

# **The Influence and Research of Group Buying on the Evaluation of Catering Enterprises**

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**Abstract:** As the basic industry of people's livelihood, catering industry is experiencing unprecedented challenges in the face of the diversification of consumer demand, the change of payment and business model and the impact of major public health events. In response to these changes, catering enterprises have embarked on the road of digital transformation. This project focuses on the digital means of group buying, and deeply analyzes its specific impact and effect on the evaluation of catering enterprises, aiming at revealing the potential of group buying strategy in improving customer satisfaction, promoting word-of-mouth communication and increasing revenue. Through this research, we aim to provide a feasible digital development path for catering enterprises, help them stand out in the fierce market competition and realize steady income growth.

**Keywords:** Catering Industry; Group Purchase; Evaluation; Digitization; Income Growth

## **1. Research Background**

### **1.1 Introduction**

Technology changes life. In recent years, with the deepening of digitalization, the catering industry is no longer limited to offline shops and paper ordering, but has launched a new form of online ordering on the platform. Many of them choose the way of group buying, and launch cheap combination dishes to attract customers, which has received a lot of comments. Many factors affect the comments of group buying, so studying the influence of various factors of group buying on the comments of catering enterprises can gain more opportunities for catering enterprises to make profits.

### **1.2 Literature Review**

In recent years, scholars have conducted extensive research on the transformation and upgrading of catering enterprises, and digitalization is the focus of attention. Some scholars apply digitalization to catering enterprises. He & Liu (2019) , and others have established a safe and traceable system-tracing food sources in time; Raw material demand forecasting service-customize the agricultural food supply chain according to the demand and reduce expenditure from the source; Transformation and upgrading of financial services-catering enterprises should directly cooperate with major financial institutions periodically to expand financial services with their own credit level; The Path of One-stop Procurement Service —— Set up a platform for direct docking with farmers to avoid second-hand merchants earning price difference[1]. Dou, made digital reform by investigating the problems of neglecting customer relationship management, lagging brand building and promotion, and lack of professional network marketing talents in Longdong Love Catering Company. It added diners' social functions to websites and APP homepages, conducted website member tracking services, paid attention to customer feedback and communication, and turned individual dining customers into interconnected communication and interaction whole. Online process increases the transparency of the whole promotion, marketing and management process, and instantly sends and presents information such as food providing steps, service operation process, online ordering and distribution process, contact information and so on to consumers[2].

As a consumption pattern, group buying is influenced by many factors. It is helpful to effectively promote the prosperity and

development of the group buying industry to deeply explore these factors. Zhang, deeply studied consumers' preference for community group buying in Nanjing through joint analysis, and found that commodity prices and the service level of heads of delegations are the most concerned factors for consumers[3]. Tian, studied the main influencing factors of urban group buying transactions from the macro level from 2011 to 2014. The empirical results show that the development level of tertiary industry, population size, information infrastructure, transportation and financial development level have significantly promoted the development of group buying market[4]. Wang & Yuan, and others found that ensuring the quality of goods, convenient and fast, and good after-sales service can promote the improvement of group buying satisfaction by analyzing the satisfaction of group buying in community networks[5].

Some scholars are committed to studying the standardization of group buying platform and its evolution in the social environment, so as to promote the sustainable development and progress of group buying business. Bai, established a user stickiness research model that is more in line with the characteristics of catering group buying by adding five variables: perceived ease of use, perceived cost, user habits, switching cost and user stickiness. It is concluded that enhancing the expected confirmation, improving the usefulness, improving the usability, increasing the conversion cost and cultivating users' habits can promote the attraction and retention of users and make users form stickiness to the website[6]. Zhang, changed the relationship between group buying websites and catering enterprises from competition to competition, and the two sides reached a strategic alliance and shared profits. That is, group buying websites fully participate in the management process of catering enterprises, providing them with more valuable data services, such as service inventory management based on customer demand storage and service mode innovation based on mass customization, promoting customer experience, and finally sharing profits with service providers[7].

