

Empirical relationship among dimensions of customer-based brand equity in e-tailing service: a study in Vietnam context

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Abstract

The study assesses the influence of brand awareness, perceived quality, and brand association on e-brand loyalty of consumers in online retailing service (e-tailing service) in Vietnam context. Exploratory factor analysis (EFA) was conducted to identify dimensions of customer-based brand equity and its construct. Three hypotheses were posited to empirically test with sampled data of 125 consumers. The result of regression analysis shows that all of variables, which are brand awareness, perceived brand quality, and brand association, positively impact on e-brand loyalty. Brand association has the most influential impact on the customers when appraising the online shopping. This study contributes to enrich the brand management literature. The study's findings are suggestive to managers of e-tailing services.

Keywords: Customer-based brand equity, E-tailing service

1. Introduction

Along with the rapid development of technology, convenience of human daily life has been increasingly focused on. Therefore, customers are gradually moving towards online shopping instead of venturing in commercial centers or on crowded streets. Within the e-commerce environment, customers have access to social knowledge and experiences to support them in better understanding their online purchase purposes, and in making more informed and accurate purchase decisions (Dennison *et al.*, 2009). Since such reciprocal advantages have been recognized by business organizations, e-commerce is undergoing a new evolution in order to enhance customer participation (Kim and Srivastava, 2007), promote customer relationships (Liang *et al.*, 2011), and achieve greater economic value (Parise and Guinan,

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2008). For that reason, e-commerce has become a useful tool and a perfect solution for both suppliers and consumers.

E-commerce is an ideal way to transform a brand from traditional stores to an innovative, well-loved brand. Besides, website is one of the best marketing tools for a business. Thanks to the internet's accessibility, millions of people all over the world can view content on websites at any time, which means that business has more opportunities to expand their brand.

“Vietnam is a land of opportunities for foreign e-commerce companies because of its young population, high internet penetration rate (ranked 17th in the world) and climbing smartphone penetration rates” (EBVN, 2018). Recently, popular online shopping sites such as Tiki, Lazada, Sendo, Shopee are creating a new wave of e-commerce in Vietnam. This new wave brings about changes and development of the economy by creating a playground for more popular brands and connecting to a wide consumer network.

Research interest in brand equity and branding has been an important topic in the marketing area (Rosa and Hernan, 2008). Many research papers on brand identity and brand loyalty have been published. Nonetheless, most research papers focus on traditional brands with specific product lines without mentioning website brands or services brands (Yoo and Donthu, 2001). The brands of websites and service brands are markedly different from traditional brands. The factors affecting brands of websites as well as the evaluation criteria are not the same as those of traditional brands. “In recent years, with the fast expanding of the e-commerce market, website brands have grown rapidly and begun to emphasize the construction of their brand equity” (Liyin, 2009). For businesses, their value lays in the brand. The more famous the brand, the higher the value. The level of competition of brands depends on the level of consumer awareness of the brand.

Given this situation, several questions arise: How do you measure customer loyalty in the field of e-commerce? To what extent the emotional state favors the creation of a long-term relationship between the brand (i.e. commercial website) and the consumer? Answering these questions is a priority for any player seeking to understand consumer behavior in the context of electronic commerce. While consumer behavior in ecommerce seems to be a complex subject, the consumer expectations are changing and challenging traditional patterns of supply of commercial websites (Ltifi and Gharbi, 2012). The objective of the study is to examine the effect of e-tail brand equity on e-brand loyalty. This study carries original value and contributes to existing literature as brand equity in an e-tailing context has been studied less before (Khan and Rahman, 2016). This study also provides deep practical insights to marketers in online retailing industry, which would enable them to formulate effective e-marketing strategies.

The remaining of the study is organized as follows. In the next section, the study begins by reviewing the brand equity literature and the most relevant theoretical and empirical studies of brand equity dimensions. In Section 3, hypotheses were advanced on each reviewed literature theme and the theoretical framework of the proposed e-brand loyalty model. In Section 4, the

study describes the research method and process of collecting data. Fourth, the study examines the influence of brand equity and e-loyalty through data analysis. In the fifth section, the presentation and discussion of the main results follows. In the final section, we outline the contribution of our findings theoretically and practically. Areas for future research and current study limitations are also presented.

2. Literature review

2.1 Brand equity

A brand is not only in a logo or a name because for a customer a brand is a reflection of emotions and connections. The surplus value of a brand is the brand equity (Aaker, 1992). Nevertheless, brand equity is an extremely broad concept. It is the value of a brand represented by financial indicators, strategies and advantages, management benefits for the business that owns the brand (Keller, 1993). “Ultimately, brand equity can be used to summarize all of the various assets that are parts of a brand, to measure the performance of a brand in the past, and to predict the performance of a brand in the future” (Pike, 2010). A great number of studies on brand equity have been carried out. Most of them point out that brand equity provides a sound basis for introduction of new products, distinguishing a company from its competitors, and protecting the given brand from competitive attacks (Feldwick, 1996). Moreover, brand equity helps consumers realize the value of a brand and get complete evaluation through different aspects of brand and from rich information sources.

