Exploring the Strategic Role of Brand Equity Towards Competitive Advantage in the Smartphone Industry

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Abstract: This study intends to explore the strategic role of brand equity towards competitive advantage from the customer’s perspective in the context of the smartphone market in Kuching, a city located in Sarawak, Malaysia. Based on the two competitive advantage strategies (cost advantage and differentiation), this study aims to investigate the extent these two strategies affects brand equity prediction towards customer satisfaction. By employing convenience sampling, self-administered questionnaires were distributed among smartphone users. A total of 417 respondents were involved in the process. The data collected were further evaluated using the Statistical Package for Social Sciences (SPSS). Pearson’s correlation analysis, multiple regression analysis, and independent sampled t-test were used to perform statistical analysis. The results revealed that elements of Brand Equity (brand awareness, brand associations, perceived quality, and brand loyalty) have a positive relationship with customer’s satisfaction. There is also a significant difference between the two competitive advantage strategies, that is, cost advantage and differentiation. Results showed that when the elements of brand equity increase, customer satisfaction level also increases and the level of increment among two samples of study is different. This study contributes in a twofold manner. Brands can be effective tools for the organizations to gain their competitive advantage, but specific advantage and segment need specific brand treatment.

Keywords: brand associations, brand awareness, brand equity, brand loyalty, perceived quality

The emergence of the Internet and handphones have boosted up the invention and continuation of smartphone production in the market, making it an interesting issue to be studied by marketers nowadays. The presence of these two technologies in the 21st century have shown considerable primary impact towards the economy of a country as they are offering more powerful computing systems with enhanced connectivity than an old, outmoded mobile phone (O’Leary & O’Leary, 2005). According to Statista (2017), there were 19.9 million smartphone users in 2017 in Malaysia, and now this figure projected to reached to 20.96 million in 2018 which is estimated to increase up to 21.76 million in 2019, forming a big industry. Based on a report by Newzoo (2018), the smartphone penetration rate of Malaysia has been ranked 11th in the Asia-Pacific region and 30th in the global ranking (i.e., 57.5%). The figures indicate that the Malaysian smartphone market is facing a challenging marketing environment with increasingly demanding consumers, strengthened competition, and rapidly growing market.

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Recently, Malaysia’s smartphone business environment is getting more and more competitive, and the rivalry between smartphone brands is getting tight with the increasing number of brands entering the market. Therefore, the brand operators are emphasizing on the brand establishment to survive and retain their competitive advantage in the market. Consequently, brand equity is viewed as an essential element in assisting smartphone managers to attain higher customer satisfaction toward their brands along with gaining competitive advantage and making wiser organizational decisions (Ahmad & Sherwani, 2015). Building strong brands has turned out to be an area of extreme importance, and numerous studies had been done to carefully identify and conceptualize the role and effects of branding because it brings along several advantages (Ahmad & Sherwani, 2015).

For the past two decades, the relationship between brand equity and customer satisfaction has been debated repeatedly, becoming a key area of research in business marketing. Aaker’s (1991) conceptual framework of brand equity confirmed the fact that brand equity and customer satisfaction are interdependent. His proposed model was further studied and accepted by many more researchers (Ahmad & Sherwani, 2015; Kapferer, 2004; Keller, 1993; Yoo, Donthu, & Lee, 2000). Ahmad and Sherwani (2015) aimed to evaluate Aaker’s brand equity framework in the context of mobile phone brands and confirmed that brand equity is positively influenced by the dimensions of brand equity which further results in increased customer satisfaction. This finding is consistent with that of Ryu, Han, and Jang (2010) that brand equity is a key measure of customer satisfaction in many instances.

Besides, evidence has proven that strong brand management impacts an organization by building a reputation and gaining competitive advantage (Anderson & Sullivan, 1993; Walsh, Dinnie, & Wiedmann, 2006; Matzler, Hinterhuber, Daxer, & Huber, 2005). Many studies emphasized the relationship of brand equity with competitive advantage (Ahmad & Sherwani, 2015; Delgado-Ballester & Munuera-Alemán, 2005; Hunt & Morgan, 1996), but there is still room to study the direct relation of the effects of brand equity on two different strategies of competitive advantage, that is, cost advantage and differentiation. Therefore, this study is conducted from the customers’ perspective to examine the influence of overall brand equity on competitive advantage (cost vs. differentiation competitive advantage) in the smartphone industry.

