PAPER

The Development Path of Guilin Gongcheng *Camellia oleifera* Based on SEM Data Processing and Analysis

Shanshan Yang[1], Jianwei Qiu[1](✉), Xinze Wang[2]

[1]Business School, Guilin University of Technology, Guilin, Guangxi, China

[2]School of Information Science and Engineering, Guilin University of Technology, Guilin, Guangxi, China

qjw19802021@126.com

ABSTRACT

To thoroughly investigate the development status of Gongcheng *Camellia oleifera* and study the development path. SPSS software, the KMO test, and the Bartlett spherical test were carried out on the data, and it was found that there was a correlation between the variables and that factor analysis was effective. Then, Amos software was used to model it, and the structural equation model diagram was obtained. Survey data were visualized with the help of the software Fine Bi. Finally, we deeply excavated and used the data to explore the factors that affect the marketing and promotion of Gongcheng *Camellia oleifera* and put forward feasible solutions to improve the sales volume of Gongcheng *Camellia oleifera*, which could promote industrial poverty alleviation and help rural revitalization.

KEYWORDS

Gongcheng *Camellia oleifera*, SPSS data analysis, structural equation model, data visualization, rural vitalization

1   INTRODUCTION

Guilin Gongcheng *Camellia oleifera* is a very distinctive traditional food of the local Yao people in Gongcheng. It has a long history and high nutritional value. With the continuous improvement of people's living standards, regional exchanges have become more convenient and frequent. Gongcheng *Camellia oleifera* is now available not just in rural mountains, but also in cities [1]. After the 1990s, Gongcheng *Camellia oleifera* spread to Guilin and Guangxi, and various Gongcheng *Camellia oleifera* shops have also emerged. *Camellia oleifera* evolved from a daily drink of the Yao culture to become part of a leisure diet in modern cities and gradually formed a food culture brand as industrial scale production of it has continued to grow. It has become an important pillar of Gongcheng's industrial development. However, due to branding and distribution problems, many Gongcheng *Camellia oleifera* stores lack unified management and are not integrated with offline *Camellia oleifera* chain stores, which leads to bottlenecks in marketing and promotion in the process of

industrial development, resulting in problems such as low sales and low popularity. So far, Gongcheng *Camellia oleifera* has not been built into a local business outside of Guangxi. Gongcheng *Camellia oleifera* has thus not optimized its market value. Therefore, the development of the Gongcheng *Camellia oleifera* industry as part of Rural Revitalization is in a critical period, and the industry urgently needs to be upgraded and developed.

This paper mainly analyzes the development path of Gongcheng *Camellia oleifera* from four aspects: creating customer awareness building customer demand, promotional strategy, and maintaining the quality of Gongcheng *Camellia oleifera*. We collected data through questionnaires, field visits, interviews, and other forms. The data show that most people have rarely or never tasted Gongcheng oil tea, and they have never heard of Gongcheng oil tea. Through analysis, it can be concluded that (1) the scale Gongcheng oil tea producers varies and offline oil tea restaurants are separated from the supply chain system; (2) it is difficult to cater to the tastes of foreign customers; (3) lack of unified management, insufficient quality supervision, and product quality supervision need to be strengthened; (4) the traditional business model, backward marketing methods, and poor promotion need to be improved; and (5) the government's oversight needs to be strengthened. Therefore, given the above problems, this paper analyzes the relevant data and proposes a reasonable development path for Gongcheng *Camellia oleifera* processing.

2   RESEARCH STATUS

2.1   Research on a structural equation model

In the 1920s and 1930s, when the idea of the structural equation model had just originated Wright proposed the concept of path analysis, which was not defined as a structural equation model at that time [2]. In the following decades, the method and connotation of path analysis have been continuously expanded. Until the 1970s, some scholars, (e.g., Joreskog and Wiley) integrated statistical methods such as factor analysis and path analysis and put forward the concept of the structural equation model [3]. The concept developed rapidly, the content was further enriched, methods were expanded, specific models for actual research objects were constantly emerging, and the scope of application was rapidly expanded.

In the 21st century, research has further clarified the internal essence of structural equation models and further expanded their connotations. Current scholars [4, 5] emphasize that structural equation models include the relationship between dominant indicators, potential variables, and interference or error variables to obtain the direct effect, indirect effect, or total effect of independent variables on the dependent variables. For large-scale research containing massive data, it may be necessary to explore which of the multiple antecedent variables have a practical role in the absence of pre-assumptions. This structural equation model from the perspective of exploration can be realized by regularization [6], [7], [8], [9].

