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Formation Mechanism of Consumer Purchase Intention and Market Expansion Paths for Geographical Indication Agricultural Products: A Case Study of Xin Yang Maojian Tea

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Abstract: With the promotion of the concept of modern agricultural development, the tea industry as both traditional planting heritage and modern market value of cash crops in the field, is accelerating to the standardisation, industrialisation and upgrading of the direction of transformation. Xinyang Mao Jian as one of the top ten tea among the ranks of the famous tea, should be in the domestic and foreign tea market competition pattern to obtain a wider range of consumer favour and market recognition. However, with the development of technology and fierce competition, Xinyang Mao Jian, a traditional tea brand, no longer occupies an absolute advantage in the market. In order to understand and improve the current situation faced by Xinyang Mao Jian, and to provide consumers with more safe and high-quality tea, this study positions the target group as tea consumers, and carries out a survey within the scope of central regions (Henan, Hubei and Hunan provinces), one of the nation's agricultural heart and transportation centres, and investigates the current situation of consumer consumption of Xinyang Mao Jian, and then applies a model to analyse the characteristics of the factors and consumer groups, in order to provide the following information Xinyang Mao Jian market in central regions to provide a useful reference. Based on the results of the questionnaire survey, this study establishes a Logistics regression model to analyse the influence of respondents' age, gender, disposable monthly income, and knowledge of Xinyang Mao Jian on whether to buy Xinyang Mao Jian; and combines principal component analysis and grey correlation analysis to obtain the main factors affecting the effect of satisfaction are product quality, after-sales service and brand image. Through the analysis, this paper draws the following conclusions: First, consumers have a large potential demand for Xinyang Mao Jian, and a strong demand for high-quality tea and tea brands. Second, the probability of people purchasing food standard certified Xinyang Mao Jian is positively correlated with age, disposable monthly income, and level of understanding. Third, the more people like tea, the more they like Xinyang Maojian, and the more consumers know about Xinyang Maojian, the more they tend to buy Xinyang Maojian. Fourth, product quality, after-sales service and brand image have the greatest influence on customers' re-purchase.

Keywords: Xinyang Mao Jian; Logistics Regression Model; Principal Component Analysis; Grey Correlation.

1. Introduction

As one of the ‘Ten Famous Teas’, Xinyang Mao Jian is highly favoured for its unique quality, taste and cultural background, and has been recognised as a geographical indication agricultural product. However, in the fierce market competition, how to give full play to the advantages of geographical indications, expand market share, increase consumer willingness to buy, has become an important issue that needs to be resolved. Xinyang Mao Jian in the market is faced with brand awareness is not high, marketing promotion is insufficient, product packaging design is more traditional, limited channel expansion, price positioning is not precise enough and other problems. These problems have led to the lack of recognition and attraction of Xinyang Mao Jian in the minds of consumers, affecting its market competitiveness and sales performance.

Geographical indications, key to enhancing agricultural products’ market competitiveness and protecting traditional agriculture, are critical amid branding and industrial transformation. The central region’s large tea consumption market, with rising demand and unique quality, offers growth potential for Xinyang Mao Jian, a regional leader. The 2023 Market Index shows mixed trends: despite a slight sales drop, total transactions surged 112.69% year-on-year, yet unit prices are volatile. To address these issues and boost Xinyang Mao Jian’s market share and consumer appeal, measures like strengthening brand awareness, optimizing marketing, innovating packaging, expanding sales channels, and rational pricing are essential.

2. Literature Review

2.1. Domestic Research Landscape

In the 1880s, the concept of geographical indications emerged in Europe, promoting the innovative development of the agricultural economy. Xinyang Mao Jian, as one of the top ten famous teas, has made remarkable achievements in brand development since it was awarded the Geographical Indication trademark in 2003, which has promoted the rapid growth of the agricultural economy and the increase of farmers' income. However, in the competitive market environment, Xinyang Maojian still needs to strengthen its brand building in order to continue to develop and grow. Han Xiao (2020) [1] pointed out that the overall brand construction of Xinyang Mao Jian is currently at a medium level, in order to enhance brand competitiveness and achieve sustainable development, the integration of geographical indications and brand construction must be further strengthened. He deeply analysed the problems and constraints in brand building of Xinyang Mao Jian, and

systematically sorted out the influencing factors such as origin, production body, consumers and the product itself. Through a questionnaire survey, all aspects of brand building were evaluated, and the results showed that in the brand building process, factors such as origin, production main body, product quality, and consumers all had a significant impact.

