

Study on Influencing Factors of Brand Building of Agricultural Products in Western Guangdong

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Abstract. Brand building of agricultural products in western Guangdong is related to farmers' income. In order to explore the influence of brand building on the brand development of agricultural products, this paper uses the theory of public goods and stakeholders, and uses questionnaire survey to carry out research. The results show that regional factors, industrial factors, brand factors and public factors all have positive influence on the brand development of agricultural products. Accordingly, the countermeasures are put forward: relying on regional advantages to extend the value chain of agricultural products; Strengthen industrial construction and integrate industrial resource allocation; Dig deep into the connotation of brand culture and expand market share; Promote multi-stakeholder coordination and achieve coordinated development. This study hopes to provide useful reference for brand building of agricultural products in western Guangdong.

Keywords: Agricultural Products, Brand Building, Influencing Factors.

1. Introduction

The Agricultural products are the main source of income for farmers. In recent years, the People's Government of Guangdong Province has successively issued a series of policy documents such as Several Policy Measures for Guangdong Province to Further Implement the Trademark Brand Strategy and Serve Economic and Social Development and Implementation Plan for Developing Geographical Indication Industries in Guangdong Province, which have stimulated the vitality of agricultural brand building at the policy level. Western Guangdong (including Maoming, Yangjiang and Zhanjiang) is an important agricultural producing area in Guangdong Province, rich in litchi, orange red, pineapple, tempeh, oyster and other agricultural products. According to the data of a questionnaire survey, when asked about their knowledge of agricultural products brands in western Guangdong, 6.34% of the respondents bluntly said they didn't know, 56.83% said they had only heard of individual brands, and only 5.8% of the respondents knew them very well. This shows that the brand building of agricultural products in western Guangdong is still in its infancy, and a distinct brand image has not yet been formed in consumers' minds, and the public's awareness of brands is still relatively low. The key crux of this gap lies in the weak brand building: although western Guangdong is rich in regional agricultural products, its brand value has not been highlighted. These problems lead to the emphasis on output rather than quality of agricultural products and the fragmentation of industrial chain, which makes agriculture fall into the development misunderstanding of "output-dependen" rather than "brand-driven".

At present, there are many studies on brand building of agricultural products, but scholars mostly focus on well-known agricultural products. At present, there are three main problems in the research: First, the theoretical basis is weak, and the interdisciplinary paradigm has not been effectively established; Second, the research method focuses on case analysis, and the empirical quantitative analysis is insufficient; Third, insufficient attention is paid to the regional resource advantages and unique cultural attributes of the research object^[1-2]. Based on the above contradictions, the core concern of this study is: What are the key factors that affect the brand building of agricultural products in western Guangdong? What differentiated roles do different stakeholders (government, enterprises and farmers) play in brand building? Specifically, these factors include not only external conditions such as regional advantages, degree of industrial chain integration and policy support, but also

internal factors such as farmers' brand awareness, enterprise marketing ability and enterprise image. How does their interaction restrict or promote the agricultural products in western Guangdong from "Regional Product" upgraded to "Regional Brand", is the content that needs to be analyzed.

By answering the above questions, this study has both theoretical contribution and practical value. In this study, data were collected through online questionnaire, and statistical modeling analysis was carried out with the help of SPSS software. This study not only responds to the goal of "improving the long-term mechanism for promoting the comprehensive revitalization of rural areas" in the No.1 Document of the Central Committee in 2025, but also conforms to the policy of strengthening the cultivation and brand promotion of agricultural products proposed by the Guangdong Provincial Administration for Market Supervision, providing theoretical reference for agricultural transformation in the digital age, and also providing effective case studies for enhancing regional brand competitiveness.

