Research on Chinese Consumers' Purchasing Intention of Medium and High-end Ice Cream under the Background of Consumption Upgrading

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Abstract

Under the background of consumption upgrading, the price of products in Chinese ice cream market has risen rapidly, and consumers have expressed that "they are all IQ taxes" and "Ice Cream Assassinating". However, the rising sales data show that these expensive medium and high-end ice cream is often more favored by consumers. What factors affect consumers' willingness to buy medium and high-end ice cream? With Python to carry out data mining,based on a variety of qualitative analysis methods,this paper systematically and comprehensively explore the factors that may affect Chinese consumers' willingness to buy medium and high-end ice cream, and puts forward management suggestions, so as to provide reference and guidance of marketing for medium and high-end ice cream brands.

Keywords

The Market of Medium and High-end Ice Cream; Purchase Intention; Text Mining; Network Matrix Analysis; Emotional Analysis.

1. Introduction

Under the background of consumption upgrading, ice cream is constantly changing from a private consumption to a public consumption. In recent years,more and more high-end ice cream brands attracts many consumers to buy their products.

This summer, the topic of " Ice Cream Assassinating "went off, may consumers said that "It's all IQ tax". However,instead of being resisted by all consumers, the actual situation is just the opposite. Although these ice cream brands represented by Zhong Xuegao and Zhongjie 1946 sell for 10-20 yuan each, and the price of some products is even as high as 66 yuan, the rising sales data shows that consumers are "duplicity". From January to June 2020, Zhong Xuegao's sales on Taobao and Tianmao platforms totaled 128million, with a total sales of 905000 orders. At the same time, the sales of Zhongjie 1946 exceeded 20 million on the first day of the brand's fifth anniversary celebration in May 2020, breaking the one-day sales record of ice cream. In addition, off-season ice cream is also very popular. In November 11th, 2020, the sales of ice cream increased by 123% year-on-year.

Why are consumers so "hypocritical"? What factors deed affect consumers' willingness to buy medium and high-end ice cream? With Python to carry out data mining,based on a variety of qualitative analysis methods,this paper systematically and comprehensively explore the factors that may affect Chinese consumers' willingness to buy medium and high-end ice cream, and puts forward management suggestions, so as to provide reference and guidance of marketing for medium and high-end ice cream brands.

2. Literature Review

What factors deed affect consumers' willingness to buy medium and high-end ice cream,on which many scholars have conducted in-depth research.Based on the interactive concept,Jiawen Han summarized that optimizing the packaging design can bring a better experience to consumers[1]. Lei Liu and Liquan Yao believe that the packaging symbols, shelf life, taste and other aspects of ice cream can highlight its quality and advantages. At the same time, a perfect sales channel coverage has greatly reduced the threshold of consumers' experience of products, and the combination of online and offline has increased consumers' purchase opportunities[2].Yizhen Huang explored the brand name, product shape, product packaging, product pricing and other dimensions of ice cream[3].In addition,Lijuan Dai believes that high quality and good taste are another selling point of medium and high-end ice cream. Velvet cocoa, Ghana black gold, hand-boiled jasmine, wine-brewed rose and other flavors cannot be made by low-cost ice cream[4].Hui Ru found that the efficient logistics and after-sales service of high-end ice cream have improved its brand value, and the nutritional health of raw materials such as low sugar or sugar free raw materials,meet current trend of sugar resistance[5].