Xuelong Yi (2017) [2] pointed out that brand communication has been of great concern to Henan Province and Xinyang City, and Xinyang Maojian, as one of the famous Chinese green tea varieties, is also a regional brand in the region. Although some enterprises have adopted various communication strategies, they still have not reached the desired state in terms of brand awareness, communication effect and market share. He made an in-depth analysis of the history, communication status and external environment of Xinyang Mao Jian brand, and proposed optimisation strategies by combining relevant regional brand communication literature at home and abroad. After SWOT analysis, it is found that the brand lacks professional perspective, the communication method is relatively old-fashioned, and there are brand advantages and communication difficulties. Therefore, taking advantage of the opportunities of new media, it is recommended to clarify the audience group, brand positioning, innovative communication means and integrate the local tea culture by organising innovative public relations activities and developing eye-catching economic activities. The measures described above aim to promote the communication effect of Xinyang Mao Jian brand in the fierce market competition.

2.2. International Literature Review

International research has focused mainly on the field of safe agricultural products, especially organic food and geographical indications (GIS). Dlouhy (1989) [3] stated that food safety and environmental factors have motivated producers and consumers to focus their attention on safe agricultural products, which in turn has fuelled the emergence of a market for safe agricultural products. Studies have shown that food safety issues and environmental factors are the main reasons that motivate producers and consumers to focus on safe agricultural products. Tobler et al. in their study on sustainable consumption of consumers in the United Kingdom found that consumer trust and willingness to buy green food is persistent. Consumers' high recognition of organic food and their willingness to pay higher prices for it show the huge potential of the market for safe agricultural products. Due to their strong local characteristics and humanistic values, tea-type GI agricultural products like Mao Jian are crucial for promoting regional economic development, which can increase consumers' recognition and willingness to buy the products. In addition, as a marketing tool, geographical indications can enhance the competitiveness of tea agricultural products like Mao Jian in the market, thus promoting the development of the regional economy. Studies by Irina Kireeva (2010) [4] and Thanasis Kizos (2013) [5] show that geographical indications products help to promote the development of local agriculture and related industries. British scholar Dwjen Rangnekar (2010) [6] describes geographical indications as ‘club products’ and emphasises that geographical indications are an economic theory closely related to reputation and relevance, which can effectively promote the sound development of agricultural products.

3. Research Design and Data Analysis

In this study, a total of 920 questionnaires were collected for survey distribution by online distribution and offline field visits, and 847 valid questionnaires were recovered (effective recovery rate of 92.1%). Reliability analysis showed that the Cronbach's α coefficient of each dimension was greater than 0.7 (the dimension of willingness to buy reached 0.967), the validity test (KMO=0.918, Bartlett's test $p<0.05$) supported the applicability of the factor analysis, and the test of randomness (swim test $p=0.514$) and the chi-square test of independence verified the reliability of the sample.

Descriptive statistics showed that the sample had a balanced gender distribution (51% female), age coverage of the 18-60 age group, and 50% of the middle-income group. More than half of the respondents have consumed Xinyang Maojian, with a significantly higher penetration rate in Henan province. Quality assurance (43%) and brand awareness (25%) were the main purchase drivers, with preferred price focusing on 300-600 RMB/catty, and favouring refreshing taste (58%), pure handmade craftsmanship (62.8%) and simple packaging. The average value of market satisfaction is 5.31-5.79 points (on a 10-point scale), with packaging design and product availability as the main shortcomings. More importantly, about 65% tend to buy GI-certified products, showing that food certification can strengthen potential consumption willingness.