2. Selection of influencing factors and variables and hypothesis proposal

2.1. Theoretical basis of variable selection

Regional brands of agricultural products have the characteristics of quasi-public goods, which can be shared by all producers in the region after formation, but excessive use may lead to the reduction of brand value. Chu Dejiang believes that the phenomenon of "free riding" is common, and the government needs to intervene to solve market failure^[3]; Hou Yanjiang et al. pointed out that brand building involves multiple stakeholders and needs coordination and collaboration^[4]; Wang He also believes that the government needs to play a coordinating role^[5]. Therefore, this study is based on public goods theory and stakeholder theory: the former can explain the public attributes and government responsibilities of external factors, while the latter can analyze the interest chain behind internal factors, and then solve the contradiction of "high output and low income". Through extensive collection of literature on the influencing factors of agricultural product brand building, and after analysis, regional, industrial, brand and public factors appear frequently as independent variables^[6-8], and most scholars use brand development performance as dependent variables to measure the effect of brand building^[9-10]. These empirical research results lay the foundation for the standardization of this study.

2.2. Basic hypotheses

In the past, scholars' research on regional influencing factors mostly focused on well-known agricultural product brands, such as Wuchang rice, navel orange in southern Jiangxi, hairy crab in Yangcheng Lake, etc., but paid less attention to agricultural products in western Guangdong. Western Guangdong belongs to subtropical climate, superior geographical location, good economic foundation and prosperous farming culture. These regional conditions not only help farmers improve the quality of agricultural products, but also create value for stakeholders such as enterprises, governments and consumers, thus promoting brand building. Therefore, the following hypothesis is put forward:

H1: Regional factors have a positive impact on the brand building of agricultural products in western Guangdong.

Studies have confirmed that the industrial development of well-known agricultural products has a significant impact on brand building, but the existing achievements are mostly concentrated in the field of agricultural products with large industrial scale and outstanding agglomeration effect, and the discussion on agricultural products brands with imperfect industrial chain is relatively scarce. From the perspective of public goods theory, the industrial development of local agricultural products can provide effective support for brand growth. Based on this, the following hypotheses are put forward: H2: There is a positive correlation between industrial factors and brand building of agricultural products in western Guangdong.

The research of David A. Aaker, Lu Taihong and other scholars at home and abroad shows that brand image and brand marketing promotion help to enhance brand value and are important factors influencing brand building. At the same time, considering the existence of brand free-riding phenomenon, the research combined with the theory of public goods can more clearly highlight the particularity of brand factors, and then provide reference for the brand building of agricultural products. Based on this, the following hypotheses are put forward:

H3: The brand factors are positively related to the brand building of agricultural products in western Guangdong.

In recent years, the brand building of agricultural products has been paid attention to, and the academic research focuses on the behavior level of government and enterprises, but pays less attention to the mechanism of the government, enterprises and consumers cooperating to promote the development of agricultural products brands. From the perspective of stakeholder theory, the value of brand building can only be fully released when the government attaches importance to brand building, enterprises earnestly implement relevant measures and consumers have a high degree of recognition of the brand. Accordingly, this study puts forward the following assumptions:

H4: Public factors are positively related to the brand building of agricultural products in western Guangdong.

2.3. Variable index setting

By combing the literature, it is found that the scale of influencing factors of agricultural products brand designed by Zhang Yue covers a wide range of indicators, and the scale has been empirically tested and has good reliability and validity. On the basis of previous studies, aiming at the characteristics of agricultural products brands in western Guangdong, the measurement contents of “economic level” and “brand marketing” are refined, and an index system suitable for agricultural products brands in western Guangdong is constructed. Based on the public goods theory and stakeholder theory, combined with the literature achievements of Zhang Yue and other scholars, a questionnaire was compiled. The questionnaire uses Richter scale 5 to evaluate the secondary indicators of independent variables and dependent variables subjectively, as shown in Table 1.