**Literature Review**

**Brand Equity**

The term “brand equity” has been proposed by various researchers from its early years of development. Different models were developed in different ways to measure brand equity for different purposes. According to Farquhar (1989), brand equity is the “value-added” to a product by a brand. The concept and the meaning of brand equity have been debated repeatedly. Numerous researches had been conducted to conceptualize and explore brand equity. Aaker (1991) defined brand equity as “a set of brand assets and liabilities linked to a brand, its name and symbol that add to or subtract from the value provided by a product or service to a firm and/or to that firm’s customers” (p.27). Brand equity is considered among the most important and popular concepts of marketing, which is successful in gaining a lot of attention from practitioners and academicians in the past few decades. The main reason behind the popularity of this concept is its strategic role in achieving competitive advantage (Atilgan, Aksoy, & Akinci, 2005).

Keller (1993) demonstrated that the brands should be valued by their customers first to have a brand value of itself. He concluded that brand equity is positively connected with customers. Aaker (1991) and Keller (1993) agreed that brand equity is conceptualized by the customers of a brand providing advantages to the firm. Then in 1996, Aaker finally concluded that other than customers, brand equity has four main dimensions which are interrelated, that is, brand loyalty, brand awareness, perceived quality, and brand association (Aaker, 1996a). Yoo et al. (2000) explored the working theory of Aaker’s brand equity model, and they agreed to what has been proposed by Aaker. Until then, almost all researchers who worked on the conceptualization of brand equity (Vazquez, Del Rio, & Iglesias, 2002; Washburn & Plank, 2002; Keller, 2003; Kapferer, 2004) agreed with Aaker’s model of brand equity and his model has also been widely used by researchers today. Combining these definitions, brand equity can be concluded as the value a product or service earned from an increment of the customers’ knowledge and awareness about the brand.
Brand equity is very important for every brand to generate higher revenues and profits. More specifically, the smartphone brands are increasingly getting attention, and competition among smartphone brands is now stiffer than ever. Bojei and Hoo (2012) explained the importance of brand equity in the context of smartphone markets in Malaysia and found that the dimensions of brand equity (i.e., brand association, brand awareness, brand loyalty, and perceived quality) positively influence the smartphone usage and its repurchase intention. Other studies relate brand equity with smartphone brands. A-Qader, Omar, and Rubel (2017) did a study on the relationship of brand equity and brand experience among the smartphone users in Malaysia and found that the brand equity of smartphone users is greatly influenced by the dimensions of effective brand experience. Furthermore, Huang and Shih (2017) explained the role of a perceived attribute of innovation as a new dimension of brand equity in the context of smartphone markets in Taiwan. According to Abid and Khattak (2017) brand equity of smartphone brands increases when, (1) the consumer’s expectations are met, (2) brand is in congruence with the consumer’s personality, and (3) brand is doing no immoral activities. It is evident from these studies that brand equity enhances the customer satisfaction of smartphone brands, which this study aims to prove.

Dimensions of Brand Equity
As shown previously, there are various definitions of brand equity by different authors, which results in diverse brand equity dimensions. Most of the studies defined brand equity based on four elements: brand awareness, brand association, perceived quality, and brand loyalty, as stated in Aaker’s renowned conceptual model of brand equity.

Brand Awareness
Whether a brand is recognized, recalled by the consumers, or it is known to the consumers, is referred to as brand awareness. At one extreme, some brands are unknown to a majority of the people. On the other hand, some brands are known to almost everyone in the world (Ahmad & Sherwani, 2015) showing a high level of brand recognition. To develop and maintain a high level of brand awareness is among one of the primary focus of the brand managers because of the advantages that are brought to the firms through brand awareness (Jamil & Wong, 2012). Brand awareness plays important roles in marketing, such as consumers tend to feel familiar, contemplate the “when” in their buying decision, and consequently start trusting brands (Keller, 1993). Brand awareness has been assessed empirically as an element of brand equity through a series of research studies (Yoo et al., 2000; Pappu & Quester, 2006; Tong & Hawley, 2009). In short, customers will only consider and purchase products or services from brands that they recognize.