4. Model Specification and Empirical Analysis

4.1. Analysis of Factors Influencing the Purchase Intention of Xinyang Maojian Based on Logistic Regression of Whether People Purchase Geographical Indication Agricultural Products Under the Certification

4.1.1. Variable Setting

(1) Dependent variable: whether or not people in central regions have purchased Xinyang Maojian under the GI certification

Whether or not people in central regions have purchased Xinyang Maojian under the GI certification reflects the current market status of GI agricultural products. The binary choice behaviour of whether the individual has purchased Xinyang Mao Jian under the certification of GI agricultural products is expressed as the dependent variable, which takes the value of 1 when choosing ‘Yes’, and takes the value of 1 when choosing ‘no’. When ‘Yes’ is selected, the value is 1. When ‘No’ is selected, the value is 0.

(2) Independent variable: individual characteristics

The personal characteristics of the survey respondents are classified according to: age, monthly disposable income, gender, whether they like to drink tea, how much they know about Xinyang Maojian, whether they like to drink it, and whether they know about geographical indication agricultural products.

In the questionnaire design, a large amount of data collected above were qualitative variables. For example, if the monthly income is divided into five grades, if it is directly coded as 5, 4, 3, 2, 1, so that it is included in the analysis as a dependent variable, it is equivalent to assuming that the gap between these five grades is completely equal, or that they

have a uniform degree of influence on the value of the dependent variable, and such an assumption would be too simple and arbitrary and not in line with the actual situation. Therefore, this paper adopts the standard statistical practice of converting the above variables into dummy variables.

(3) Modelling

Based on the above definitions of independent and dependent variables, the multivariate Logistic regression model is constructed as follows:

$$\breve{Y}_i = P(Y_i = 1|x) = \frac{\exp\left(x_i^{'}\breve{\beta}^{'}\right)}{1+\exp\left(x_i^{'}\breve{\beta}^{'}\right)} = \frac{e^{\breve{\beta}_0+\breve{\beta}_1 x_{1i}+\breve{\beta}_2 x_{2i}+\ldots+\breve{\beta}_n x_{ni}}}{1+e^{\breve{\beta}_0+\breve{\beta}_1 x_{1i}+\breve{\beta}_2 x_{2i}+\ldots+\breve{\beta}_n x_{ni}}}$$

Where Y_i is the dependent variable and $\breve{Y}_i$ is the fitted value of the dependent variable, taking values between [0, 1]. x are the independent variables, which correspond to the 15 dummy variables under the six independent variables of age, monthly income, level of understanding, whether they like tea or not, and gender plus a continuous variable. $i(i = 1,2,3,\ldots,n)$ represents the observed values and $\breve{\beta}_i$ represents the regression coefficients to be estimated.

4.1.2. Model Solving Results and Model Checking

The model was solved by using SPSS and the test results were obtained. The Hosmer-Lemeshaw test results among them are shown in the following table:

Table 1. Hosmer-Leimershaw test

Chi-square	Degrees of Freedom	Significance (P-value)
2.279	8	0.971

As can be seen from the results in the table, the significance is much greater than 0.05, which represents a good model fit.

According to the output of the regression coefficients, there are some regression coefficients that are not significant. However, the regression equation actually has only six factors, so as long as the coefficient corresponding to the dummy variable under a certain factor is significant, it is considered that the factor is significant in the equation. The four factors of age, monthly income, knowledge of Xinyang Maojian, and whether or not one likes to drink tea are all significant. As for the degree of knowledge of geographical indication agricultural products, because all his dummy variables are not significant, so the degree of knowledge of geographical indication agricultural products is not significant, and also the gender is not significant, so the gender is not significant.

4.1.3. Analysis of Measurement Results

The analysis of this study based on logistic regression model shows that consumers' age, monthly income, knowledge of Xinyang Maojian and tea-drinking preference significantly affect their purchase intention of GI certified products. Specifically, the purchase probability of the 45-60 years old group is significantly higher than that of the reference group above 60 years old, while the purchase intention of the group below 45 years old is lower than that of the reference group; monthly income is positively correlated with the purchase probability, and the lower the level of income, the lower the possibility of purchase, taking the monthly income of more than 10,000 yuan as a reference. In addition, the deeper the understanding of Xinyang Mao Jian, the higher the purchase probability of consumers, and the intensity of tea-drinking preference is positively correlated with the willingness to buy, the more fond of tea groups tend to choose GI certified products. The results of the study show that middle-aged and old-aged consumers with high income, high product awareness and heavy tea drinkers are the core consumer groups of Xinyang Mao Jian with GI certification.