Many scholars have provided valuable suggestions for catering enterprises through in-depth research on group buying business, so as to promote the continuous optimization and

development of group buying service. Duan & Xu, gave full play to the advantages of online group buying and promoted the development of online group buying by strengthening regulatory constraints, perfecting the credit system, building security barriers, optimizing service management, clarifying target strategies, highlighting distinctive styles, and solving the problems existing in the development of online group buying, such as lack of integrity, poor supervision, lack of security, difficulties in safeguarding rights, lack of style and homogeneous competition[8]. Yan, promotes the development of online group buying in China by improving the online payment mechanism, strengthening the integrity construction of merchants, establishing rights protection mechanism, perfecting relevant laws and regulations, strengthening legal supervision, and solving the problems existing in online group buying in China, such as lack of guarantee mechanism for payment methods, integrity problems of merchants, consumer rights protection, low entry threshold and serious homogenization[9]. Liu, improved laws and regulations, formulated entry norms and standards, strengthened publicity to make consumers more vigilant, and solved the problems existing in the development of online group buying, such as low entry threshold, fierce market competition, poor product quality, insecure after-sales service, lack of industry standards and imperfect relevant laws, and promoted the development of online group buying in China[10].

Based on the above scholars' research, we have noticed that the catering industry is gradually undergoing digital transformation in recent years. More and more catering enterprises actively expand group buying services and pay close attention to consumers' preferences. Based on these findings, we conduct further research.

### **1.3 Policy Support**

The following Table 1 shows the policies related to group buying issued in recent years, which have effectively promoted the development of the group buying industry.

## **2. Status Analysis**

### **2.1 Basic Situation of Catering Enterprises**

China catering enterprises show a strong development momentum. China's catering enterprises are rich in types, covering a variety of formats from traditional Chinese food to modern fast food to meet the needs of different consumers.

As shown in Figure 1, although the operating income of catering enterprises in China fluctuates slightly, it shows an overall upward trend. From 2019 to 2020, there was a slight decline due to major public health emergencies. With the end of major public health

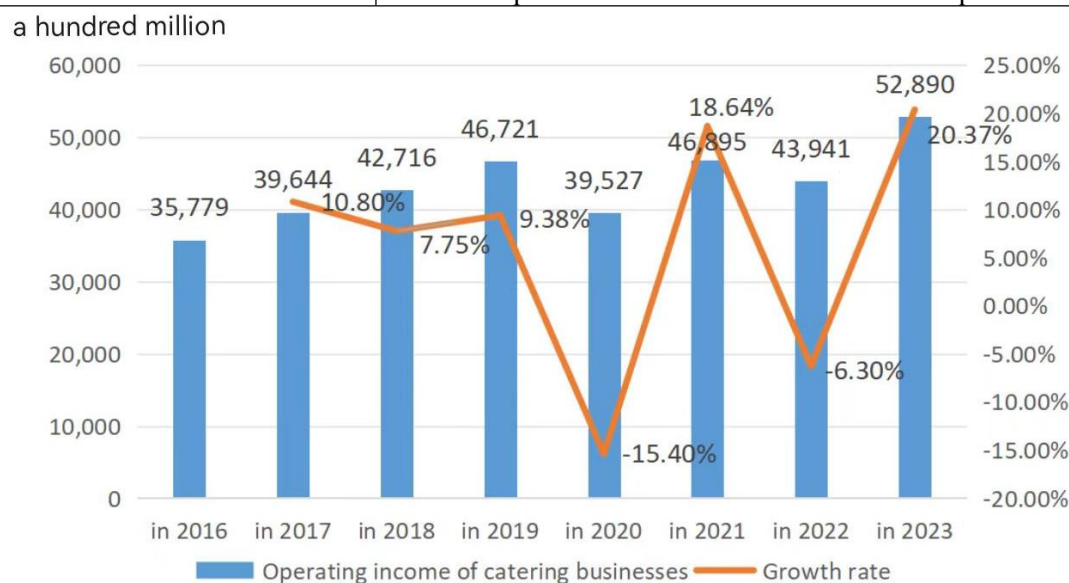
emergencies, catering enterprises recovered and their income showed an increasing trend, showing a strong recovery momentum.

The catering industry showed a steady growth trend in 2024. According to the data released by the National Bureau of Statistics, the national catering revenue reached 1,736 billion yuan in the first four months of 2024, up 9.3% year-on-year, showing the overall recovery of the catering market and the enhancement of consumer demand.

