

Research on the Formation Factors of Hospital Brand Attachment Based on a Grade-A Tertiary Hospital in Guangzhou

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Abstract—Through questionnaire surveys, data analysis was performed on samples to study and explore the relationship between hospital brand experience, hospital brand identity, and hospital brand attachment, so as to make corresponding recommendations based on the results of the study. The results show that hospital brand experience has a positive impact on hospital brand identity; hospital brand experience and hospital brand identity have a positive impact on hospital brand attachment; and hospital brand identity plays a part of the mediating role between hospital brand experience and hospital brand attachment.

Keywords: *hospital brand experience, hospital brand identity, hospital brand attachment*

I. INTRODUCTION

Hospital brand has become an indispensable advantage of hospital in the competition of medical service market. Based on the existing research, this study studies the relationship among hospital brand experience, hospital brand identity and hospital brand attachment, so as to provide suggestions for building a good hospital brand according to the conclusions drawn. This paper has certain innovation and theoretical value.

II. RELATED RESEARCH

A. *Concept and dimension of brand experience*

Referring to the definition of brand experience by Brakus and Schmitt [1], consumers will have subjective reactions to brands, such as senses, emotions, behaviors, cognition, etc., and they are stimulated by brand related substances. Using the division of Brakus and Schmitt [1] on brand experience as the dimension division in this study, the brand experience is divided into sensory experience, emotional experience, thinking experience and action experience.

B. *Concept and dimension of brand identity*

Using the research of Rio [2] and Jin Liyin [3] to divide the dimensions of brand identity, this paper measured the hospital brand identity from two dimensions of individual brand identity and social brand identity.

C. *The concept, dimension and formation mechanism of brand attachment*

Referring to Park's definition of brand attachment [4] [5], brand attachment is defined as a special emotional connection between consumers and brands. Using the brand attachment scale [5] of Park and others, this paper studies brand attachment from two dimensions of emotional connection and self-brand association. At present, consumer attachment model put forward by Schultz, Thomson's A-R-C model and Park's brand attachment comprehensive model are relatively mature theoretical models of brand attachment formation mechanism.

III. OBJECTS AND METHODS

In this paper, the research model is as shown in "Fig. 1".

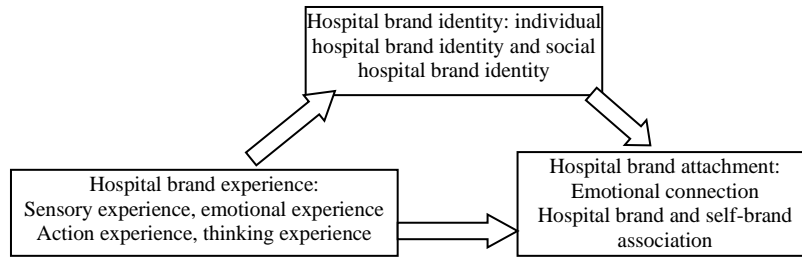


Fig. 1. Research model.

The model and variables of this study refer to the relevant research and literature of different scholars in China and

foreign countries, which is also combined with the main purpose of this study (as shown in "Table I").

TABLE I. DEFINITION OF VARIABLES AND DIVISION OF DIMENSIONS IN QUESTIONNAIRE

Variable	Definition	Dimension	Literature sources
Hospital brand experience	Hospital name, logo, advertisement, environment and other stimuli related to hospital brand lead to consumers' subjective and internal reactions, including sensory, emotional, action and thinking	Sensory experience emotional experience Action experience thinking experience	Schmitt (1999) [8] Schmitt, Brakes (2009) [1] Zhang Zhenxing, Bian Yajing (1011) [9]
Hospital brand identity	Consumers' judgment on the consistency between the cultural concept of hospital brand and their own concepts.	individual hospital brand identity Social hospital brand identity	Rio et al. (2001) [2] Underwood. (2001) [10] Jin Liyin (2005, 2006) [3]
Hospital brand attachment	Consumers have a direct connection between cognition and emotion for hospital brands	emotional connection Hospital brand and self-brand association	Mcewen (2005) [11] Heilbrunn (2006) [12] Thomson, Macinnis, Park (2005) [4] Park, Macinnis, Priester (2006) [5]

This paper has put forward four hypotheses:

H1: hospital brand experience has a significant positive impact on hospital brand identity.

H2: hospital brand identity has a significant positive impact on hospital brand attachment.

H3: hospital brand experience has a significant positive impact on hospital brand attachment.

