

Analysis of Market Situation and Consumption Demand of Cafe in China

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Abstract: On the one hand, the prosperity of China's coffee market and the trend of consumption upgrading drive the prosperity of China's coffee market; On the other hand, the vast majority of Coffee shops in China still adopt the concept of "third space" with serious homogeneity. New retail coffee, online coffee categories and the COVID-19 epidemic also hinder the development of China's coffee shop market, and there are still many hidden dangers in the future development of China's coffee shop industry. This time, this survey aims to analyze the development of China's coffee shop industry, the number and distribution of coffee shops in China, the forecast of future development and the consumption demand of college students for coffee shops, so as to put forward targeted suggestions for the future development of China's coffee shop industry. On the one hand, I obtained the required data through desktop research, and analyzed the number and distribution of China's coffee shops with the help of Excel, SPSS and other software, including chart visualization, correlation analysis, and establishing linear regression model, and predicted the future development of China's coffee shop industry. Through the above analysis, I think: Although China's coffee shops are mainly located in the second tier and above cities, but in the future, the market of coffee shops in the third tier and below cities is expected to open and become the "competitive land" of major coffee brands. At present, the chain rate of China's cafe market is low, but from the perspective of brand effect and economic benefits, cafe brand chain may become a major trend in the future. Despite the closure of many cafes in China due to the COVID-19 pandemic, the country's coffee shop industry is poised for good development in the future. On the other hand, I conducted a questionnaire survey for college students, and analyzed the current consumption situation of college students in coffee shops by using descriptive statistics and graphic visualization. On this basis, we further analyze the questionnaire data by using crossover analysis, independent sample T test and Logistic model method, and find that there is no significant difference in the frequency of different genders patronizing coffee shops. There are significant differences in the frequency of coffee shop visits among different income groups. There was no significant difference in the degree of preference of different genders to coffee types. Gender, income range and length of stay in coffee shops

all have a significant impact on the maximum per capita consumption range of acceptable coffee shops, and income range is the variable that can most affect the maximum per capita consumption range of acceptable coffee shops. Finally, according to the conclusions obtained from the above analysis and combined with the national conditions of China, suggestions are put forward for the future development of the coffee shop industry, such as launching efficient takeaway service, accelerating the layout of third-tier and lower-tier cities, brand chain, launching "creative coffee" more in line with the needs of contemporary young people, and making full use of the advantages of the Internet.

Keywords: our cafe; industry development situation; quantity and distribution situation; future scale forecast; consumption present situation; consumption preference

1. Research Background and Purpose

With the continuous increase of China's national income and the infiltration of "coffee culture" into our life, coupled with China's huge demographic dividend, the coffee market in China has entered a stage of rapid development. At the same time, from the perspective of the coffee category freshly brewed coffee market share in China is the United States, Japan and other countries around the world freshly brewed coffee market share significantly lower, higher quality of freshly brewed coffee is more conform to the trend of consumption upgrade in our country, so each big cafe chain brand continuously over the years by accelerating expansion line layout to consolidate their market position; Meanwhile, independent cafes are on the rise. But because most of the cafes mainly adopts the third space concept, the selling point of the single, serious homogeneity, together with the part such as KFC, McDonald's and convenience stores offer freshly brewed coffee, coffee category of online guest unit price low, and the impact of the epidemic, reversed transmission customers choose cost-effective, has caused many cafe was forced to close shop, coffee shop market boom and the actual stagnation [1].

In this context, it is particularly important to find the next strong growth point for coffee shops. This paper will provide practical suggestions for better development of

coffee shops in the future by analyzing the current market situation and consumer demand of coffee shops.

2. Survey Scheme Design

2.1 Survey Ideas

First of all, through consulting materials, literature and field visits to get the development of the coffee shop industry in China and other relevant information, through text analysis, get effective information, understand the status of the coffee shop industry in China, clear my research direction. Then, on the one hand, I obtained the data I needed through desktop research, and visualized the data through charts with the help of Excel, SPSS and other software. At the same time, I conducted correlation analysis on some of the data, and predicted the future development of the cafe industry by establishing a linear regression model on the premise of significant correlation. On the other hand, the questionnaire is designed for college students. After the questionnaire design was completed, the questionnaire was distributed and recycled, and the invalid samples in the questionnaire were cleaned and removed. Then the consumption status of college students in coffee shops was analyzed. On this basis, cross analysis and independent sample T test were conducted on some problems by using SPSS, and Logistic model was established to analyze whether gender, income range and stay time in cafe would have an impact on the maximum per capita consumption range of acceptable cafe. Finally, through the above analysis to get relevant conclusions combined with China's national conditions for the future development of the cafe industry to put forward effective suggestions.

2.2 Survey Methods

2.2.1 Access to Data and Literature

I have searched the information and literature related to the research content of this topic. Through the study of these information and literature, I have learned the status quo and existing problems of China's coffee shop industry, and analyzed the deeper research for this paper.

2.2.2 Field Visit Method

At the same time, I further improved my understanding of the industry by visiting local coffee shops and interviewing store managers, employees and customers.

