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Brand Equity Perceptual Mapping: Competitive Landscapes and Consumer Segments in Brand Equity Space

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ABSTRACT

This study put forward a theoretically based set of brand equity perceptual maps that depict competitive brand sets and consumer segments in four-dimension brand equity space. Survey research collected brand equity ratings for two sets of competitive brands (Nike, Converse, Reebok and Toyota, Nissan, Pontiac), used to construct a pair of two-dimensional maps that illustrate the brands' position on brand equity dimensions relative to competitors and demographic-based segments. Paired brand equity indicators resulted in eight map quadrant areas that characterize a brand positioned in that space. The mapping techniques facilitate the strategic application of multidimensional brand equity constructs and their use as brand valuation tools.

INTRODUCTION

The application of brand equity relative to other factors enhances the constructs usefulness as a valuation measure of brand strength. No matter the technique used to determine a brand's equity, the results are most insightful when one compares them to competitors' brand equity or across audience segments. Although a measure may determine a brand has high equity, its true value is only apparent in the context of other market factors. When measured at the consumer level, brand equity is also relative to the audience segment used to determine its value. Brand value typically does not exhibit fixed uniformity across audiences, and equity ratings will likely differ as well. To capture such relative relationships and foster strategic application of the brand equity construct, this study put forth a set of perceptual maps that visually depict competitive brand landscapes and different audience segments in brand equity space.

Literature reports several conceptualizations of brand equity (MacKay 2001) and operational approaches (Agarwal and Rao 1996). The framework applied to develop the perceptual maps in this study is a four-dimension brand equity construct assessed on measures of brand awareness, brand associations, perceived quality, and brand loyalty (Aaker 1996). Grounded in decades of research, this construct is practical for perceptual mapping because the four factors are vital brand performance measures, other equity models integrate similar factors, and valid scales are available for each construct dimension.

Expressing brand equity in relational terms provides better assessment and performance measurement with multidimensional models. Perceptual maps are helpful because they visually depict patterns between variables in datasets and illustrate relative relationships in ways that numbers cannot easily show. To this end, this study cataloged brand equity ratings for a set of

competitive brands, compared dimension scores across brands and different audience segments, and illustrated these findings using perceptual maps based on relevant literature and the sampled survey responses.

REVIEW OF RELEVANT LITERATURE

Scholars typically refer to brand equity as the value added to a product, for example a sports car, by its brand name, such as Porsche (Aaker 1996). Well-cultivated brands are important strategic assets, which provide an intangible value not easily quantified as intellectual capital. When consumers pay a premium price because of the value associated with owning a particular brand, not the product it represents, that brand name and everything associated with it generates a market advantage that is highly coveted and needs protection. Decades of scholarly and corporate research initiatives have attempted to quantify this phenomenon, resulting in a number of different models in use today such as Equity EngineSM and Young & Rubicam's BrandAsset[®] Valuator (Knowles 2007).

Customer-Based Brand Equity

Keller (1993) advanced a “customer-based” brand equity framework, which indicates brand equity facets that affect customer behavior by measuring brand equity at the individual consumer level, typically using survey research to gauge responses attributed to the brand name. The conceptualization of customer-based brand equity employs the aforementioned four-dimension construct (i.e., brand awareness, brand associations, perceived brand quality, and brand loyalty). Numerous studies have employed this model and developed valid, reliable measures of the four brand equity dimensions (Keller 1993; Abela 2003; Park and Srinivasan 1994; Washburn and Plank 2002; Yoo and Donthu 2001; Zeithaml 1988).

Brand awareness is the strength of a brand's presence in consumer memory (i.e., recognition and recall) and a necessary condition for brand equity development. Aaker (1991) defined brand awareness as “the ability of a potential buyer to recognize or recall that a brand is a member of a certain product category.” Brand awareness is a continuum that ranges from completely unaware, to simple brand recognition, to brand recall, to top-of-mind recall (i.e., the first brand named in unaided recall), and eventually the “dominant” brand, the only brand named by the consumer. Importantly, high brand awareness does not always denote strong brand equity because brands can have high recognition and recall, yet consumers may dislike the brand.

Brand associations are pieces of information related to a brand embedded in consumer memory. Associations develop by the entirety of ways a brand's name and symbol makes contact with consumers (Shultz and Barnes 1999). Firms can control many brand contacts, for example, advertising messages, while others are out of a company's control, such as word of mouth and branded litter on the street. The combination of positive and negative associations helps establish consumer brand knowledge. Keller (1993) theorizes that brand equity is a function of the differentiating effect of brand knowledge, and suggests that firms should establish strong, unique, and favorable associations to build brand equity.

