Analysis of Contemporary College Students' Preference for Online Promotion Activities — Youth Choice Under the Online Shopping Trend

Qiurui Song[1]

[1] School of Economics, Harbin University of Commerce, Harbin 150028, China
Correspondence: Qiurui Song, School of Economics, Harbin University of Commerce, Harbin 150028, China.

Abstract

With e-commerce's surge, online shopping is vital for college students. Market expansion fuels diverse promotions, shaping purchasing decisions. This paper explores student preferences to inform effective marketing.

Research focuses on attitudes towards online promotions. 800 questionnaires analyzed preferences, impact on shopping, and non-participation reasons. Data mining compared online vs. traditional promotions.

Pearson correlation linked promotions to shopping intent. K-means clustering segmented students for targeted marketing. Advanced models delved into promotion-behavior dynamics. Logistic regression predicted purchasing reactions.

Findings: students prefer discounts, but value shopping experience and after-sales service. Enterprises should enhance promotions, improve product quality, service, and brand image. Innovative, targeted strategies address diverse consumer groups. Social media and campus feedback aid market positioning.

Enterprises must personalize and diversify college market approaches, leveraging advanced data analysis. Future studies can explore regional, professional differences, using big data to uncover trends, offering insights for e-commerce growth.

Keywords: instant frozen food, market requirement, K-means

1. Research Background

1.1 The Rise of E-Commerce, and the Expansion of Online Shopping Scale

In recent years, online shopping, as an important form of digital economy, has been expanding the scale of online shopping, playing a positive role in boosting the growth of consumption. The Statistical Report on Internet Development in China shows that the scale of online shopping users has shown a continuous growth trend in recent years.

1.2 Online Retail Growth, the Market Potential Is Infinite

The digital economy is booming, and the national online retail sales are also growing year by year, becoming an important force driving the expansion of consumption. As the main force of consumption, college students are one of the important online shopping consumers, and their dependence on online shopping is also increasing.

1.3 Various Ways of Promotion, to Seek the Best Solution

In recent years, the willingness and scale of college students to participate in promotional activities have increased, so that the consumer market of college students' online shopping has expanded. Major e-commerce platforms have obtained considerable economic benefits and detected business opportunities, so as to constantly innovate the content and form of promotional activities. At this point, what kind of sales promotion activities are the most attractive to college students is particularly important.

Each e-commerce platform needs to make marketing plans according to college students' online shopping habits, consumer psychology and their popularity for various promotional activities. Therefore, it is necessary to put forward specific suggestions to find the types of promotional activities applicable to the Lotus Shopping platform.

2. Purpose of Research

In response to the party's 20 about to speed up the development of digital economy, speed up the construction of trade power decision deployment, this paper to the 123 line college students as the research object, starting from the actual market research, using the combination of probability sampling and probability sampling of consumer status analysis, cause analysis, consumer behavior analysis, marketing strategy analysis of several dimensions, and dig out college students more inclined to online shopping promotion type, in-depth analysis of college students to participate in various promotional activities, and for the actual business of lotus purchase platform put forward relevant countermeasures and Suggestions.

3. Domestic Relevant Literature Research

3.1 The Study of the Promotion Strategies

Yin Chen (2013) classified the online promotion methods, classifying special promotion, discount promotion, coupon, quantity discount, freight discount and flash sale as price promotion, and gifts and lottery promotion as non-price promotion. Han Rui (2005) in the study of consumer behavior intention, choose 20% of the promotion is discount promotion to attract consumers, found 8 discount preferential attractive to consumers in a higher level of promotion, and Miao Shuyun (2013) that join the promotion within 10% (fold) for consumers to buy, many consumers will choose to give up. Li Hao et al. (2022) believe that promotion is the core factor affecting market demand. As one of the global classic 4P marketing theories, sales promotion plays an important role in increasing the sales volume of enterprises. Whether it is e-commerce platform promotion, or online retailer promotion, we should accurately grasp the promotion intensity. Li Bilin (2021) believes that online and offline promotion should be coordinated, and appropriate methods and content should be adopted to coordinate online and offline promotion activities according to different user needs.