2.2.3 Desktop Research

I selected and compared government data and information, public information of the industry and opinions publicly expressed by senior experts in the industry. Finally, I obtained the required data of China's coffee shop industry through desktop research, and analyzed these data with the help of Excel, SPSS and other statistical software.

2.2.4 Questionnaire Survey

Through previous research and investigation, I learned that business white collars and college students are the main forces of China's coffee shop consumer market.

However, due to their limited status, I conducted further analysis on the consumer demand preferences of college students through questionnaire survey. Details are as follows:

1) Preliminary questionnaire survey: I used the questionnaire star to design the questionnaire, and selected 14 people around to conduct a preliminary questionnaire survey. Through the survey, I found the questions in the questionnaire and the problems in the setting of answers. After the feedback of the participants in the preliminary survey, I modified and adjusted the questionnaire to make my questionnaire more reasonable.

2) Formal questionnaire survey: After preliminary survey and questionnaire revision, I will send formal questionnaire. My questionnaires were distributed on wechat moments, Weibo Chaohua, Douban group and other platforms, and collected questionnaires from college students in different areas. I have issued 504 questionnaires in total, and the valid sample data is still 504 after data cleaning.

3. China's Cafe Market Situation

3.1 Development of China's Coffee Shop Industry

In 1997, Taiwanese coffee shops represented by Ujima coffee took the lead in entering the Chinese market, which was mainly positioned as business and leisure. Later, they occupied considerable market share by virtue of their first-mover advantage and channel advantage. At the peak, there were 3,000 stores in the Chinese mainland. Later, due to trademark rights, serious differences among shareholders and blind expansion of franchise stores without strengthening management, its brand image was greatly damaged, and its stores were closed down substantially.

Around 2000, European and American coffee shops represented by Starbucks entered China. By relying on the "third space" (focusing on the design of indoor environment, coffee shops are made into a third space for customers to socialize and relax besides living and working, so as to prolong the stay time of customers in coffee shops. The marketing concept of enhancing customer stickiness has achieved rapid expansion in China, and has become one of the chain brands with the largest share in China's coffee shop market.

First, with the continuous development of China's economy and the continuous improvement of people's living standards, the national consumption capacity increases accordingly. Second by the trend of globalization and our country population, huge market and the influence of freshly brewed coffee market share significantly lower, more and more foreign large coffee chains in our country, vigorously promoted the spread of "coffee culture" in our country, as people the gradually deepening understanding of the coffee, the higher quality of freshly brewed coffee more and more favored by people [2]. Moreover, cafes mostly adopt the concept of "third space", which provides a quiet and comfortable environment for consumers to study and work, relax or get together with friends. All these have greatly stimulated the development of coffee shops in China.

In recent years, on the one hand, some emerging coffee chain brands represented by Luckin coffee have sprung up with their accurate market positioning, multi-scene business model and unique marketing methods. On the other hand, independent cafes with their own characteristics (such as pet theme cafes, cafes + bookstores, etc.) are emerging in the Chinese market, driving the development of China's cafe market towards a more diversified direction. But I found that by investigating in the increasing popularity of coffee culture in our country at present, our country most of the coffee shop still management USES the concept of "starbucks" third space, one can't well satisfy the need in the first and second space coffee consumption demand of consumers, and along with our country national recognition degree of coffee culture, coffee function is more and more higher, There will be a growing number of consumers who want refreshment coffee while studying or working. Second, compared with other catering industries, affected by the epidemic is greater.

At the same time, KFC, McDonald's and some convenience stores with high offline coverage provide freshly ground coffee and abundant online coffee categories with low customer unit price, which are developing rapidly due to their advantages of cheap, efficient, convenient and gradually improving quality, which has caused a certain degree of impact on offline coffee shops.