Perceived brand quality is the consumer's subjective judgment about a brand's overall excellence, and considered a major driver of brand equity (Aaker 1996; Zeithaml 1988). Perceived quality is a major point of brand differentiation, and the only brand equity dimension demonstrated to drive sales performance, statistically shown to predict both return on investment (ROI) and stock returns. Research shows that perceived quality influences the formation of other brand perceptions. Zeithaml (1988) illustrated that as perceptions of brand quality improve, other brand perceptions also improve. Harris Interactive's yearly EquiTrend survey rates the world's top brands based on an equity measure operationalized by multiplying a brand quality ranking scale and a 'salience' (i.e., awareness) scale. Industry experts consider the top fourteen brands rated highest on the quality measure "world class" brands (Hein 2002).

Brand loyalty is the level of attachment that a customer has to a brand, considered the single most reliable assessment of brand equity (Reichheld 2001; Chauduri and Holbrook 2001). Loyal consumers provide companies a clear competitive advantage that helps establish barriers of entry, gives companies time to respond to competitive offerings, and gives them the ability to demand premium prices (Aaker 1991). Research indicates a strong, positive correlation between the level of customer loyalty and market share, which ultimately results from trust in the brand name (Chauduri and Holbrook 2001; Riley 2004). Apart from sales, loyalty-building programs are a foremost corporate objective, reaching a peak in the 1990's with the advent of customer relationship marketing (CRM) programs and other consumer-oriented marketing philosophies (Fournier 1998).

RESEARCH AGENDA

Two limitations with the application of multidimensional, customer-oriented brand equity models are (1) the attention placed on the single number that represents a brand's overall equity, and (2) assuming that a brand will have similar equity across audience segments. To enhance the usefulness of the brand equity construct, strategists should look at a brand's position relative to competitors on all dimensions measured. For example, higher overall perceived quality scores may drive a brand's equity rating, while primarily higher brand loyalty scores drive the competitor's equity.

In a similar manner, a brand's equity will likely differ across audience segments when measured at the individual consumer level. For instance, a brand's equity may be driven by high brand loyalty ratings from one consumer segment, and diminished by low perceived quality ratings from another. When compared to competitors, such insights will isolate brand equity facets that positively drive or hinder a brand's overall equity, and help fine-tune strategies for different valued segments.

Perceptual mapping is a technique that provides a simple visual presentation of data structure and facilitates its interpretation. Standard perceptual maps use two dimensions for plotting stimuli in space defined by the intersection of two axes, each representing variable scale parameters. Methods also exist for presenting data in three or more dimensions; however, they are more complex to interpret, particularly with more than three variables. Researchers plot stimuli (e.g.,

brands) within the space created by the combined variable scales representing a unique location defined by the scale parameters.

When combined with other stimuli, the relative position of each within the variable space is evident. Similar to a photograph that depicts a single moment in time on two dimensions, the graphic that presents a perceptual map is a snapshot of variables measured at the moment of data collection. Perceptual maps aid strategists in the development of brand differentiation and positioning strategies by depicting the competitive or audience landscape. An important strategic development and management tool, visual mapping provides insights not easily recognized with other methods, and can foster the identification of opportunities and new strategies.

The principal goal of this study was to develop a theoretically based set of brand equity perceptual maps that depict competitive brand sets in brand equity space, and to compare equity scores across different demographic segments. The existent literature enhances the perceptual maps' diagnostic capabilities when organized (see Tables 3 and 4) to characterize unique areas of four-dimension brand equity space (i.e., brand awareness, brand associations, perceived quality, and brand loyalty). To accomplish the research agenda, multidimensional brand equity ratings for different competitive brand sets illustrated the application of perceptual mapping and provided empirical justification for map development.

METHOD

This study employed survey research to compare the brand equity of two competitive brand sets in four-dimension brand equity space. Preliminary research generated an extensive list of brands highly relevant to target respondents, used to select the units of analysis. Questionnaire refinement occurred via two pre-tests on sub samples of the target population. A convenience sample of two-hundred forty eight (N = 248) undergraduate college students participated in the primary survey, recruited from courses at a large U.S. urban university. Given the diverse student population at the institution, it was possible to gather questionnaires from three broadly defined ethnic/racial groups (i.e., Black, Hispanic, and White) to use for demographic segmentation comparisons.

