# Analysis on Brand Preference of Chinese Traditional Patent Medicine and Its Influencing Factors

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*Abstract*—In order to understand whether consumers have preference for Chinese traditional patent medicine brands and what factors affect the formation of brand preference, the authors conducted a questionnaire survey and used SPSS and Excel to analyze the results. The results show that most consumers have brand preference for Chinese traditional patent medicine brands, and there exists a gradual process from brand contact, brand cognition, and brand image, to brand preference. In this process, the above-mentioned links influence each other, thus promoting the formation of consumers' preference for Chinese traditional patent medicine brands.

*Keywords: brand preference, influencing factors, Chinese traditional patent medicine*

## I. INTRODUCTION

Traditional Chinese medicine is the crystallization of the wisdom of China's five-thousand-year civilization and the regular choice of Chinese people for medical treatment. In recent years, against the combined influence of the increasing health needs of residents, the aging population structure, numerous chronic diseases and other factors, the Chinese traditional patent medicine market has shown a sustained overall growth trend. [1] With the increasingly fierce market competition in Chinese traditional patent medicine industry, only based on the in-depth investigation of consumers' brand preference can traditional Chinese medicine enterprises develop reasonable marketing strategies, so as to develop marketable drugs and improve their market competitiveness.

In this study, consumers of different ages, different identities and different regions were investigated through questionnaires. Consumers' cognition, contact, image, preference of certain Chinese traditional patent medicine brand and its competitive brand can be used to judge whether consumers have brand preference for Chinese traditional patent medicine. In doing so, influencing factors of brand preference are also analyzed. Based on the data analysis, this paper puts forward marketing strategy suggestions for the operation of Chinese traditional patent medicine enterprises.

## II. LITERATURE RESEARCH ON BRAND PREFERENCE

In the modern market dominated by consumers, brand serves as a vital factor for consumers to choose drugs, and the consumers' brand preference formed thereby is manifested as emotional preference, cognitive preference, and behavioral preference. In the past studies, some scholars believe that the formation of brand preference is a process, but there is still no consensus on the steps involved. Ma Hongfei (2008) takes that consumers should experience "brand cognition, emotional preference, behavioral preference, and brand preference to cultivate brand preference. [2] Cai Pei (2008) held that the formation of brand preference should go through the process of "brand cognition, brand attitude, and brand preference". [3] On the whole, the formation of brand preference must go through several important stages, such as brand cognition, brand contact, brand image and brand preference, which may vary in order according to specific circumstances.

Zhu Ling, Wang Sheng, and Lu Xiongwen (2003) proposed that Chinese consumers' preferences for Chinese and foreign brands and actual purchase behaviors will vary depending on the type of drug. Such factors as age, personal income, education background and location have a significant impact on the formation of brand preferences [4]. Zhao Zhanbo and He Zhiyi (2009) explored the key influencing factors of consumers' brand preferences based on data collected by Management & Case Center Peking University in 32 large and medium cities nationwide from July to October 2004. Studies have found that age, education background, and monthly household income are the main influencing factors [5].

To sum up, most of the current studies on brand preference are qualitative studies, while there is still a lack of empirical studies on brand preference of Chinese traditional patent medicine. Therefore, this paper discusses this issue.

## III. RESEARCH DESIGN

### A. Selection of survey objects and sample distribution

The subjects of this public study are consumers over the age of 18 who can afford Chinese traditional patent medicine and have purchased such medicine by themselves. The

participants are mainly distributed in Beijing and Guangzhou, and some other cities are also involved.

### B. Implementation of survey

Questionnaire survey method was adopted. Microsoft Excel and SPSS17.0 for Windows software were used to conduct descriptive statistics and difference examination on the data. Correlation analysis and regression analysis will be used for several major factors of the scale.

### C. Research hypothesis

The following hypotheses are proposed based on literature analysis.

H1: Consumers' personal conditions are related to the formation of brand preference of Chinese traditional patent medicine.

H2: There is a positive correlation between brand exposure and brand recognition of Chinese traditional patent medicine.

H3: There is a positive correlation between brand recognition and brand preference of Chinese traditional patent medicine.

H4: There is a positive correlation between brand image and brand preference of Chinese traditional patent medicine.

H5: There is a negative correlation between competing Chinese traditional patent medicine brands and brand preference.

## IV. RESEARCH RESULTS

### A. Descriptive analysis

*1) Overview of basic information:* The gender gap in the sample has narrowed, with female respondents accounting for 36.2% and male respondents 63.8%. Participants were mainly aged between 18 and 35, with more urban residents (66.3%). The proportion of people with middle income is relatively large, and the majority of respondents have higher education (bachelor's degree or master's degree or above) (71.4%). In terms of occupation, they are mainly students, employees of enterprises and public institutions. In general,

the distribution of questionnaires is reasonable, which can basically reflect the opinions and attitudes of different groups of people with different characteristics, and has good representativeness.