3.2 The Number and Distribution of Cafes in China

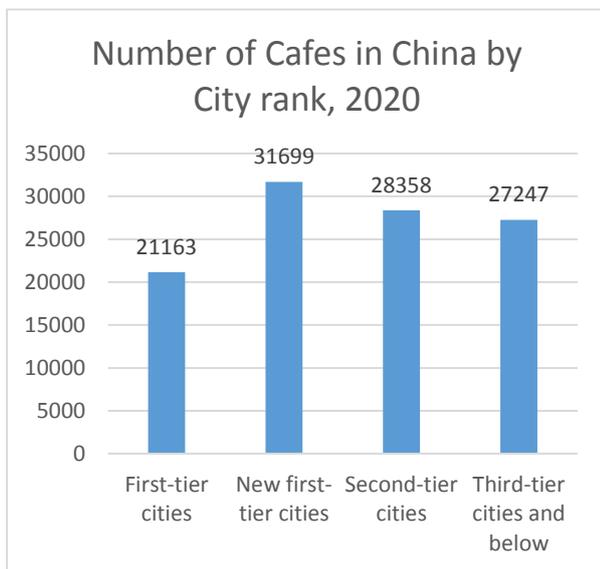


Figure 1. The number of Cafes in China in 20201

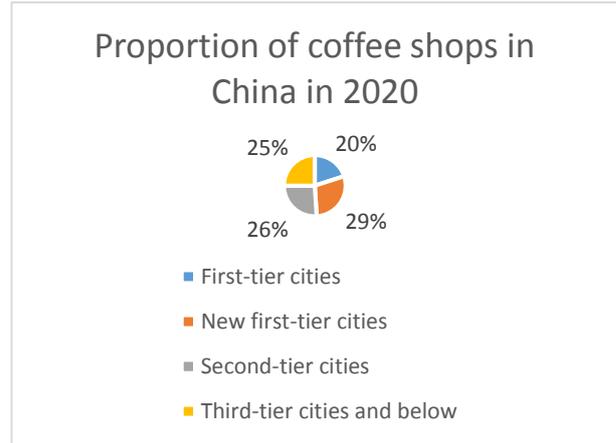


Figure 2. Proportion of coffee shops in China in 20202

As can be seen from Figures 1 and 2, by the end of 2020, China's first-tier cities had 21,000 cafes, accounting for 20 percent of the total. New first-tier cities have 32,000 cafes, or 29 percent; Second-tier cities have 28,000 cafes, or 26 percent of the total. Third-tier cities and below have 27,000 cafes, or 25 percent.

China's cafes are mainly located in second-tier and above cities, and the number of cafes in second-tier and above cities accounts for 75%. The number of cafes in third-tier cities and below accounted for only 25%. The second-tier and above cities have developed economy, large population and a large number of coffee shop main consumers, high consumption level and consumption power, and high recognition of coffee shop culture. People in these cities are more able to consume and more willing to consume. China's coffee shops are naturally mainly located in these cities [3]. However, in the future, with the continuous development of China's economy, the deepening of urbanization construction and the continuous popularization of coffee culture, the cafe market in third-tier cities and below is expected to open up and become the "competitive land" for major coffee brands.

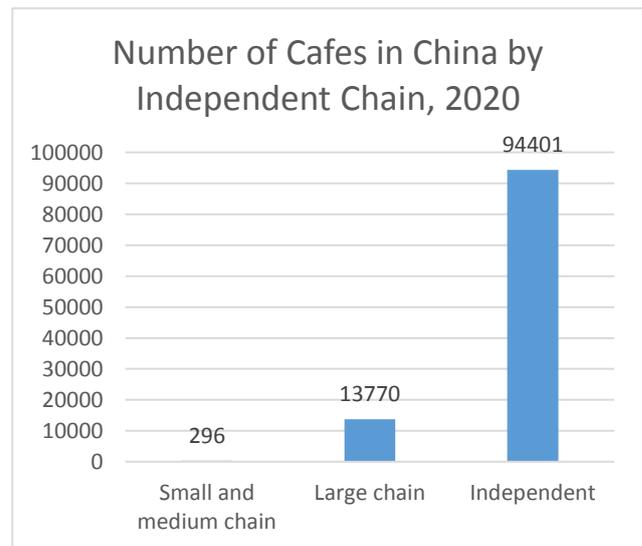


Figure 3. Number of Coffee shops in China in 2020 (by independent chain)3

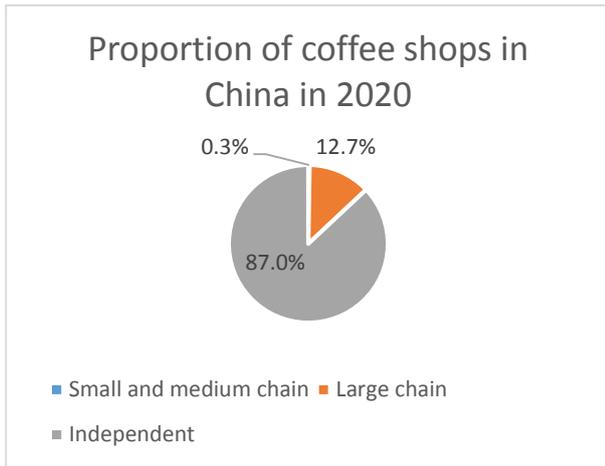


Figure 4. Proportion of coffee shops in China in 2020

As can be seen from Figures 3 and 4, by the end of 2020, China had 13,800 large chain cafes, accounting for 12.7%; The number of small and medium-sized chain cafes is 0.03,000, accounting for 0.3%; The number of independent cafes is 94,400, accounting for 87 percent.

From the perspective of chain rate, the current chain rate of China's cafe market is low [4]. Chain brands only account for 13% of all cafes, while independent cafes account for 87%. However, from the perspective of brand effect and economic benefits, cafe brand chain may become a major trend in the future.