Brand Selection Procedure

Preliminary research identified brands (1) well-known to a sample of target respondents, (2) that were both liked and disliked, and (3) were readily available and consumable by both female and male respondents from each demographic segment. Given verbal instructions, participants listed two brands they were familiar with and like and two brands they were familiar with, but do not like. Selecting brands consumers liked and disliked provided a list of brands that likely range on equity to allow for comparisons. This procedure generated a list of over two-hundred brands.

Selected from this list were three automotive sedan brands (i.e., Toyota, Pontiac, and Nissan) and three athletic shoe brands (i.e., Nike, Reebok, and Converse) to serve as the units of analysis. Four of the selected brands (i.e., Toyota, Nissan, Nike, and Converse) respondents mentioned most often as "liked". The other two brands (i.e., Pontiac and Reebok) selected were frequently

mentioned as “do not like” and fit into the product categories of the other four brands. Further, six brands were sufficient to achieve the research agenda and not be overly cumbersome to respondents, allowing enough time to complete the questionnaire.

Brand Equity Measurement

To measure brand equity, the study design employed a ten-item multidimensional brand equity (MBE) scale developed by Yoo & Donthu (2001), shown to be valid and reliable across product categories and free of cultural bias. The MBE scales measure the four discussed brand equity dimensions. Displayed in Table 1 are the scale items for each dimension (two items for brand awareness, three items for brand associations, two items for perceived quality, and three items for brand loyalty).

Respondents indicated their agreement to each item statement using five-point Likert-scales anchored at 1 = “strongly disagree” and 5 = “strongly agree”. The MBE is an abbreviated version of a larger brand equity scale, used to allow for the examination of multiple brands in a single survey and not over burden the respondents. Also important, the MBE instrument only measures the “strength” of brand associations, not the “uniqueness” nor the “favorability” of a brand’s image associations. Hence, from this point forward, the “brand associations” dimension is referred to as “brand association strength,” indicating the strength of a brand’s image associations in memory.

Table 1
Multidimensional Brand Equity Scale Items

Brand equity factor	Scale items
Brand awareness	I am aware of brand X. I can recognize brand X among other competing brands.
Brand associations	Some characteristics of brand X come to my mind quickly. I can quickly recall the symbol or logo of brand X. I have difficulty in imagining brand X in my mind.
Perceived quality	The likely quality of brand X is extremely high. The likelihood that brand X would be functional is very high.
Brand loyalty	I consider myself loyal to brand X. Brand X would be my first choice. I will not buy other brands if brand X is available at the store.

Note. Multidimensional brand equity (MBE) is an average of ten items. Substitute research brand for “brand X”.

To allow for the exclusion of subjects not familiar with any of the brands, the questionnaire instructed respondents before rating each brand to answer the question “Are you familiar with (brand X)?” If a respondent answered “no” they were instructed to skip to the next brand on the questionnaire. As a measure of comparison and to validate preliminary research that suggested the selected brands were either liked or disliked, the survey gathered brand attitude ratings, measured with a three-item, five-point attitude scale (favorable/unfavorable, good/bad, and likeable/unlikeable), commonly used in brand research and operationalized as an index of three semantic differential scales (MacKenzie, Lutz, and Park 1989).

RESULTS

Descriptive Statistics

Two-hundred forty eight (N = 248) questionnaires were collected for analysis. The majority (71 percent) of respondents were females (n = 176) and 29 percent male (n = 72). Fifty four percent of respondents were Hispanic (n = 134), 22 percent White (n = 54) and 19 percent Black (n = 46). The remainder of respondents were Asian (n = 12) and American Indian (n = 2). Sixty nine percent of respondents were between the ages 18 and 24 (n = 170), 24 percent were 25-29 (n = 60), and 7 percent of the sample were 30 and older (n = 18). Each brand had high levels of familiarity. Of the six brands, Pontiac received the lowest familiarity with 10 of the 248 sampled respondents reporting they were unfamiliar with the brand.

For the athletic shoe brands, Nike ranked highest on the five-point attitude index ($\mu = 4.36$, $SD = 0.78$, $n = 248$), Converse second ($\mu = 3.87$, $SD = 1.16$, $n = 248$), and Reebok displayed the lowest rating ($\mu = 2.97$, $SD = 0.96$, $n = 246$). For the automotive sedan brands, Toyota ranked highest ($\mu = 4.23$, $SD = 0.86$, $n = 248$), Nissan second ($\mu = 4.13$, $SD = 0.92$, $n = 246$), and Pontiac rated lowest ($\mu = 2.41$, $SD = 1.02$, $n = 238$). Examination of the internal consistency of the brand attitude indices showed high reliability (ranged between .8699 and .9433) using Cronbach’s Alpha reliability coefficients.