*2) Knowledge of Chinese traditional patent medicine:* The scores given by the respondents according to their understanding of drugs were analyzed, among which 1 stands for complete ignorance, 2 stands for knowing well, and 3 stands for familiar well. After statistical analysis, it was found that the average value was only 1.92, indicating that most of the respondents did not know about drugs. So overall, consumers don't know much about medicines. The first reason for consumers to buy Chinese traditional patent medicine is to treat diseases, accounting for 55.34%. Second, home standby, accounting for 36.21%; The rest are for elders or other purposes. The results show that most consumers mainly buy Chinese traditional patent medicine from drugstores or hospitals, while some consumers also buy it from convenience stores.

*3) Channels affecting consumers to purchase Chinese traditional patent medicine:* According to the survey, consumers are very concerned about the status, reputation, of manufactures, efficacy of the medicine, and recommendation of relatives and friends when purchasing such medicine, while seldom care the packaging, price, taste, user-friendliness, and recommendations from pharmacy promoters.

### B. Analysis of credibility and validity of the scale

In this paper, Cronbach a was employed for credibility analysis, with a<0.35 indicating low credibility, 0.35<a<0.7 indicating medium credibility, and a>0.7 indicating high credibility. All parts of the scale used in this study are greater than 0.7, and even most of them are greater than 0.85, indicating that this scale has high credibility.

Correlation coefficient analysis method was used for validity test. There is a correlation between variables and the absolute value of the correlation coefficient is greater than 0.5, indicating that the relationship between variables is close. The KMO value is greater than 0.8, indicating that the questionnaire has a very high validity.

TABLE I. CORRELATION COEFFICIENT TABLE OF VARIABLES

|  | Brand cognition | Brand contact | Brand image | Brand preference | Competing brands |
|---|---|---|---|---|---|
| Brand cognition | 1 |  |  |  |  |
| Brand contact | 0.693** | 1 |  |  |  |
| Brand image | 0.668** | 0.791** | 1 |  |  |
| Brand preference | 0.592** | 0.702** | 0.828** | 1 |  |
| Competing brands | 0.521** | 0.627** | 0.662** | 0.616** | 1 |

a. Note: **, significantly correlated at the 0.01 level (bilateral).

### C. Analysis of scale variables

*1) Correlation analysis of scale variables*
"Table I" shows that the correlation coefficient r of all variables is greater than 0.5, P<0.01. According to the standard of a=0.05, the correlation coefficient between

variables was statistically significant, that is, there was a positive correlation.

*2) Personal conditions and the formation of brand preference of Chinese traditional patent medicine:* Personal conditions cover many aspects. This paper mainly discusses

the influence of monthly average income and personal education on the formation of brand preference of Chinese traditional patent medicine. The data of monthly average income and individual education background were studied by univariate analysis of variance.

According to the analysis, P=0.011<0.05, according to the standard of a=0.05, it is believed that personal conditions (education background) are correlated with the formation of brand preference of Chinese traditional patent medicine. In addition, P=0.0186<0.05, according to the standard of a=0.05, it is believed that personal conditions (monthly average income) are correlated with the formation of brand preference of Chinese traditional patent medicine.

*3) The relationship between brand contact, brand recognition, brand image, competing brand and brand preference of Chinese traditional patent medicine*

*a) Brand contact and brand recognition of Chinese traditional patent medicine:* Through regression analysis of the data, P=0.000<0.01 was obtained. According to the standard of 0.05, the fitted regression equation was considered to be of statistical significance, indicating that brand contact of Chinese traditional patent medicine was significantly correlated with brand recognition. The absolute value of standardized coefficient is 0.693, indicating that brand contact of Chinese traditional patent medicine has a greater effect on brand recognition. The line chart of brand contact and brand recognition of Chinese traditional patent medicine drawn according to the fitted regression equation shows that brand contact has a positive correlation with brand recognition.

*b) Brand contact and brand image of Chinese traditional patent medicine:* The regression analysis of the data shows that P=0.000<0.01. According to the standard of 0.05, the fitted regression equation is considered to be of statistical significance, indicating that brand contact of Chinese traditional patent medicine has a significant correlation with brand image. The absolute value of the standardized coefficient β is 0.791, indicating that the brand contact of Chinese traditional patent medicine has a greater effect on brand image. The line chart of brand contact and brand recognition drawn according to the fitted regression

equation shows that brand contact has a positive correlation with brand image.

