

Original Article

A survey of the effects of brand value on customer satisfaction in pharmaceutical and biological industries

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ABSTRACT

The purpose of this study was to describe how companies in pharmaceutical and biological sectors can ensure their position in different markets by relying on sustainable, competitive advantages, resulting from the use of a well-defined marketing model with particular emphasis on brand improvement. As competition becomes more intense among companies and phenomena such as global marketing grow in importance, domestic industries in each country become obliged to improve their competitive advantages in order to survive from a marketing perspective. Customer satisfaction is among factors which could lead to the success and profitability of a company. The present research examined the relationship between brand value and customer behavioral intention. Accordingly, 80 questionnaires were distributed among customers, selected through random sampling in Tehran, Iran. The obtained data were analyzed by SPSS. Based on descriptive statistics, two aspects of customer behavioral intention included “product introduction” and “repeat purchase”, while two aspects of brand equity were “brand awareness” and “product introduction”. The research findings showed that factors such as “brand awareness” and “brand loyalty” directly affect customer behavioral intention and satisfaction.

Keywords: Brand value, Customer satisfaction, Brand awareness, Brand loyalty, Product introduction,

INTRODUCTION

In today's competitive marketplace, most companies have highlighted the importance of customer retention as the main key to success. The most important marketing strategy is to maintain the existing customers, while acquiring new clients. Therefore, many companies attempt to provide high-quality services to their customers in order to promote customer satisfaction (Dowling and Uncles, 1997).

One of the most popular and crucial concepts of marketing, which is widely discussed by marketing experts and specialists, is brand equity. The importance of this phenomenon lies in its strategic and major role in promoting managerial decisions and attaining competitive advantages for organizations and customers. Brand equity enables organizations to ask for a higher price in exchange for their brand and helps them retain their market share (Aker, 2005). A powerful brand can enjoy more profits and attain

competitive advantage, depending on the customers' behaviors and decisions. In fact, organizations attain higher market shares through achieving high levels of customer satisfaction. The positive perspective and attitude of customers lead to repeat-purchase behaviors among customers, which in turn results in customers' resistance against situational factors and the rivals' marketing efforts and strategies (Fourmier, 1998). Biological industries constitute a major part of a country's healthcare system and its economy. In fact, the dynamism and capacity of these industries can have dramatic impacts on commercial and economic micro-environments. In order for biological industries to compete in this environment, it is essential to provide the most remarkable and modern services demanded by customers in order to promote a positive attitude towards the brand in customers' minds. Overall, customer opinion and inclination with respect to a new form of competition, consisting of cost reduction, customer retention, customer encouragement, security, and easy use, constitute a large section of production and service provision (Knowles, 2003). In One of the most popular and integral concepts of marketing, widely discussed by marketing experts and specialists, is brand equity. The importance of this phenomenon lies in its strategic and major role in promoting managerial decisions and attaining competitive advantage for organizations and customers (Keller, 2003).

Importance and Significance of the Subject. In recent years, increased competition among companies over acquiring customers with the purpose of selling products and services, along with strengthened customer power in today's competitive world, has led companies to not only pursue new customers, but also maintain the established ones. Considering the increasingly complex relationship between companies and purchasers, today, organizations cannot merely provide services in one single field, but should follow a process which is accompanied with profitability. Customer behavioral intention is a valuable aspect, related to employees and customers. A positive brand

image acts as a stimulus for customers to purchase goods from a company. In fact, the image an organization leaves in the customer's mind affects his/her behaviors. When clients are satisfied with the presented services, their view of the organization is improved, which in turn affects their behavioral intentions. According to the literature, there is a significant relationship between the level of customer satisfaction and profitability and sustainability of a company. Despite the fact that some organizations and companies have taken customer behavioral intention into consideration, no research study has focused on biological industries, so far. Overall, the significance of such studies lies in their influence on promoting the presentation and profitability of industries. If left neglected or discarded, companies may face numerous problems, such as reduced profitability, decreased sale, and eventually bankruptcy. In fact, damages and problems of an industry may be a result of managers' negligence.