3.2 Research on the Consumption Behavior of College Students

Wang Yao et al. (2023) studied the consumption concept of college students in the new era and believed that it was characterized by strong consumption initiative, a relatively high proportion of online consumption, and diversified and changeable consumption direction. Zhao Xuchang (2020) believes that if enterprises want to attract the attention of college students and stimulate their consumption, they need to start from the consumer psychology of college students and show their products and culture in a way that is more acceptable to them. With the help of a variety of marketing activities, such as experiential marketing, cultural marketing and other promotional activities, to form a good consumption effect. Wei Wennuan (2024) proposed that enterprises should establish a unified commodity search platform and commodity expression methods suitable for college students according to the network marketing methods that college students like.

Through the collation and research of relevant literature and official data, we have a certain understanding of the online shopping behavior and various promotion methods of contemporary college students and have determined the research direction and the basic framework of the article.

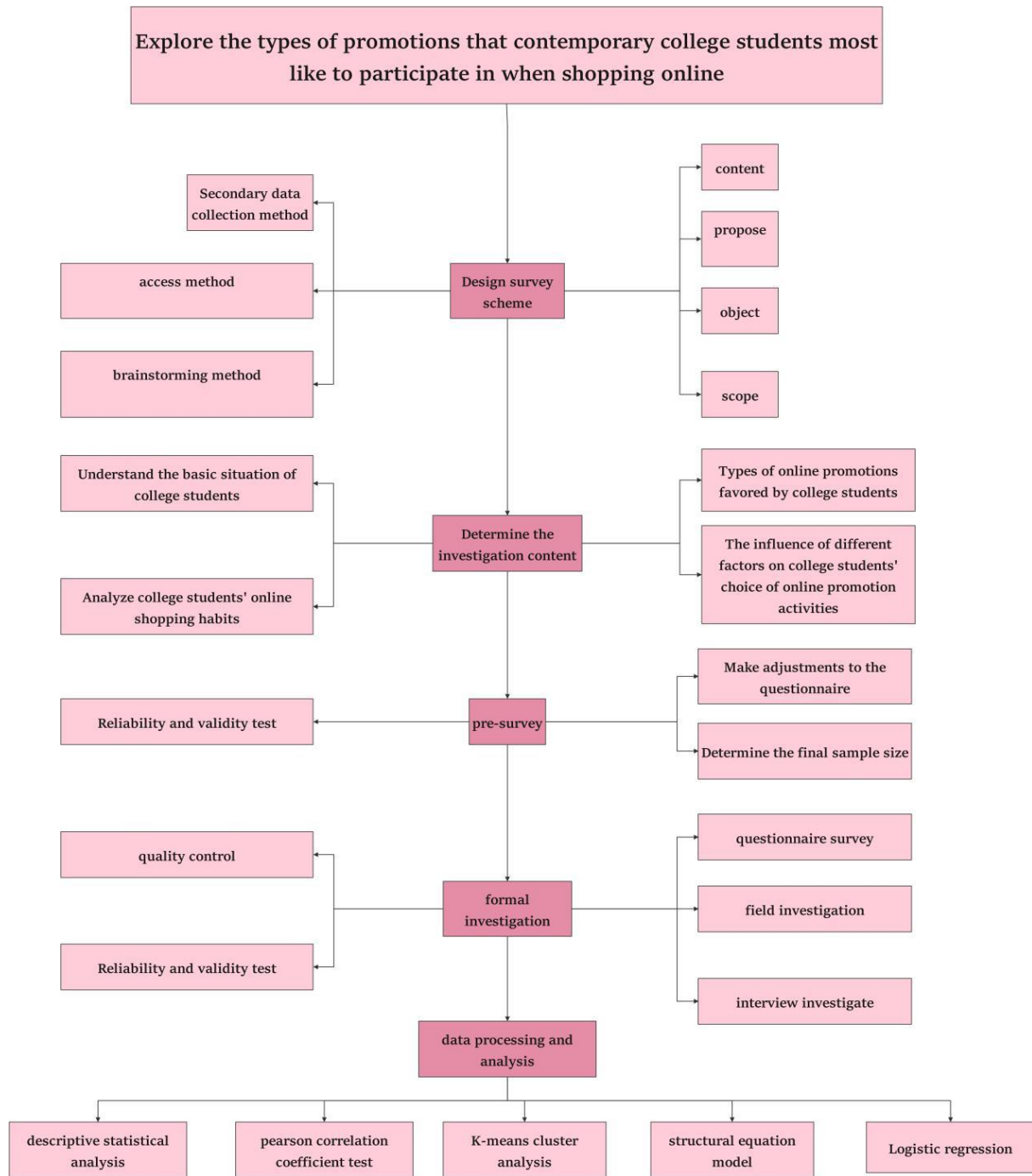**4. Survey Scheme Design**   *4.1 Overall Design Ideas*