3.3 Market Prospect Analysis

3.3.1 Changes in the Number of Cafes in China

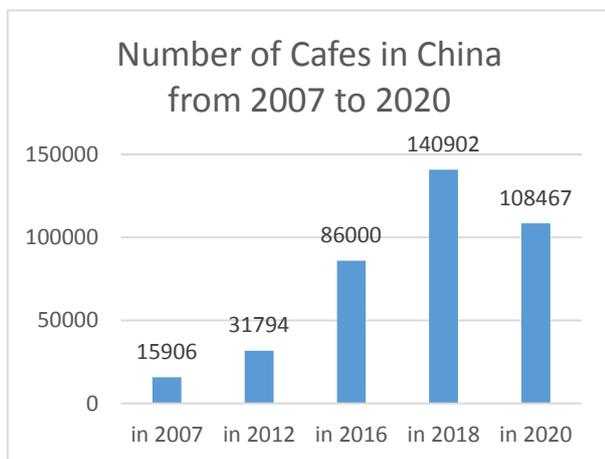


Figure 5. Number of Coffee shops in China from 2007 to 2020

As can be seen from the Figure 5, the number of cafes in China grew rapidly from 2007 to 2018, showing an exponential growth trend [5]. However, in these two years, nearly 30,000 cafes closed down, mainly due to the huge impact of COVID-19 on offline consumption scene. By the end of 2020, there were 108,000 cafes in China.

In order to explore how the number of cafes in China will change in the future, I first used SPSS to analyze the correlation between the number of cafes and the year, and the Table 1 is obtained:

Table 1. Correlation between year and number of cafes

The correlation

	year	Number of cafes
year	Pearson correlation	0.907.*
	Sig. (Single tail)	0.017.
	The case number	5
Number of cafes	Pearson correlation	0.907.*
	Sig. (Single tail)	0.017.
	The case number	5

*. At level 0.05 (single tail), the correlation was significant.

When Pearson correlation coefficient is greater than 0.7, we believe that the two variables are highly correlated. When Pearson's correlation coefficient is between 0.3-0.7, we think that the two variables are moderately correlated. Below 0.3, we consider the two variables to be weakly correlated. And the prerequisite condition must be that the significance is less than the significance level of 0.01 or 0.05. We believe that the two variables are significantly correlated and have statistical significance. We can see the degree of correlation between variables by Pearson correlation coefficient in the Table 1. I found that the Pearson correlation coefficient between years and the number of cafes was 0.907, and the significance was less than 0.05, rejecting the null hypothesis, indicating a significant positive correlation between years and the number of cafes, which was statistically significant.

Based on the above analysis, I further took the year as the independent variable and the number of cafes as the dependent variable, and conducted linear regression analysis using SPSS, obtaining the Figure 6:

Linear analysis results (n=5)							
	Non standardized coefficient	Standardized coefficient	t	P	VIF	R ²	Adjust R ²
	B	Standard error	Beta				
constant	-18371232.501	4949325.388	-3.712	0.034*	-	0.822	0.763
particular year	9157.076	2456.722	3.727	0.034*	1.000		

Dependent variable: number of cafes
D-W value: 2.636
*p<0.05**p<0.01

Figure 6. Results of linear regression analysis

It can be seen from the Figure 6 that the model formula is:

$$\text{Number of cafes} = -18371232.501 + 9157.076 * \text{Year} \tag{1}$$

The r-squared value of the model is 0.822, which means that 82.2% of the variation in the number of cafes can be explained by years. When conducting F test on the model, it was found that the model passed the F test (F=13.893, P=0.034<0.05), which indicated that the year must have an impact on the number of cafes. Finally, specific analysis showed that:

The regression coefficient value of year is 9157.076 (t=3.727, P=0.034<0.05), which means that year has a significant positive influence on the number of cafes.

Summary analysis shows that all years have a significant positive influence on the number of cafes [6].

By using the regression model, the number of cafes in China is expected to reach 171,847 by 2025. Although the novel coronavirus epidemic has caused a great impact on China's coffee shops, China's coffee shop industry will have a good development trend in the future due to the vigorous promotion of epidemic prevention.

3.3.2 Changes in the Market Scale of China's Coffee Shop Industry

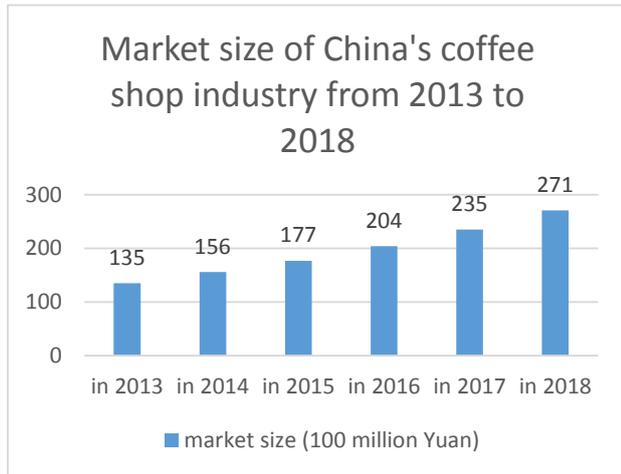


Figure 7. Market scale of China's coffee shop industry from 2013 to 2018

Through the Figure 7 we can see that China's cafe industry between 2013 and 2018 the size of the market rise year by year, and growth increases year by year, and based on the construction of urbanization in our country, and constantly improve people's living standard, the caffeine addiction have make coffee consumption viscous and policy in our country, yunnan boutique coffee plantations support for the industry, I think the market size of China's coffee shop industry will still show an upward trend.