In recent years, many other methods have been combined the traditional statistical methods in experimental research, with the idea of latent variable modeling, which is forming a latent variable modeling method based on experimental research. For example, Breitsohl compared the analysis of variance between subjects and two methods based on structural equation models: the structural mean model and the multi-index multi-factor model [10]. For another example, the latent repeated measures analysis of variance [11] proposed by Langenberg et al. replaces the single

index dominant result variable with the multi-index latent variable, improves the testing power of the main effect and interaction effect, relaxes the assumptions about the deletion and residual structure, and can verify whether the strong invariance is satisfied through the measurement invariance analysis.

2.2 Research on the development path of Gongcheng *Camellia oleifera*

The current development of the *Camellia oleifera* industry is facing a series of problems: uneven development, need for simply prepackaged *Camellia oleifera* products, lack of industry norms, and low consumer awareness of *Camellia oleifera*. Therefore, improving the sales for the *Camellia oleifera* industry is an important research topic, which also has important practical significance for the research of improving sales.

Writing about the origin, development status, and ideas for improving ideas for produciton of *Camellia oleifera* in northern Guangxi, Xu Nianzhi has identified problems in the *Camellia oleifera* industry [12]. The author attributes the success of the snail powder industry to deepening the supply side and structural reform and to strengthening the publicity of regional cultural specializes. He notes that the same should be true for the *Camellia oleifera* industry and believes that only by improving the scientific and technological quality, fostering a cultural heritage, and providing protection policies for the *Camellia oleifera* industry can we avoid such problems such as unbalanced development, single-structure production, and weak *Camellia oleifera* sales.

Wang Yanling's team analyzed in detail the current challenges faced by Gongcheng *Camellia oleifera* and the practical problems encountered in its development, using the 4V theory for analysis [13]. She suggested promoting Gongcheng *Camellia oleifera*, cultivating and forming the core competitiveness of Gongcheng *Camellia oleifera*, publicizing and carrying forward the culture of Gongcheng *Camellia oleifera*, and promoting the brand value with the slogan "home town of longevity," fully combining tourism and product promotion, and putting forward the concept of educational inheritance, which could provide a theoretical basis and guiding direction for the development of Gongcheng *Camellia oleifera* in the future.

The success of Gongcheng *Camellia oleifera* ultimately depends on consumers and their desire to purchase the product directly affects the development of the *Camellia oleifera* industry. Zeithamlt believes that perceived quality is the subjective evaluation of products or services by consumers after comprehensive consideration of price, quality, and other factors. He proposes that customer-perceived value is a trade-off between perceived gain and perceived loss [14]. Brand and other scholars pointed out that the higher the quality of products or services consumers feel, the higher their perceived value, resulting in greater likelihood to behavior [15]. Pitts's research found that the improvement of customer-perceived value increases people's willingness to buy again and again, and the probability of recommending this product or service to others also greatly increases [16].

3 ANALYSIS OF QUESTIONNAIRE DATA

3.1 Reliability and validity analysis

Reliability analysis. This survey uses SPSS statistical analysis software to analyze the internal consistency of the questionnaire mainly through the Alpha reliability

coefficient method. According to Table 1, the Cronbach α reliability coefficient is 0.808, greater than 0.7. It is considered that the scale has good reliability, indicating that the formal survey data has good reliability, and the questionnaire has internal consistency, which can be further analyzed.

Table 1. Reliability analysis of formal survey data

Cronbach α	Cronbach Based on Standardized Terms α	Number of Items
0.808	0.834	70

Validity analysis. In this survey, SPSS statistical analysis software was used to analyze the structural validity through factor analysis of KMO and Bartlett's spherical test.

Table 2. KMO and Bartlett's sphericity test results of presurvey data

Project	Numerical Value
Kaiser-Meyer-Olkin's measure of sampling adequacy	0.715
Approximate chi-square	12672
Free degree	2415
P-value	0.000

According to the results of the KMO test and Bartlett's sphericity test in Table 2, the validity of presurvey data is tested. The KMO value is 0.715, Bartlett's sphericity test value is 12672, and the *P*-value is less than 0.05; KMO > 0.7. This indicates that the questionnaire has good validity and is suitable for factor analysis.

Table 3. KMO and Bartlett's sphericity test results of formal survey data

Project	Numerical Value
Kaiser-Meyer-Olkin measure of sampling adequacy	0.909
Approximate chi-square	41412
Free degree	2415
P-value	0.000

It can be seen from Table 3 that the KMO value is 0.909, Bartlett's sphericity test value is 41412, and the *P*-value is less than 0.05; KMO > 0.7. This indicates that the validity of the questionnaire is very good, reaching more than 90%, which is suitable for factor analysis.