*4) Brand recognition and brand preference of Chinese traditional patent medicine:* In terms of the correlation coefficient between brand cognition and brand preference of Chinese traditional patent medicine, P=0.000<0.01, indicating that brand cognition of Chinese traditional patent medicine has significant correlation with cognitive preference, emotional preference, and behavioral preference. However, the standard coefficient value of the three is around 0.5, indicating that brand recognition of Chinese traditional patent medicine has similar effects on brand preference of the three dimensions, with no significant difference.

In order to further verify and analyze the relationship between brand cognition and brand preference of Chinese traditional patent medicine, a regression analysis is made on brand cognition and brand preference. P=0.000<0.01, indicating that brand recognition of Chinese traditional patent medicine has a significant correlation with brand preference. The standard coefficient, β=0.592, indicates that brand recognition plays a certain role in brand preference.

*5) Brand image and brand preference of Chinese traditional patent medicine:* "Table II" shows the fitting of the model, with the determination coefficient $R^2$ of 0.625, which not only indicates that 62.5% of brand preference of Chinese traditional patent medicine can be explained by the change of brand image, but also proves that the fitting degree of data of this regression equation is relatively good. "Table III" shows the variance analysis results of each step in the regression model fitting process. The regression sum of squares is 7353.483, and the residual sum of squares is 3366.877. It's obvious that the former is much larger than the latter, indicating that the linear model explains most of the total sum of squares and the fitting effect is better. According to the linear model of brand image and brand preference of Chinese traditional patent medicine in "Fig. 1", brand image has a high correlation and closeness with brand preference, and the relationship between the two is positive.

TABLE II.    MODEL SUMMARY

| | Independent variable | R | $R^2$ | Adjustment of R2 | Standard error of estimate | Unstandardized coefficients | | Standardized coefficients | T value | Sig. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | B | Standard error | Trial version | | |
| Brand preference | Brand image | 0.791 | 0.625 | 0.624 | 4.13728 | 1.078 | .037 | .828 | 29.483 | 0.000 |

TABLE III.    ANOVA[B]

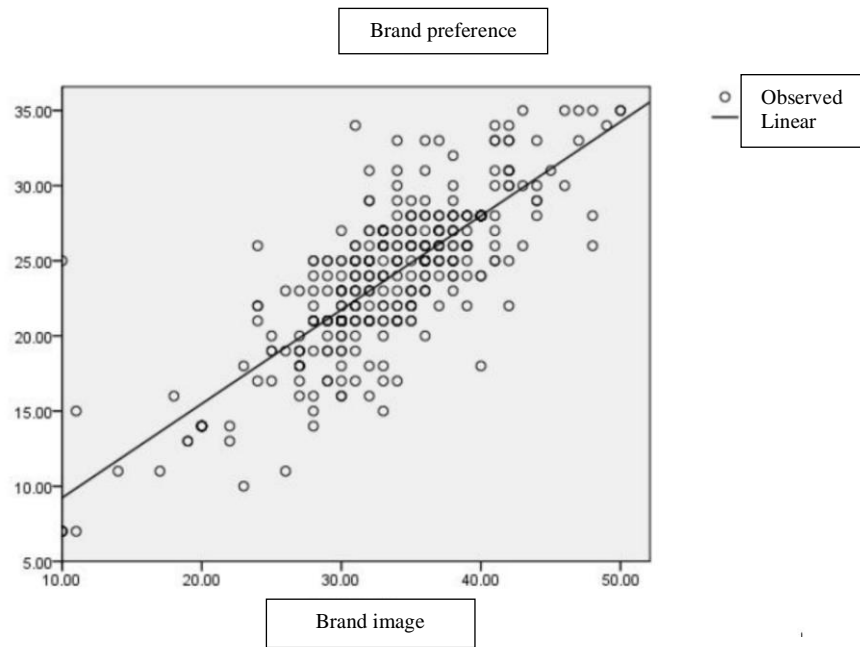| | | Sum of squares | df | Mean square | F value | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 7353.483 | 1 | 7353.483 | 869.258 | 0.000 |
| | Residual | 3366.877 | 398 | 8.459 | | |
| | Total | 10720.360 | 399 | | | |

Fig. 1.   Line chart of brand image and brand preference of Chinese traditional patent medicine.

*6) Competing brand and brand preferences of Chinese traditional patent medicine:* In the Chinese traditional patent medicine market, consumers may be overwhelmed by the variety of drug information, so it is assumed in advance that competing brands have a negative relationship with brand preference. However, data analysis shows that competing brands can promote brand preference. "Table IV" and "Table V" show that P=0.000<0.01, indicating that there is a significant correlation between the brand preference and competing brand of Chinese traditional patent medicine.