There are two different points to study brand equity based on two different aspects: financial-based and customer-based (Keller, 1993). Taking the definition of brand equity from a financial perspective, total value of a brand is a separable asset when it is sold or included in a balance sheet (Feldwick, 1996). Customer-based brand equity is defined from the perspective of the customer and is based on customer knowledge, familiarity, and association with the brand (Washburn and Plank, 2002). As Keller (1993) explains, positive customer-based brand equity ‘can lead to greater revenue, lower cost, and higher profit; it has direct implications for the firm’s ability to command higher prices, a customer’s willingness to seek out new distribution channels, the effectiveness of marketing communications, and the success of brand extensions and licensing opportunities’ (Tong and Hawley, 2009). Keller (1993) proposes a concept of customer-based brand equity and defines brand equity as “differential effect of brand knowledge on customer responses to the marketing of the brand”.

Customer-based brand equity concept views brand equity as an aspect of perceived value in customers’ minds such that branded products and services cause customers to be biased toward the brand and/or the given products and services versus an unbranded equivalent (Biel, 1997). Biel argues that if customers perceive a product to have high brand equity, they will think more positively about the given product or brand (Keller, 1993), which will, in turn, have an impact on their purchasing choices (Kim, 1990).

Understanding customers’ needs and desires and establishing product programs to satisfy them is the key to a brand’s success. “Customer response mainly includes consumer loyalty;

their resistance to competitor's marketing activities, lower price sensitivity and positive evaluations on brand extension. This comprehension of brand equity has revealed the nature of driving factors for brand equity, which has important theoretical and practical meaning" (Liyin, 2009). According to Keller (2003), brand equity is defined as the distinct effect of brand knowledge affecting customer's reactions to that brand. Thus, brand equity is stronger when customers have a high level of brand awareness, brand loyalty, satisfaction with service and quality which bring a stable source of profit to that brand. Research findings on brand equity contribute to brand knowledge structure based on customer cognition of brand personality and formation mechanism for brand equity (Liyin, 2009).

Along with the development of network technology is the formation of an e-commerce system with trading transactions conducted in virtual space, making the business expand and not limiting by location. A website brand is usually a website address, with notes about types of services or items, which allows customers to more clearly identify a brand, a type of service and a product program that the brand provides. For website brand equity, there is no specific and widely accepted definition. Therefore, based on the existing definitions and the characteristics of website brand, this paper defines website brand equity as Internet users' knowledge of certain brand names of websites in the context of a virtual online market as well as the induced cognition, attitudes and responses of the websites (Liyin, 2009).

Recent advancements in information technology have changed the dynamics of retailing by giving birth to another type of retailing practice, namely, online retailing (e-tailing) (Kennedy and Coughlan, 2006). In Vietnam, the e-tailing system is popular. Retail sites offer various services and items that are rampant on the internet and anyone can access.

E-tailing is the sale of goods through the Internet and other electronic channels to individual consumers and households (Khan and Rahman, 2016). This definition includes commercial activities such as creating commodity transactions with consumers and providing services to satisfy their needs. Some activities that do not create direct transactions such as providing free information, promoting the development of trademarks through advertising are also considered a part of e-commerce (Hamzah *et al.*, 2014). E-tailing has its own advantages and disadvantages. The challenges that e-retailers face are slow implementation due to lack of investment capital, lack of technical knowledge or lack of facilities to fulfill orders (electronic payment ...). In addition, there are some legal issues, especially related to tax. There are many customers who are not in contact with the network (Page and Lepkowska-White, 2002). The issues of online customer care and purchase price as well as assurance of product quality also hinder suppliers. In contrast, suppliers no longer have to worry about location of sales, size of the service, and cost of maintaining operation of the store. E-tailing businesses bring convenience to business people in expanding their business networks, advertising products, and providing customers with relevant information (Page and Lepkowska-White, 2002).

2.2 Dimension of brand equity

2.2.1 Brand awareness

Brand awareness is recognized as one of the brand assets that contribute to enhance the value of a brand (Aaker, 1996; Keller, 2013). Keller (2013) identifies brand recognition and brand recall as the dimensions of brand awareness. Brand awareness is an important factor affecting brand equity. According to Keller (1993), brand awareness consists of two sub-dimensions: brand recall and brand recognition. Brand recognition reflects the ability of consumers to confirm their past experiences with the brand, whilst brand recall demonstrates consumers' ability to spontaneously generate the brand from their memory (Hoeffler and Keller, 2002).

Successful marketing communications as different communication tools must promote consumer awareness through a series of psychological phases to get the highest brand awareness. Brand awareness is the basis for businesses to promote their brands, successfully introduce new products or services, build the business reputation, distinguish businesses from competitors, and find and retain loyal customers.