3.2 Marketing and promotion analysis of Gongcheng *Camellia oleifera*

Analysis of *Camellia oleifera* marketing model based on structural equation model.

a. **Establishment of structural equation model**
   (1) **Exploratory factor analysis of data**
       Before building the structural equation model, SPSS 26.0 software was used to conduct exploratory factor analysis on the survey data, explore the

main factors that affect the improvement of *Camellia oleifera* sales volume, find out the potential variables in the theoretical model, reduce the number of items, and make identify groups of less relevant and more relevant variables.

First, the KMO test and Bartlett's sphericity test analysis were carried out. The KMO value was 0.715, Bartlett's sphericity test value was 12672, and the cumulative percentage of 36 variables explained and analyzed by the output 10 factors was 71.557%. After the first exploratory factor analysis, the unsatisfactory questions in the questionnaire were re-screened and integrated, and a second-factor analysis was carried out. The KMO was 0.909, greater than 0.9, and the *P*-value was less than 0.001. The main results are shown in Tables 2 and 3.

According to the rotated factor load matrix, four factors are defined: cognitive level, promotes strength, Camellia flavor, and purchase intention. The degree of lift is a function of all these factors containing variables. This model starts mainly with these four factors to establish a structural equation model to explore the relationship between various factors and carries out empirical research. These four factors are of vital significance for understanding the development path of Gongcheng *Camellia oleifera*.

(2)   Confirmatory factor analysis of data

Table 4. Model-fitting indicators

Statistic	CMIN	DF	*P*	CMIN/DF	GFI	RMS	CFI	NFL	IFI
Value	4141.26	2415	0	1.715	0.957	0.018	0.987	0.995	0.914

Table 4 shows that the chi-square degrees-of-freedom ratio is 1.175, which is significantly lower than the standard (>3); the values of GFI, CFI, and NNFI are all higher than 0.9; and the values of RMSEA and RMR are all less than 0.05, which is just within the standard-value range. Therefore, the model-fitting quality is qualified, which means that the scale data of this study can be focused on a factor. For the CMV test, the above idea is also applicable to the use of exploratory factor analysis (EFA) method to test CMV problems (also known as the Harman single-factor test method); that is, when all scale items are used for EFA, if only one factor or the first factor has a particularly large explanatory power (variance interpretation rate), which is usually bounded by 50%, then it can be determined that there is homologous variance (common method deviation); otherwise, there is no common method deviation.

(3)   Reliability and validity testing data

IBM SPSS26.0 was used to calculate the Cronbach α coefficient of the *Camellia oleifera* survey scale, KMO value, and *P*-value. According to Table 5, the Cronbach α coefficient' for understanding and attitude of *Camellia oleifera* is 0.880, greater than 0.8, indicating high reliability. The KMO value is 0.715, greater than 0.7, indicating good validity. The *P*-value is 0.000, less than 0.05. Bartlett's spherical test shows that there is a correlation between variables, and factor analysis is effective; the Cronbach α coefficient for *Camellia oleifera* promotion and marketing is 0.956, greater than 0.9, indicating high reliability. The KMO value is 0.909, greater than 0.7, indicating good validity. The *P*-value is 0.000, less than 0.05. Bartlett's spherical test

shows that there is a correlation between variables and that factor analysis is effective.

Table 5. Reliability and validity test table

Category	Cronbach α Coefficient	KMO Value	Bartlett's Spherical Test (*P*-value)
Knowledge and attitude of *Camellia oleifera*	0.880	0.715	0.000
Camellia oleifera promotion and marketing	0.956	0.909	0.000