Table 1 Selection of variables

Primary index	Secondary index	Index definition	Yardstick
Regional factors(χ_1)	Advantages of natural resources	The subtropical climate and soil conditions in western Guangdong have significantly improved the characteristics of agricultural products.	Level 5 Likert scale (1 = very inconsistent, 5 = very consistent)
	Geographical position	The coastal location of western Guangdong has enhanced the market radiation ability of agricultural products brands.	
	Economic level	The level of economic development in western Guangdong provides financial and technical support for brand building.	
	History and culture	Leizhou culture, Litchi Festival and other regional cultures give the brand of agricultural products in western Guangdong a unique cultural recognition.	
Industrial factors(χ_2)	Industry cluster	The upstream and downstream enterprises in the agricultural product industry chain in western Guangdong have a high degree of agglomeration and cooperation.	
	Market value	The market share of agricultural products in western Guangdong and consumers' willingness	

		to pay are significantly higher than those of similar products.
	Corporate champion	Leading enterprises in western Guangdong play an outstanding role in the standardization and large-scale development of industrial chain.
	Technical innovation	The research and application of digital technology for agricultural products in western Guangdong has improved the quality of products.
Brand factor(χ_3)	Product quality	The quality certification coverage of agricultural products in western Guangdong is high and the quality credibility is strong.
	Brand image	Consumers have a high evaluation of the reputation of agricultural products brands in western Guangdong.
	Pinpi marketing	The brand marketing of agricultural products in western Guangdong is frequently promoted through e-commerce live broadcast, exhibitions and other channels, and the effect is remarkable.
	Brand culture	Brand stories and symbols enhance brand appeal.
	Brand management and protection	The trademark registration and infringement measures of agricultural products brands in western Guangdong are perfect, effectively protecting consumers' rights and interests.
Public factor(χ_4)	Orderly market competition	The agricultural products market in western Guangdong has high price transparency, less vicious competition and standardized market order.
	Government and industry behavior	The local government in western Guangdong has a strong policy support for agricultural products brands.
	Laws and regulations	Trade associations play a significant role in the formulation of brand standards and market coordination.
	Public relations	Local media and consumers have many positive comments on agricultural products brands in western Guangdong, and their brand loyalty is high.
Brand development performance(Y)	Regional brand value	The market valuation or consumer perceived value of agricultural products brands in western Guangdong is higher.
	Brand reputation	Consumers' satisfaction with the quality and service of agricultural products brands in western Guangdong is significantly higher than that of brands in other regions.
	Economic driving force	The brand of agricultural products in western Guangdong has obvious economic driving effect on local employment and output value growth.

3. Data analysis

3.1. Data acquisition

In order to ensure the reliability of data sources, this study adopts online and offline methods to distribute questionnaires. A total of 328 questionnaires were collected this time. After screening out invalid questionnaires, 305 valid questionnaires were finally obtained, with an effective rate of 92.99%. The basic information of the questionnaire is shown in Table 2.

Table 2 Statistics of Basic Information

information	classify	sample size	Percentage (%)
gender	man	155	50.82
	woman	150	49.18
age	Under 18 years old	28	9.18
	18-26 years old	135	44.26
	27-45 years old	96	31.47
	46-60 years old	29	9.51
	Over 60 years old	17	5.58
academic degree	High school and below	55	18.03
	college for professional training	113	37.05
	undergraduate course	114	37.37
	Graduate students and above	23	7.55
occupation	Agricultural practitioners	62	20.33
	Enterprise staff	108	35.42
	Government/institution personnel	42	13.77
	Freelancer	73	23.93
	other	20	6.55

3.2. Test of reliability and validity

By In order to test the consistency and stability of the questionnaire, Cronbach's Alpha coefficient was calculated by SPSS software to measure the internal consistency reliability of the questionnaire. Generally speaking, when the α value is greater than 0.7, it indicates that the reliability of the scale is good. For the accuracy and validity of the questionnaire, it is mainly realized by calculating KMO value and conducting Bartlett spherical test. Among them, KMO value is greater than 0.8, which means that the partial correlation between variables is strong; If the significance value of Bartlett's spherical test is less than 0.05, it means that there is a strong correlation between variables and there is a meaningful structural relationship in the data. Only when the reliability and validity tests meet the analysis conditions at the same time can we further improve the scientificity of questionnaire analysis and enhance the credibility of the research results. See Table 3 for specific values.