To test this conjecture, I first tested the correlation between years and the size of the coffee shop market, as the Table 2:

Table 2. Correlation between year and coffee shop market size

Pearson related - Standard format	
	The size of the market
year	0.994 **

** * p < 0.05 p < 0.01

It can be seen from the Table 2 that the Pearson correlation coefficient between the year and the market size of the coffee shop industry was 0.994, and the significance was less than 0.05. Rejecting the null hypothesis, it indicated that the year was significantly

positively correlated with the market size of the coffee shop industry, which was statistically significant.

Based on the above analysis, I further took the year as the independent variable and the market size of the cafe industry as the dependent variable, and conducted linear regression analysis using SPSS, obtaining the Figure 8:

	Non standardized coefficient		Standardized coefficient	t	P	VIF	R ²	Adjust R ²	F
	B	Standard error	Beta						
constant	101.933	5.903	-	17.268	0.000*	-	0.988	0.984	F(1,4) =316.642, p=0.000
particular year	26.971	1.516	0.994	17.794	0.000*	1.000			

Dependent variable: market size
D-W value: 1.051
*p<0.05**p<0.01

Figure 8. Results of linear regression analysis

As can be seen from the Figure 8, the model formula is:

$$\text{Market size} = 101.933 + 26.971 * \text{Year} \quad (2)$$

The R square value of the model is 0.988, which means that year can explain 98.8% of the variation of market size. When conducting F test on the model, it was found that the model passed the F test (F=316.642, P=0.000<0.05), which indicated that the year must have an impact on the market size. Finally, specific analysis showed that:

The regression coefficient value of year is 26.971 (t=17.794, P=0.000<0.01), which means that year has a significant positive influence on the market size.

Summary analysis shows that all years have a significant positive impact on market size.

By using the regression model, the market size of China's coffee shop industry is expected to reach 45.2 billion yuan in 2025. It can be seen that China's coffee shop industry still has a lot of space for development.

4. Analysis of Consumer Demand for Coffee Shop of College Students

Through the research data of JIGUang, I learned that college students are one of the main forces in China's cafe consumption market at present, so I analyzed the consumer demand of this group through questionnaire survey.

4.1 Analysis of Current Consumption Situation of College Students in Coffee Shops

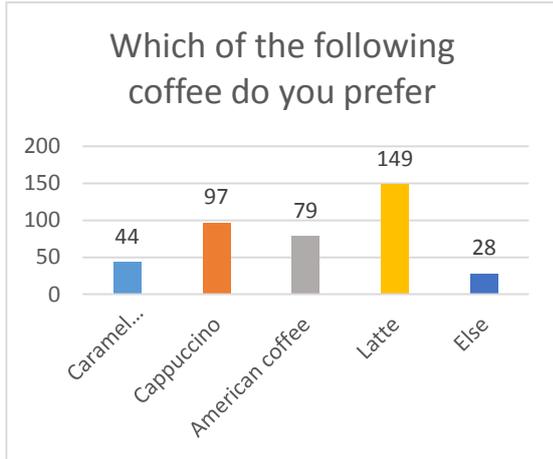


Figure 9. College students' preference for coffee types9

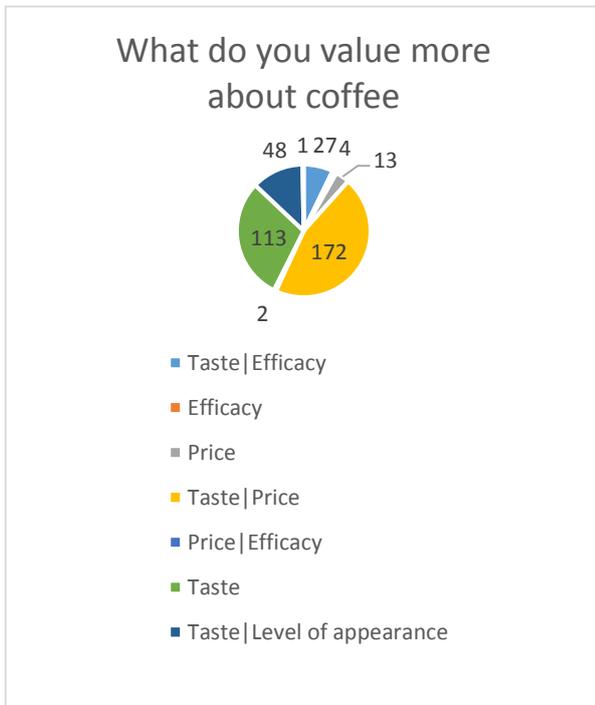


Figure 10. College students value coffee10

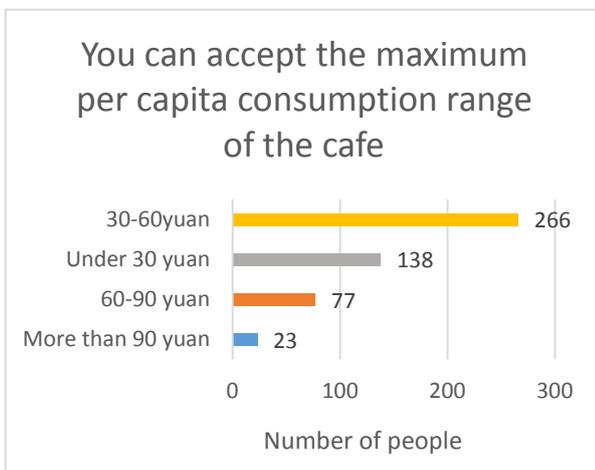


Figure 11. Maximum per capita consumption range of coffee shops acceptable to college students11