b. Establishment of model

AMOS16.0 software was used in this modeling. After setting the causality path diagram as required, we ran the program to get the results, as shown in Figure 1.
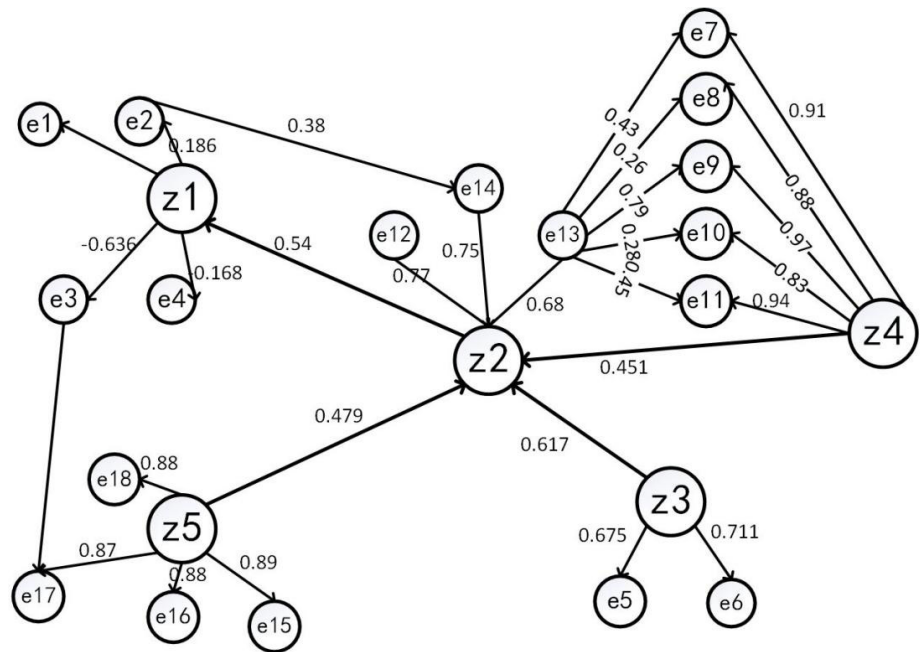
e1:Space for development e2:Production experience e3:Experience desire
e4:Tasting intentions e5:Frequency of drinking e6:Oil tea plus travel mode
e7:Black sesame seeds e8:Honey e9:Walnut
e10:Bovine bone marrow e11:Salted nuts e12:Learning history
e13:Tasting experiences e14:Level of understanding e15:Region
e16:Nation e17:Age e18:Gender
z1:Promotion efforts z2:Cognitive strength z3:Purchase intention
z4:Camellia flavor z5:Objective condition

Fig. 1. Structural equation model diagram of *Camellia oleifera* marketing promotion evaluation

c. Interpretation and analysis of model results
(1) Relationship between potential variables

The coefficient between potential variables indicates the degree to which the change of one variable causes the change of other variables. According to the significance of the path coefficient, it can be found that the path coefficient between "*Camellia oleifera* marketing" and "promotion" is not

significant in the existing latent variable relationship, that is, one accepts the original hypothesis: *Camellia oleifera* marketing has no strong correlation with its outward promotion, which shows that the marketing mode of *Camellia oleifera* in the market will have a small direct impact on the degree of promotion of *Camellia oleifera*. The path coefficients between other latent variables are significant, indicating that the hypothesis is true and that there is a causal relationship between latent variables.

The regression coefficient between the external pressure factor and promotion factor is –0.45, indicating that various external pressure factors of *Camellia oleifera* marketing methods increase by one percentage point, and the promotion factor of *Camellia oleifera* decreases by 0.45 percentage points. It can be seen that reducing the degree of *Camellia oleifera* marketing is conducive to the outward promotion of *Camellia oleifera*. In reality, the marketing mode of *Camellia oleifera* is affected by external pressure, which hurts the degree of promotion.

The regression coefficient between the objective condition factor and the promotion degree factor is 0.48, indicating that the objective condition factors of *Camellia oleifera* marketing mode increase by one percentage point, and the promotion degree factor of *Camellia oleifera* is increased by 0.48 percentage points. From practical experience, people's cognition (cognitive strength) of Gongcheng *Camellia oleifera* and its marketing methods have a direct impact on the promotion of *Camellia oleifera*.

The regression coefficient between the satisfaction factor and the promotion factor is 0.94, indicating that the promotion factor of people's cognition of Gongcheng *Camellia oleifera* increased by one percentage point, and the marketing measurement of *Camellia oleifera* increased by 0.94 percentage points. It can be seen that people's cognition of Gongcheng *Camellia oleifera* will directly affect their marketing measurement of *Camellia oleifera*.

(2) Relationship between potential variables and observed variables

In addition to analyzing the relationship between potential variables, we can also analyze the relationship between potential variables and observed variables in *Camellia oleifera* marketing mode and its promotion model to explore the observation variables that are significantly related to potential variables and the comparison between internal observation variables of each potential factor.

