



Research on the Market Situation of Fruit Wine in Weifang and the Factors Influencing Consumers

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Abstract. In recent years, the market for low-grade fruit wine has grown rapidly and has a large development potential. This study takes the fruit wine market in Weifang City as an example and conducts a differential analysis of the current situation of the fruit wine consumption market and consumer satisfaction. A hypothesis test was used to initially screen the variables related to fruit wine awareness and consumption, and a logistic regression model was put into place to explore the specific effects of each relevant variable on the dependent variable, and a portrait of fruit wine high awareness groups and key consumer groups was conducted, so that organizational marketing > cultural perception > product experience > functional evaluation could be known, and thus precise marketing could be conducted for key and potential user groups.

Keywords: Fruit wine market · Consumer satisfaction · Group portrait · Logistic model · Variance analysis

1 Introduction

With the upgrading of the national consumption level and the enhancement of rational consumption concept, the public's concern for healthy drinking has gradually increased, "moderate" and "moderate" are widely advocated, and the market for refreshing "microbrews" is rapidly expanding. "The market for low-flavored fruit wines has been expanding rapidly, breaking the "three-way" situation of white wine, beer and foreign wine.

In order to better study China's low-degree fruit wine industry and understand the market situation in China from a point of view, this study is based on the current situation of the fruit wine market in Weifang City. By exploring consumers' awareness of low-degree fruit wine, consumption, consumption preferences, consumption satisfaction and respective influencing factors, it refines the fruit wine consumption needs of different consumer groups and provides suggestions for the development of fruit wine brands, which can help reduce the homogenization of fruit wine products and improve

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consumers' repurchase rate. This will help reduce the homogeneity of fruit wine products, improve consumer repurchase rates and contribute to the overall development of the fruit wine industry.

2 Data Sources

Questionnaire data on residents' perceptions of the fruit wine market and satisfaction around large supermarkets in Weifang City.

3 Difference Analysis

Pearson chi-square test [1] was used when the dependent variable was unordered definite class information [2]; the rank sum test was used for analysis of variance when the dependent variable was rank information, where the Mann-Whitney U test was used when the grouping variable was dichotomous [3] and the Kruskal-Wallis test was used when it was a multicategorical variable [4].

Differences were considered statistically significant at $P < 0.1$, and the results showed statistically significant differences in the level of knowledge in terms of age, occupation, and monthly income. The differences in the purchase of fruit wines were statistically significant in terms of gender, occupation, and monthly income level.

4 Analysis of the Main Influencing Factors of Fruit Wine Awareness and Consumption Intention Based on Logistic Regression Models

Three variables related to fruit wine awareness and four variables related to willingness to consume were put into a binary logistic regression [5] model to investigate the specific effects of each influencing factor on fruit wine awareness and willingness to consume, using the "input" method, with the first value as a reference and $P < 0.05$ as a statistically significant difference.

Table 1 shows that the dependent variable Y is whether or not consumers know about fruit wine, and the value of $Y = 1$ is assigned to whether or not they know about fruit wine in general, relatively well or very well, and the value of $Y = 0$ is assigned to whether or not they know about fruit wine at all. A total of three independent variables, namely age, occupation, and monthly income, were set in the form of dummy variables for regression analysis.

The dependent variable Y is a 0–1 type dependent variable of whether or not consumers buy fruit wine, with "consume" and "don't consume" set to $Y = 1$ and $Y = 0$, respectively. 4 dummy variables, namely gender, occupation, monthly income level, and education level, are set to be included in the model. The regression analysis was conducted with dummy variables.

Table 1. Table of model variables

Type	Variables	Variable assignment
Individual Characteristics	Gender-X1	1 = Male, 2 = Female
	Career-X2	1 = School students, 2 = Service workers, 3 = Freelancers, 4 = Manual workers, 5 = Institutional workers, 6 = Corporate employees, 7 = Private business owners, 8 = Unemployed/retired, 9 = Other
	Age-X3	1 = Under 18 years old, 2 = 18–24 years old, 3 = 25–29 years old, 4 = 30–34 years old, 5 = 35–39 years old, 6 = 40 years old and above
	Re-X4	1 = No income, 2 = \$2,000 and below, 3 = \$2001–4,000, 4 = \$4,001–6,000, 5 = \$6,001–8,000, 6 = \$8,001–10,000, 7 = \$10,001 and above
	Aq-X5	1 = high school, junior college and below, 2 = specialty, 3 = bachelor’s, 4 = graduate and above
Fruit Wine Awareness	Under-Y	1 = Knowledge of fruit wines 0 = Don’t know anything about fruit wines
Consumer Behavior	Cost-Y	0 = No consumption, 1 = Consumption

4.1 Factors Influencing the Perception of Fruit Wine

4.1.1 Binary Logistic Model Construction

From Table 2, it can be seen that there is no multicollinearity between the respective variables [6].