As can be seen from Figures 9, 10 and 11, college students the most significance of coffee taste, prefer latte, cappuccino, and American, on this basis, the level price, appearance also has a certain degree of pursuit, and can accept the highest per capita consumption of cafe range in 30 to 60 yuan more, should be on the premise of guarantee the high quality taste cafe appropriate lower the price, to win more customers for their own, at the same time improve the level of appearance, Convenient for young people to take photos and punch in.

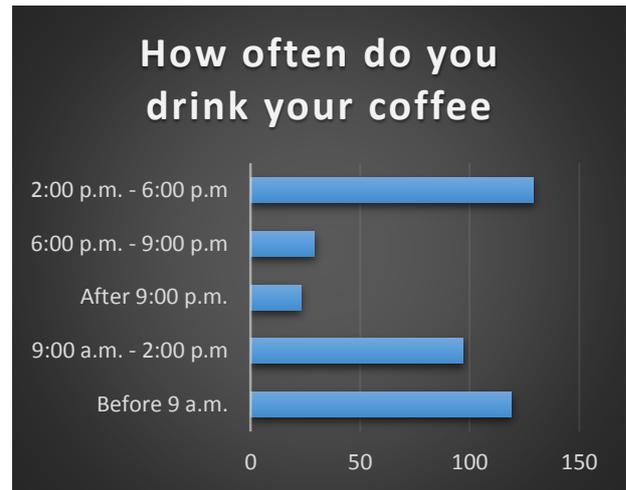


Figure 12. Time chart of college students' coffee habit12

As can be seen from the Figure 12, college students are accustomed to drinking coffee between 14 and 18 and before 9 o'clock. It is suggested that coffee shops adjust their business hours accordingly to better meet the needs of college students. If necessary, they can also increase personnel allocation during these periods to provide customers with better consumption experience.

Table 3. Places where college students drink coffee3

\$Q7 frequency		The response	The	Percentage
		The case	The	of cases
		number	percentage	
\$	Study or	287	47.1%	72.3%
Q7a	office			
	Dormitory	173	28.4%	43.6%
	or home			
	Cafe	119	19.5%	30.0%
	Commuting	22	3.6%	5.5%
	Others	8	1.3%	2.0%
A total of		609	100.0%	153.4%

A. Use the value 1 to tabulate binary groups.

As can be seen from the Table 3, college students are most accustomed to drinking coffee in study or office, followed by dormitories or at home and coffee shops. It can be seen that with the continuous infiltration of coffee culture into our lives, people's demand for drinking coffee in the first and second space has increased significantly. It is suggested that coffee shops launch efficient takeaway services to better meet consumer needs and improve profits.

Table 4. The types of products college students choose in coffee shops4

\$Q11 frequency				
		The response		Percentage of cases
		The case number	The percentage	
11a	\$Q coffee	419	39.8%	83.1%
	casual dining	116	11.0%	23.0%
	cake	243	23.1%	48.2%
	tea	84	8.0%	16.7%
	Fruit juice	126	12.0%	25.0%
	Alcohol	8	0.8%	1.6%
	Other drinks or meals	57	5.4%	11.3%
	A total of	1053	100.0%	208.9%

A. Use the value 1 to tabulate binary groups.

As can be seen from the Table 4, people consume more coffee, pastries and light meals in coffee shops. It is suggested that coffee shops sell pastries and light meals together.

Table 5. Aspects of coffee shops that attract college students5

\$Q15 frequency				
		The response		Percentage of cases
		The case number	The percentage	
\$Q15a	Brand Guarantee	171	33.9%	33.9%
	Decoration Style	110	21.8%	21.8%
	Product quality	144	28.6%	28.6%
	Service Attitude	19	3.8%	3.8%
	Reasonable price	60	11.9%	11.9%
	A total of	504	100.0%	100.0%

A. Use the value 1 to tabulate binary groups.

Table 6. The purpose of college students' consumption in coffee shops6

\$Q13 frequency				
		The response		Percentage of cases
		The case number	The percentage	
13a	\$Q Coffee	131	12.3%	26.0%
	Office study	195	18.4%	38.7%
	business	34	3.2%	6.7%
	relax	314	29.6%	62.3%
	date	129	12.2%	25.6%
	Gathering of friends	218	20.5%	43.3%
	other	40	3.8%	7.9%
	A total of	1061	100.0%	210.5%

A. Use the value 1 to tabulate binary groups.

As can be seen from Tables 5 and 6, cafe brand guarantee, product quality and decoration style is the most attractive to consumers, it is suggested that cafes slowly try to brand their own, ensure product quality, and on the premise of sufficient management ability, brand chain, enhance brand income; At the same time, the decoration

style should meet the main needs of consumers to relax, friends to party and study the office.