A. The relationship between cognitive strength factor and observation variables

Among the cognitive strength factors, the regression coefficient of *Camellia oleifera* marketing means is 0.97, the regression coefficient of people's cognition is 0.54, the regression coefficient of *Camellia oleifera* taste is 0.49, and the regression coefficient of purchase intention is 0.54. This shows that external pressures such as a means of marketing means of *Camellia oleifera*, people's cognitive level, the taste for *Camellia oleifera*, and purchase intention will affect the marketing and promotion of *Camellia oleifera*. Among them, means of marketing *Camellia oleifera* is the most important influencing factor, followed by people's cognitive level, the taste for *Camellia oleifera*, and purchase intention. It can be seen that before the promotion of *Camellia oleifera*, external pressure, such as means of marketing and cognitive level should be avoided; otherwise, they will be unhelpful of even harmful to the marketing and promotion of *Camellia oleifera*.

B. Relationship between objective condition factors and observed variables

Among the objective condition factors, the regression coefficient of individual gender is –0.07, the regression coefficient of different regions is 0.87, the regression coefficient of age is 0.48, and the regression coefficient of *Camellia oleifera* production experience is 0.10. The regression coefficient of different regions is the largest, while the regression coefficient of gender and *Camellia oleifera* production experience is relatively small, indicating that among the factors affecting *Camellia oleifera* marketing and promotion, different regions are the most important factor. Therefore, in the implementation of measures to improve *Camellia oleifera*'s marketing and promotion, one should first carry out promotion strategies in different regions, focusing on the marketing proportion and degree of promotion in the regional market.

C. Relationship between satisfaction factors and observation variables

Among the satisfaction factors, the regression coefficient of people's taste for *Camellia oleifera* is 0.89, the regression coefficient of *Camellia oleifera* production experience is 0.88, the regression coefficient of *Camellia oleifera* culture is 0.91, and the regression coefficient of *Camellia oleifera* efficacy (to reduce fever, detoxify, promote blood circulation and break up blood clots, and relieve pain) is 0.86. This shows that the above factors will have an impact on the satisfaction of *Camellia oleifera*. It can be seen that improving the taste of *Camellia oleifera*, strengthening the experience of *Camellia oleifera* production, deepening the publicity of *Camellia oleifera* culture, and enhancing the efficacy of *Camellia oleifera* play an important role in improving people's satisfaction with *Camellia oleifera*.

D. Relationship between lift factor and observed variables

Among the factors of promotion degree, the regression coefficient of cognitive degree is 0.88, the regression coefficient of *Camellia oleifera* taste is 0.87, the regression coefficient of product packaging is 0.89, the regression coefficient of occasions suitable for *Camellia oleifera* is 0.88, the regression coefficient of frequency of drinking *Camellia oleifera* is 0.86, and the regression coefficient of the purpose of buying *Camellia oleifera* is 0.86. This shows that the degree of cognition, the taste of *Camellia oleifera*, product packaging, and the frequency of drinking *Camellia oleifera* have an important impact on its marketing and promotion.

Optimal scale regression analysis of influencing factors on the promotion of Gongcheng *Camellia oleifera*.

a. **Theoretical basis of optimal scaling regression analysis**

Ordinary linear regression has very strict requirements for data. When encountering classified variables, linear regression cannot accurately reflect the distance between different values of classified variables. For example, in gender variance, men and women are on the same level and there is no distinction between size, order, and trend. If they are directly included in a linear regression model, they may lose their significance.

Optimal scaling regression can solve similar problems. It is good at quantifying different values of classification variables, to convert classification variables into numerical types for statistical analysis. It can be said that the optimal scale regression method greatly improves the processing ability of classified variable data, break through the limitation of classified variables in the selection of analysis models, and expand the application ability of regression analysis.

Optimal scale analysis was developed by the DTSS research group of Leiden University in the Netherlands, and an application program was added after SPSS11.0. The English abbreviation is CA-TREG, also known as classification regression. It uses principal component analysis to describe the correlation between the levels of two or more classification variables and uses multidimensional graphical methods to reflect the relationship between variables [17].

b. **Model selection and quantification of observed variables**

Because there are classification variables in the selected data, the simple regression model cannot accurately reflect the distance between different values of classification variables. Therefore, we choose to establish the optimal scale regression model, quantify the different values of classification variables, and then convert the classification variables into numerical variables in regression analysis.

c. **Model establishment**

Spss26.0 is used to establish the optimal scale regression model. The relevant parameter estimation and test results are shown in Tables 6–7.