Research Objectives. The main objective of this research study was to present a structural model with the purpose of predicting the relationship between brand equity and customer behavioral intention. The following hypotheses were also formulated and tested in this study:

1. There is a significant relationship between brand equity and customer behavioral intention.
2. There is a significant relationship between brand awareness and product introduction.
3. There is a significant relationship between brand awareness and repeat purchase behavior.
4. There is a significant relationship between brand loyalty and product introduction.

There is a significant relationship between brand loyalty and repeat purchase by the customer.

METHODOLOGY

In the present study, a correlational research method was applied with respect to the main objective of the study in order to determine the effect of an independent variable on a dependent variable, i.e., the effect of

brand equity on the behavioral intention of customers. The present research can be regarded as an applied study based on its aims and a descriptive, correlational study with respect to the applied method. Based on the literature, an integrated questionnaire was designed, using a Likert scale (1= very low, 2= low, 3= moderate, 4= high, and 5= very high) in order to increase the effectiveness of sampling and simplify the collection of essential data through non-random convenient sampling. The questionnaire was completed by the customers and then collected. Construct validity was assessed for the purpose of evaluating the validity of the questionnaire. In addition, face validity and reliability factor (factor analysis) were examined. Cronbach's alpha (ranging between zero and one) was calculated in order to assess the reliability of the questionnaire; also, values above 0.7 were considered acceptable (Hatch and Majken, 2001). The total Cronbach's alpha coefficient of the questionnaire was equal to 0.725, indicating the reliability of the instrument.

Brand equity. A recently developed framework has been incorporated in marketing management which highlights the value of intangible brand assets in order to develop brand loyalty and form a closer relationship with customers. Service quality, personal experience, organizational culture, brand knowledge, and brand equity are amongst these assets. Similar to other intangible assets, brand equity can become a powerful instrument in a competitive market. Aaker considers brand equity as a set of assets and commitments related to a brand, its name, and symbol, resulting in the reduced or improved value of a product or service for the company or customers. Claire defines brand equity as an effect which brand awareness has on the consumer's reaction to the brand's marketing activities (Hoeffler and Keller, 2003). Moreover, according to Hoyer and Brown (1990), brand equity constitutes brand strength and brand value. Brand strength is a set of associations and behaviors on the part of brand's customers, channel members, and the parent company (main), which allows the brand to enjoy different

sustainable competitive advantages (Hatch and Majken, 2001). Different aspects of brand equity include brand loyalty, brand awareness, brand association, and brand image.

Brand Loyalty. Brand loyalty is a function of customers' tendencies and behaviors (habits). Consumers' trust in a brand results in the attainment of brand equity and indicates consumers' loyalty to the brand and their tendency to pay higher prices for the products. Development of brand equity, which is of great significance due to its positive correlation with brand loyalty, is highly important to managers (Hatch and Majken, 2001). Two factors can substantiate the integration of brand loyalty in the conceptual framework of brand equity. First, brand loyalty is a key factor which must be taken into consideration when rating a brand's sales success. In fact, having a group of loyal customers can lead to sales promotion and increase the profit flow for the owner of the brand. A loyal customer may pay more money to purchase the products of a certain brand, since he/she can understand the value of goods with which no other brand compares. Second, recognition of brand loyalty as an asset can lead to the implementation of plans for the purpose of boosting loyalty, which in turn promotes brand equity; in fact, customer loyalty is recognized as an invaluable business asset. Overall, brand loyalty has competitive advantages for companies, i.e., reducing advertising costs and spurring customer's resistance to other competitors. A large number of loyal and satisfied customers can create a proper image of the brand. Also, brand loyalty of customers provides an opportunity for the brand to show a competitive reaction to the rivals' movements and promote the products and the brand.

Brand Awareness. Brand awareness refers to the salience of a brand in the customer's mind. Brand recognition and the influence it has on the customers' purchase decisions lead to higher levels of brand awareness (Knowles, 2003). Different methods evaluating brand awareness consider customer's recollection of the brand as a criterion. Brand awareness has many competitive advantages for

companies, i.e., recognizing the brand (have you ever seen this brand?), remembering the brand (what brands can you remember which have this group of products?), and considering the brand as the best available option (what is the first brand that comes to your mind?). Brand awareness creates the feeling of familiarity with the brand in the customer. If a brand comes to the client's mind while shopping, even if it is an option which the customer will discard, it helps him/her recall and remember the brand. Moreover, brand awareness could be a sign of customer loyalty.