4.2. Analysis of Factors Affecting Effect Satisfaction Based on Principal Component Extraction and Grey Correlation

4.2.1. Modelling

According to the question options in the questionnaire, 8 influencing factors are selected, which are frequency of purchase, after-sales service of Xinyang Maojian, product quality, product price, brand image, GI agricultural product support and GI agricultural product certification, product packaging form, and product efficacy. Considering the correlation between these eight influencing factors, principal component analysis was firstly applied to eliminate the correlation between the influencing factors, and at the same time, the principal component with a cumulative contribution rate of variance of 85% was selected. Then the importance of these five principal components was evaluated by combining grey correlation analysis.

4.2.2. Principal Component Analysis and Grey Correlation Analysis Implementation and Solution

(1) Principal Component Analysis

Principal component analysis was carried out using SPSS software and KMO and Bartlett's test results were obtained as follows:

Table 2. KMO and Bartlett's Test Results

KMO and Bartlett's Test		
KMO Sample Suitability Quantity		.746
Bartlett's Test of Sphericity	Approximate Chi-square	307.421
	Degree of Freedom	28
	Significance	.000

From the results, it is known that the KMO sampling aptitude quantities ≧ 0.6, the significance is lower than 0.05, so the results can be known to be significant.

The results of principal component analysis are as follows:

Table 3. Principal Component Analysis Results

	Comp.1	Comp.2	Comp.3	Comp.4	Comp.5	Comp.6	Comp.7	Comp.8
CRV	0.34845	0.15416	0.13684	0.11428	0.10711	0.09448	0.02509	0.0195
CCRV	0.34854	0.50270	0.63954	0.75382	0.86093	0.95541	0.98050	1.00

According to the magnitude of variance contribution, the top five principal components with a cumulative variance contribution of 85% were selected for grey correlation analysis.

(2) Grey Correlation Analysis

The scores of the five principal components obtained were taken as the comparison sequence, and the willingness to purchase again was set as the reference sequence for grey relational analysis. The grey correlation degrees between each principal component and the satisfaction with the effect are calculated and shown in Table 4 below:

Table 4. Grey correlation degree of each indicator

Indicator	Comp.1	Comp.2	Comp.3	Comp.4	Comp.5
Correlation	0.6743	0.8152	0.8249	0.7834	0.7256
Ranking	5	2	1	3	4

4.2.3. Analysis of Principal Component and Grey Correlation Results

(1) Explanation of the principal component

In order to provide practical explanations for these six principal components, the principal component load matrices are given as shown in the following table:

Table 5. Principal component load matrix

	1	2	3	4	5
Purchase Frequency	.038	.860	.182	.327	.086
Product Quality	.275	-.233	.981	-.069	-.038
After-sales Service	.297	-.298	.801	.250	.542
Brand Image	.323	-.024	.372	-.508	-.283
Product Price	.317	.261	-.097	-.533	.632
Certified Concerns	.305	.118	-.127	.317	-.836
Package	.000	.001	.005	-.002	-.008
Product Benefits	-.007	-.001	-.011	.005	-.002

As can be seen from the principal component loading matrix, principal component Comp.1 has a large loading value on brand image and product price, which can be regarded as the resource input principal component; Comp.2 has a large loading on purchasing frequency, which indicates that the second principal component mainly integrates the information of purchasing frequency of the purchasing population, which can be regarded as the positive principal component of the consumers themselves; Comp.3 has a large loading value on the quality of the product, after-sale service and brand image, which reflects the degree of professionalism of the product, and can be regarded as the degree of professionalism principal component. Comp.3 on product quality, after-sales service and brand image has a large loading, reflecting the degree of professionalism of the product, which can be regarded as the degree of professionalism principal component. Since the variance contribution rate of Comp.4 and Comp.5 is not high, and their significance overlaps with the first three principal components, it is considered that these two principal components mainly play the role of supplementing the explanation of the variance of the original data.

