



# MEASURING CUSTOMER-BASED BRAND EQUITY: A STUDY OF APPLE AND SAMSUNG IN THE VIETNAMESE TABLET MARKET

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**Abstract:** Brand plays a pivotal role to firms in today's business. The increasing attention on brand has led to the introduction of the concept "brand equity" in the 1980s. More recently, brand equity has been defined in customer-based contexts since the company's real value lies in the minds of existing or potential buyers. In this study, based on Aaker's well-known theory of customer-based brand equity (CBBE), the measurement of CBBE is constructed on four main dimensions, including brand loyalty, brand awareness, brand associations and perceived quality. By investigating the interrelationships between brand loyalty and the remaining components of customer-based brand equity, this study aims to provide an in-depth understanding of brand equity from a consumer perspective in the Vietnamese tablet market, from which some implications for practitioners working in the tablet industry are drawn. The findings conclude that there is no discriminant validity between brand awareness and brand association. Brand loyalty and brand awareness/association, brand loyalty and perceived quality are found to be positively correlated.

**Keywords:** Customer-based brand equity, brand loyalty, brand awareness, brand association, perceived quality, interrelationship

## 1 Introduction

The concept of brand equity began to be used widely in the 1980s by advertising practitioners [3]. In the 1990s, this concept was greatly contributed by Aaker, Srivastava and Shocker, Kapferer and Keller. Brand equity provides value for both customers and firms. Brand equity creates value for customers by enhancing efficient information processing and shopping, building confidence in decision making, reinforcing buying, and contributing to self-esteem. Brand equity creates value for firms by increasing marketing efficiency and effectiveness, building brand loyalty, improving profit margins, gaining leverage over retailers, and achieving distinctiveness over the competition [2]. "Principally, brand equity can be categorised into two principal perspectives that are financial and customer based" [6, p.1]. Between these two categories, measuring CBBE could be one of the most effective ways to have a more thorough understanding of customer behavior because the premise of CBBE models is that the power of a brand lies in what customers have seen, read, heard, learned, thought, and felt about the brand over time [8].

In recent years, the world has experienced a boom in smart device industry, especially, tablet (also tablet computer or tablet PC) – "a small portable computer that accepts input directly on to its screen rather than via a keyboard or mouse" [13] segment has been growing rapidly. In Vietnam, the percentage of the population that owns a tablet is expected to grow rapidly in the near future, which promises attractive profitability for tablet manufacturers. The Vietnamese tablet market is being dominated by the two giants – Apple and Samsung. According to

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International Data Corporation's report, Apple's tablet comprises around 80% in terms of market share in the Vietnamese tablet market, and Samsung occupies the second position. Nevertheless, there have been limited studies carried out on brand equity issues in general and high technology-related brand equity in particular in Vietnam. For this reason, the concept of CBBE is put forward in this research to provide a deeper understanding of brand equity from a consumer perspective in the Vietnamese tablet market, from which some implications for practitioners working in the tablet industry are drawn.

## **2 Literature review**

### **Customer-based brand equity**

Customer based approaches view brand equity from the perspective of the consumer, either an individual or an organization [1]. The advantage of conceptualizing brand equity from a consumer's perspective is that it enables managers to consider specifically how their marketing program improves the value of their brands. Keller (1993) explains, though the eventual goal of many marketing programs is to increase sales, it is necessary to establish knowledge structures for the brand so that consumers respond favorably to marketing activity for the brand. If the brand has no meaning to the customer, none of the other definitions are meaningful. Keller (1993) also explains that firms with positive CBBE can achieve greater revenue, lower cost and higher profit because it has direct implications for their 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 [7]. Hence, a profound understanding of CBBE is essential for successful brand management.