According to Cobb-Walgren, Ruble, and Donthu (1995), the higher brand awareness among customers, the higher will be the purchase intentions. Cobb-Walgren et al. (1995) also found in their study that brand awareness is helpful only in directing customers towards purchase intentions, but they are useless in influencing repurchase intentions in the future. However, in a study on smartphone brands, Bojei and Hoo (2012) found that brand awareness plays a significant role in increasing smartphone usage and further encouraging customers towards the repurchase intention. Smartphones containing advanced features are of great help to consumers in day to day life and businesses; therefore, companies should increase brand awareness regarding updated features among consumers to increase overall brand equity (Huang & Shih, 2017). Once the brand awareness is successfully developed, it is not compulsory for smartphone brands to advertise based on advanced technologies to gain customer preferences because a customer blindly associates new technology to the brand values (Petruzzellis, 2010). It is emphasized by Keller (1993, 1998), Aaker (1997), and Berry (2000) that elements of brand knowledge, (i.e., brand image and brand awareness) are very important in building successful brands.

Brand Association
Brand association serves as a platform for building customer loyalty through repeat purchases (Aaker, 1991). Aaker (1996a) conceptualized brand association as a follow-up phenomenon of brand awareness, indicating that customers must first be aware and recognize the brand before a set of associations can be developed (Washburn & Plank, 2002). Aaker (1991) considered brand association as one of the magnitudes of brand equity. Belen del Rio, Vazquez, and Iglesias (2001) further added that brand association provides a differential advantage to the brand. According to Keller (1993), the combination of attitudes, attributes, and
benefits can shape brand association. Low and Lamb (2000) suggested that brand associations have primary dimensions that include brand attitude, brand image, and perceived quality.

According to Cobb-Walgren et al. (1995), higher brand association leads to higher purchase intention. Furthermore, in a study on smartphones, Bojei and Hoo (2012) found that besides purchase intention, brand association also helps in enhancing repurchase intentions among the consumers of smartphones. Bojei and Hoo (2012) further added that brand association with reference to smartphones could be seen by the experiential and functional attributes that a specific brand offers. For example, consumers used to associate positive things with brands like innovativeness, distinctiveness, high technology, sophistication, and excellence. Thus, in the context of a smartphone, the distinctive features and functions offered by specific brand could signify brand associations. Aaker (1996b) asserted that brand associations are determined by the brand identity that has been created through the integration of intangible and tangible features. In short, users’ perception toward the experiential and functional characteristics makes up the brand association.

**Perceived Quality**

Aaker (1991) defined perceived quality as “consumer’s perception of the overall quality or superiority of a product or a service with respect to its intended purpose, relative to alternatives” (p. 52). Zeithaml (1988) revealed that perceived quality is the overall product quality and excellence that is judged by a consumer. Perceived quality is different from brand association because it plays a noteworthy part in differentiating a brand from others (Ha, Janda, & Muthaly, 2010). High perceived quality implies that consumers can identify and distinguish the superiority of a brand when they come by to have long term involvement with the brand. Perceived quality is being confirmed as one of the main elements of the brand equity model (Farquhar, 1989; Keller, 1993; Aaker, 1996b) as it provides value that differentiates the brand from its competitors. Basically, perceived quality can contribute towards the value of a brand in many ways; it can provide a good reason for purchasing the brand’s product and empowers the brand to differentiate itself from the competitors (Aaker, 1991).