Table 6. Results of optimal scale regression model

Variable Name	Coefficient	Self-sampling (1000) Estimation of Standard Error	Free Degree	F	Significance Level
Gender x_1	0.157	0.086	1	3.343	0.070
Age x_2	0.194	0.081	3	5.777	0.001
Nation x_3	0.186	0.065	8	8.185	0.000
Knowledge of *Camellia oleifera* x_4	0.092	0.097	2	0.906	0.407
Whether to experience the production of *Camellia oleifera* x_5	0.173	0.120	2	2.079	0.130
Frequency of drinking *Camellia oleifera* x_6	0.447	0.095	2	22.028	0.000
Whether to participate in *Camellia oleifera* literature experiential tourism project x_7	0.228	0.108	2	4.449	0.014
Whether to experience making *Camellia oleifera* Whether to drink a bowl of *Camellia oleifera* from a famous place of origin x_8	0.024	0.055	1	0.181	0.671

Table 7. Analysis of variance of optimal scale

Source	Sum of Squares	Free Degree	Mean Square	F	Significance Level
Regression equation	37.717	21.000	1.796	2.092	0.007
Residual	95.283	111.000	0.858		
Total	133.000	132.000			

The overall F-test of the regression model is highly significant (P-value < 0.05), indicating that at least one of the factors considered has a significant impact on the sale of *Camellia oleifera.* The t-test is conducted for each variable. The t-test results in Table 6 show that in addition to gender, knowledge of *Camellia oleifera*, whether to experience making *Camellia oleifera*, and whether to drink a bowl of *Camellia oleifera* from a famous place of origin, the coefficient is estimated at the significance level. It is not significant at 0.05, and the other explanatory variables are not significant at 0.

Since there are still some nonsignificant explanatory variables in the optimal scale regression model, the numerical variables transformed by the optimal scale regression are then used for stepwise regression analysis. The analysis and test results are shown in Table 8.

Table 8. Results of the stepwise regression model

Variable Name	Non-standardized Coefficient	Standard Error	Standardization Coefficient	t	Significance Level
Constant	6.08E-18	0.076		0	1
Gender x_1	0.162	0.079	0.162	2.057	0.042
Age x_2	0.201	0.077	0.201	2.606	0.01
Nation x_3	0.186	0.078	0.186	2.378	0.019
Whether to experience the production of *Camellia oleifera* x_5	0.185	0.09	0.185	2.065	0.041
Frequency of drinking *Camellia oleifera* x_6	0.424	0.091	0.424	4.659	0
Whether to participate in *Camellia oleifera* literature experiential tourism project x_7	0.204	0.081	0.204	2.536	0.012

It can be seen intuitively from Table 8 that after stepwise regression, two explanatory variables were excluded; namely, the understanding of *Camellia oleifera* and whether to drink a bowl of *Camellia oleifera* from a famous place of origin; There are only six explanatory variables left, which are gender, age, nationality, whether to experience the production of *Camellia oleifera*, the frequency of drinking *Camellia oleifera*, and whether to participate in camellia culture experiential tourism projects.

Stepwise regression analysis of variance is shown in Table 9.

Table 9. Stepwise regression analysis of variance

Source	Sum of Squares	Free Degree	Mean Square	F	Significance Level
Regression equation	37.717	8	4.715	6.136	0
Residual	95.283	124	0.768		
Total	133.000	132			

It can be seen from Table 9 that the F-test of the stepwise regression model is highly significant (P-value <0.001), which indicates that at least one of the factors considered has a significant impact on the logarithmic admission score line. Next, the t-test was performed on each explanatory variable, and the test results show that each explanatory variable is at the significance level of α = 0.05: the original assumption that the regression coefficient is 0 is rejected, indicating that the regression estimate of each explanatory variable is significant.

Therefore, the equation of stepwise regression is:

$$y = 0.162 \times x_1 + 0.201 \times x_2 + 0.186 \times x_3 + 0.185 \times x_5 + 0.424 \times x_6 + 0.204 \times x_7$$

where the value range of x_1, x_2, x_3, x_5, x_6, x_7 is determined by the optimal scalar quantization results table.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusion

Gongcheng *Camellia oleifera* is one of the local specialties and cultural symbols of Gongcheng County. It has a unique position and role in economic and social development. At this stage, research on the *Camellia oleifera* industry is of great significance. In terms of brand building, we should speed up product development and technological innovation, develop its presence on the Internet, promote and instant tea brand, and explore new marketing models. In terms of catering services, we should improve the catering-service process, establish unified catering service standards, and improve service personnel. The theme of this investigation and research was to analyze the causes of of low sales and difficulty promoting Gongcheng *Camellia oleifera* in order to propose appropriate countermeasures. By analyzing the data collected from online and offline questionnaires, we found that the main reasons for the low sales and difficult promotion of Gongcheng *Camellia oleifera* are as follows.