## **3 A conceptual framework and research hypotheses**

### **3.1 A conceptual framework**

David Aaker - former UC-Berkeley marketing professor introduced Aaker's Brand Equity Model in 1991 as a conceptual foundation for customer-based brand equity. Aaker views brand equity as a set of five categories of brand assets and liabilities linked to a brand that adds to or subtracts from the value provided by a product or service to a firm and/or to that firm's customers. These categories of brand assets include: "(1) brand loyalty, (2) brand awareness, (3) perceived quality, (4) brand associations, and (5) other proprietary assets such as patents, trademarks, and channel relationships" [9, p. 279-280]. Among these five brand equity dimensions, the first four represent customers' evaluations, and reactions to the brand can be readily understood by consumers [3], [12]. Brand loyalty is considered as the heart or the major component of brand equity [1]. Therefore, in this study, the conceptual framework is constructed as follows:

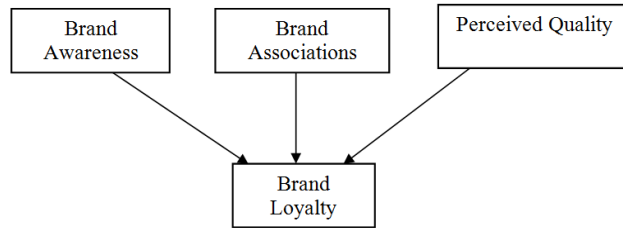


Fig. 1. A conceptual framework for customer-based brand equity (source: Adopted from Aaker's model)

### 3.2 Research hypotheses

**The relationship between brand awareness and brand loyalty:** The brand loyalty of the customer base is often the core of a brand's equity [1]. Brand loyalty is a complex phenomenon. Dickson (1994) suggested that there are at least seven different types of brand loyalty, including emotional loyalty, identity loyalty, differentiated loyalty, contract loyalty, switching cost loyalty, familiarity loyalty and convenience loyalty [5]. Loyalty begins with the customers becoming aware of the product [1]. In familiarity loyalty, brand loyalty is the result of top-of-mind brand awareness [5]. In this way, brands with a higher level of awareness would be more likely to be purchased [6]. As a result, consumers tend to buy a recognized brand than an unfamiliar brand. Awareness can affect customers' perceptions which lead to a different brand choice and eventually brand loyalty [8]. Based on the above definition and the suggested relationship of brand awareness and brand loyalty in the literature, the following hypothesis is proposed:

*H1: Brand awareness has a significant positive direct effect on brand loyalty*

**The relationship between brand associations and brand loyalty:** Brand association is anything "linked" in memory to a brand. Brand associations create value for the firm and its customers by helping to process/retrieve information, differentiate the brand, create positive attitudes or feeling, provide a reason to buy, and provide a basis for extensions. Associations represent the basis for purchase decision and for brand loyalty [1]. One of the preliminary steps in maintaining customer loyalty is to build and sustain a positive brand image (associations). Gladden and Funk (2001) suggested that there is a link between brand loyalty and brand associations [6]. This study examines whether this relationship exists:

*H2: Brand associations has a significant positive direct effect on brand loyalty*

**The relationship between perceived quality and brand loyalty:** Perceived quality is one of the key dimensions of brand equity and is highly associated with other key brand equity measures. A strong brand with respect to perceived quality will be able to extend further, and will find a higher success probability than a weak brand [1]. The more brand-loyal a customer is, the more he or she perceives the brand as superior. High quality brand provides repurchase motivation and influences brand loyalty through perceptions of price-value and customer satisfaction [4]. Kayaman and Arasli (2007) suggested that perceived quality was positively linked to repurchase behavior and loyalty [6]. Hence, the following hypothesis of the relationship between brand loyalty and perceived quality is proposed:

*H3: Perceived quality has a significant positive direct effect on brand loyalty*

## 4 Methodology

**Research design:** The data collection instrument for this study is a structured questionnaire. A Likert scale of 1 to 5 was adopted for all the brand equity measures with the anchors 'strongly disagree' (1) and 'strongly agree' (5). The items were developed with reference to the "The Brand Equity Ten" - a ten-set of measures written by David A. Aaker and The Brand Equity Scale developed by Yoo and Donthu (2001). The reason for referring to their scale development studies is that these scales are the most commonly accepted measure of customer-based brand equity [6]. The distribution of the questionnaires was conducted in Hue city by face-to-face method. Respondents were requested to name the brands of tablets that they knew according to the order from top of mind to recognition and give their evaluations to the brand equity compositions of the two tablet brands, Apple and Samsung. A convenience sampling was employed since it was the cheapest and easiest method to conduct under the circumstance that the authors did not have the data of tablet user population in Hue city (how many and who they are). However, using convenience sampling in this case study means that the authors had no control over the representativeness of the sample. According to Malhotra (1999), a sample size of 200 is minimum sufficient for a problem solving research; thus, the sample size for this study was determined to be 200. To achieve this target number, 230 questionnaires were drafted and 217 useable ones were received. The target population of this study was defined as people between the ages of 18 and 45 and owned tablets from the brands Apple or Samsung. This group of consumers was interested in and willing to spend more time and money on new high technology products, thus representing one of the most important market segments for tablet retailers in Vietnam.