Table 3 Cronbach's Alpha coefficient test of each variable

Measurement index	Cronbach's Alpha	number of terms
Regional factors	0.859	4
Industrial factors	0.868	4
Brand factor	0.918	5
Public factor	0.881	4
Performance factors of brand development	0.864	3
Overall reliability	0.964	

It can be seen from Table 3 that Cronbach's Alpha coefficient of each variable is greater than 0.8, which shows that the reliability of each factor dimension in the scale is good and the internal consistency is acceptable; The overall Cronbach's Alpha coefficient of the questionnaire is 0.964, which shows that the reliability of the questionnaire is good and high, and further research can be carried out.

Table 4 KMO and Bartlett tests

KMO sampling suitability quantity		0.958
Bartlett's sphericity test	Approximate chi-square	4136.412
	freedom	190
	significance	0

According to Table 4, KMO value is 0.958, which shows that there are strong common factors among variables and the structure is reasonable. The significance of Bartlett sphericity test is close to 0, which shows that there is a significant correlation between variables. Therefore, the scale has a high level of validity, which shows that the structure of the questionnaire is better. Through the calculation of the above α and KMO values, the foundation is laid for the effective analysis of the data.

3.3. Regression analysis

Table 5 Regression analysis

model	Non-standardized coefficient		Standard coefficient	t	significance
	B	standard error	trial version		
constant	0.059	0.143		0.414	0.679
Regional factors(χ_1)	0.152	0.062	0.139	2.457	0.015
Industrial factors(χ_2)	0.160	0.062	0.144	2.57	0.011
Brand factor(χ_3)	0.467	0.042	0.507	11.25	0.000
Public factor(χ_4)	0.203	0.053	0.176	3.816	0.000
R ²		0.757			
F		233.756			

P	0
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Regression analysis results are shown in Table 5. The significance of each variable is less than 0.05, and the coefficient β is positive, which shows that the independent variables have a significant positive impact on the independent variables. Regional brand development has a linear regression relationship with regional factors, industrial factors, brand factors and publicity factors, and the model fitting effect is good. The regression equation is:

$$Y=0.059+0.152 \times \chi_1 +0.160 \times \chi_2 +0.467 \times \chi_3+0.2303 \times \chi_4 \quad (1)$$

This regression model shows that brand factors have the greatest influence on brand development, which means that for every unit of brand factors, brand development performance will increase by 0.467 units, followed by publicity factors. Through this regression model, we can better understand the factors affecting brand building.

3.4. Results and analysis

Regional factors have a significant impact on brand development factors, and the regression coefficient is significantly positive ($\beta=0.152$, $P=0.015$), assuming that 1 holds; Industrial factors have a significant impact on brand development factors, and the regression coefficient is significantly positive ($\beta=0.160$, $P=0.011$), and hypothesis 2 holds; Brand factors have a significant impact on brand development factors, and the regression coefficient is significantly positive ($\beta=0.467$, $P=0.000$), and hypothesis 3 holds; The emergence of this result is mainly due to the core of fresh agricultural products in western Guangdong, such as lychee, red orange, oyster and soy sauce. The characteristics of such products make consumers highly sensitive to the authenticity of the place of origin and the stability of quality, making the brand the primary decision-making basis for their purchase. At the same time, the questionnaire data further confirms this trend: the average recognition of "brand image" and "brand culture" by respondents reached 4.27 points, significantly higher than other indicators, highlighting the key role of brand related factors in consumer decision-making. The publicity factor has a significant influence on the brand development factor, and the regression coefficient is significantly positive ($\beta=0.203$, $P=0.000$), so Hypothesis 4 holds. To sum up, the four hypotheses put forward in this study are all supported by data, indicating that regional factors, industrial factors, brand factors and publicity factors are the key factors affecting brand building.

4. Development suggestions

(1) Relying on regional advantages, layout diversified development routes.