A. From the perspective of the product itself: *Camellia oleifera* is difficult to meet the tastes of foreign customers.
B. From the perspective of department management: lack of unified deployment and insufficient quality supervision.
C. From the perspective of sales mode: the insufficient marketing effort is still only regional and has not been extended to a wider range.
D. From the perspective of publicity: the promotion means are poor, relying on traditional paper publicity, and not using the Internet and other platforms.
E. From the perspective of raw materials: the quality of the *Camellia oleifera* crop is uneven, and the quality of products cannot be guaranteed.
F. From the perspective of production: the Gongcheng *Camellia oleifera* industry has long been in a state of spontaneous development and workshop management by local people, which restricts the development of the industry. Without assembly-line production and manufacturing, we cannot rely on light industry to develop agriculture.
G. From the perspective of relevant policies: local governments have not adjusted measures to local conditions to provide policies that conform to actual local conditions and rely on traditional local culture.

To better develop the *Camellia oleifera* Industry and make it a powerful driving force for rural revitalization, these problems need to be solved urgently.

4.2 Recommendations

The recommendations for Gongcheng *Camellia oleifera* is as follows.

A. Build an online platform to promote industrial integration. Using modern marketing methods, adopting O2O "Internet +" marketing mode, using modern advanced information technology to empower traditional industries, creating an online business environment, and using the interaction of digital information and online media to assist the realization of *Camellia oleifera* marketing goals. At the same time, promote the integration of industries and the current development of

the *Camellia oleifera* industry so that it reaches a state of continuous development. With the development and progress of the *Camellia oleifera* industry, the progress of the *Camellia oleifera* tourism culture will follow. There is a close relationship between *Camellia oleifera* industry and *Camellia oleifera* tourism culture.

B. Strengthen government guidance and realize scientific management. We should use government and industrial guidance and production innovation to support the *Camellia oleifera* industry, respond to the call of the 14th five-year plan, promote targeted poverty alleviation in the industry, and help rural revitalization. Government support is particularly needed for ensuring public welfare and creating customer loyalty. The government should give policy support to the leading *Camellia oleifera* enterprises in Gongcheng, Guangxi, to help attract investment and promote expansion. With the support of the government's poverty alleviation policy, carrying out public welfare activities is not only conducive to enhancing customers' sense of identity with the enterprise, but can also generate goodwill in society, demonstrate corporate ethics and social responsibility, and attract more consumers. Use food science engineering to inject new vitality into the production and development of *Camellia oleifera*. For example, portable *Camellia oleifera* drinks can be produced to make the products more people friendly. Introduce scientific food management methods and integrate the production process and sales. Do not let products expire or let inventory run out. Well-managed production and sales of *Camellia oleifera* will not only reduce costs but also increase profits.

C. Introduce high-end talent and develop peripheral products. Research to revitalize an industry requires people with brains to carry out production management and also requires people with practical experience to work together. There is no doubt about the importance of talent. After introducing talent, what we need to do is to guide them to develop products. Research should not only develop the value of *Camellia oleifera* itself, but also develop its incidental industrial effects. For example, the 2022 Beijing Winter Olympics made good use of peripheral products to promote the Winter Olympics itself. The research is to learn from this model to promote the development of the industry.

D. Create the brand of *Camellia oleifera* and expand the online and offline markets. Deploy a combination of culture and tourism; build an Intangible Cultural Heritage Inheritance base, *Camellia oleifera* museum, and *Camellia oleifera* physical experience store; increase publicity and guide more tourists to Gongcheng to experience *Camellia oleifera*; encourage more physical stores to develop *Camellia oleifera* products, develop organic *Camellia oleifera*, concentrated *Camellia oleifera*, and instant *Camellia oleifera*, and improve the brand of *Camellia oleifera*.

E. Implement product adjustment and upgrade related industries. Gongcheng oil-tea products need to be upgraded and adjusted to cater to the market, develop drinks based on "oil-tea soup," improve the existing flavor, make the taste more suitable for young people, reduce the greasy and heavy feeling in the taste, and add new nutrients. We can also develop healthful "fast foods" based on oil tea soup, such as various kinds of bread, biscuits, and cakes, so that the oil-tea industry can achieve diversified and rapid development [18]. Upgrade and adjust the existing activities with Gongcheng *Camellia oleifera* as the core. The government can produce films on Gongcheng tea culture that will appeal to the perspective of contemporary young people. To develop relevant activities, local industry associations can actively develop various innovative activities, including competitions and agricultural product promotion in combination with the local festivals celebrating cultural heritage and carry out these activities on or *as* holidays.