**Demographics:** The sample indicated the balance in terms of gender with 53% of males and the rest 47% of females. These tablet owners appeared to be young (more than 64% were from 25 to 35 years old) and had moderate incomes (around 50% reported having a monthly income of USD 200- USD 500). The majority (85.7%) of the respondents owned Apple tablets whilst, the remaining (14.3 %) owned Samsung tablets, which roughly reflects the two brands' current positions in the Vietnamese tablet market in connection to market share.

## 5 Results and analysis

### 5.1 Reliability and Validity

**Reliability:** In order to test the internal reliability of the scale, Cronbach's alpha coefficients were evaluated. Sharma (1996, p. 118) recommended that a value of the coefficient 0.7 is acceptable [11]. Table 1 shows that the reliability of the scale was highly acceptable since all reliability coefficients and the overall value were higher than 0.7.

**Table 1.** Reliability analysis of the dimensions of brand equity (source: Field research)

Brand equity dimensions	Cronbach's $\alpha$
Brand Awareness	0.707
Brand Associations	0.821
Perceived Quality	0.853
Brand Loyalty	0.917
Overall brand equity	0.935

**Validity:** The data collection instrument for this study was developed based on the combination of items from CBBE scales of David A. Aaker (1991) and Yoo and Donthu (2001). As a result, variables could be highly correlated. Hence, the Principal Components Analysis (PCA) was employed to evaluate the validity of the scale. First, the tests of the sample sufficiency and correlations among subscales were conducted. Table 2 indicates a high KMO index (0.932), which means that the sample of the data is highly appropriate for the implementation of factor analysis. The Bartlett's test has a statistical significance of 0.000. Consequently, two requirements for conducting factor analysis are satisfied.

**Table 2.** KMO and Bartlett's Test (source: Field research)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.932
Bartlett's Test of Sphericity	Approx. Chi-Square	2239.001
	df	136
	Sig.	0.000

Next, the Principal Components Analysis was proceeded. As can be seen from Table 3, three components were extracted. Table 4 illustrates these extracted components and the component loadings generated after Principal components analysis. Questions BL1, BL2, BL3, BL4, and BL5 have high loadings on the first component. This component presents the consumers' opinions about the degree of their loyalty to the tablet brand that they were using, and it was labeled "Brand Loyalty". Questions AS1, AW2, AW1, AS3, AS4, AW3, AS5, and AS2 have high loadings on the second component. Interestingly, the second component includes statements prepared to measure the brand awareness and brand association of the tablet users, therefore this component was labeled "Brand Awareness/Association". This is totally suitable to the empirical findings by Yoo and Doothu in 2001 that the two dimensions (Brand Awareness and Brand Association) should be combined into one dimension when measuring Brand Equity. The questions that load highly on the third component include PQ1, PQ4, PQ2, and PQ3. These questions are all related to the statements of perceived quality, therefore, this factor was labeled "Perceived Quality". Eventually, there are three principal components extracted after conducting Principal Components Analysis, namely Brand Loyalty, Perceived Quality and Brand Awareness/Association.

**Table 3.**Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	8.578	50.461	50.461	8.578	50.461	50.461	6.954
2	1.326	7.801	58.261	1.326	7.801	58.261	6.834
3	1.003	5.900	64.161	1.003	5.900	64.161	5.998
4	.847	4.981	69.143				
5	.787	4.631	73.773				
6	.606	3.566	77.340				
7	.563	3.311	80.651				
8	.532	3.129	83.780				
9	.429	2.524	86.304				
10	.395	2.325	88.630				
11	.382	2.245	90.874				
12	.332	1.953	92.828				
13	.291	1.713	94.540				
14	.276	1.622	96.162				
15	.256	1.507	97.669				
16	.241	1.419	99.088				
17	.155	.912	100.000				

Extraction Method: Principal Components Analysis

**Descriptive statistics:** The mean and standard deviation of all the study variables are presented in Table 5. All the variables exceed 3.0 out of 5.0. Apple received higher evaluations for all brand equity’s dimensions from tablet consumers than Samsung. In general, both brands have achieved a high level of brand awareness/association and perceived quality (most of the mean scores are all higher than 4 out of 5). However, the mean scores for the component “brand loyalty” of both brands are all from 3.4 to less than 4, which illustrates that tablet consumers of Apple and Samsung are not really loyal to these brands. It seems that although the general public has become broadly aware of Apple and Samsung’s existence and their tablet quality is highly perceived, they still have to have great efforts to gain the consumers’ loyalty in the Vietnamese tablet market.