3. Text Analysis

3.1. Text Mining

Using Python to get the data of the comments of consumers about domestic and foreign medium and high-end ice cream brands on Tianmao platform (the products with the highest sales volume in the official flagship store), this paper select Zhong Xuegao and Menglong, two representative brands, and grab a total of 15200 comments in chronological order. In the process of data collection, there are a large number of original data that need to be eliminated.For example,meaningless comments like figure1 and repeat comments like figure2 should be deleted.
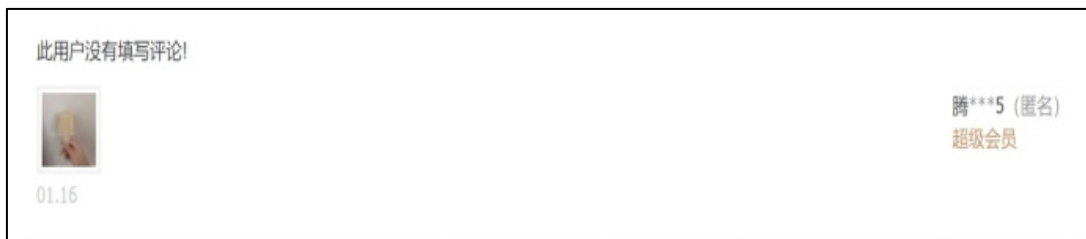

Figure 1. The Example of Meaningless Comments

Figure 2. The Example of Repeat Comments

After data processing, 12103 valid comments were obtained, and the effective rate was 79.6%. In addition to preliminarily and intuitively understand the factors that consumers pay attention to domestic and foreign medium and high-end ice cream brands,this paper show the mining results in a word cloud diagram by using the website Jisouke (http://nlp.gooseeker.com)to carry out words segmentation and selection. Import the filtered comments of each brand, filter out English, numbers, words and websites, remove adverbs and pronouns, and retain nouns and adjectives. Synonyms such as "delicious" and "delicious" were manually merged, and words lacking reference value such as "double 11" and "thank you" were deleted. Finally, the corresponding is generated according to the word frequency, and the results are shown in figure3.

Figure 3. The Words Cloud of Comments

The higher the word frequency, the larger the word size. It can be seen from the figure that when consumers buy medium and high-end ice cream, they always pay attention to the packaging, taste and price of ice cream. In addition, service, logistic and other factors have also attracted the attention of consumers.