Figure 1. Design idea framework

First, by studying the relevant documents of enterprises, we studied the relevant literature, and conducted a comprehensive investigation and analyzed the online shopping psychology and behavior of contemporary college students. Then, we investigated the specific types of online questionnaires and offline field interviews. Later, statistical related analysis methods are used to describe and analyze the market information of the promotional activities that college students like to participate in online shopping. Finally, the purpose of this survey was achieved, and on this basis, to create featured promotion activities for Lotus Shopping platform, select appropriate online promotion activities and put forward relevant promotion strategies. The overall thinking framework is shown in Figure 1.

4.2 Survey Content

Survey mainly around the country each 123 line city college students of online shopping consumption habits, consumer psychology, favorite online promotion type, and so on and so forth, aims to find college students from the subjective choice on the type of online shopping promotion, for lotus purchase platform analyzes the advantages and disadvantages of promotion, according to the actual personalized demand of college students of the promotion form, promotion, promotion rhythm put forward reasonable opinions and suggestions, so as to find suitable for lotus purchase platform promotion type and improve the level of its online shopping promotion.

4.3 Sampling Method

4.3.1 Multi-Stage Sampling Method

The sampling process is divided into multiple phases, with each one using different sampling methods. The implementation process is as follows: First extract the unit with larger range from the whole, called the first level sampling unit, then extract the secondary unit with smaller range from each primary unit, and so on, the unit with smaller range is selected as the investigation object.

4.3.2 PPS Sampling

The unequal probability PPS sampling was conducted in 34 provincial administrative regions, and the sample frequency of each administrative region was unequal, which was proportional to the number of college students included in the administrative region. The more the population of college students included in the administrative region, the greater the probability of the administrative region being drawn. Each college student number in line with the differentiation of prefecture level is implemented by code method. If the random number generated belongs to the number of codes owned by a region, the administrative region constitutes the first level sampling unit.

4.3.3 Stratified Sampling

Stratified sampling refers to the method in which the population is divided into disjoint layers, and then a certain number of individuals are independently drawn from each layer according to a certain proportion, and the individuals from each layer are taken together as samples. The second unit is drawn from the first level sampling unit, that is, two prefecture-level

cities and 4 municipalities from each selected provincial administrative region.

4.3.4 Simple Random Sampling

Each sample is drawn from the sampling box by extraction, and each individual is drawn at each time. For each second-level sampling unit of the sample, we obtained the data collected through the Internet and obtained the directory of all universities in each city. Using simple random sampling, 5 universities in the 6 cities were selected to form the third-level sampling unit.

4.4 Determination of the Sample Size

Table 1. Statistics of college students in the six universities

School	College students
The Central University of Finance and Economics	19573
Shanghai University of Science and Technology	5488
Guangzhou University	30160
Southwestern University of Finance and Economics	22361
Harbin University of Commerce	25229
Shandong University of Technology	34000

The total number of college students in the six universities is:

$\Sigma N\_j = N1 + N2 + N3 + N4 + N5 + N6$

$\Sigma N\_j = 19573 + 5488 + 30160 + 22361 + 25229 + 34000 = 136811$

Number of questionnaires: This survey mainly adopts stratified sampling, the recovery ratio of pre-survey is r = 0.89, the ratio of male and female numbers in the 200 pre-survey questionnaires is roughly 42:58, the total N ratio of each grade is 136,811 people, and the confidence estimate of 95% is required, so the following formula can be used:

$$n_0 = \frac{\mu^2 p(1-p)}{d^2}$$

$$n_1 = n_0 \times \frac{N}{N + n_0} \times \frac{deff}{r}$$

$$n_2 = \frac{n_1}{r}$$

Where, = 1.96, P = 0.58, d= 0.05, and deff = 1.84. Computing can be μ = 366, n_0 = 754 and n_1 = 847, so at least 847 questionnaires need to be collected for analysis and research. Considering that the problems prone to misfiling and missing filling in network survey, 900 questionnaires were finally issued. In the next six cities, according to the resident population of each university, the number of questionnaires that should be issued by each university was calculated, as shown in Table 2.