When Gongcheng *Camellia oleifera* has gained popularity and influence, and when conditions fully permit, we anticipate the opening of stores in the northern and southwestern regions, where the market is still immature, growth in offline sales, and the opening of profitable online stores nationwide. Long-term goals include stabilizing the domestic market and selling Gongcheng *Camellia oleifera* and auxiliary foods abroad.

5   ACKNOWLEDGMENTS

6   DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

7   REFERENCES

[1]   He Shun. (2017). Discussion of the inheritance of ethnic diet culture in modern cities—a case study of *Camellia oleifera* in Gongcheng, Guilin, Guangxi Journal of Nanning Vocational and Technical College, 22(5), 4.

[2]   Chen Qi, Liang Wannian, & Meng Qun. (2004). Structural equation model and its application China Health Statistics, (02).

[3]   Charles E. Werts, Karl G. Joreskog, & Robert L. Linn. (1973). Identification and estimation in path analysis with unmeasured variables. American Journal of Sociology, (6). https://doi.org/10.1086/225474

[4]   Yellow star. (2012). Research on some problems in structural equation model (Master's thesis, Wenzhou University) https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CMFD201301&filename=1013134860. NH.

[5]   Wu Ruilin, & Yang Linjing. (2014). Applying structural equation models in public management research—ideas, models and practices. China Administration, (03), 62–68.

[6]   Jacobucci, R., Grimm, K. J., & McArdle, J. J. (2016). Regularized structural equation modeling. Structural Equation Modeling: A Multidisciplinary Journal, 23(4), 555–566. https://doi.org/10.1080/10705511.2016.1154793

[7]   Lu, Z.-H., Chow, S.-M., & Loken, E. (2016). Bayesian factor analysis as a variable-selection problem: Alternative priors and consequences. Multivariate Behavioral Research, 51(4), 519–539. https://doi.org/10.1080/00273171.2016.1168279

[8]   Muthén, B., & Asparouhov, T. (2012). Bayesian structural equation modeling: A more flexible representation of substantive theory. Psychological Methods, 17(3), 313–335. https://doi.org/10.1037/a0026802

[9]   Pan, J., IP, E. H., & Dubé, L. (2017). An alternative to posting his model modification in confirmatory factor analysis: The Bayesian lasso. Psychological Methods, 22(4), 687–704. https://doi.org/10.1037/met0000112

[10] Heiko Breitsohl. (2019). Beyond ANOVA: An introduction to structural equation models for experimental designs. Organizational Research Methods, (3). https://doi.org/10.1177/1094428118754988

[11] Langenberg Benedikt, Helm Jonathan L., & Mayer Axel. (2020). Repeated measures ANOVA with latent variables to analyze interindividual differences in contrasts. Multivariate Behavioral Research, (1). https://doi.org/10.1080/00273171.2020.1803038

[12] Xu Nianzhi, Liao Xiayun, Luo Jianyu, Ling Yongwei, & Lu Rumei. (2020). The origin, development status and improvement ideas of *Camellia oleifera* in northern Guangxi Light Industry Technology, (10), 12–15.

[13] Wang Yanling, Zhang Jiayue, Huang Youwan, Huang Haiming, & Xu Jinrong. (2021). Research on the promotion of Gongcheng *Camellia oleifera* culture based on 4V theory Shanghai business, (09), 26–27.

[14] Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual: a multiple-item scale for measuring consumer perceptions of service quality. Journal of Retailing, 64(1), 12–40.

[15] Brady, M. K., Cronin, J. J., & Brand, R. R. (2002). Performance-only measurement of service quality: A replication and extension. Journal of Business Research, 55(1), 17–31. https://doi.org/10.1016/S0148-2963(00)00171-5

[16] Pitts, R. E., & Wittenbach, J. L. (1981). Tax credits as influencing consumer behavior. Journal of Consumer Research, 8(3), 335. https://doi.org/10.1086/208873

[17] Jia Shijun. (2005). An empirical study on consumer behavior in the housing market—the application of correspondence analysis and optimal scale analysis China Soft Science, (07), 153–157.

[18] Lin Yexin. (2021). Research on the promotion and development strategy of Guangxi intangible cultural heritage Gongcheng *Camellia oleifera* in the context of great health Modern Food, (24), 53–56. https://doi.org/10.16736/j.cnki.cn41-1434/ts.2021.24.015

8   AUTHORS

Shanshan Yang, Business School, Guilin University of Technology, Guilin, Guangxi 541004, China.

Jianwei Qiu, Business School, Guilin University of Technology, Guilin, Guangxi 541004, China.

Xinze Wang, School of information science and Engineering, Guilin University of Technology, Guilin, Guangxi 541004, China.