**Table 1. Relevant Policies of Group Buying Business of Catering Enterprises**

Age	Policy name	Main content of policy
2015	Guiding Opinions on Actively Promoting the "internet plus" Action	Encourage the integration and innovation of the Internet and traditional industries, including the catering industry. The policy proposes to promote the deep integration of the Internet and the catering industry, and support the development of emerging formats such as online take-out and online ordering.
2016	Opinions on Promoting the Innovation and Transformation of Physical Retail	Encourage physical retail enterprises to use information technologies such as big data and cloud computing to promote online and offline integration and enhance the consumer experience.
2018	Guiding Opinions on Accelerating the Intelligent Supervision of Food Safety in Catering Services	It is proposed to use information technology to improve the level of food safety supervision of catering services and promote the construction of food safety intelligent supervision of catering services.
2019	Guiding Opinions on Promoting the Healthy Development of Platform Economy	Encourage the development of platform economy in catering industry and other fields, promote online and offline integration, and improve service quality and efficiency.
2020	Guiding Opinions on Promoting the High-quality Development of Catering Industry	It is proposed to speed up digital empowerment, promote online and offline integration of catering industry, cultivate catering brands and improve service quality.
2022	Notice on the Implementation of Supporting Policies to Promote the Restaurants' Recovery and Development	From six aspects, it is clearly required to do a good job in the implementation of supporting policies to promote the recovery and development of the catering industry. Implement relevant subsidies, social insurance to help enterprises out, broaden financing channels for enterprises, enhance the function of credit enhancement of financing guarantees, give full play to the supporting role of commercial insurance, and support the consumption of food for the elderly.
2023	Guiding Opinions on Giving Play to the Leading Role of Online Catering Platform to Effectively Prevent Takeaway Food Waste	Enhance the civilized consumption awareness of merchants and consumers in the platform, form a good social trend of practicing economy and opposing waste, and promote the standardized and healthy development of the online catering industry.
2023	Guiding Opinions on Accelerating Digital Empowerment of Life Services	This policy encourages and guides catering and other traditional life service enterprises to carry out digital and intelligent upgrading, and uses information technology to enhance market analysis and customer acquisition capabilities. This directly promoted the digital transformation of the catering industry and improved the overall competitiveness of the industry.
2023	"Beijing promotes the healthy	Innovatively launch the small program of "opening a restaurant

development of catering enterprises with digital reform"	in the palm of your hand" and the new mode of "cloud reconnaissance" remote verification; Focus on improving the efficiency of supervision, reduce the interruption of enterprises, and implement the new means of "off-site supervision".
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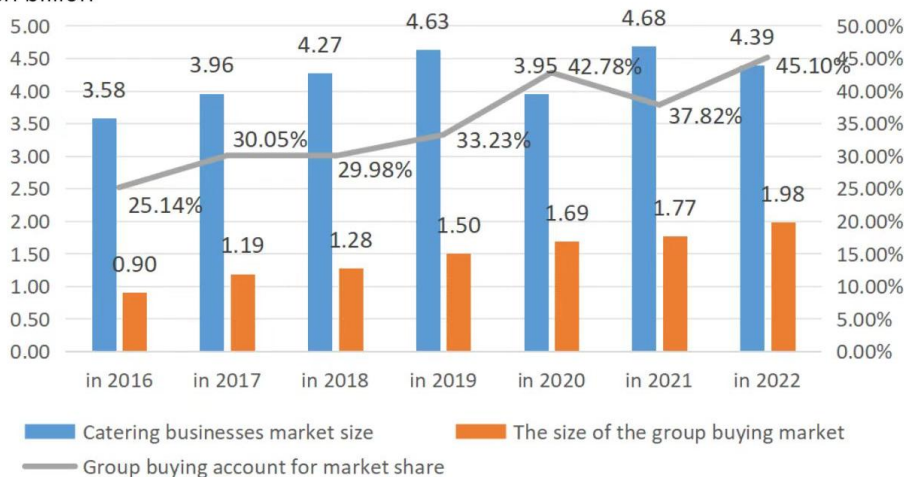
**Figure 1. Operating Income of Catering Enterprises**

Source: National Bureau of Statistics

## 2.2 Group Buying in Catering Industry

As an important business in the catering industry, group buying has developed significantly in recent years, and the catering group buying market has accounted for 30% of ten billion

the catering industry. With the development of the Internet, more and more consumers choose to spend food and beverage by group purchase, especially on holidays, and the number of group purchase orders will increase significantly.



**Figure 2. China Group Buying Market Share**

Source: National Bureau of Statistics, iiMedia Research.