TABLE IV.   MODEL SUMMARY

| | Independent variable | R | R$^2$ | Adjustment of R2 | Standard error of estimate | Unstandardized coefficients | | Standardized coefficients | T value | Sig. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | B | Standard error | Trial version | | |
| Brand preference | Competing brands | 0.616 | 0.380 | 0.378 | 4.08733 | 1.119 | 0.082 | 0.567 | 13.700 | 0.000 |

TABLE V.   ANOVA$^B$

| | | Sum of squares | df | Mean square | F value | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 4071.272 | 1 | 4071.272 | 243.698 | 0.000 |
| | Residual | 6649.088 | 398 | 16.706 | | |
| | Total | 10720.360 | 399 | | | |

TABLE VI.   SUMMARY OF HYPOTHESIS RESULTS

| Hypothesis | Hypothetical content | Verification result |
|---|---|---|
| H1 | Consumers' personal conditions are related to the formation of brand preference of chinese traditional patent medicine. | Support |
| H2 | There is a positive correlation between brand contact and brand recognition of chinese traditional patent medicine. | Support |
| H3 | There is a positive correlation between brand recognition and brand preference of chinese traditional patent medicine. | Support |
| H4 | There is a positive correlation between brand image and brand preference of chinese traditional patent medicine. | Support |
| H5 | There is a negative correlation between competing chinese traditional patent medicine brands and brand preference. | Deny |

## V. CONCLUSION

The hypothesis was verified by correlation and regression analysis, and the verification results are shown in "Table VI".

The results of the hypothesis analysis are concluded as follows:

H1 studies the influence of consumers' personal conditions on the formation of brand preference of Chinese traditional patent medicine. This paper mainly probes into the effect of education background and average monthly income covered in consumers' personal conditions on the formation of brand preference. Specifically, consumers' personal conditions have a direct influence on the formation of brand preference of Chinese traditional patent medicine. Because education background and average monthly income directly affect consumers' living environment, which further directly sways consumers' purchasing behavior.

The research on H2 suggests that a person's memory is limited and requires constant drug exposure to sustain deep memories. Consumers can get access to Chinese traditional patent medicine through different channels and scenarios. The more scenes consumers have in contact with a specific Chinese traditional patent medicine brand, and the higher the frequency, the deeper their recognition of that brand. In addition, the more scenes consumers have in contact with a specific Chinese traditional patent medicine brand, and the higher the frequency, the richer the brand image (or impression) of the brand.

The research on H3 shows that consumers develop cognition through constant exposure to Chinese traditional patent medicine, and then gradually develop emotional preference and finally behavioral preference. Cognitive preference, emotional preference and behavioral preference constitute the main judgment dimensions of brand preference, while consumers' brand cognition of Chinese traditional patent medicine has a direct or indirect impact on the three.

H4 reveals that the brand image of Chinese traditional patent medicine has both positive and negative aspects, which is determined by company image, service attitude, and drug quality, etc. The brand image of Chinese traditional patent medicine influences consumers' emotions and purchase behavior towards the brand. The more positive the brand image of the drug is, the higher the trust level of consumers will be, thus generating more positive emotions.

Research on H5 indicates that competing Chinese traditional patent medicine brands can promote consumers' brand preference through analysis and verification. The reason why the hypothesis is not valid is that it only takes into account the confusion of consumers' cognition caused by too much drug information, but ignores the regulating effect of competing Chinese traditional patent medicine brands on brand preference. When consumers are faced with similar drug brands, their memory of the original drug brand will be deepened, thus reinforcing brand preference.

Through the research on brand preference of Chinese traditional patent medicine, the following marketing suggestions are proposed for enterprises concerned.

*1) Highlighting and enhancing the impact of advertising:* Brand exposure can make consumers have a deeper impression of the brand intentionally or unintentionally. Any Chinese traditional patent medicine enterprise that hopes to win the brand preference of consumers should first make them contact with the medicine and recognize the medicine, which requires attention to advertising.

*2) Valuing and maintaining the brand image:* Brand image, an important factor influencing brand preference, can directly or indirectly sway the formation of brand preference. Enterprises should value the maintenance and dissemination of brand image in the process of communication, and establish a positive brand image in the minds of consumers.

*3) Focusing on word-of-mouth marketing:* Considering that Chinese traditional patent medicine serves as special food closely related to consumers' life and health, consumers will be very cautious in purchasing such medicines and rely more on word of mouth. Therefore, while promoting the quality of medicines, pharmaceutical services should be taken as attached value. The combination of excellent drug quality and good service is more likely to form a good reputation and make consumers willing to recommend it to those around them.

*4) Emphasizing experience marketing:* Experience marketing can enhance the interaction between consumers and enterprises.

Experience marketing of Chinese traditional patent medicine is more than the direct distribution of drugs to customers for trial. Changes in the forms and levels of interaction between consumers and enterprises in promotional activities can also be considered to facilitate the formation of brand preference through interactive experiences.

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