Brand Equity

Multidimensional brand equity (MBE) scores are sample means of the averaged brand awareness, brand association (strength), perceived quality, and brand loyalty scores based on five-point scales. For all sampled respondents, the ranking of brands by equity scores follows the pattern found with the attitude measure. For the shoe brands, Nike ($\mu = 4.19$, $SD = 0.53$, $N = 248$) ranked highest, followed by Converse ($\mu = 3.72$, $SD = 0.81$, $N = 247$), and Reebok ($\mu = 3.20$, $SD = 0.63$, $N = 244$) with the lowest MBE rating. Toyota ($\mu = 3.98$, $SD = 0.65$, $N = 248$) ranked highest for the car brands, followed by Nissan ($\mu = 3.79$, $SD = 0.75$, $N = 246$) and Pontiac ($\mu = 2.61$, $SD = 0.78$, $N = 238$) lowest.

Brand Equity Dimension Scores

Table 2 displays the rating for each brand on the four brand equity dimensions. All brands have moderately high brand awareness ratings, except for Pontiac, the only brand rated below four ($\mu = 3.38$, $SD = 1.25$), illustrating a slightly weaker presence in consumer memory. In fact, Pontiac rated below three on each dimension except for brand awareness, evident of the brand's lower overall MBE rating. Brand association strength varied slightly between brands, with Nike ($\mu = 4.70$, $SD = 0.53$) and Toyota ($\mu = 4.41$, $SD = 0.74$) rated highest in their product category. Similarly, perceived quality ratings show Nike ($\mu = 4.44$, $SD = 0.65$) and Toyota ($\mu = 4.32$, $SD = 0.83$) rated highest. Overall, brand loyalty scores were lower than the other three dimension ratings for each brand, with Nike ($\mu = 2.95$, $SD = 1.20$) and Nissan ($\mu = 2.69$, $SD = 1.17$) rated highest, though remaining below three.

Correlation coefficients, displayed in Tables 5-10 in Appendix A for each brand, show the degree of relationship between the four brand equity dimensions. Of the four variables, awareness and association strength had the strongest relationship across brands, with a range ($r = .51$ to $.76$) of moderate to high coefficients. Perceived quality and brand loyalty were significantly related across brands with a range ($r = .23$ to $.54$) of low to moderate positive coefficients. For three of the six brands, i.e., Nike, Reebok, and Pontiac, there was not a significant relationship between perceived quality and / or loyalty with awareness and association strength.

Table 2
Brand Equity Four-Dimension Scores

Brand	N	Brand Awareness		Association Strength		Perceived Quality		Brand Loyalty	
		Mean	SD ^a	Mean	SD ^a	Mean	SD ^a	Mean	SD ^a
Nike	248	4.64	0.58	4.70	0.53	4.44	0.65	2.95	1.20
Converse	248	4.45	0.88	4.16	1.06	3.67	0.96	2.57	1.29
Reebok	244	4.14	0.83	3.44	1.16	3.49	0.93	1.74	0.83
Toyota	248	4.62	0.56	4.41	0.74	4.32	0.83	2.56	1.27
Nissan	246	4.41	0.73	3.88	1.04	4.18	0.81	2.69	1.17
Pontiac	238	3.38	1.25	2.71	1.25	2.89	1.01	1.46	0.81

Note. Brand awareness, association strength, perceived quality, and brand loyalty score values are the sample mean of the combined MBE scale items for each dimension reported on 5-point scales for all sampled respondents.

^aStandard deviation.

As a point of reference, correlations also illustrate the relationship between overall brand equity (MBE), brand attitude, and each brand equity dimension. As anticipated from the literature, a positive relationship is evident between higher brand equity and attitude toward each brand. For two of the brands (i.e., Nike and Converse) brand loyalty had the strongest relationship with brand attitude, while perceived quality had the strongest relationship with brand attitude for the remaining brands: Reebok, Toyota, Nissan, and Pontiac.

Brand Equity Perceptual Maps

To capture the four-dimension brand equity construct, two perceptual maps are used; each depicts two construct dimensions (see Figures 1-8). Brand awareness and brand association strength are related memory constructs and displayed the strongest relationship between dimensions in the current dataset. One perceptual map pairs these two dimensions in what is termed “awareness-association strength space”. In contrast, brand loyalty and perceived quality are different from memory constructs, critical variables in other brand equity measures, and are strong predictors of overall brand equity. Hence, the second map pairs these two dimensions in “perceived quality-loyalty space”. Each map axis represents respondent scores on five-point scales, ranging from low (1) to high (5) for each dimension (e.g., low awareness to high awareness).