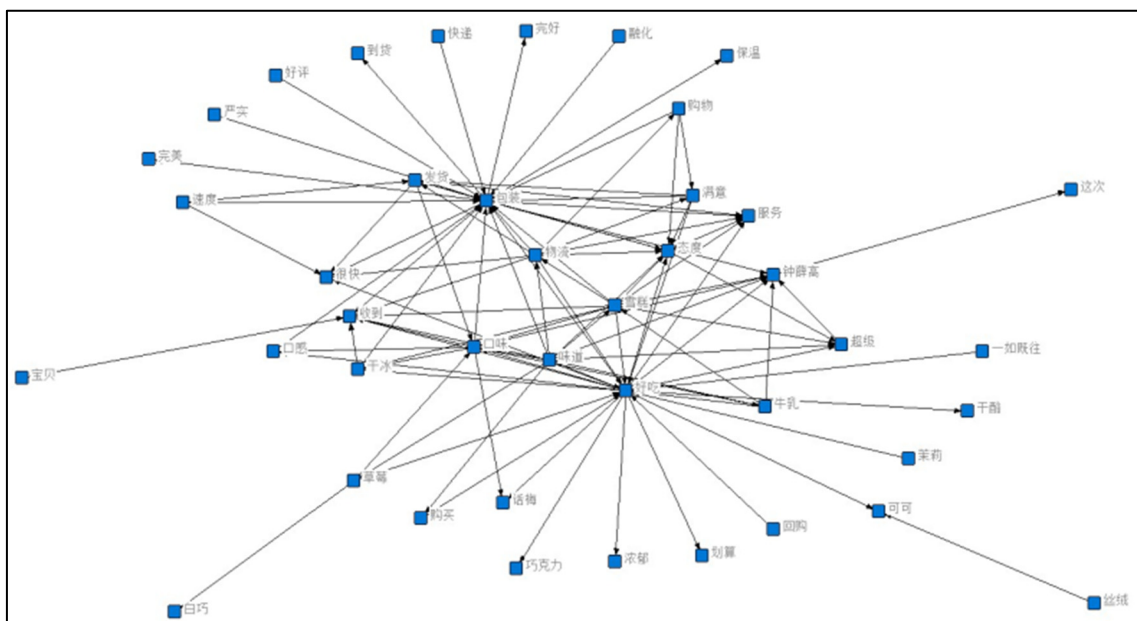## 3.2. Network Matrix Analysis

Figure 4. The Semantic Network of Zhong Xuegao

Semantic network analysis is an analysis method that describes complex concepts and their relationships through the representation of nodes and edges. This paper conceptualize the complex text data, segment the sample data in the text mining software, and get the semantic network diagram. One or more subgroups are formed around each important central node, and the closer the distance from the central node, the closer the connection between the words in the central node and the words around.Choosing Zhong Xuegao, a representative domestic brand of medium and high-end ice cream, and Menglong, a representative foreign well-known brand, as the analysis objects, this paper constructs the semantic network diagram with professional software "Rost CM6".

As shown in Figure 4, the social semantic network matrix of the online text of "Zhong Xuegao" mainly extends outward with the words "packaging, delicious and attitude" as the ethnic center. Among them, "packaging" mainly extends to express delivery, arrival, tightness, melting and other words, which may indicate that consumers have expectations and concerns about packaging and logistics when purchasing Zhong Xuegao products online. The word "attitude" is mainly connected with "service" and "satisfaction", which shows that consumers have expectations for Zhong Xuegao's online sellers in terms of service attitude, and most of these expectations can be better met. The word "delicious" is mainly connected with taste extends to words representing specific taste or raw materials such as "milk, strawberry and plum", which indicates that consumers pay attention to Zhong Xuegao's materials, taste and other attributes, showing certain taste preference.

Comparing the semantic networks of Zhong Xuegao and Menglong brands, we can find that in the semantic analysis network diagram, many categories are continuously extended with taste, packaging, logistics, service attitude as the center of the group, indicating that these contents are the attributes of high consumer attention.And the "fast, cost-effective, as always perfect" extended by various specific subdivisions connected with it are the specific evaluation of the brand by consumers. On the whole, there is not much difference between the two brands, which shows that in the medium and high-end ice cream market, there is no essential gap between the domestic brands represented by Zhong Xuegao and the foreign brands represented by Menglong,and there is even a crisis of homogenization. It may be necessary to strengthen the continuous improvement of product taste, packaging and services in order to maintain its market position and form differentiated competitive advantages.
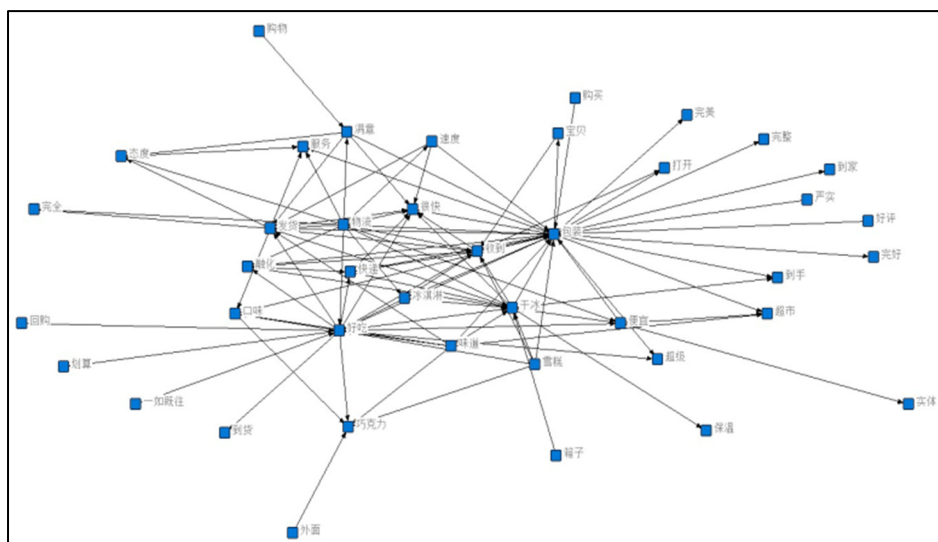