Table 2. Number of questionnaires issued by the six schools

School	Number of questionnaires (copies)
The Central University of Finance and Economics	135
Shanghai University of Science and Technology	36
Guangzhou University	198
Southwestern University of Finance and Economics	135
Harbin University of Commerce	171
Shandong University of Technology	225

Note: Total number of questionnaires, T = 900.

According to the proportion of college students in the five universities, how many questionnaires were distributed in Central University of Finance and Economics, Shanghai University of Science and Technology, Guangzhou University, Southwestern University of Finance and Economics, Harbin University of Commerce and Shandong University of Technology.

5. Quality Control and Reliability and Validity Testing

5.1 Quality Control During the Survey Process

5.1.1 Quality Control of the Questionnaire Design

Due to the limitations of the theoretical level and practical experience of the questionnaire designers, and in order to avoid the disadvantages in the network survey, we released the pre-survey before issuing the formal questionnaire.

Modified based on the questions presented in the pre-survey and finally issued the formal questionnaire.

5.1.2 Quality Control of the Questionnaire Implementation

Considering the time, cost and other feasibility, the questionnaire will be distributed and collected online. In the investigation stage, we pay attention to the handling of execution deviation, member fraud and other cases. The human error of this process is controlled in advance.

5.1.3 Quality Control During the Data Processing Stage

At this stage, the team members identify the data quality of the questionnaire according to the external characteristics and internal characteristics of the questionnaire, and we will select the low-quality questionnaire or the invalid questionnaire according to the questionnaire filling time and the logical questions between the answers. During the data cleaning, the team members will immediately check and correct the problems to ensure the improvement of the final data.

5.2 Questionnaire Validity Test and Validity Test

5.2.1 Questionnaire Reliability Test

First, the Cronbach's α coefficient reliability coefficient method was used to test the reliability of the formal questionnaire after recovery (Table 3), and the results are shown in Table 3.

Table 3. Cronbach's α reliability coefficient test

The Cronbach's α coefficient	Normalized Cronbach's α coefficient	Number of terms	Sample number
0.893	0.922	20	847

5.2.2 Questionnaire Validity Test

According to Table 2, the Cronbach's α coefficient value of this questionnaire is 0.893> 0.7, which has passed the test and has good reliability.

Then we selected the corresponding scale indicators from the questionnaire, and then tested the validity of KMO and Bartlett through the SPSSPRO in the questionnaire network,

resulting in Table 4.

Table 4. KMO tests and tests of Bartlett

KMO price		0.917
Bartlett Sphericity test	Approximate chi square	2403.334
	df	136
	P	0.000***

Note: ***, ** and * represent the significance levels of 1%, 5% and 10%, respectively.

The results of KMO test in Table 4 show that the value of KMO was 0.917. Meanwhile, the results of Bartlett star test showed that the significance P value was 0.000 ***, which showed significant correlation between all variables and the factor molecule is valid, indicating that the questionnaire has good validity, and the results are valid.

6. Classification of Consumer Groups Based on K-Means Cluster Analysis

Principal component analysis and K-means cluster analysis are used to extract the subjects that affect consumer consumption.

The factor and its classification to determine the division of consumers and the characteristics of groups.

Table 5. KMO tests and tests of Bartlett

KMO test and Bartlett		
KMO price		0.917
Bartlett Sphericity test	Approximate chi square	2403.334
	df	136
	P	0.000

Note: represent the significance levels of 1%, 5% and 10% respectively.

According to Table 5, the KMO value was 0.917 and the p-value of the Bartlett sphere test is significant, indicating the questionnaire data can be the main component analysis.