Western Guangdong enjoys a superior geographical position, located in the main road of land and sea traffic, with good economic development conditions and convenient transportation. Western Guangdong agricultural products can not only rely on the huge domestic consumer market to expand domestic sales, but also expand overseas markets with the help of coastal location advantages, so as to build a broader sales market space for local agricultural products. On this basis, we should fully tap the integration potential of agriculture and cultural tourism industry, meet the needs of consumers through the development of special projects such as picking experience, manual production and pastoral sightseeing, and promote the extension of agricultural products from a single edible attribute to a cultural experience carrier, thus broadening the value growth chain of agricultural products, effectively enhancing the added value of products, and further enabling farmers to enjoy the fruits of agricultural modernization.

(2) Strengthen industrial construction and integrate industrial resources.

A number of leading agricultural enterprises have emerged in western Guangdong, which actively promote brand building in the industry, but from the actual production point of view, individual farmers are still an important subject of agricultural product supply. Based on this reality, leading enterprises should strengthen cooperation and linkage with individual farmers, build a close interest

linkage mechanism, integrate scattered production resources, cultivate and form large-scale and standardized industrial clusters, and promote industrial scale development and strength improvement. Enterprises and governments need to increase investment in science and technology, actively introduce suitable local planting and breeding technologies, and help farmers solve technical problems in production. At the same time, efforts are made to integrate the whole chain supply chain of agricultural products from planting, harvesting, processing to sales, build a complete industrial chain, and strive to build related enterprises into production entities recognized by consumers, so that products can accurately meet the needs and preferences of consumers.

(3) Dig brand connotation and promote it according to market demand.

Based on the above conclusions, the brand building of agricultural products in western Guangdong needs to focus on the influence of brand factors, and the whole chain quality management system that fits the regional characteristics should be established with quality improvement as the core, and product quality assurance is the basis of product brand building. In view of the lack of professionalism and fragmentation of new media marketing, set up a professional team or introduce a third-party organization to accurately spread brand information through emerging media^[11]; In terms of brand image building, we should dig deep into the regional elements such as Leizhou Peninsula culture and coastal customs and integrate them into packaging design, and strengthen consumers' cognition with differentiated visual language; At the same time, relying on local farming traditions and farmers' experience to build a brand story with temperature, and enhance consumer identity through emotional resonance, thus enhancing brand market competitiveness and preference.

(4) Deepen public coordination and create a harmonious symbiotic environment.

The achievements of brand building of agricultural products are shared by the government, enterprises, farmers and consumers, but its long-term development needs the common care of many parties. In particular, it is necessary to strengthen government-led supervision and industry norms to maintain an orderly market competition environment. Problems such as unfair competition in the market should be corrected through both policy guidance and institutional norms to prevent bad money from expelling good money. At the same time, it is necessary to deepen the cooperative relationship among government, enterprises, farmers and other stakeholders, build a linkage mechanism of risk sharing and benefit sharing, and unite the joint efforts to enhance brand value. The survey also shows that many respondents hope that the government can provide more financial and technical support, promote the sharing of development achievements, crack down on acts that undermine market competition, and guide public opinion to spread positively.

5. Conclusion

Based on public goods theory and stakeholder theory, this paper constructs a mechanism model of influencing factors of agricultural product brand building in western Guangdong, empirically tests the effects of regional factors, industrial factors, brand factors and public factors on brand development performance, and formulates targeted strategies for agricultural product brand building in western Guangdong. The research results not only provide theoretical and practical support for the follow-up brand building in this region, but also provide reference experience and enlightenment for other regions to solve the common problems in brand building of agricultural products. However, limited by the sample size, the analysis of the problem in this study may lack universal applicability and did not include specific case studies as supplements. Future research will further expand the sample size, focus on the core areas of agricultural product brands, and explore the dynamic evolution mechanism of influencing factors through multi period tracking data.

Acknowledgements

The authors gratefully acknowledge the financial support from the 2024 Guangdong Province Youth Innovation Talent Project funds (NO.2024WQNCX010).

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