2.2.2 Perceived quality

Perceived quality is defined as the customer's judgment about a product's overall excellence or superiority in comparison to alternative's brand (Zeithaml, 1988; Aaker, 1996) and overall superiority that ultimately motivates a customer to purchase the product (Aaker and Jacobson, 1994). Perceived quality can help customers interpret, process and better store information related to products and brands. Perceived quality also impacts customer confidence when making a purchase decision and it also increases customer satisfaction with the experience of using that brand. Perceived quality shapes brand image, increases the perceived value of the given brand in consumers' minds, and serves as a determinant in the brand equity model (Netemeyer *et al.*, 2004).

2.2.3 Brand association

Brand association is another important brand element which creates value for businesses in the market (Keller, 2013; Aaker, 1996). Brand association describes anything the consumer mentally links to the brand (Aaker, 1991). Brand association is a positive element such as feeling, belief or knowledge of known and transmitted brand. This association comes from consumer brand experiences, which have been confirmed over time. Potential value of a brand name is based upon specific associations and is related to its image. Brand associations influence a consumer's brand choices and purchases, increase the barriers through which competitors may need to break, and may also serve as the basis for brand extensions (Aaker, 1991, 1996; Keller, 1993).

2.2.4 E-brand loyalty

Loyalty is a core dimension of brand equity (Aaker, 1996). Brand loyalty as the holy grail of brand equity (Beneke and Zimmerman, 2014) is the attachment of a consumer towards a

brand (Chahal and Bala, 2010) even after changing the price or product features (Reisenwitz and Gupta, 2011). We want customers to be as loyal as possible. Efforts to keep old customers cost less than finding a new customer. Loyal customers ensure a stable source of revenue for businesses. Customers will remain loyal to what they consider “their brands” and they will help the brands be more widely known. Brand loyalty has been defined based on the belief, attitude and intention structure of consumers for a certain brand (Lee *et al.*, 2009). In another view, customers with high experience level and involvement with a certain product category will tend to be brand loyal (Holland and Baker, 2001). Loyalty is generally understood as “a deeply held commitment to rebuy or re-patronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to switching behaviour” (Oliver, 1999).

The development of the internet and related technologies has extended the brand loyalty concept to the online environment and retitled it e-loyalty. Anderson and Srinivasan (2003) identified e-loyalty as “a customer’s favorable attitude toward an electronic business resulting in repeat buying behavior”. Previous studies have defined e-loyalty as a commitment to revisit a brand’s website consistently for shopping on that website without switching to other websites (Cyr, 2008).

2.3 Research gap

Organizations of all types, including privately and publicly held traded companies, could realize the value of branding as well as brand equity and devise marketing activities to achieve it. The brands that are the preferred choice by consumers are said to have high brand equity. There is a consensus in the scholarly community that strong brands have high brand equity. This is the reason why since the first introduction of brand equity concept in the 90s, there have been several theoretical and empirical studies for realization of the formation and effectiveness in evaluation of brand equity. Nevertheless, most of the studies focus on normal product brands, while fewer pay attention to service brands and website brands (Page and Lepkowska-White, 2002; Christodoulides *et al.*, 2006), despite the current fast-growing e-commerce industry of the world. Existing research on understanding brand experience has been limited to either non-internet environment (Iglesias *et al.*, 2011; Ishida and Taylor, 2012; Lin, 2015), or internet purchasing behavior of buyers in various contexts (Hamzah *et al.*, 2014; Lee and Jeong 2014; Morgan-Thomas and Veloutsou, 2013) other than e-tailing brands (Khan, and Rahman, 2016). There are few studies that investigate the concept of brand equity with e-tailing brands (Morgan-Thomas and Veloutsou, 2013). A limited amount of research on online businesses under the concept of brand equity suggests that the Internet is not eliminating the power of the brand and that companies operating on websites need to differentiate even more given a large number of companies online. Besides, there is limited empirical research to confirm the relationship between dimensions of brand equity with brand loyalty in online context in Vietnam. Thus, a systematic theoretical research on the

relationship between brand equity and brand loyalty is needed, specifically through websites for online shopping in e-retailing industry.

3. Theoretical framework

3.1 Hypotheses development

This study measures the effect of brand equity on key consumer behavioral outcomes including loyalty. Koufaris (2002) and Oliver (1999) suggest that brand loyalty vital for the success of a brand. More specifically, the hypotheses are proposed as follow.