4.2 The Relationship between Gender and Frequency of Coffee Shop Visits

A crosstab is a contingency table with two or more categorical variables, so a crosstab is often used to analyze the relationship between two categorical (or ordered) variables. Crosstab analysis is easy to understand, easy to explain, simple operation, but can explain more complex phenomena. In order to explore the relationship between different genders and the frequency of patronizing coffee shops, I conducted a cross analysis of these two variables by using SPSS, and Tables 7 and 8 are obtained:

Table 7. Cross-table of gender and frequency of cafe visits7

9. How often do you visit coffee shops							
		count					A total of
		1	2	3	4	5	
1. Your gender		111	20	17	3	3	154
		270	34	40	5	1	350
A total of		381	54	57	8	4	504

Table 8. Chi-square test table8

chi-square			
	value	Degrees of freedom	Progressive significance (bilateral)
Pearson chi-square	5.352a	4	.253.
Likelihood ratio	4.932	4	.294.
The linear correlation	1.855	1	.173.
Number of active cases	504		

A. Three cells (30.0%) have an expected count of less than 5. The minimum expected count is 1.22.

As can be seen from Tables 7 and 8, the chi-square value of different genders in the frequency of patronizing coffee shops is 5.352 and the significance is 0.253, and the P value is greater than the significance level. The original hypothesis is accepted and it is believed that there is no significant difference in the frequency of patronizing coffee shops between different genders.

4.3 The Relationship between Income Range and Frequency of Visiting Coffee Shops

In order to explore the relationship between income range and frequency of visiting coffee shops, I conducted a cross analysis of these two variables by using SPSS, and Tables 9 and 10 are obtained:

Table 9. Cross table of income range and frequency of cafe visits9

2. Your income range (including living expenses) * 9.		
Cross chart of how often you visit coffee shops		
		count
		9. How often do you visit coffee shops
		A total of

	1	2	3		
2. Your income range (including living expenses)	76	6	9		94
	247	2	2		304
	6	5			
	25	1	1		50
	12	8	3		23
	6	0	3		10
	15	3	4		23
A total of	381	5	5		504
	4	7			

Table 10. Chi-square test table10

chi-square			
	value	Degrees of freedom	Progressive significance (bilateral)
Pearson chi-square	60.667a	20	.000.
Likelihood ratio	46.916	20	.001.
The linear correlation	10.811	1	.001.
Number of active cases	504		

A. 18 cells (60.0%) have an expected count of less than 5. The minimum expected count is .08.

As can be seen from Tables 9 and 10, the chi-square value of different income ranges is 60.667 and the significance is 0.000, and the P value is less than the significance level. Therefore, the null hypothesis is rejected and it is believed that different income ranges have significant differences in the frequency of patronizing coffee shops.

4.4 The Relationship between Gender and the Degree of Preference for Coffee Types

The independent sample T test can be used to infer whether there are significant differences between the mean values of two populations based on two independent samples that follow the normal distribution of the population. In order to explore the relationship between gender and preference for coffee types, I conducted independent sample T test on these two variables by using SPSS, and Tables 11 and 12 are obtained:

Table 11. Group statistics11

Set of statistics					
	You r gender	The case number	The average	The standard deviation	Mean standard error
4. Which of the following coffee do you prefer	1	154	1.13	2.678	216.
	2	350	1.40	2.356	126.

Table 12. Independent sample test table12

Independent sample test		
	Levine variance isotropy test	Mean isotropy T test

								95% confidence interval	
								Lower	
								Upper	
								95% confidence interval	
								Lower	
								Upper	
4. Which of the following coffee do you prefer	Assumed	6.499	0.1114	1.122	50.262.	2.267.	238.	-2734.	200.
	We don't assume equal variance			1.070	1.66986.	2.267.	250.	-759.	25.

As can be seen from Tables 11 and 12, the degree of preference of different genders to coffee types is -1.070, and the significance is 0.286, and the P value is greater than the significance level. The null hypothesis is accepted and it is believed that there is no significant difference in preference of different genders to coffee types.

4.5 Establish Logistic Model to Analyze the Factors Influencing the Maximum per Capita Consumption Range of Acceptable Cafes

The maximum per capita consumption range of acceptable cafes is the dependent variable (1 is high, 0 is low), in which, the maximum per capita consumption range of "less than 30 yuan", "30-60 yuan" is low, and the maximum per capita consumption range of "30-90 yuan" and "more than 90 yuan" is high.

Logistic model is mainly applicable to the analysis of dichotomous variables as dependent variables, and it is the best model to analyze individual decision-making behavior. Height is a qualitative dichotomous variable, and researchers mostly use this model to study this behavior. In this paper, a regression model is established to obtain the regression coefficient of each path choice, so as to determine the influencing factors of the maximum per capita consumption range. In this paper, certain mathematical expressions are used to describe certain probability distribution variables, and SPSS software is used to operate.