(2) Degree of influence of each principal component on satisfaction

After giving the interpretation of the principal components, the table was updated to a grey correlation between the five factors and effect satisfaction as follows:

Table 6. Grey correlation of the first five indicators of the principal components

Indicator	Comp.1	Comp.2	Comp.3	Comp.4	Comp.5
Correlation	0.6743	0.8152	0.8249	0.7834	0.7256
Ranking	5	2	1	3	4

From the above table, it can be seen that the correlation between the five influencing factors and the willingness to buy again are all large. Among them, the grey correlation between professionalism and willingness to buy again is 0.8249, indicating that product quality, after-sales service and brand image have the greatest influence on consumers' willingness to buy again. Therefore, improving the professional level of products, brand image and after-sales service has an important influence on consumers' willingness to buy again. The second factor is the correlation between consumers' personal purchase frequency and their willingness to buy again, which is 0.8152, with a strong correlation between the two, indicating that consumers' own enthusiasm for purchasing Xinyang Maojian, a GI agricultural product, affects their willingness to buy again. Supplementary factor 1 and supplementary factor 2 mainly supplement the level of professionalism and the degree of positivity, so the grey correlation between the two is also larger. Compared with the level of professionalism and the degree of motivation, the grey correlation between resource input and effect satisfaction is smaller at 0.6743, but still greater than 0.6, which is highly correlated. In response to this factor, encouraging consumers to increase their investment in purchasing tea effectively enhances consumers' willingness to purchase again.

4.2.4. Analysis of Findings

Product quality, after-sales service and brand image have the greatest influence on consumers' willingness to buy Xinyang Mao Jian again, which means that product quality, after-sales service and brand image are the key factors affecting consumers' loyalty to Xinyang Mao Jian products; at the same time, consumers' personal GI agricultural products purchase positivity will also have an impact on their willingness to buy again.

5. Conclusion

This study shows that consumers in central regions as a whole prefer fresh and fragrant handmade Xinyang Mao Jian, and that product quality, after-sales service and brand image are the core factors affecting purchase intention, while low satisfaction with packaging, market counterfeiting and confusing pricing system are significant constraints on the release of consumption potential; further analysis reveals that the high-income female group of 45-60 year-olds and the male group of 18-29 year-olds constitute the core potential consumer market. Further analysis reveals that 45-60 year-olds high-income female group and 18-29 year-olds male

group constitute the core potential consumer market, and although the awareness of food certification is still low, its positive effect on improving consumer confidence has been initially seen. Based on this, the study proposes systematic countermeasures: relevant higher-level institutions need to strengthen scientific management and financial support for the industry, and promote brand innovation and development through the establishment of an industry-university-research co-operation platform; enterprises should build a diversified marketing system, and carry out accurate promotion of young groups through social media; growers need to deepen brand awareness training, and enhance the added value of products by tapping into the regional cultural connotations, so as to form a quality control, brand dissemination and market expansion of the synergistic development pattern.

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References

[1] Han Xiao, “Brand Communication Research of Xinyang Maojian”, Guangxi University (Doctoral Dissertation), 2020.

[2] Xuelong Yi, “Research on Brand Building of Xinyang Maojian from the Perspective of Geographical Indications”, Zhengzhou University of Aeronautics (Master’s Dissertation), 2017.

[3] Dlouhy, “Food Safety and Environmental Factors in the Development of the Safe Agricultural Products Market”, Journal of Agriculture, 1989, Vol. 25 (3), p112-125.

[4] Irina Kireeva, “How to Register Geographical Indications in the European Community”, World Patent Information, 2010, Vol. 33 (1), p72-77.

[5] Thanasis Kizos, “Consumers and Producers Expectations and Gains from Geographical Indications”, Comprehensive Analytical Chemistry, 2013, Vol. 60, p31-47.

[6] Dwijen Rangnekar, “The Law and Economics of Geographical Indications: Introduction to Special Issue of The Journal of World Intellectual Property”, The Journal of World Intellectual Property, 2010, Vol. 13 (2), p96-118.