Brand awareness and e-brand loyalty. Hypothesis 1 looks at the relationship between brand awareness and e-brand loyalty. Brand awareness is considered to be one of the brand assets that contribute to create the value of a brand (Aaker, 1996; Keller, 2013). Keller (2013) defines brand awareness with two dimensions: brand recognition and brand recall. In addition, strong brand awareness can affect a consumer's buying decision in terms of brands that are being considered. Furthermore, consumers' awareness of a brand can offer the brand a sense of familiarity and signals of substance and commitment (Aaker, 1992). Previous studies revealed that brand awareness positively influences brand loyalty (Jing, *et al.*, 2014; Yousaf, *et al.*, 2012). Jing *et al.* (2014) investigate the influence of brand awareness, brand image and perceived quality on brand loyalty. These authors point out that there is a statistically significant association between brand awareness and brand loyalty. Yousaf *et al.* (2012) conduct a study that focused on brand loyalty in the cosmetics industry and the results of their study indicate that there is a positive relationship between brand awareness and brand loyalty. Therefore, inferring from the literature and the empirical evidence above, it is hypothesized that:

H1: Brand awareness has a positive influence on e-brand loyalty.

Perceived quality and e-brand loyalty. The other factor could influence the e-brand loyalty is perceived quality. Khan *et al.* (2016) identify that quality is positively correlated with brand loyalty. This means that an increase or decrease in product quality will cause an increase or decrease in brand loyalty. Reich *et al.* (2006) investigate the impact of product and service quality on brand loyalty. Moreover, Ndukwe (2011) shows that product quality was more likely to lead to brand loyalty when customers judged the product as having high quality. Based on the above judgments on the relationship between perceived quality and brand loyalty, the following hypothesis is proposed:

H2: Perceived quality has a positive influence on e-brand loyalty.

Brand association and e-brand loyalty. It is undeniably essential to consider the relationship between brand association and e-brand loyalty. Atilgan *et al.* (2005) find that a strong brand association leads to higher brand loyalty. Azadi *et al.* (2015) also conduct research which investigated the relationship between brand association and brand loyalty in the fans of private clubs in Iran. The findings of their research show that there was a significant relationship between brand association and brand loyalty in the fans of private club.

Moreover, Atilgan *et al.* (2005) reveal that if customers have more positive association toward a brand, they would be more loyal toward a brand. It is true the other way round. Thus, according to those mentioned above, it is, therefore, hypothesized that:

H3: Brand association has a positive influence on e-brand loyalty.

3.2 Conceptual model

The purpose of this research is to investigate the relationship among dimensions of brand equity. Figure 1 exhibits the research model that guides this research. As Figure 1 depicts, the important variables of this research include brand equity (including brand awareness, perceived quality and brand association) as the independent variable, and e-brand loyalty as the dependent variable.

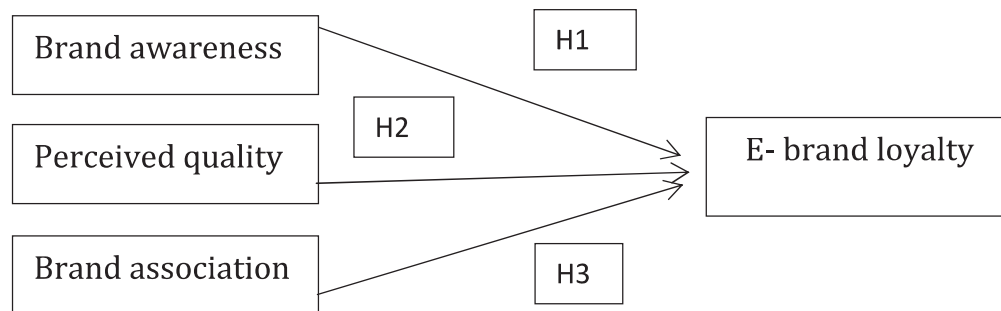


Figure 1. The proposed conceptual model

Source: Authors' collection

4. Methods

4.1 Sample and data collection

The data for this study were gathered through a questionnaire that was distributed to target participants who reported their consumption experience with shopping online. Sampling methods is used by the combination of group and convenient sampling. Targeted participants focus on customers who like to shop online based on the frequency of purchasing behavior and level of expenditure. The targeted participants are students, office staff and housewives, who represent groups of potential customers to shop online. After selecting a group, criteria are selected in each group to join the sample and use the convenient sampling method

The questionnaires were distributed on several social media platforms in Vietnam. The targeted participants are expected to be different in terms of age and gender, no matter where their location is. The most important condition is that they have at least one time using/purchasing from e-tailing business in order to make sure the validity of the answers.

We conducted an online survey in Google forms. The targeted respondents were contacted via direct email with an active link to the survey and asked to complete the online survey. Two weeks after sending emails, a reminder email was followed.

The questionnaire is divided into two parts. The first is concerned with the demographic (such as gender, age, occupation). The second part of the questionnaire is independent and dependent variables. The data collection instrument is a structure questionnaire. A pool of 19 questions compiled from the literature was incorporated in the questionnaire (Table 1). A Likert-scale from 1 to 5 was adopted for all measures with the anchors ‘strongly disagree’ (1) and ‘strongly agree’ (5).