Furthermore, Aaker (1991) explained that perceived quality also allows the firms to charge premium prices and give firms a strong opportunity for brand extension. Perceived quality also helps in maintaining brand image and therefore correlates with customer-based brand equity (Yoo & Donthu, 2001). Customers are likely to purchase from the brands that are perceived to offer superior quality (Cobb-Walgren et al., 1995). Bojei and Hoo (2012) supported this argument and found that the higher perceived quality of smartphone brands the higher is the purchase intention of the customers. Besides, a global smartphone brand that is being marketed in numerous countries and big cities is perceived to have a good quality, which further results in conducive and flattering consumer attitudes regarding the global brands (Pappu, Quester, & Cooksey, 2007; Roy & Chau, 2011). Thus, in short, perceived quality assures the prevalence of the chosen brand over others.

**Brand Loyalty**

Brand loyalty is a significant phenomenon to be studied in the context of marketing strategy. Assael (1998) and Deighton, Henderson, and Neslin (1994) conceptualized brand loyalty as the repurchase behavior of consumers that are delighted with their previous buying experience for the same brand. Oliver (1999) defined brand loyalty as “a deeply held commitment to buy or patronize a preferred product or 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 cause switching behavior” (p. 41). Travis (2000) continued to claim that brand loyalty is the ultimate objective and connotation of brand equity, adding that brand loyalty is brand equity. Brand loyalty results from loyalty-based buying decisions that might become an everlasting habit (Solomon, 2013).

Besides, brand loyalty could support the organization as a chance to respond and handle the competition. Loyal customers of a brand are always satisfied and inclined to remain with their favorite brand, making them less sensitive to price increase due to the product’s ability to satisfy their needs (Ruddle-Thiele & Bennett, 2001). Cobb-Walgren et al. (1995) are of the view that purchase intention among consumers is high when brand loyalty is high. Consistent with the findings of Cobb-Walgren et al. (1995), Bojei and Hoo (2012) also found brand loyalty to be linked positively with the repurchase intentions for smartphones in Malaysian markets. In the category of electronic accessories like...
smartphones, it is not essential for brands that have brand loyalty to gain customer preferences through the push of new technologies; rather, loyal customer associate new technologies with the brands themselves (Petruzzellis, 2010).

Customer Satisfaction

To gain customer satisfaction is the primary goal of companies in both service and product industry. Customer loyalty and customer retention, which are considered very important and helps in high turnovers and increased profits, are connected with customer satisfaction (McQuitty, Fin & Wiley 2000). Oliver (1981) stated that satisfaction is “the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with prior feelings about the consumer experience” (p. 24). Customer satisfaction is viewed as a vital approach for a company to achieve long term business success and gain a competitive advantage (Pappu & Quester, 2006). This is also vital in terms of a firm’s economic performance. Furthermore, customer satisfaction affects consumer purchase intentions (Cronin & Taylor, 1992), making repeat purchase behavior possible and help produce strong brands with a strong competitive advantage (LaBarbera & Mazursky, 1983). Past literature shows that customer satisfaction has strong links with different dimensions of brands (Grace & O’Cass, 2001). Various dimensions of brand equity effects satisfaction directly, such as employee service, servicescape (Berry, 2000), core service, and emotions that instigate while encountering services (Babin & Babin, 2001).

The relation between overall brand equity and customer satisfaction has become a major concern in marketing research for the past two decades. Today, customer satisfaction is seen as a primary strategy by marketers to gain customer loyalty, improve customers’ willingness to pay more, and enhance customer lifetime value (Hogan, Lemon, & Rust, 2002; Keller & Lehmann, 2006). It is recognized that delighted customers become less price-sensitive and more loyal to the firm for a longer period when compared with dissatisfied customers (Dimitriades, 2006). Although there has been an abundance of surveys conducted to investigate the connection between brand equity and customer satisfaction (Ahmad & Shervani, 2015; Bilal & Malik, 2014; Nam, Ekinci, & Whyatt, 2011; Torres & Tribo, 2011) and relationship between customer satisfaction and competitive advantage (Miles, Miles, & Cannon, 2012), studies which directly relate and compare competitive advantage with effects of brand equity have been neglected in the past. For the success of smartphone brands, customer satisfaction is very crucial as customers who find a particular smartphone brand up to the desired level of expectations tend to recommend that brand to others (Martensen, 2007). Various scholars have emphasized that smartphone companies should consider the preferences of the customers and their desired features of smartphones so that they can be satisfied and make repeat purchases (Martensen, 2007; Petruzzellis, 2010; Bojei & Hoo, 2012; Huang & Shih, 2017).