According to the survey data, a total of 847 samples are used, and the survey consumers are divided into the following three categories:
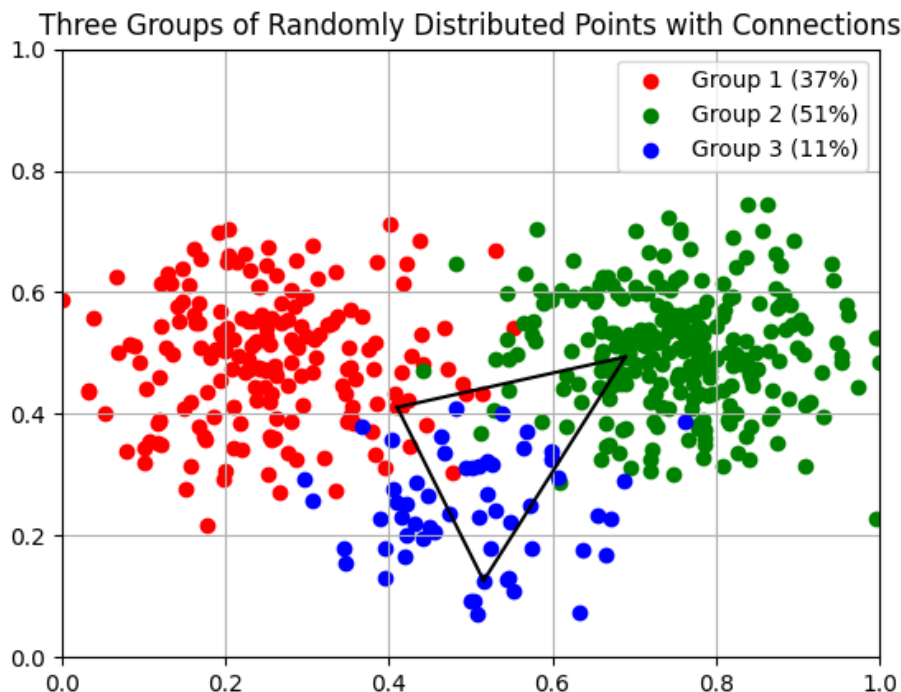

Figure 2. The scatter plot

The first type of college students: green, high consumption, high activity college students: This kind of, college students usually in first-tier cities, rich shopping experience, sensitive to preferential rates, high living costs, and pay attention to promotion interaction. They may be

more inclined to buy high-end brands and high-quality products

The second type of college students: blue medium consumption, medium activity college students: this type of college students may be in the second and third-tier cities, general shopping experience, a certain sensitivity to the discount range, moderate living expenses, and sometimes pay attention to promotion interaction. They may be more inclined to buy more cost-effective products.

The third type of college students: red, low consumption, low activity college students: In this type, college students may be mainly in third-tier cities, less shopping experience, not sensitive to the preferential range, low living expenses, and do not pay much attention to promotion interaction. They may be more likely to buy cheaper products.

From the classification results, different categories of college students, city and gender pay different attention to promotion activities, and the pace and intensity of monthly promotion are different.

7. Conclusions and Suggestions

In this chapter, through the design of the survey scheme, the data of college students participating in promotional activities, in-depth analysis of the lotus shopping platform and its sales situation, and discuss the competitive environment of the platform for market summary. Then, through the portrait of college students, it reveals the characteristics of their consumption behavior, and explores the relationship between promotional activities and college students' shopping preferences by using statistical methods. Finally, the study discusses the influencing factors of purchasing intention, purchasing frequency and repurchasing situation. Through analysis, it is found that the purchasing intention of college students is influenced by many factors, including the attraction of promotional activities and consumers' choice of products to buy promotional products. The following conclusions and recommendations are drawn:

7.1 Analysis and Conclusion

College students' promotional participation reveals nuanced preferences beyond price sensitivity. They seek value-added experiences, prioritizing promotions offering points, privileges, or experiences aligned with academic

growth. Their time-conscious nature favors quick and convenient activities, showcasing a preference for efficiency.

Social dynamics play a pivotal role, as peer influence shapes their choices. Successful promotions tailored to college aesthetics and interests can spark brand loyalty and viral word-of-mouth.

Moreover, values are evolving. College students increasingly align with brands advocating environmental responsibility, social justice, and fair trade. These values resonate deeply, influencing their promotional preferences.

In summary, enterprises must innovate promotions to cater to college students' diverse needs, blending efficiency, value-added experiences, social influence, and shared values for effective marketing strategies.

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