4.2 Measures

This study utilizes multiple measures for each construct in the conceptual model in Table 1. Seven test items for measuring brand awareness were obtained from empirical studies of Yoo and Donthu (2001), Tong and Hawley (2009), and Lee and Leh (2011). Four items regarding brand association were modified to investigate the connection between the brand and customers based on the study of Lee and Leh (2011). Three items were proposed for measuring perceived quality through the customer’s perception of e-tailing service quality

Table 1. Measurement of independent and dependent variables

| No | Variable | Code | Measurement items | Sources |
|----|------------------------|------|-----------------------------------------------------------------------------------------------|-----------------------------------------------|
| 1 | | AW1 | I am well aware of this website | Yoo and Donthu (2001) |
| 2 | | AW2 | I think about this website first whenever you talk about shopping online | Yoo and Donthu (2001), Tong and Hawley (2009) |
| 3 | | AW3 | There are many people mentioning this website when talking about online shopping | Authors proposed |
| 4 | Brand awareness (AW) | AW4 | I have watched/come across a lot of this website’s advertisements | Authors proposed |
| 5 | | AW5 | I can recognize this brand among competing brands | Yoo and Donthu (2001); Tong and Hawley (2009) |
| 6 | | AW6 | This brand is the only brand recalled when I need to make a purchase decision on the product. | Lee and Leh (2011) |
| 7 | | AW7 | I am familiar with the website brand. | Tong and Hawley (2009) |
| 8 | | BA1 | I am impressed by the symbol/logo/slogan of website | |
| 9 | Brand association (BA) | BA2 | I believe that this company does not take advantage of consumers. | Lee and Leh (2011) |
| 10 | | BA3 | I believe that this company is contributing to the society | |
| 11 | | BA4 | I feel highly secured when using the services of this website | |

| No | Variable | Code | Measurement items | Sources |
|----|------------------------|------|--------------------------------------------------------------------------------------|--------------------|
| 12 | Perceived quality (PQ) | PQ1 | The website quickly informs me of current events or a specific topic/promotion | Liyin (2009) |
| 13 | | PQ2 | The website always offers a wide range of products that I can choose from | |
| 14 | | PQ3 | The website is easy to navigate and well-organized | |
| 15 | E-brand loyalty (BL) | BL1 | I consider myself a loyal customer of this website | Liyin (2009) |
| 16 | | BL2 | When it comes to online shopping, this website will always be my first choice | Lin and Sun (2009) |
| 17 | | BL3 | I will still purchase on this website even if other websites offer lower prices | Liyin (2009) |
| 18 | | BL4 | Even if another brand has same features as this website, I would prefer this website | Lin and Sun (2009) |
| 19 | | BL5 | I would love to recommend this website to others | Lin and Sun (2009) |

Source: Authors' calculation

responds to customer's needs (Liyin, 2009). Lastly, e-brand loyalty with five items was evaluated by using scale items adapted from Liyin (2009) and Lin and Sun (2009).

4.3 Demographic profile of the respondents

The profile of respondents is shown in Table 2. The total number of respondents for this study is 125. Respondents were asked to choose one of the online shopping websites, which are listed in the questionnaire, from which they frequently make purchases. The demographic factors include six personal information questions, which are age, gender, occupation, frequently used online shopping website, frequency of purchasing from said website, and average spending on online shopping per month.

The number of respondents who are from the age of 18 years old to 25 years old accounts for 97.6% of the total number of people who took part in the survey. Only 2.4% are from 26 to 35 years old. No respondent is older than 35. From Table 2, we can early conjecture that those who are under 35 years old have higher frequency of purchasing on e-tailing business than those older than 35 years old.

The number of respondents who are female accounts for 65.6% of the total number of people who were surveyed. Specifically, there are 82 women out of 125 respondents. From the result, we can see that the number of women is higher than that of men. The reason might be that women actually take part in online shopping activities more than men do, or simply due to the sampling limitation.

Table 2. Demographic profile of the respondents

| Variables | Categories | Percentage |
|---------------------------------------------|-----------------------|------------|
| Age | 18- 25 years | 97.6 |
| | 26 – 35 years | 2.4 |
| Gender | Female | 65.6 |
| | Male | 34.4 |
| Occupation | Students | 65.5 |
| | Office | 28.0 |
| | Others | 6.5 |
| Frequency of purchasing | Daily | 3.2 |
| | Monthly | 62.4 |
| | Weekly | 12.0 |
| | Yearly | 22.4 |
| Frequently used online shopping website | Shopee | 70.0 |
| | Tiki | 17.6 |
| | Lazada | 5.6 |
| | adayroi | 0.8 |
| | Vatgia | 0.8 |
| Average monthly spending on online shopping | Others | 3.2 |
| | Under 500,000 VND | 64.0 |
| | 500,000-1,000,000 VND | 19.2 |
| | 1-3,000,000 VND | 12.8 |
| | Over 3,000,000 VND | 4.0 |

Source: Authors' calculation

Regarding occupation of respondents, 65.5% of the respondents are students in universities, 28% are official workers, and 6.5% are from other occupations.