For presentation, the two maps (i.e., Map 1 = “awareness-association strength” and Map 2 = “perceived quality-loyalty”) merge as a single figure. Each perceptual map has four quadrants that represent particular areas in brand equity space defined by the rating levels on combined dimensions. Characteristics for each paired-variable quadrant describe the brand equity position of plotted stimuli using the dimension scale items for defining the space. Plotted positions indicate the general strategic direction for brand equity development in each quadrant. Perceptual Map 1 contains Quadrants I, II, III, and IV – each represents different levels of consumer brand memory and described in Table 3. Perceptual Map 2 contains Quadrants V, VI, VII, and VIII, described in Table 4.

On both perceptual maps, the further brands map toward the right and the top, the better the performance on the brand equity indicators. For each map, the location illustrative of strong brand equity is the top-right location that represents high ratings on both mapped dimensions; this corresponds to Quadrant III on Map 1 and Quadrant VII on Map 2. An exception is Quadrant VIII that represents brands with high loyalty, yet low perceived quality ratings.

Table 3
Perceptual Map 1 Quadrant Characteristics: Awareness-Association Strength Space

Map Quadrant	Quadrant Characteristics
Quadrant I	High brand awareness and low brand association strength ratings. The brand is well known by respondents, yet the image is not as well established compared to higher equity brands. Consumers are aware of brands in this quadrant, can recognize them among other brands, however, they cannot quickly think of brand associations. Quadrant I suggests brands that need to strengthen image associations, cultivate the brand's logo/symbol, while maintaining name awareness.
Quadrant II	Low brand awareness and low brand association strength. These brands lack the foundations of brand equity. This quadrant is typical of new and unfamiliar brands. Brands lack established memory structures, are not easily recognized among competing brands, and consumers do not recall their characteristics. Brand strategy in Quadrant II should focus on building awareness and forging positive associations to build brand knowledge and identity.
Quadrant III	High brand awareness and strong brand associations, the most desirable location on Map 1. Brands that occupy this quadrant are well known, have forged brand associations in consumer memory, and established knowledge structures. Brands with positive associations need a strategic focus that maintains a strong favorable brand identity. Brands with strong negative associations each require particular strategic redirection.
Quadrant IV	Low brand awareness and strong brand associations. This quadrant suggests an improbable situation for a brand given that awareness (i.e., memory) is a necessary condition for the formation of associations.

Note. Brand equity perceptual Map 1 quadrant descriptors characterize the general brand equity position on awareness-association strength space and suggest general equity development strategy.

The forthcoming brand equity perceptual maps illustrate the position of the analyzed brands in brand equity space as described. Perceptual map figures are presented for each brand set (i.e., athletic shoes and automotive sedans) and for each brand to illustrate the brand's position with each respondent segment (i.e., Black, Hispanic, and White respondents) in brand equity space. For succinctness, only the automotive brand's 'consumer segment' perceptual maps are discussed in detail. Appendix B presents the consumer segment map figures (see Figures 6-8) for the other three brands (Nike, Converse, and Reebok). For reference, Tables 11-16 in Appendix C present the consumer segment brand equity dimension mean scores for each perceptual map.

Table 4
Perceptual Map 2 Quadrant Characteristics: Perceived Quality-Loyalty Space