Competitive Advantage

Porter (1985) introduced the term “competitive advantage” as the sustainable superior performance in the firm’s products or services relative to competitors in the same industry or towards industry average. Barney (1995) viewed competitive advantage as the strength that a firm gains through its successful implementation of the marketing mix that is valued by customers. On the other hand, Murray (2014) defined competitive advantage as “a characteristic, feature or an opportunity that an organization possesses which makes it more attractive than its competitors” (p. 189). Almost everything can be well-thought-out as a competitive edge, from either a higher profit margin or greater return to other valuable possessions available in the company (Jurevicius, 2013). Strategic managers and researchers have long been concerned about understanding the foundations of competitive advantage for firms (Rumelt, 1984; Barney, 1995). The concept of competitive advantage results from the rivalry among companies in the same industry and great importance is given to this concept because the competition is being viewed as the focus of a company’s success or failure (Murray, 2014). “Competition determines the appropriateness of a firm’s activities that can contribute to its performance, such as innovations, a cohesive culture or good implementation” (Porter, 1985, p. 1).

Competitive advantage can be further described through cost and differentiation advantages. Be it a cost advantage or differentiation, it is concerned with the value chain of the company (Porter & Millar, 1985). Porter and Millar (1985) further explained that certain cost drivers are associated with every single value activity, which controls the cost and leads to
cost advantage. Similarly, the efficient working of each value activity makes the company able to differentiate itself from rivals not only in selling products or services but also in other activities like logistics and after-sales services. According to Porter and Millar (1995), if the collective costs of all the activities being performed in a company are less than the costs encountered by the competitors, then the company is considered to have a cost advantage. However, a differentiation strategy is achieved by outperforming in the related industry and having uniqueness in some aspects that are valued by the customers (Porter & Millar, 1995). Considering these two important competitive advantages, this study incorporated samples from each of the two advantages to find the differences.

According to Delgado-Ballester and Munuera-Alema’n (2005), brand equity has the features which help in creating a competitive advantage that is sustainable to the firms and increase value in the minds of customers. Hunt and Morgan (1996) were also among those who emphasized the relationship of brand equity with a competitive advantage and stated that trust and loyalty together form brand equity, which further creates a competitive advantage. Combining all the definitions above, competitive advantage can be defined as a strategy providing the company with unique capabilities that makes the company proficient for outperforming its competitors while sustaining their customers and reputation. Considering the smartphone market globally, there is immense competition among smartphone brands and a single minimal feature can be a source of competitive advantage in this technology-driven industry, so firm’s innovation capabilities are essential to create competitive advantage (Lew & Sinkovics, 2013). It is noted in previous studies that competitive advantage through product innovation affects the reputation of the company and its influence on consumers in a positive way (Henard & Dacin, 2010). Therefore, it is concluded that the smartphone market is increasingly competitive, and smartphone brands must keep striving for product innovation for the sake of gaining a competitive advantage.

Hypothesis

This research is conducted primarily using Aaker’s conceptual brand equity model that consists of four basic elements—brand awareness, perceived quality, brand association, and brand loyalty. The model of brand equity is being used as an independent model to test the level of customer satisfaction among two samples of the population, one focusing on the cost advantage sample and the other focusing on differentiation sample. These four elements of brand equity are used as the independent variables in this study, and any changes among the four elements will affect the dependent variable, which is customer satisfaction. The conceptual model is shown in Figure 1.