The general formula of logistic regression is:

$$y = \frac{1}{1 + e^{-z}} \tag{3}$$

The domain of this function is $(-\infty, +\infty)$, the range is $[0, 1]$, and its derivative expression is as follows:

$$y'(z) = y(z)(1 - y(z)) \tag{4}$$

In a word, logistic regression is the Sigmoid function plus a regression model. For the independent variable X, there is a corresponding y output. It only needs to estimate the parameters in the model, and the maximum

likelihood estimation method can be used for parameter estimation. From a statistical point of view, let P be the probability of the dependent variable. You can:

$$\text{logit}(p) = \ln(p/(1-p)) \tag{5}$$

Let's say there are k factors x_1, x_2, \dots, x_k affects the value of y

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 x_1 + \dots + \beta_k x_k \tag{6}$$

Where are model parameters.

$$p = \frac{\exp(\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k)}{1 + \exp(\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k)} \tag{7}$$

Table 13. Model fitting information table13

Model fitting information				
model	Model fitting criteria	Likelihood ratio test		
	-2 logarithmic likelihood	chi-square	df	Significant level
Only intercept	339.402			
In the end	289.333	50.069	14	000.

The purpose of this test is to test whether the model constructed is meaningful. As can be seen from the Table 13, the Chi-square value of the model is 50.069, the degree of freedom is 14, and the significance is 0.000, that is, the P value is less than the significance level of 0.05, so the model constructed is considered significant and statistically significant.

Table 14. Pseudo R square table14

Pseudo R party	
Cox and Snell	0.152
Nagelkerke	0.212
McFadden	0.30

It can be seen from the Table 14 that Cox and Snell are 0.152, and Cox-Snell R square represents the value of the model. The larger Cox-Snell R square is, the more valuable the model will be, that is, the established model can be considered to be relatively valuable.

Table 15. Variables in the equation15

Variables in an equation							
		B	Standard error of	t	Degrees of freedom	Significant	Exp (B)
Step 1a	1. Your gender	27.8	260.	1.151	1	283.	1.321
	2. Your income range (including living expenses)	34.8	089.	15.218	1	000.	1.416

10. The amount of time you normally spend in a cafe	24	117.	4.259	1	039.	1.274
constant	3.147	576.	29.903	1	000.	043.

*a. Variables entered in Step 1: 1. your gender, 2. your income range (including living expenses), 10. The amount of time you normally spend in a cafe.

It can be seen from the Table 15 that the significance of some variables is less than 0.05, that is, the null hypothesis is rejected and the significance test of model coefficients is passed, indicating that the model coefficients are significant. Combined with the results in the above table, gender, income range and stay time in cafes all have a significant impact on the maximum per capita consumption range of acceptable cafes, among which income range is the variable that can most affect the maximum per capita consumption range of acceptable cafes.

5. Advice

1. Break the limit of "third space" and launch efficient takeaway service. More than the traditional offline cafe USES the concept of "the third space", meet the demand of customer eat-in and since, but with the advancement of the process of our modernization drive as well as the demand for the people to pursue and facilitation, and affected by the outbreak of abroad, domestic outbreak again and again, at the same time delivery can be tapped, expand customer service scope, useful for cafe. However, since the taste of freshly ground coffee will change over time, businesses need to pay more attention to the efficiency of takeaway service to avoid customer loss.

2. Accelerate the layout of third-tier and lower-tier cities to seize market opportunities. Through the above analysis, we believe that the third-tier and lower-tier cities have huge market potential in the future, which should not be underestimated by chain brands or independent brands.

3. On the premise of sufficient management ability, brand chaining can enhance brand revenue. On the one hand, brand chain can expand the brand influence and win the trust of consumers more than non-brand cafes, which is conducive to maintaining old customers and attracting new customers. On the other hand, chain brand cafes can also create cultural IP by launching peripheral products in line with the tonality of their own cafes or actively seeking cross-border cooperation with other brands, which can not only bring new revenue points for businesses, but also help enhance customer stickiness.

4. Launch "creative coffee" more in line with the needs of contemporary young people. Through the above investigation, we find that the main consumers of coffee shops in China are young people, who are curious about new things. With the continuous development of Chinese society, they have developed more demands for coffee. Therefore, traditional coffee cannot continue to meet their needs. Cafe brands need to keep innovating and try

to create unique coffee products that can meet the richer needs of contemporary young people. For example, there are "creative coffee" such as cold brew coffee, which is more complicated but tastes better, nitrogen coffee, which has a thicker and healthier taste, and Bulletproof coffee, which has the function of replacing meals and reducing fat.

5. Take advantage of the Internet to promote your brand. On the one hand, coffee shops can attract customers by operating online platforms such as Tiktok, Weibo and Dianping, and combining price promotion methods such as discounts and coupons to realize the disruptive communication. On the other hand, through big data technology, accurate delivery of target customers can be achieved.

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