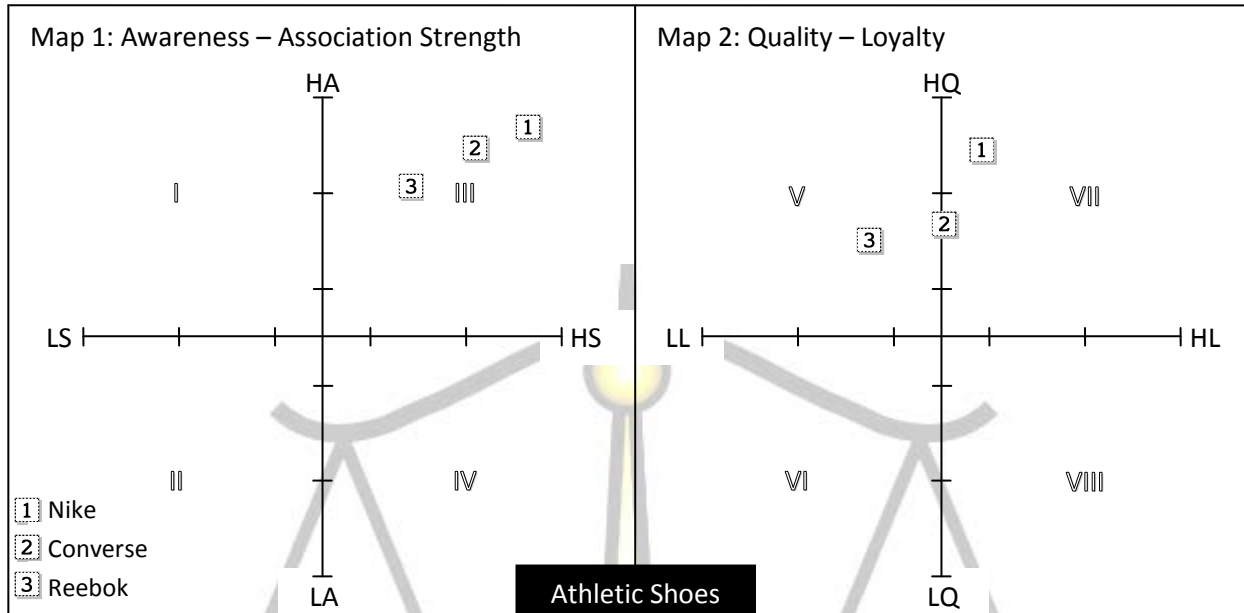
Map Quadrant	Quadrant Characteristics
Quadrant V	Low brand loyalty and high-perceived quality ratings. Consumers view these brands as moderate to high quality and likely to be functional in meeting their needs, yet they are not brand loyal, and would not choose the brand first, considering other brands if available. Strategies should focus on influencing the consumer decision process, loyalty-building programs, combating competitive offerings, while protecting differentiating thoughts about quality.
Quadrant VI	Low brand loyalty and low perceived quality ratings, representing low brand equity. Consumers are not loyal to these brands, would not choose them first, and would easily buy other brands if available. Products represented by these brands are not perceived as quality or likely to be functional in meeting consumer needs. Brand strategy should focus on changing consumers' brand perceptions and developing positive, differentiating thoughts.
Quadrant VII	High brand loyalty and high quality ratings, representative of brands with strong brand equity. Consumers consider themselves loyal to these brands, they are their first choice, and will not buy other brands if available. Consumers believe these brands are of high quality and highly likely to be functional in meeting their needs. Strategies should focus on maintaining consumer perceptions and relationships, while protecting brand status.
Quadrant VIII	High brand loyalty and low perceived quality ratings. Loyal consumers that would choose brand first and not buy alternatives even though these brands are viewed as lower quality. This quadrant likely represents value brands that also have strong equity given the loyal customers. Strategies should maintain customer relationships, while delivering value-added loyalty programs and promotions.

Note. Brand equity perceptual Map 2 quadrant descriptors characterize the general brand equity position on quality-loyalty space and suggest general equity development strategy.

Brand Equity Perceptual Maps: Nike, Converse, and Reebok

Figure 1 illustrates the positions of Nike (1), Converse (2), and Reebok (3) in brand equity space for all respondents. Map 1 shows the position of each brand plotted on awareness-association strength space. Each brand occupies Quadrant III, denoting moderate to high awareness and association strength scores. Nike (1) occupies the strongest position compared to the other two brands, with both higher awareness and association strength ratings, indicating stronger brand presence in consumer memory. Reebok (3), while positioned in Quadrant III, occupies the weaker position on both variables compared to Nike (1) and Converse (2).

Figure 1
Athletic Shoes: Brand Equity Perceptual Maps



Brands plotted position based on the mean dimension scores for all sampled respondents. Each axis represents 5-point scales (1 = low and 5 = high). Map 1: Awareness – Association strength space: LA = Low Awareness, HA = High Awareness; LS = Low Association Strength, HS = High Association Strength. Map 2: Perceived quality – Brand loyalty space: LQ = Low Quality, HQ = High Quality; LL = Low Loyalty, HL = High Loyalty.

Map 2-Figure 1, shows a similar pattern between the plotted brands on perceived quality-loyalty space, though Reebok’s (3) position is low in Quadrant V, illustrative of moderate quality ratings and poor brand loyalty. Nike (1) occupies the strongest position, particularly with higher perceptions of quality and brand loyalty than Converse (2) and particularly Reebok (3). Converse (2) occupies a position between the other two brands on both maps, close to Quadrant V on Map 2 with moderate brand loyalty in comparison. Overall, for the three athletic shoe brands, loyalty ratings are moderately high at best, which may indicate a general characteristic of the product category.