![Conceptual framework](image)

**Figure 1.** Conceptual framework.

H1 and H5: Brand awareness has a positive relationship with customer satisfaction.
H2 and H6: Brand association has a positive relationship with customer satisfaction.
H3 and H7: Perceived quality has a positive relationship with customer satisfaction.
H4 and H8: Brand loyalty has a positive relationship with customer satisfaction.
H9: There is a significant difference between customer satisfaction level in cost advantage and differentiation sample.
Methods

The focus of this study is the smartphone market in Kuching, Sarawak. According to Department of Statistics Malaysia (2010), the population of Kuching is 705,546. Based on convenience sampling, the required data was collected primarily through a quantitative method by distributing 417 questionnaires. The questionnaire contained measurement items that require respondents to indicate their agreement level towards brand equity elements that includes brand awareness, brand association, perceived quality and brand loyalty, and customer satisfaction. To facilitate this study, five-point Likert scale, (ranging from 1=strongly disagree to 5=strongly agree) has been used. A sample of 10 respondents was selected to perform the pre-test to figure out respondents’ understanding of the questions used in the instrument. After the preliminary test, a pilot, or a feasibility test was conducted with 30 respondents to further confirm the validity of the administrated questionnaire prior to a larger study. Based on the results and opinions from the 10 and 30 respondents from preliminary and pilot test, respectively, the instrument became understandable, and the language used is simple and readable. Therefore, there is no amendment needed for the instrument.

Results

A total of 217 questionnaires for the cost-advantage sample were successfully collected. Table 1 shows the descriptive statistics of respondents’ demographic profile of cost advantage sample. There are five dimensions in the respondent profile—respondent’s gender, age group, ethnic group, educational level, and income level. Among the 217 respondents, 42.4% of them were male. Age of more than half of the respondents (77%) was in the range of 21 to 30 years, followed by respondents aged 20 years and below (13.8%), and the least with just 0.9% which were 51 years old and above. The study revealed that among 217 respondents, there were 42 Malays, 148 Chinese, 2 Indians, and 25 respondents that belong to ethnic groups other than three major ethnic groups in Malaysia mentioned earlier. Among all the respondents of differentiation sample in Kuching, 33% of them were degree holders where 76 (38%) of them have a monthly income of RM 2000 and below.

The data obtained were analyzed using SPSS 23. Reliability test has been conducted to show the consistency and stability of the instrument used in this study. The Cronbach’s alphas for the factors were found to be 0.85, 0.85, 0.905, 0.894, and 0.858 for brand awareness, brand association, perceived quality, brand loyalty, and customer satisfaction, respectively. These values are all reliable as they are above the recommended threshold value of 0.7 (Nunnally, 1988). The results of reliability analysis using the Cronbach’s alpha approach is provided in Table 2.

Multiple Regression Analysis in Cost Advantage Sample

Multiple regression analysis was conducted to test the eight hypotheses to examine the relationships among brand equity elements (brand awareness, brand association, perceived quality, and brand loyalty) and customer satisfaction in the two different samples. A total of 217 responses from the cost advantage sample who view cost as a priority in their consideration of choosing smartphone brands were being collected and analyzed. Referring to Table 3, the $R^2$ value (0.512) indicates that there is 51.2% explained variation in customer satisfaction due to brand awareness, brand association, perceived quality, and brand loyalty. The percentage of Adjusted $R^2$ shows the percentage of change after adjustment of standard errors in the data. The value of adjusted $R^2$ (0.503) shows that after adjustment of standard error, there is still 50.3%
Table 1  
*Descriptive Statistics of Respondents (Cost and Differentiation Advantage Sample)*

<table>
<thead>
<tr>
<th>Detail</th>
<th>Cost Advantage Sample</th>
<th>Difference Sample</th>
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<td>Percentage</td>
<td>Frequency</td>
<td>Percentage</td>
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<tr>
<td>Male</td>
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<td>120</td>
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<td>21-30</td>
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<td>77</td>
<td>65</td>
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<td>5001 and above</td>
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Table 2  
*Reliability Analysis*

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<td>Brand Association</td>
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<td>Perceived Quality</td>
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<td>Brand Loyalty</td>
<td>6</td>
<td>0.894</td>
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<tr>
<td>Customer Satisfaction</td>
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<td>0.858</td>
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</table>
variation in customer satisfaction explained by the predictors, that is, brand awareness, brand association, perceived quality, and brand loyalty. It is revealed that there are medium positive relationships between the elements of brand equity and customer satisfaction level in cost advantage sample.