H4: hospital brand identity plays an intermediary role between hospital brand experience and hospital brand attachment.

In this paper, consumers with medical experience in grade-A tertiary hospital in Guangzhou are taken as the research objects to study the formation factors of hospital brand attachment. The research methods include literature survey, questionnaire survey and SPSS data analysis.

IV. RESULTS

A. Questionnaire distribution and recovery

In the formal investigation of this study, 378 questionnaires were finally collected, with total samples of 378. After excluding invalid samples that had not been treated in a grade-A tertiary hospital in Guangzhou and which were filled in with incomplete questionnaire options, 352 valid samples and 26 invalid samples were obtained, and the effective rate of the questionnaire was 93.12%.

B. Descriptive statistical analysis of variables

In the questionnaire survey, Likert scale is mainly used to divide the degree of consent into five grades. The mean value of items in this study is between 2.23 and 2.96, indicating that the data distribution of the questionnaire sample is to the left, and the standard deviation is between 0.846 and 1.017. The standard deviation of each item is close, indicating that the data is within the acceptable range, and the discrete trend of each item is similar. In addition, the absolute value of skewness is less than 3, while the kurtosis is less than 10. Therefore, the data of this study shows the normal distribution.

C. Analysis on reliability and validity

1) Reliability

SPSS 19.0 software was used to analyze the reliability of the three variables in this study. The analysis results of the hospital brand experience scale show that the Cronbach's Alpha values of sensory experience, emotional experience, action experience and thinking experience are 0.848, 0.854, 0.836 and 0.863 respectively, and the Cronbach's Alpha value of the overall hospital brand experience scale is 0.943, all greater than 0.8. The analysis results of hospital brand identity scale show that the Cronbach's Alpha values of individual hospital brand identity and social hospital brand identity are 0.804 and 0.920 respectively, and the Cronbach's Alpha value of the overall hospital brand identity scale is 0.897, all of which are above 0.8. The analysis results of the hospital brand attachment scale show that the Cronbach's Alpha values of the two dimensions of emotional connection and hospital brand and self-connection are 0.903 and 0.847

respectively, and the Cronbach's Alpha value of the overall scale of hospital brand identity is 0.931, both above 0.8. Cronbach's Alpha of the whole sample is 0.966, which is greater than 0.8. Therefore, the questionnaire has good reliability, stability and consistency.

2) Validity

In this study, factor analysis was used to test the structure and validity of the scale. KMO and Bartlett spherical tests were conducted before factor analysis. When KMO value is less than 0.5 or Bartlett spherical test Sig. is greater than or equal to 0.01, it indicates that this data is not suitable for factor analysis. The factor load value is obtained by principal component analysis. It is generally considered that when the factor load value is greater than 0.5, the convergence validity of each item among factors is good.

D. Correlation

SPSS 19.0 software and Pearson correlation coefficient were used to analyze the pairwise correlation of hospital brand experience, hospital brand identity and hospital brand attachment, and the hypothesis proposed in this study was preliminarily tested. When the correlation coefficient value is in the range of 0.8-1, it indicates that the correlation between variables is very high; when the correlation coefficient value is in the range of 0.6-0.8, it indicates that the correlation between variables is high; when the correlation coefficient value is in the range of 0.4-0.6, it indicates that the correlation between variables is medium; when the correlation coefficient value is in the range of 0.2-0.4, it indicates that the correlation between variables is low; when the correlation coefficient value is less than 0.2, it indicates that the correlation between variables is weak.

E. Hypothesis test

According to the description of the equation fitting, the R-square value is 0.817, indicating that the regression analysis has a good fitting degree. According to the statistical analysis, F value is 1559.576, and P value of significance is 0.000, which is less than the significance level of 0.05, showing that the model has statistical significance. The regression coefficient of hospital brand experience is 0.904, the regression coefficient is positive, the probability value of T value of hospital brand experience is 0.000, and the significance is less than 0.05, indicating that the regression coefficient is very significant, and hospital brand experience has a significant impact on hospital brand identity. From this, regression equation can be established, namely, hospital brand identity = $0.737 + 0.904 * \text{hospital brand experience}$. Also, it can draw a conclusion that hospital brand experience has a positive impact on hospital brand identity, indicating that H1 is tenable.