For frequency of purchasing from online shopping websites, there are 78 participants answering “monthly”, accounting for the majority of the responses (62.4%). The option with the lowest frequency is “daily”, which only has 4 responses, accounting for 3.2% of the total number of responses.

The most popular website that respondents have used is Shopee. About 72% of the total number of respondents have used Shopee and 90 people chose it as their frequently used online shopping website. Other options are Tiki and Lazada, with 17.6% and 5.6% of respondents, respectively.

From Table 2, it is clear that most of the respondents answered they have spent less than 500,000 VND per month for online shopping. Given that most of the respondents study in colleges, this is a reasonable result because their earnings per month might be not as much

as office workers. The second highest option of spending is from 500,000 VND to 1,000,000 VND per month, which accounts for 19.2% of the total number of respondents.

5. Data analysis

5.1 Reliability and validity of variable measurement

We took the total sample to test the reliability and validity of the 19-item measurement model. First, the Cronbach's Alpha of different latent variables consisting of various items was

Table 3. Results of reliability analysis of independent and dependent variables

| Scales | Cronbach's Alpha |
|------------------------|------------------|
| Brand awareness (AW) | 0.855 |
| Brand association (BA) | 0.834 |
| Perceived quality (PQ) | 0.706 |
| Brand loyalty (BL) | 0.826 |

Source: Authors' calculation

calculated. The Alpha coefficients of all latent variables are significantly above the minimum of 0.70, which shows good reliability for the measuring (Table 3).

An exploratory factor analysis (EFA) on all items of the independent construct was applied to test the validity in order to identify underlying factors as well as assess the unidimensionality of the constructs. In EFA analysis, to determine factor structure of customer-based brand equity, the extraction method was principal components analysis, and the rotation method was varimax rotation. In this study, the rule of thumb for exhibiting factor loadings is over 0.5 (Hair *et al.*, 2010; Williams *et al.*, 2010).

The results of EFA analysis with independent variables, which are customer-based brand equity, indicated that these variables satisfied the requirement of validity for measurement scales, particularly: (1) an adequate fit of Kaiser-Meyer-Olkin test (KMO) with significant Barlett test of sphericity; (2) $0.5 < \text{KMO coefficient} = 0.833 < 1$; Extraction Sums of Squared Loadings = $61.111\% > 50\%$; Initial Eigenvalues > 1 (Williams *et al.*, 2010) which indicates the presence of sufficient inter-correlations in the data matrix and appropriateness of factor analysis. The three constructs of independent variables with 14 items were grouped into 3 factors namely brand awareness (seven items), brand association (four items) and perceived brand quality (three items) (Table 4).

5.2 Hypothesis testing

A regression analysis was employed to test the relationships posited in the model. Based on the conceptual model, the brand equity dimensions, which are treated as independent variables in the model, are assumed to influence e-brand loyalty. The dependent variable e-brand loyalty was regressed on all these variables, which are brand awareness, perceived quality, and brand associations. The results are shown in Table 5.

Table 4. EFA Results of validity analysis of independent variables

| Component | | | |
|-------------------------------------------------------|----------------------|------------------------|------------------------|
| Customer-based brand equity | Brand awareness (AW) | Brand association (BA) | Perceived quality (PQ) |
| AW6 | 0.754 | | |
| AW4 | 0.716 | | |
| AW3 | 0.715 | | |
| AW5 | 0.708 | | |
| AW2 | 0.691 | | |
| AW7 | 0.610 | | |
| AW1 | 0.567 | | |
| BA3 | | 0.815 | |
| BA2 | | 0.776 | |
| BA1 | | 0.774 | |
| BA4 | | 0.766 | |
| PQ2 | | | 0.810 |
| PQ3 | | | 0.769 |
| PQ1 | | | 0.514 |
| Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy | | | 0.833 |
| Barlett's Test of Sphericity | Approx. Chi-square | | 736.826 |
| | df | | 91 |
| | Significance | | 0.000 |
| Extraction Sums of Squared Loadings (%) | | | 61.111 |

Source: Authors' calculation

Table 5. Results of regression analysis of the relationship between brand equity dimensions and e-brand loyalty

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|------------|-----------------------------|------------|---------------------------|--------|-------|-------------------------|-------|
| | B | Std. Error | Beta | | | Tolerance | VIF |
| (Constant) | -0.244 | 0.306 | | -0.796 | 0.427 | | |
| 1 AW | 0.288 | 0.080 | 0.258 | 3.580 | 0.000 | 0.649 | 1.541 |
| BA | 0.449 | 0.069 | 0.460 | 6.542 | 0.000 | 0.684 | 1.462 |
| PQ | 0.255 | 0.092 | 0.207 | 2.762 | 0.007 | 0.601 | 1.665 |

Note: R square = 0.591

Source: Authors' calculation

All the three variables, which are brand awareness, perceived quality and brand associations, are found to have significant and positive influence on e-brand loyalty at a significant level of 1%. The R-square of 0.591 indicates that 59.1 percent of the variance in e-brand loyalty was explained by the variations in brand awareness, perceived quality and brand associations.