Pertaining to the strengths, direction, and coefficients value of multiple regression analysis in cost advantage sample, the results showed that there are positive relationships of brand awareness, brand association, perceived quality, and brand loyalty with customer satisfaction with $\beta$-value of 0.145, 0.081, 0.254, and 0.363, respectively. Among the four independent variables, brand loyalty indicates the strongest relationship with customer satisfaction whereas brand association shows the weakest. These positive relationship supports the formulated hypotheses. It implies that when there is an increase in brand awareness, brand association, perceived quality, and brand loyalty, customer satisfaction also increases.

From the significance value column in Table 3, it could be statistically proved that the relationships between all the independent variables (brand awareness, brand association, perceived quality, and brand loyalty) and dependent variable (customer satisfaction) are all significant with $P < 0.05$. Therefore, hypotheses $H_1$, $H_2$, $H_3$, and $H_4$ are accepted.

### Table 3

**Hypothesis Testing Summary (Differentiation vs Cost Advantage)**

<table>
<thead>
<tr>
<th>Details</th>
<th>Cost Advantage</th>
<th>Differentiation Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Awareness</td>
<td>$0.436^{**}$</td>
<td>$0.755^{**}$</td>
</tr>
<tr>
<td>$t = 2.171$;</td>
<td>$t = 2.986$;</td>
<td>$0.003$ sig. ($H_5$)</td>
</tr>
<tr>
<td>Brand Association</td>
<td>$0.438^{**}$</td>
<td>$0.830^{**}$</td>
</tr>
<tr>
<td>$t = 1.114$;</td>
<td>$t = 4.420$;</td>
<td>$0.000$ sig. ($H_6$)</td>
</tr>
<tr>
<td>Perceived Quality</td>
<td>$0.639^{**}$</td>
<td>$0.810^{**}$</td>
</tr>
<tr>
<td>$t = 4.011$;</td>
<td>$t = 4.111$;</td>
<td>$0.000$ sig. ($H_7$)</td>
</tr>
<tr>
<td>Brand Loyalty</td>
<td>$0.647^{**}$</td>
<td>$0.772^{**}$</td>
</tr>
<tr>
<td>$t = 5.128$;</td>
<td>$t = 5.552$;</td>
<td>$0.000$ sig. ($H_8$)</td>
</tr>
</tbody>
</table>

| N               | 217            | 200                       |
| Mean Satisfaction | 3.6968        | 4.009                     |
| Std. Deviation   | 0.57571        | 0.69724                   |
| $R^2$           | 0.512          | 0.788                     |

**. Correlation is significant at the 0.01 level (2-tailed).
relationships between all the independent variables and dependent variable are all significant with P < 0.05. Therefore, hypotheses H\(_5\), H\(_6\), H\(_7\), and H\(_8\) are accepted.

**Independent Sampled T-test**

Independent sampled t-test has been conducted in this research to test the extent and the strength of the relationship between two samples of the study, which are cost advantage sample and differentiation sample. The t-test enables researchers to examine the difference between two distinct populations using the data gathered from two different samples. Table 4 showed the statistical results of the two samples. There are 217 respondents for cost advantage sample and 200 respondents for differentiation sample. Also, there is a difference between cost advantage sample and differentiation sample with a mean value of 3.6968 and 4.0090, respectively.

The results reveal that there is a significant difference between the customer satisfaction level among both samples, that is, sample who valued cost and sample who valued differences/uniqueness at F = 0.884, p = 0.026. Based on the F-value of 0.884 and the significance level at 0.026 (p < 0.05), it is concluded that the effect of brand equity elements towards customer satisfaction level is different among cost advantage and differentiation sample.

Overall, smartphone users in differentiation sample are more satisfied (mean value = 4.0090) with their smartphone brand choices when compared to smartphone users among cost advantage sample who valued cost as their consideration for smartphone brands (mean value = 3.6968). Therefore, this study supports H\(_a\), and we conclude that the effect of brand equity model in influencing customer satisfaction level is different among cost advantage and differentiation sample in Kuching smartphone market.