The market scale of group buying has grown steadily. As shown in Figure 2, the group buying market in China is growing, and its proportion in the catering market is on the rise as a whole. In 2022, the market scale reached 1.98 trillion yuan. The group buying industry is developing in the direction of branding, digitalization and standardization, and supply

chain construction has become the core of reducing costs and increasing efficiency.

## 3. Research Design

### 3.1 Data Source and Sample Selection

This paper selects China's leading local life information and trading platform-public



comment as the research platform. Public comment was established in 2003, and it is the first third-party consumer comment platform in the world. Since its establishment, it has experienced four rounds of financing. In 2014, the group buying model launched by the public comment directly cut into specific trading scenarios, which brought intuitive platform commissions to the platform; In 2015, the public comment merged with Meituan, which changed the group buying market structure; By 2023, the number of daily users and monthly users will reach 18.9 million and 121 million respectively.

In this paper, the open source crawler software is used to obtain the data of all registered businesses and their comments, ratings and business methods before 2023, and Rstudio is used to clean up the data, and a total of 27,136 samples in 10 dimensions are obtained. Excluding the unavailable data, there are 8391 samples left.

The number of comments (comm) is selected as the evaluation standard for customers. Select whether there is a group purchase (grou) as the influence of group purchase on the number of comments. Select Total Score (tota) to reflect customers' satisfaction with all aspects of the business, and see if the score will affect the number of comments. Select per capita consumption (pric) to reflect the price level of the restaurant. Select whether there is a book, as the influence of whether the restaurant accepts reserved seats on the number of comments. Select whether there is a promotion (psal), and whether there is a promotion activity as a group purchase of restaurants that affects the number of comments. Tast is selected as the influence of dish taste on the number of comments. Select heal as the influence of restaurant environment on the number of comments. Select service (serv) as the influence of restaurant service on the number of comments. The main variables are defined in Table 2.

**Table 2. Definition of Variables**

Variable name	Code	Unit	Variable interpretation
number of comments	comm	individual	Number of customers' comments on businesses
takeaway	outs	-	There is 1, and there is no 0.

total score	tota	grade	Customer's overall rating of the restaurant
consumption per person	pric	yuan	Average consumption level of customers in our store
group purchasing	grou	-	There is 1, and there is no 0.
schedule	book	-	There is 1, and there is no 0.
promote sales	psal	-	There is 1, and there is no 0.
one's taste	tast	grade	Customer's rating on the taste of dishes
environment	envi	grade	Customer's rating of restaurant service
service	serv	grade	Customer's rating of restaurant service

### 3.2 Model Setting and Variable Definition

In order to test the influence of guild on anchor gift income, this paper constructs the following multiple linear regression model as the benchmark model:

$$Y = XB + U \quad (1)$$

The main model selects the number of comments (comm) as the explained variable. Group purchase (Grou) is the core explanatory variable, which represents the influence of group purchase on evaluation. The control variables are total score (tota), promotion (psal), acceptance of reservation (book), taste score (tast), hygiene score (heal) and service score (serv). Construct the above indicators to verify whether there is a group purchase in the restaurant and its influence on the number of comments in the public comments.

### 3.3 Descriptive Statistics

Table 3 lists the descriptive statistical results of the main variables. Judging from the number of comments, the maximum value is 33,565, the minimum value is 2, the sample difference is 33,563, and the average value is 923.86, which shows that the number of comments from different businesses is quite different. From the total score, the maximum value is 4.90, the minimum value is 2.80, the

sample difference is 2.10, and the average value is 4.02, indicating that the scores of different businesses are quite different and the overall score is higher.

**Table 3. Descriptive Statistical Results**

	comm	grou	tota
sample size	8391	8391	8391
minimum value	2	0	2.8
maximum	33565	one	4.9
sample difference	33563	one	2.1
sum	7752140	3886	33737.8
median	285	0	3.9
average value	923.86	0.46	4.02
standard error of average value	19.84	0.01	0.004
95% confidence interval of the average	38.9	0.01	0.01

variance	3303647.39	0.25	0.17
standard deviation	1817.59	0.5	0.41

**3.4 Correlation Analysis**

Table 4 reports the results of correlation analysis of major variables. Pearson correlation coefficient and significance are shown in the table, in which \* \* \*, \* \* and \* are significant at the level of 0.1%, 1% and 5% respectively. The results show that there is a significant correlation between the explained variables, core explanatory variables and control variables to be selected in this paper. As can be seen from the table, the correlation coefficient between comm and grou is 0.41, which is significant at the level of 1%, indicating that Agtv is significantly positively correlated with Gvge.