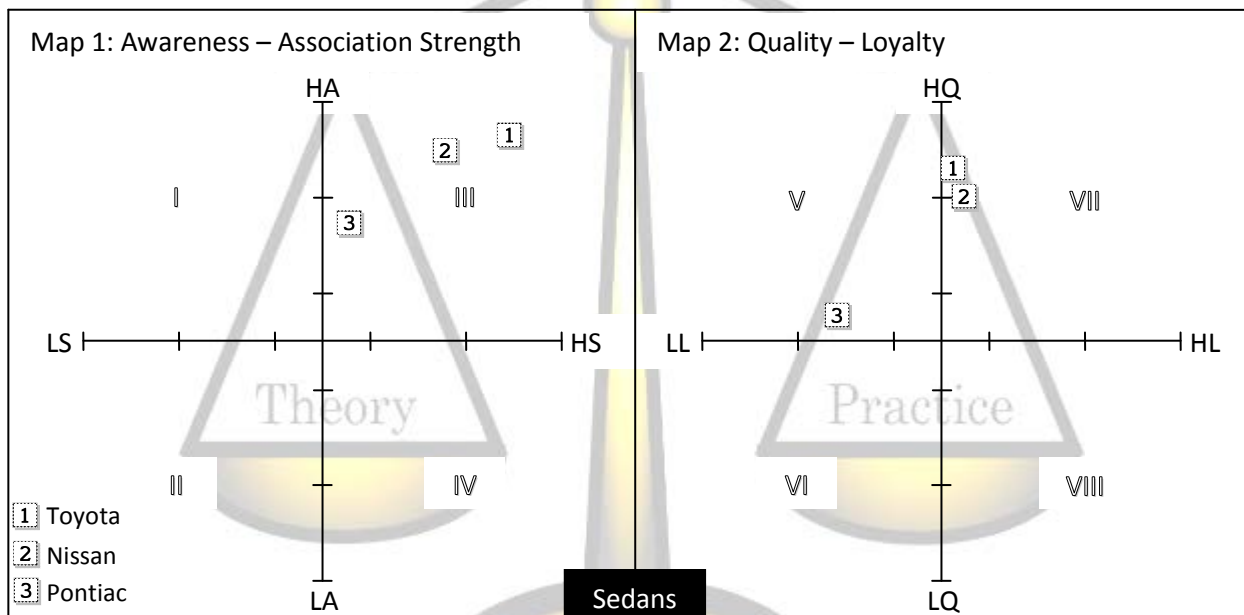
Brand Equity Perceptual Maps: Toyota, Nissan, and Pontiac

Figure 2 illustrates Toyota (1), Nissan (2), and Pontiac (3) plotted in brand equity space. Map 1 (awareness-association strength) shows each brand in Quadrant III, notably, there is more differentiation between the car brands than the shoe brands. Toyota (1) occupies the strongest position on Map 1, indicative of stronger brand presence in consumer memory than the other two car brands. Pontiac’s (3) brand presence is not as strong, with both lower brand awareness and weaker associations, positioned in close proximity to Quadrant I. Nissan (2) also occupies a

strong position on Map 1, however, the brand has slightly lower awareness and weaker brand associations than Toyota (1).

Map 2-Figure 2 (quality-loyalty space) shows Toyota (1) and Nissan (2) both in Quadrant VII, occupying nearly the same position, with high quality ratings and moderate brand loyalty scores. Even though Toyota (1) and Nissan (2) occupy similar positions on quality-loyalty space, Toyota, positioned stronger than Nissan on Map 1, illustrates the point of brand equity differentiation between the two brands (i.e., a stronger image for Toyota). Further, Pontiac (3), plotted in Quadrant V, displays low to moderate quality ratings and low brand loyalty from all respondents.

Figure 2
Sedans: Brand Equity Perceptual Maps



Brands plotted position based on the mean dimension scores for all sampled respondents. Each axis represents 5-point scales (1 = low and 5 = high). Map 1: Awareness – Association strength space: LA = Low Awareness, HA = High Awareness; LS = Low Association Strength, HS = High Association Strength. Map 2: Perceived quality – Brand loyalty space: LQ = Low Quality, HQ = High Quality; LL = Low Loyalty, HL = High Loyalty.

Toyota: Consumer Segment Brand Equity Perceptual Maps

Figure 3 displays Toyota’s brand equity position with Black (1), Hispanic (2), and White (3) respondents. Toyota has the strongest brand equity with Black (1) respondents, whom occupy positions on both maps illustrative of very high ratings on awareness, association strength, perceived quality, and high brand loyalty. Toyota is well positioned with Hispanics (2), except noticeably lower brand loyalty than with Blacks, illustrated on Map 2. For White (3) consumers,

Toyota is established in memory, though not as strong compared to the other segments, positioned close to Hispanics on Map 1. Map 2, shows Toyota positioned with White (3) consumers in Quadrant V, depicting the groups' lower perceived quality and brand loyalty compared to the other segments.