Figure 5. The Semantic Network of Menglong

3.3. Emotional Analysis

Emotion analysis mainly analyzes the emotional content expressed in comments to help researchers get the emotions of commentators. This paper loads the data into the Rost CM6 analysis software and extracts the detailed results of emotion analysis, emotion segmentation statistical results, neutral emotion result file and statistical results of emotion distribution. The software divides all comments into three emotional categories:positive emotion,intermediate emotion,negative emotion. Taking Zhongxuegao as an example,the analysis results are as follows:

Table 1. The result of Emotional Analysis

Emotional Category	Number of Comments	Percentage
Positive	1463	66.02%
Intermediate	510	23.01%
Negative	243	10.97%

The statistical result of positive emotions are as follows:

Table 2. The result of positive emotions

Emotional Intensity	Number of Comments	Percentage
Low(0—10)	640	28.8%
Medium(10—20)	373	16.83%
High(above 20)	450	20.31%

The statistical result of negative emotions are as follows:

Table 3. The result of positive emotions

Emotional Intensity	Number of Comments	Percentage
Low(0—10)	166	7.49%
Medium(10—20)	355	2.48%
High(above 20)	5	0.23%

AS these tables shows,among 2216 comments, 1463 were positive emotions, accounting for 66.02%,and the emotional intensity was evenly distributed. There are 243 negative emotions, accounting for 10.97% of the total, and most of them are negative emotions of general intensity, with moderate and high negative emotions accounting for less than 3% of the total. This shows that in online shopping, consumers have a relatively positive emotional tendency towards Zhongxuegao.

4. Conclusion&Suggestion

Through analysis above, this paper concludes that consumers' willingness to buy medium and high-end ice cream products is mainly affected by many factors,in which taste and packaging play a great role.In contrast, the price is not the most important though it is also a factor. To a certain extent, medium and high-end ice cream products meet the value needs of consumers through other characteristics such as better taste, novel packaging. Therefore, even the price is relatively expensive, consumers still show a strong willingness to buy.Based on the conclusion, there are some marketing suggestions for marketers.

First,marketers should enrich the tastes of ice cream and provide unique experience. At present, consumers are no longer satisfied with the ordinary taste, they began to try to buy some niche flavors.In addition to sweet ice cream, other flavors of ice cream entered the market such as Salty ice cream represented by sea salt flavor, salted egg yolk flavor, rum flavor, pistachio milk flavor and so on. Peculiar taste can not only trigger consumers' curiosity, but also an important factor to distinguish low-cost ice cream, because generally low-cost ice cream lacks the ability to develop new products and has only a fixed number of flavors. Therefore, while stabilizing the basic tastes, the medium and high-end ice cream brands can can constantly launch products with various flavors based on market research to meet the demand of consumers and win the favor.

Second, brands should pay attention to the packaging of ice cream. Packaging is the first factor to attract consumers. Brands should innovate in packaging design and pay attention to the exquisiteness of packaging design. Exquisite packaging design can promote consumers' purchase.

Third, Enterprises should pay attention to the shape of ice cream, that is, beauty. With the improvement of economic level, consumer's demand for ice cream is not only satisfied with the function of eating, but also endowed with social attributes in ice cream. While using ice cream to relieve summer heat, consumers also hope that the appearance of ice cream will be more exquisite, which can make them more excellent when taking and sharing photos. Therefore, in the era of "beauty is justice",medium and high-end ice cream brands should strengthen their investment in the beauty of ice cream, impress consumers with "high-beauty ice cream" to stimulate their purchase desire.

Last but not least, the market strategy of word of mouth.Nowadays,with the development of "fans economy", "those who win fans win the world", which can make help sales of goods. Medium and high-end ice cream brands can choose stars that are consistent with their brand positioning to endorse, and use the star effect to "detonate" the brand.

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