**Correlations:** Pearson correlation analyses were conducted to examine whether there were relationships between brand awareness/associations, perceived quality and brand loyalty. The correlation coefficients among these study variables are illustrated in Table 6. The correlation coefficients between brand awareness/associations and brand loyalty, and between perceived quality and brand loyalty are 0.621 and 0.627, respectively. Hence, there are strong positive interrelationships among brand awareness/associations, perceived quality, and brand loyalty.

**Table 4.** Rotated Component Matrix<sup>a</sup>

	Component		
	1	2	3
I was satisfied with the tablet of this brand during my last use experience (BL1)	0.885		
I would recommend the tablet of this brand to others (BL3)	0.856		
The tablets of this brand would be my first choice (BL4)	0.841		
I would buy the tablet of this brand on the next opportunity (BL2)	0.78		
I consider myself to be loyal to the tablets of this brand (BL5)	0.75		
In my opinion, the tablet from this brand has a personality! (AS1)		0.768	
Some characteristics of the tablets from this brand come to my mind quickly (AW2)		0.758	
I can recognize the tablets of this brand among other competing brands (AS4)		0.752	
I have a clear image of the type of person who would use the tablet of this brand. (AS3)		0.7	
In my opinion, the tablets of this brand are different from the ones from competing brands (AS4)		0.657	
I can quickly recall the symbol or logo of the tablets from this brand (AW3)		0.599	
The tablets from this brand is made by an organization I would trust (AS5)		0.584	
In my opinion, the tablet of this brand is interesting! (AS2)		0.583	
I think that the tablets of this brand have high quality (PQ1)			0.917
I think that the appearance of the tablets of this brand are well designed (PQ4)			0.836
In my opinion, in comparison to alternative brands, the tablets of this brand are the best (PQ2)			0.732
I think that the tablets of this brand have consistent quality (PQ3)			0.624

Extraction Method: Principal Components Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 5 iterations. Source: Field research

**Hypothesis Tests:** Due to the change in the number of brand equity’s components as a result of principal components analysis, there was an adjustment in the number of hypotheses; specifically, two hypotheses *H1: Brand awareness has a significant positive direct effect on brand loyalty* and *H2: Brand association has a significant positive direct effect on brand loyalty* would be combined into one hypothesis named *H1: Brand awareness/association has a significant positive direct effect on brand loyalty*. Therefore, this section would test two hypotheses:

*H1: Brand awareness/association has a significant positive direct effect on brand loyalty.*

*H3: Perceived quality has a significant positive direct effect on brand loyalty.*

Table 7 presents results of hypothesis testing. As can be seen from this table, H1 and H3 are strongly supported, which indicates the positive and the direct role of brand awareness/association (beta = 0.614, t = 11.127), and perceived quality (beta = 0.617, t = 11.617) in affecting brand loyalty. Therefore, it is concluded that brand awareness/association and perceived quality have a direct significant influence on brand loyalty.