Brand Association. Brand association refers to anything deep seated in one's memory about the brand (Aker, 2005). Brand association may appear in all forms and particulars related to a good or in aspects independent of the good itself (Hatch and Majken, 2001). According to Aaker's definition, brand awareness includes product properties, customer advantages, product application/use, lifestyle, product class, competitors, and country/geographical region. The mentioned factors play an important role in assessing the product or service and affect the customer's choice by helping him/her develop a set of mental images which have been engraved on his/her mind as positive or negative. Also, brand consistency refers to thoughts and ideas which individuals form in their minds with respect to a specific service or good (Laforet and Saunders, 2005).

Brand Image. For the first time, Gardner and Levy presented the concept of brand image in an article in 1995. They believed that products have different social and physiological natures. The concept of "product image" has been used in research on consumer behavior. Brand image, which is regarded as a vital concept in marketing, is shaped based on consistency between the brand and customer's viewpoint. In addition, it is one of the independent and widely used elements in the framework of brand equity. In fact, brand image has its roots in the customer's purchase experiences (Madden et al., 2006).

Customer Behavioral Intention. According to studies by some authors, the behavioral intention of

customers encompasses product introduction, repeat purchase behaviors, and mental insensitivity. *Product introduction:* This concept refers to the decision of an organization or company's customer to either encourage his/her friends and family to try the company's products or express negative opinions about the company or organization. Since every product has a lifecycle, sales will eventually drop; therefore, survival of a company depends on the final replacement of the product with another to at least make the same amount of profit. Considering the fact that sales rates drop even in cases where no decline has been predicted, promotional plans should incorporate continuous use of the product or addition of a new item (Hoyer and Brown, 1990). *Repeat purchase:* This concept refers to the customer's tendency to use the company's services and products again in future and avoid purchasing items from other service providers. *Mental insensitivity:* This concept refers to the customer's tendency to use and purchase the products of a certain company, despite paying more money in comparison with rivals which provide similar services. According to the definition proposed by (Mizik and Jacobson, 2008), an individual's intention includes his/her interpretation and understanding of a particular behavior. In other words, an individual's behavioral intention is defined as his/her perceived likelihood or subjective probability that he/she will engage in a given behavior. In fact, an individual's viewpoint affects his/her behavior through behavioral intention (Rezaian, 2007). The consumer's behaviors include all actions related to purchasing and using (or not using) goods and services, informing others about the products, customer's predispositions after using the products, and gathering purchase information. Moreover, according to previous studies, behavioral intention includes the customer's revisit and promotion of the brand which can predict his/her future purchase behaviors. According to previous studies, if behavioral intentions are positive, they can lead to customer loyalty and increase the possibility of clients' repeat purchase; moreover, it may promote positive verbal

advertising by customers. On the other hand, the customer's negative behavioral intention has reverse consequences.

Literature Review. In this section, the most important papers on the subject under study are briefly presented. Biehal and Sheinin (2007) examined the relationship between four aspects of brand equity, i.e., brand awareness, brand loyalty, brand association, and brand image, in cosmetic industries and promoted brand value interpretation from the customers' viewpoint. Through evaluating different aspects of brand quality and examining their relationship with brand image and loyalty, researchers came to the conclusion that particular aspects of the brand affect its image. In the mentioned article, by assessing brand equity and the influencing factors from the viewpoint of consumers, Biehal and Sheinin (2007) presented four hypotheses and examined the subject through applying structural equation modeling and using a questionnaire. The results obtained by the analysis of the collected data indicated that brand loyalty directly affects brand equity. Moreover, it was revealed that brand association directly influences brand equity. In addition, based on the findings, the interpreted quality factor indirectly affects brand equity through brand loyalty. Brand awareness indirectly affects brand equity through brand association and loyalty. Berman and Evans (2013) analyzed the pivotal role of brand equity and determined its different aspects in the purchase of orthopedic athletic shoes among the youth. In this study, the customer-based brand equity model proposed by Aker (2005) was employed. It was revealed that marketing managers should consider the relative importance of different aspects of brand equity in their general assessment. They also examined the causal relationship between various aspects of brand equity and brand equity itself by using structural equation modeling. Furthermore, Boush and Loken (1991) examined the intermediary role of customer-based brand equity in a successful relationship with customers and brand image. In this descriptive survey, the findings demonstrated that

successful relationship with customers has a positive and significant influence on brand equity and brand image. Moreover, the positive and significant effect of brand equity on brand image was confirmed. In the abovementioned study, the indirect effect of a successful customer relationship on brand image was more significant than its direct impact. In addition, the intermediary role of brand equity was approved, suggesting the promotional role of this variable in the customer relationship and brand image.