Looking at the standardized beta coefficients, brand association has the highest contribution towards e-brand loyalty, followed by brand awareness and perceived quality.

Table 6. Results of hypotheses testing

| Hypotheses | Result |
|-------------------------------------------------------------------|-----------|
| H1: Brand awareness has a positive influence on e-brand loyalty | Supported |
| H2: Perceived quality has a positive influence on e-brand loyalty | Supported |
| H3: Brand association has a positive influence on e-brand loyalty | Supported |

Source: Authors’ calculation

From the regression results from the above, the theoretical model is refined as below:

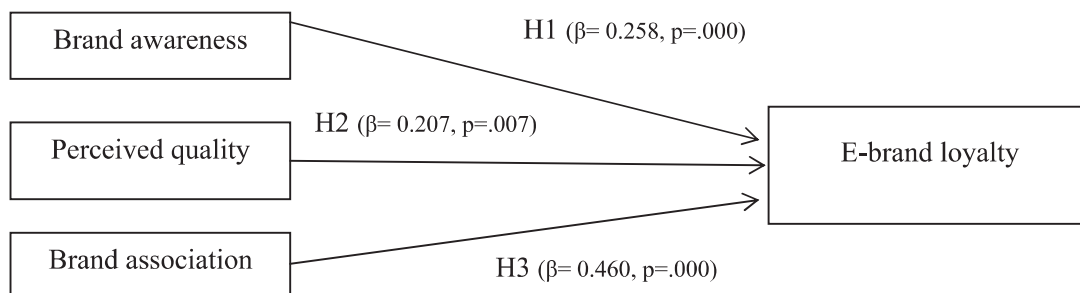


Figure 2. The tested conceptual model

Source: Authors’ collection

$$BL = 0.258AW + 0.460BA + 0.207PQ \quad (1)$$

These findings substantively support H1, H2 and H3 as shown in Table 6.

6. Discussion

The first hypothesis (H1) postulated that there would be a positive relationship between brand awareness and e-brand loyalty. This hypothesis was supported with a positive beta coefficient ($\beta= 0.258$). Previous studies also supported the hypothesis (Asif *et al.*, 2015; Pike and Bianchi, 2016). Keller (2013) emphasizes that one of the advantages of developing strong brand awareness is that it influences the consumer to include the brand in a set of alternatives that can be considered for future purchases. In addition, strong brand awareness can affect a consumer’s buying decision in terms of brands that are being considered. Furthermore, consumers’ awareness of a brand can offer the brand a sense of familiarity and signals of substance and commitment (Aaker, 1992). Keller (2013) also reiterates that enhanced brand recognition exposes consumers repeatedly to brand, which will cause consumers to

experience the brand. When consumers are exposed and become experienced to the brand through hearing, seeing or thinking about it, the brand can occupy their memory and can be recognized at any time, leading to loyalty from the brand.

The second hypothesis (H2) predicted a positive significant relationship between perceived quality and e-brand loyalty. The results from the empirical evidence supported this hypothesis with beta coefficient ($\beta = 0.207$). Aaker and Keller (1996) believe that perceived quality in the branding context can be both the customer's perception of overall quality and an intangible, overall feeling about the brand (Hsu *et al.*, 2012). Aaker (1996) states that perceived quality reported by the loyal customers. His research believed that the customers are tending to become loyal to a brand which its offer is based on high quality (Hsu *et al.*, 2012; Eren-Erdogmus *et al.*, 2012). Thus, in the face of increasing competition, website-tailing businesses want to attract and retain customers, an important condition is to provide good website service quality to customers. In order to achieve this goal, Hung *et al.* (2005) point out that shopping website operators must understand the customer groups that they serve. The majority of website operators are not initially aware of who their customers are, let alone their related personal or background information. But after a while, customers leave browsing the website as well as transaction records on the website, even signing on as shopping website VIP members. Towards the end of satisfying the customers, shopping website operators should try to enhance service quality through the use of related business analysis and an understanding of their customers' traits, buying preferences and shopping habits.

The third hypothesis (H3) postulated that there would be a positive relationship between brand association and e-brand loyalty. Based on this model, we can see that the factor brand association has the most influential impact on the customers when appraising the online shopping websites, with beta coefficient ($\beta_2 = 0.460$). The ability of online shopping websites to create customer's association to their brand is important (Aaker, 1996). The effect of brand association is significant enough to be considered as an important variable. This result is consistent with other empirical results which state that brand association enables the customers to distinguish their needs that the brand fulfills and differentiates the company from others and enhances the customer performance over the brand (Yoo *et al.*, 2000; Pike *et al.*, 2010; Buil *et al.*, 2013). Chen (2001) realizes that strong and unique brand associations strengthen brand equity and ultimately, create strong competitive edge for a firm.