According to the description of equation fitting, the R-square value is 0.563, indicating that the fitting degree of regression analysis is general. According to the statistical analysis, F value is 451.548, and P value of significance is 0.000, which is less than the significance level of 0.05, showing that the model has statistical significance. The regression coefficient of hospital brand experience is 0.969,

the regression coefficient is a positive number, the probability value of its t value is 0.000, and the value of significance is less than 0.05, indicating that the regression coefficient is very significant, and hospital brand experience has a significant impact on hospital brand attachment. From this, regression equation can be established, namely, hospital brand attachment = $2.325 + 0.969 * \text{hospital brand experience}$. Also, it can conclude that hospital brand experience has a positive impact on hospital brand attachment, indicating that H3 is tenable.

According to the description of equation fitting, the R-square value is 0.544, indicating that the fitting degree of regression analysis is general. According to the results of statistical analysis, F value is 418.181, and P value of significance is 0.000, which is less than the significance level of 0.05, showing that the model has statistical significance. The regression coefficient of hospital brand identity is 0.953, the regression coefficient is a positive number, the probability value of T value is 0.000, and the value of significance is less than 0.05, indicating that the regression coefficient is very significant, and hospital brand identity has a significant impact on hospital brand attachment. From this, regression equation can be established, namely, hospital brand identity = $2.422 + 0.953 * \text{hospital brand identity}$. Also, it can conclude that hospital brand identity has a positive impact on hospital brand attachment, indicating that H2 is valid.

F. The intermediary role of hospital brand identity

It can be seen from the analysis that the R-square value is 0.583, and the fitting degree of regression analysis is general. F value is 243.637, and P value is 0.000, which is less than 0.05, indicating that the model has statistical significance. The results of variance analysis showed that the regression coefficients of hospital brand experience and hospital brand identity were 0.59 and 0.419, respectively, indicating that the two had a positive impact on hospital brand attachment, while the probability value of t-value was 0.000, and the significance value was less than 0.05, indicating that the regression coefficient was very significant, and hospital brand experience and hospital brand identity had a significant impact on hospital brand attachment.

The analysis shows that the regression coefficient of hospital brand experience to hospital brand attachment in model 1 of the original model is 0.969, while in model 3, when the intermediary variable hospital brand identity is added, the regression coefficient of hospital brand experience to hospital brand attachment will be 0.59, indicating that hospital brand identity plays a part of intermediary role in hospital brand experience and hospital brand attachment, and H4 is tenable.

V. CONCLUSION

This paper mainly studies the formation factors of hospital brand attachment, obtains the data through questionnaire survey, analyzes the data by SPSS19.0 software, tests the hypotheses, and confirms that all

hypotheses are valid ("Table II"), and the results are as follows:

TABLE II. CONCLUSION OF MODEL HYPOTHESIS

	Model hypothesis	Test
H1	Hospital brand experience has a significant positive impact on hospital brand identity	valid
H2	Hospital brand identity has a significant positive impact on hospital brand attachment	valid
H3	Hospital brand experience has a significant positive impact on hospital brand attachment	valid
H4	Hospital brand identity plays an intermediary role in the relationship between hospital brand experience and hospital brand attachment	valid

The results show that hospital brand experience has a positive impact on hospital brand identity. When consumers have pleasant and positive medical experience in the process of hospital medical treatment, this positive brand experience will make the hospital brand attractive to consumers, guide them to explore and understand the personality and image of the hospital brand, so that the hospital brand image resonates with individual image. At the same time, the possibility of the hospital brand identification will be increased, which is conducive to the hospital brand gaining the positive identification of consumers.

According to the results, hospital brand identity has a positive impact on hospital brand attachment. The consumers pay attention to whether hospital brand can show their individual image and social status. When consumers think that hospital brand has a high degree of fit with their individual image and personality and social status, consumers will have trust and love for the brand. With the deepening of consumers' emotions such as love and trust, the hospital brand identity has a positive impact on hospital brand attachment.

The results show that hospital brand experience has a positive impact on hospital brand attachment. When the hospital brand brings consumers a good positive brand experience in the medical process, it can make consumers have strong feelings for the hospital brand. They will have connection with the hospital brand, and have emotional attachment to the hospital brand. On the contrary, consumers will have a bad impression of hospital brand, which makes them unable to have emotional connection and attachment with hospital brand.

According to the results, the hospital brand identity plays a part of intermediary role between hospital brand experience and hospital brand attachment. When consumers have the experience of hospital brand in different aspects, when they think the hospital brand is similar to their own personality, such as life style, values, etc., or the brand can show the social status, consumers will have a positive attitude towards hospital brand, and the personality and culture embodied in the hospital brand. This sense of identity helps consumers to establish emotional connection with the hospital brand, so as to generate attachment to the hospital brand.

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