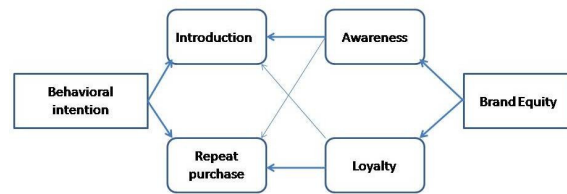


Diagram 1. The conceptual model of the research

Data Collection Tools. Two types of data, i.e., primary and secondary data, can be used in conducting any type of research. Relevant written data were gathered from specialized marketing books, the internet, marketing journals, articles, and books, and scientific resources (available at Razi Vaccine and Serum Research Institute and Pasteur Institute) for the purpose of examining theoretical topics related to the study subject and evaluating the research background and literature. A questionnaire was used to collect the primary data. This questionnaire evaluated brand awareness, brand loyalty, brand equity, product introduction, and repeat purchase by the customers and consisted of two major sections, i.e., general questions regarding the demographic information of the participants (five questions) and specialized questions (30 questions). The questions were rated, based on a five-point Likert scale, as one of the most popular measuring scales.

Data Analysis. The data were analyzed by SPSS version 20. Indices including “brand awareness”, “brand loyalty”, “repeat purchase”, and “product introduction” were first measured in order to carry out

the examinations. For statistical assessments, the data were first examined through descriptive methods such as graphs, tables, and numerical indices (i.e., mean and standard deviation).

Reliability and Validity of the Instrument. Cronbach's alpha was calculated in order to determine the reliability of the instrument. Cronbach's alpha coefficient of the final questionnaire was equal to 0.792. Split-half coefficients, indicating the reliability of research variables (i.e., brand awareness, brand loyalty, product introduction, and repeat purchase), were also measured. Cronbach's alpha coefficients are presented in Table 1.

Table 1. Measurement of Cronbach's alpha coefficient of the questionnaire

Cronbach's alpha of the questionnaire	Number of participants	Number of questions	Cronbach's alpha coefficient
Total	80	30	0.792

Before the final sampling, a small-scale pilot examination was carried out on 80 samples, selected from the study population in order to ensure face validity, reliability, efficiency, and performance of the questionnaire and resolve probable executive problems. The questionnaire's Cronbach's alpha was estimated at 0.792. Also, the content validity of the questionnaire (30 questions) was approved by university professors and experts.

Table 2. Frequency distribution of the study samples in terms of gender

Gender	Frequency	Percentage
Female	28	35
Male	52	65
Total	80	100

Demographic Properties of the Study Population. The demographic data collected from the samples were first examined, using descriptive and analytical methods. This research study focused on demographic properties, such as gender, educational level, professional status, and work experiences. As demonstrated in Table 2, the majority of the participants were male (65%).

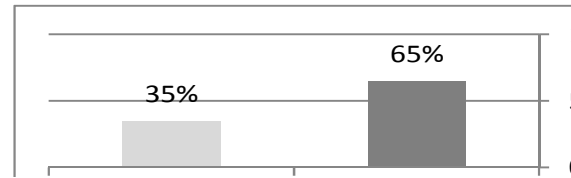


Figure 1. Frequency distribution of the study samples in terms of gender

Table 3. Frequency distribution of the participants based on educational level

Educational level	Frequency	Percentage
High school diploma	5	6.25
Associate's degree	5	6.25
Bachelor's degree	8	10
Master's degree	20	25
PhD	42	52.5
Total	80	100

As presented in Table 3, the majority of the participants had a PhD degree (52.5%).