7. Contributions to theoretical and managerial implications

7.1 Theoretical implications

E-tail brands face severe competition in the virtual market and cope with the constant pressure to differentiate them and build loyal customers. Providing unique e-tail brand equity to customers may be an effective way to develop e-brand loyalty and differentiate the e-tail brand in the mind of the customer.

The present study contributes to the brand equity and retailing literature mainly in two ways. First, this study offers new insights into the brand equity in the online retailing industry.

While previous studies have examined brand equity in a general context (Morgan-Thomas and Veloutsou, 2013) and in context of the hotel industry (Lin and Bennett, 2014), this study investigates brand equity in context of the online retailing industry. A similar attempt has not been made before, which makes our study unique and highlights its contribution to brand equity literature. Second, the study tests the relationship between brand equity dimensions and e-brand loyalty. Results supported Hypotheses H1, H2 and H3, implying that brand awareness, perceived quality and brand association play an important role in the aforementioned relationships. This finding is well supported by previous studies (e.g. Yoo, *et al.* 2000; Pike *et al.*, 2010; Buil *et al.*, 2013). The studies suggest that when improvement of brand awareness, perceived quality and brand association could positively affect to brand loyalty of customer shopping online.

7.2 Managerial implications

The present study has several important implications for managers. First, the results of the study have implications for marketing practitioners in online context. The study demonstrates that brand awareness and association contribute positively to support the loyalty. As a result, marketing managers should focus on building brand awareness and association, which will significantly improve loyalty. The study further confirms that brand awareness and association create value for brands, which in turn drives loyalty in shopping online. Investing more resources to develop brand awareness and association will not only enhance loyalty but also create strong brands, which will contribute to increase loyalty in virtual environment, which can lead to a reduction in the cost of attracting new customers and an increase in word-of-mouth advertising and overall commercial value of the brands in the industry. Second, the study suggests for internet retailers who can also implement different policies to allow customers to trust their service quality more. Because perceived brand quality will be greatly influenced by web service. Commonly, there is little chance for staff members of a website and website visitors to meet. Therefore, the encounters with website administrators in virtual cyber space will have decisive impact on consumers' evaluation of online services. Managers, in turn, should pay special attention to this kind of service contact in cyber space, caring for consumers and respecting their suggestions, making quick responses to their inquiry, and meanwhile developing personalized online services. Its e-service quality rating system will certainly be a useful tool for improving e-service in the global e-commerce environment. Third, the results indicate that customers are engaged with website brands through their perceptual elements which include cognitive, affection and activation, and these perceptual elements influence their online practice and online experience, making the customers loyal. Therefore, aside from fulfilling personal service quality and information levels, shopping websites can also provide specific member services through social organization such as chat room links or VIP membership. In short, in order to increase customer e-loyalty, shopping website operators should make the transfer cost to other websites high, so that the shopping website can maintain a longer transaction relationship with the customers.

8. Conclusion, limitation and future research

This study focuses on four dimensions of customer-based brand equity, which are perceived brand quality, brand associations, brand awareness, e-brand loyalty and its measurements.

Conceptualizing brand equity from the consumer's perspective is useful because it suggests both specific guidelines for marketing strategies and tactics and areas where research can be useful in assisting managerial decision making.

The current study was carried out to investigate the influence of brand awareness, perceived brand quality and brand association on brand loyalty in the online context. The study confirms that high awareness, high website service quality and unique association are important brand assets which significantly contribute to support e-brand loyalty. Strong brand association also positively and significantly impact on e-brand loyalty. From the results, the authors have several important suggestions for marketing practitioners and internet retailers.

Limitation

The survey in this study was conducted at a single point in time. In view of the significant difficulties experienced in Vietnam during the conduct of this study, there is the risk of potential distortion of the responses because respondents may have view their world and reality only in the light of whatever seemed important to them at that specific time. This limitation could be overcome by conducting longitudinal studies in the future (Barnes, 2002). Besides, this model includes four factors and 19 items with 125 samples. For better results, an increase in the sample size is desired. Hair *et al.* (2010) affirm that sample size must be 10x of entire items in the questionnaire, which would enhance the generalization of the findings to customer's behavior in shopping online.

Future research

Further studies should investigate the fitness of the model by using the structural equation model (SEM) to employ qualitative methods to allow for in-depth investigation of the impact of brand awareness, association and perceived quality on loyalty through the mediation effect of satisfaction in the online environment.

Besides, in order to attract new customers and retain the old ones, the study will consider more on website and online experience factors in the research model. Because when the managers develop a culture which matches the customers' interest, it will attract new customers and turn them into loyalty customers.

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