As can be seen from Table 3, the model as a whole is statistically significant, and the overall goodness of fit and the explanatory power of the regression results are strong.

Explanation of the direction of action of the variables using OR values:

Age. The age groups were ranked in descending order of knowledge about fruit wines: group of respondents over 35 years old > group of respondents under 18 years old > group of respondents between 18 and 34 years old.

Occupation. The different occupational groups, in order of their knowledge of fruit wines, were: service industry workers > freelancers > other professionals > all other occupational groups.

Table 2. Table of results of multicollinearity test

IV	B	Error	Beta	t	Signf	tr	VIF
(Constant)	0.132	0.034		3.822	0.000		
Q2_Age	0.018	0.007	0.066	2.570	0.010	0.988	1.012
Q5_Career	-0.014	0.003	-0.105	-4.133	0.000	0.992	1.008
Q8_Re	0.000	0.005	0.002	0.090	0.929	0.996	1.005

Table 3. Omnibus test and HL results table

Iv	B	Error	Wald	P	OR(95%CI)
Q2_Age			13.806	0.017	
Q2_Age(1)	-0.285	0.559	0.260	0.610	0.752(2.25,0.251)
Q2_Age(2)	-0.399	0.565	0.498	0.480	0.671(2.031,0.222)
Q2_Age(3)	-0.418	0.566	0.546	0.460	0.659(1.995,0.217)
Q2_Age(4)	0.347	0.587	0.351	0.554	1.415(4.472,0.448)
Q2_Age(5)	1.357	0.913	2.209	0.137	3.885(23.252,0.649)
Q5_Career			70.643	0.000	
Q5_Career(1)	1.221	0.395	9.537	0.002	3.391(7.361,1.562)
Q5_Career(2)	0.980	0.544	3.240	0.072	2.664(7.741,0.917)
Q5_Career(3)	0.218	0.383	0.325	0.569	1.244(2.636,0.587)
Q5_Career(4)	-0.800	0.349	5.254	0.022	0.449(0.891,0.227)
Q5_Career(5)	-0.925	0.342	7.329	0.007	0.396(0.775,0.203)
Q5_Career(6)	-0.581	0.354	2.699	0.100	0.559(1.119,0.28)
Q5_Career(7)	-0.175	0.344	0.260	0.610	0.839(1.646,0.428)
Q5_Career(8)	0.454	0.388	1.367	0.242	1.574(3.367,0.736)
Q8_Re			16.681	0.011	
Q8_Re(1)	0.085	0.380	0.050	0.822	1.089(2.293,0.517)
Q8_Re(2)	0.394	0.396	0.989	0.320	1.483(3.221,0.682)
Q8_Re(3)	-0.370	0.339	1.192	0.275	0.691(1.342,0.356)
Q8_Re(4)	0.194	0.409	0.224	0.636	1.214(2.703,0.545)
Q8_Re(5)	-0.001	0.430	0.000	0.998	0.999(2.319,0.43)
Q8_Re(6)	0.709	0.475	2.226	0.136	2.032(5.16,0.8)
Constants	2.116	0.638	11.002	0.001	8.295

Monthly income level. Different monthly income groups were ranked in descending order according to their knowledge of fruit wines: group with more than RMB 10,000 > group with RMB 2,000 to 4,000 > group with less than RMB 2,000 \approx group with RMB 6,000 to 8,000 > group with no income > group with RMB 4,000 to 6,000.

4.2 Factors Influencing Consumption Intention

As can be seen from Table 4, there is no multicollinearity between the respective variables.

Characteristics of the key consumer groups of fruit wine: female, high school education and below, career workers, and monthly income level of 2000–4000 yuan or 8000–10,000 yuan.