Table 4. Frequency distribution of the participants in terms of service records

Service record (years)	Frequency	Percentage
< 5	20	25
5-10	10	12.5
10-15	22	27.5
15-20	12	15
20-25	6	7.5
25-30	4	5
> 30	6	7.5
Total	80	100

First hypothesis: In this study, a significant relationship between brand equity and customer behavioral intention was hypothesized.

Table 5. Evaluation of the relationship between brand equity and customer behavioral intention

Variables	Mean	Standard deviation	Spearman's correlation coefficient	Level of significance	Number
Brand equity	22.60	3.402	0.402	0.000	80
Customer behavioral intention	29.02	6.022			

As presented in Table 5, the correlation coefficient between brand equity and customer behavioral intention was equal to 0.402. Therefore, there was a

significant relationship and a positive (direct) correlation between brand equity and customer behavioral intention; in other words, brand equity promoted customers' behavioral intention.

Second hypothesis: We assessed the relationship between brand equity and product introduction.

Table 6. Pearson's correlation coefficient between brand equity and product introduction

Variables	Mean	Correlation coefficient	Number
Brand awareness	23.5	0.39	80
Product introduction	18		

As presented in Table 6, the correlation coefficient between brand awareness and product introduction was estimated at 0.39, thus indicating a significant relationship and a positive (direct) correlation between brand awareness and product introduction. In other words, brand awareness increased product introduction. *Third hypothesis:* We also hypothesized a significant relationship between brand awareness and repeat purchase.

Table 7. Pearson's correlation coefficient between brand awareness and repeat purchase

Variables	Mean	Correlation coefficient	Number
Brand awareness	23.5	-0.485	80
Repeat purchase	23.375		

The correlation coefficient between brand awareness and repeat purchase was equal to -0.485, as presented in Table 7. Therefore, there was no significant relationship between brand awareness and repeat purchase by customers.

Fourth hypothesis: In this study, a significant relationship between brand loyalty and product introduction was hypothesized.

Table 8. Pearson's correlation coefficient between brand awareness and product introduction

Variables	Mean	Correlation coefficient	Number
Brand loyalty	44.7	-0.599	80
Product introduction	18.65		

The correlation coefficient between brand loyalty and product introduction was equal to -0.599, as shown in Table 8. Therefore, there was no significant relationship between brand loyalty and product introduction.

Fifth hypothesis: A significant relationship between brand loyalty and repeat purchase was speculated.

Table 9. Pearson's correlation coefficient between brand loyalty and repeat purchase

Variables	Mean	Correlation coefficient	Number
Brand loyalty	44.7	0.25	40
Repeat purchase	23.375		

The correlation coefficient between brand loyalty and repeat purchase was equal to 0.25, as presented in Table 9, which indicates a significant relationship and a positive (direct) correlation between brand loyalty and repeat purchase. In other words, as brand loyalty increased, repeat purchase was promoted, as well.

CONCLUSION

Based on the conducted research and examination of variables affecting the relationship between brand equity and customer behavioral intention, hypotheses 1, 2, and 5 were accepted in the field of biological and vaccine industry; in fact, the obtained results could confirm the significant existing relationship. Considering the fact that the abovementioned hypotheses were confirmed, we can assume that brand loyalty affects repeat purchase in Iran. Therefore, it is advisable that producers and service providers maintain

their customers loyal to their products. Moreover, it is recommended that service providers promote the quality of their products and services, present novel services and products, pay attention to their customers' suggestions about the presented products, and consider their tendencies and preferences to increase the number of loyal customers. In addition, if clients are informed about new products and services, they can introduce them to others; therefore, use of proper methods for advertising and informing customers is highly recommended.

Suggestions.

-Since this research study focused on products which consumers do not commonly purchase, it is recommended that similar studies be performed on popular goods for customers.

-It is recommended that future studies focus on biological products for humans and livestock.

-It is suggested that further studies be performed on products which are consumed in livestock and poultry sectors.

-It is suggested that future studies involve the members of distribution channels for biological products.

-Examination of the effects of different aspects of brand equity on the financial performance of companies manufacturing biological products is suggested.

Limitations The questionnaires were distributed in a restricted geographical region.

-Comparing the results of only conducted companies in the biological sector of Iran, making comparisons was somehow limited in this study.

Conflict of Interest

The authors declare that they have no conflict of interest.

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