**Table 4. Correlation Analysis Results**

Parameter	serv	envi	tast	book	psal	pric	tota	grou
comm	0.68***	0.72***	0.76***	0.33***	0.38***	0.47***	0.76***	0.41***
grou	0.41***	0.43***	0.39***	0.25***	0.60***	0.27***	0.37***	
tota	0.93***	0.89***	0.95***	0.31***	0.35***	0.44***		
pric	0.45***	0.49***	0.46***	0.37***	0.28***			
psal	0.35***	0.38***	0.37***	0.30***				
book	0.32***	0.32***	0.32***					
tast	0.93***	0.90**						
envi	0.94***							

**4. Empirical Results Analysis****4.1 Benchmark Regression**

Table 5 Model (0) reports the influence of group buying on merchant evaluation based on all samples. The results show that take-out has a significant positive impact on comments. In order to ensure the rationality of the model explanation, model (1) added control variables, and reported the influence of takeaway and total score on comments. The estimated regression coefficient of grou to comm is 0.5473288, which is still significant at the level of 1%, indicating that the more group purchases, the more comments. To sum up, if a merchant has a group purchase, the more comments it has on the platform, and the higher the total score.

**4.2 Robustness Test**

In order to verify the robustness of regression, the independent variable is replaced by whether there is a group purchase and the scores of each item. The results are shown in

Table 6, and the influence direction of explanatory variables on the explained variables has not changed, all of which are significant at the level of 1%.

**Table 5. Report on Results of Main Regression Models**

variable	Model (0)	Model (1)
	comm	comm
grou	1.3295***	0.5473288***
	(40.7)	(21.45)
tota	-	2.7146720***
	-	(85.22)
tota/pric	-	-0.0000543***
	-	(-6.03)
Intercept	5.0123***	-5.5188277***
	(-225.6)	(-44.4)

**Table 6. Report on Results of Main Regression Models**

variable	Model(0)	Model(1)	Model(2)
	comm	comm	comm
grou	507.8***	489.2***	525.5***
	(13.1)	(12.4)	(13.3)
tast	1263.9***	-	-
	(29.6)	-	-

<b>envi</b>	-	1176.1***	-
	-	(27.4)	-
<b>serv</b>	-	-	1132.1***
	-	-	(25.8)
Intercept	-4402.6***	-4008.7***	-3853.23***
	(-26.1)	(-23.9)	(-22.4)

## 5. Conclusions and Suggestions

### 5.1 Conclusion

Through empirical research, it is found that the emergence of food group buying has a positive impact on the evaluation of catering enterprises. The total score of group buying platform, the score of each item and the per capita consumption are one of the key factors affecting the evaluation of catering enterprises. The taste, environment and service of eating in restaurants are also important reasons affecting the comments, and the number of comments is closely related to these factors. Among them, merchants have group buying to make them comment more, which has a positive impact on them. To sum up, the emergence of group buying has a positive impact on catering enterprises.

### 5.2 Suggestions

First, formulate preferential methods. Combined with the results of market research, formulate attractive group purchase packages and preferential schemes. We can increase the urgency and scarcity of group buying through limited time promotion, and urge consumers to place orders as soon as possible. The contents of the package should be rich and varied to meet the needs of different consumers; The preferential margin should be moderate, which can not only attract customers but also ensure the profit space of enterprises.

Second, optimize the process of group buying activities. Ensure that the booking, payment, verification and other processes of group buying activities are simple and fast, and reduce the operation difficulty and waiting time of customers. During the group buying activities, some exclusive benefits or recharge services can be introduced for group buying customers, such as giving small gifts and providing priority seats, so as to improve customer satisfaction.

Third, ensure offline service and experience. The taste, environment and service of

customers during the meal have an important influence on the evaluation, so it is necessary to ensure that the offline dining service is in place. group buyings should ensure the high quality of dishes and avoid reducing the quality of dishes because of discounts. Customers respond to consumers' consultation and feedback in time during the meal, actively solve the problems they encounter during the purchase and use, and enhance consumers' satisfaction and trust.

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