**Table 5.** Descriptive statistics analysis (source: Field research)

Brand awareness/association	Entire sample		Apple		Samsung	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
I can recognize the tablets of this brand among other competing brands.	4.17	0.75	4.16	.739	4.19	.833
Some characteristics of the tablets from this brand come to my mind quickly.	3.68	0.99	3.68	1.003	3.68	.945
I can quickly recall the symbol or logo of the tablets from this brand.	4.44	0.65	4.49	.599	4.16	.860
In my opinion, the tablet from this brand has a personality!	4.00	0.84	4.01	.829	3.97	.912
In my opinion, the tablet of this brand is interesting!	4.14	0.72	4.15	.702	4.13	.806
I have a clear image of the type of person who would use the tablet of this brand.	3.50	0.94	3.47	.954	3.68	.871
In my opinion, the tablets of this brand are different from the ones from competing brands.	4.12	0.82	4.14	.820	4.00	.816
The tablets from this brand are made by an organization I would trust.	4.03	0.74	4.02	.731	4.10	.790
<b>Perceived Quality</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Mean</b>	<b>Standard deviation</b>
I think that the tablets of this brand have high quality.	4.25	0.71	4.29	0.66	4.00	0.93
In my opinion, in comparison to alternative brands, the tablets of this brand are the best.	4.11	0.85	4.12	0.82	4.00	0.97
I think that the tablets of this brand have consistent quality.	4.20	0.71	4.22	0.64	4.10	1.04
I think that the appearance of the tablets of this brand are well designed.	4.46	0.66	4.49	0.61	4.29	0.90
<b>Brand Loyalty</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Mean</b>	<b>Standard deviation</b>
I was satisfied with the tablet of this brand during my last use experience.	3.95	0.69	3.99	0.65	3.71	0.86
I would buy the tablet of this brand on the next opportunity.	3.76	0.80	3.81	0.77	3.52	0.96
I would recommend the tablet of this brand to others.	3.90	0.74	3.96	0.70	3.58	0.92
The tablets of this brand would be my first choice.	3.75	0.84	3.79	0.82	3.48	0.92
I consider myself to be loyal to the tablets of this brand.	3.79	0.84	3.83	0.81	3.55	0.99



**Table 6.**Correlation Matrix of the dimensions of brand equity (source: Field research)

	Brand awareness/associations	Perceived quality	Brand loyalty
Brand awareness/associations	1.00		
Perceived quality	0.560	1.00	
Brand loyalty	0.621	0.627	1.00

Correlation is significant at the 0.01 level (2 tailed)

**Table 7.**Results of hypothesis testing (source: Field research)

Hypotheses	Relationships	Standardized Coefficient	T-value	P-value	Results
H1	Brand Awareness/Association → Brand Loyalty	0.614	11.127	≤ 0.001	Supported
H3	Perceived Quality → Brand Loyalty	0.617	11.617	≤ 0.001	Supported

## 6 Conclusion and future research

This study measures customer-based brand equity and tests the interrelationships between the individual dimensions of customer-based brand equity to provide an in-deep understanding of brand equity from a consumer perspective in the Vietnamese tablet market by applying Aaker's model - the most common theory for measuring customer-based brand equity. The study was conducted with a scale of 20 variables representing four dimensions of brand equity, including brand awareness, brand association, perceived quality and brand loyalty. Conclusions with-drawn from this study are presented as follows:

1. The reliability of the scale was acceptable with the overall reliability coefficient, and the reliability coefficients of each dimension were higher than 0.7.

2. There was a coincidence between the findings after implementing Principal components analysis in this study and Yoo and Donthu's in 2001, and no discriminable validity between the dimensions brand awareness and brand association was found.

3. The results of measuring customer-based brand equity reflected the current positions of Apple and Samsung in the Vietnamese tablet market as the leading and second brand. Apple occupied the first position in the majority of the tablet consumers' mind with 86% whilst, more than 84% of the respondents could recall the brand Samsung when thinking of tablet products. Considerably, Apple received higher evaluations for all brand equity dimensions from tablet consumers than Samsung.

4. Both two research hypotheses generated for this study were found to be supported.

To conclude, the empirical data and statistical tests in this study confirm the relevance in the customer-based brand equity dimensions with the existing empirical research (Aaker, 1996; Keller, 1993; Yoo and Donthu, 2001). This study provides support for the positive and direct

relationship between brand loyalty and brand awareness/associate; and between brand loyalty and perceived quality. In other words, it suggested that the more consumers are aware of the brand and perceived high quality, the more they are likely to be loyal to the brand. Therefore, in order to build strong loyalty among their consumers, brand managers should concentrate on creating high brand awareness/association and satisfy the users in terms of quality. Nevertheless, there are limitations that could be drawn from this study. First, it only focused on the tablet market in Hue city; hence, future researches need to be implemented if the results are supposed to be expanded into other regional markets in Vietnam due to the remarkable regional gaps in consumer attitudes and behaviors. Second, it should also be noted that the data about brand awareness/association in this study were collected from Apple and Samsung tablet owners, whilst it should have been collected from the people who even do not own a tablet, which might provide a more exhaustive result. Thus, this should be considered when a future study is conducted.

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