Table 4. Table of results of multicollinearity test

IV	B	Error	Beta	t	Signf	tr	VIF
(Constant)	1.187	0.061		19.618	0.000		
Q1_Gender	0.057	0.023	0.063	2.468	0.014	0.999	1.001
Q4_Aq	-0.016	0.014	-0.031	-1.177	0.239	0.954	1.049
Q5_Career	-0.006	0.004	-0.035	-1.345	0.179	0.967	1.035
Q8_Re	0.009	0.007	0.036	1.387	0.166	0.986	1.014

As can be seen from Table 5, the overall goodness of fit of the model and the explanatory power of the regression results are strong.

Table 5. Omnibus test and HL results table

Iv	B	Error	Wald	P	OR(95%CI)
Q1_Gender(1)	0.297	0.129	5.324	0.021	1.346(1.733,1.046)
Q5_Career			12.276	0.139	
Q5_Career(1)	-0.318	0.367	0.754	0.385	0.727(1.492,0.355)
Q5_Career(2)	0.002	0.413	0.000	0.997	1.002(2.252,0.445)
Q5_Career(3)	-0.207	0.386	0.288	0.591	0.813(1.731,0.382)
Q5_Career(4)	0.149	0.388	0.148	0.701	1.161(2.485,0.542)
Q5_Career(5)	-0.343	0.383	0.805	0.370	0.709(1.502,0.335)
Q5_Career(6)	-0.576	0.394	2.144	0.143	0.562(1.216,0.26)
Q5_Career(7)	-0.317	0.371	0.729	0.393	0.728(1.508,0.352)
Q5_Career(8)	-0.648	0.402	2.600	0.107	0.523(1.15,0.238)
Q4_Aq			5.527	0.137	
Q4_Aq(1)	-0.128	0.189	0.463	0.496	0.879(1.273,0.608)
Q4_Aq(2)	-0.068	0.188	0.131	0.717	0.934(1.351,0.646)
Q4_Aq(3)	-1.061	0.466	5.177	0.023	0.346(0.863,0.139)
Q8_Re			14.082	0.029	0(0,0)
Q8_Re(1)	0.133	0.340	0.153	0.695	1.143(2.227,0.586)
Q8_Re(2)	0.713	0.332	4.605	0.032	2.04(3.913,1.064)
Q8_Re(3)	0.310	0.311	0.996	0.318	1.364(2.509,0.741)
Q8_Re(4)	0.537	0.347	2.397	0.122	1.712(3.38,0.867)
Q8_Re(5)	0.734	0.365	4.043	0.044	2.084(4.264,1.019)
Q8_Re(6)	0.111	0.391	0.081	0.777	1.117(2.402,0.52)
Constant	-1.280	0.400	10.243	0.001	0.278

Gender. The gender difference is significant at the 5% level, with a positive regression coefficient and an OR value greater than 1, implying that women are more willing to buy fruit wine than men. This finding is in line with other market research findings that “women are the main buyers of low alcohol”.

Education level. The willingness to buy fruit wine is lower among those with a college degree or higher than those with less than a college degree.

Occupation. The willingness to buy fruit wine was higher among career workers than among all other occupations, followed by freelancers and students.

Monthly income level. The willingness to buy fruit wine was higher among those with monthly incomes of RMB 2,000 to 4,000 and RMB 8,000 to 10,000 than among those with other monthly incomes, followed by those with monthly incomes of RMB 4,000 to 8,000, those with monthly incomes of less than RMB 2,000 and those with incomes of more than RMB 10,000, and those with no income had the lowest willingness to buy fruit wine.

5 Recommendations

According to the portrait of key consumer groups and potential consumer groups, through further investigation, we can accurately grasp the needs of both groups, which is expected to transform potential consumers into consumers, increase fruit wine sales, and further develop the market.

6 Conclusion

Through chi-square and rank-sum tests on 8 basic information, this study found statistically significant differences in the level of understanding in terms of age, occupation, and monthly income level. The specific relationship between the three variables and fruit wine knowledge was further explored through logistic models, and a portrait of high fruit wine awareness groups was obtained: over 35 years old, service industry workers or freelancers, and high income groups above \$10,000.

After the chi-square test and rank-sum test, the influencing factors of fruit wine purchase intention were initially screened as gender, occupation, monthly income level, and education level. Further, a logistic regression model was used to investigate the specific relationships between the four variables and the consumption of fruit wine, and to obtain a portrait of the main consumers of fruit wine as women, those with high school education or less, those working in institutions, and those with monthly income levels of RMB 2,000 to 4,000 or RMB 8,000 to 10,000.

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