**Discussion**

This study is conducted to investigate the relationship between four elements of brand equity (brand awareness, brand association, perceived quality, and brand loyalty) and competitive advantage through customers’ perspective, that is, customer satisfaction towards smartphone brands in Kuching. Also, it is conducted to explore the differences between the level of customer satisfaction among Kuching smartphone users in cost advantage and differentiation samples. This study reveals that the four elements of brand equity have a positive relationship with the customer satisfaction level. Previous studies showed that the brand equity model (Aaker, 1991) had been described as the determinant of customer satisfaction in most of the cases (Ryu et al., 2010). Based on recent studies, it can be concluded that customer satisfaction signifies a major element in generating value and advantage for companies in a competitive environment (Bilal & Malik, 2014; Ahmad & Sherwani, 2015).

Out of four elements of brand equity, results showed that in cost advantage sample, brand loyalty has the strongest relationship with customer satisfaction level, which is consistent with the research conducted by Ahmad and Sherwani (2015). This indicates the criticality of brand loyalty development among all the elements of brand equity to leverage the customer satisfaction level among smartphone users who valued cost as their primary consideration of selecting a smartphone brand.

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Levene’s Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>0.884</td>
<td>0.038</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DV = satisfaction (Cost vs differentiation Advantage)
In differentiation sample results, brand association has the most dominant effect on customer satisfaction level. This means that customers who valued uniqueness and differences in considering their smartphone brands would most probably be satisfied when they are well associated with the brand. Bridges, Keller, and Sood (2000) asserted that a strong brand association strengthens brand equity and consequently leads to increased satisfaction. Overall, smartphone users in the differentiation sample are more satisfied with their smartphone brand choices when compared to smartphone users among the cost advantage sample who valued cost as their consideration for buying smartphone brands. This reveals that there is a significant difference between those who value cost and those who value uniqueness/differences in selecting their smartphone brands.

Three implications can be derived from the findings of this study. First, smartphone brands who practice cost leadership strategy (i.e., they primarily aimed to market their smartphone at a penetration price while keeping their production cost low) should focus their efforts on building brand loyalty. Brand loyalty is the repurchase behavior of customers that may lead the firm to gain market share with more satisfied customers, which reduces marketing cost because customers are already loyal to the product and will repurchase without thinking much about the advertising efforts by other brands. Consequently, it results in strengthening the brand towards competitive threats.

Secondly, for those companies who pursue differentiation strategy, they should first ensure that their target customers are well associated with their brand. The results of the current study show that brand association has the most dominant effect on customer satisfaction level. Connecting their customers with good feelings and great perceptions can assist the brands to obtain higher customer satisfaction level. This study concludes that brand association is the predicting variable of customer satisfaction towards customers that value uniqueness when purchasing smartphones.

Conclusion

This research aims to measure brand equity of smartphone brands only in Kuching, Malaysia. This is to ensure that there is a scope to study the perceptions of the consumers and their behaviors. The cross-sectional data obtained is only able to disclose the effect of the predictor variable towards a criterion variable within a specific timeframe. Additionally, the limitation of using convenience sampling techniques has denoted that the outcomes of this research will be more specific and cannot be generalized. Secondly, marketing managers should also take the inter-correlations among all the four elements of Aaker’s brand equity model into consideration. Customer satisfaction level can be increased if the brand’s image and its superiority are recognized by the customers.

As a conclusion, the cost leadership strategy that primarily adopts the price penetration tactics should focus on how to keep their price competitive. Organizations can realign their marketing efforts that focus more on product design and efficient distribution system to keep the price low as part of their competitive advantage strategy. For the organizations that pursue differentiation strategy, it must be ensured that their target customers are well associated with their brand because brand associations can lead to customer satisfaction. Therefore, brands can be effective tools for the organizations to gain their competitive advantage, but specific advantage and segment need specific brand treatment.

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None.

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The study was approved by the institution.

References


Exploring the Strategic Role of Brand Equity Towards Competitive Advantage in the Smartphone Industry