Figure 3
Toyota: Consumer Segment Brand Equity Perceptual Maps

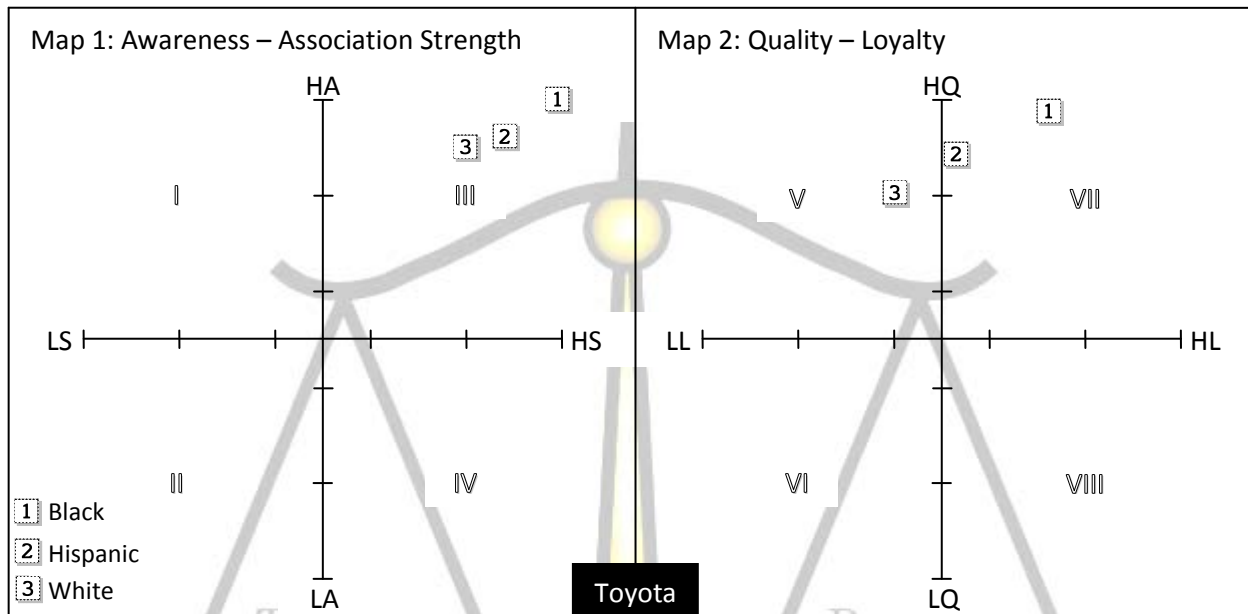


Figure illustrates brand's position for Black (1), Hispanic (2), and White (3) consumers based on the mean dimension scores for each group. Each axis represents 5-point MBE scales (1 = low and 5 = high). Map 1: Awareness – Association strength space: LA = Low Awareness, HA = High Awareness; LS = Low Association Strength, HS = High Association Strength. Map 2: Perceived quality – Brand loyalty space: LQ = Low Quality, HQ = High Quality; LL = Low Loyalty, HL = High Loyalty.

Nissan: Consumer Segment Brand Equity Perceptual Maps

Figure 4 illustrates Nissan's brand equity position with each consumer segment. Nissan is best positioned on brand awareness with Hispanics (2) and occupies the strongest brand association position with Black (1) consumers, illustrated on Map 1. While positioned in Quadrant III for White (3) respondents, Nissan received both lower brand awareness and association strength ratings from this segment. Furthermore, Nissan's position with the three groups shows more differentiation on Map 1 than illustrated with Toyota, evidence of a less consistent presence in consumer memory across segments.

Map 2-Figure 4 shows Nissan positioned on quality-loyalty space for each group. Evident on this map, Nissan's position with Black (1) consumers is very strong, occupying the furthest right position in Quadrant VII, illustrative of higher brand loyalty with this group. Map 2 also shows

that Nissan’s perceived quality ratings are similar across groups, with each plotted at relatively the same height on the variable axis. Rather, brand loyalty with Hispanic consumers and brand image strength with White consumers diminish the brand’s overall equity compared to Toyota shown in Figure 3.

Figure 4
Nissan: Consumer Segment Brand Equity Perceptual Maps

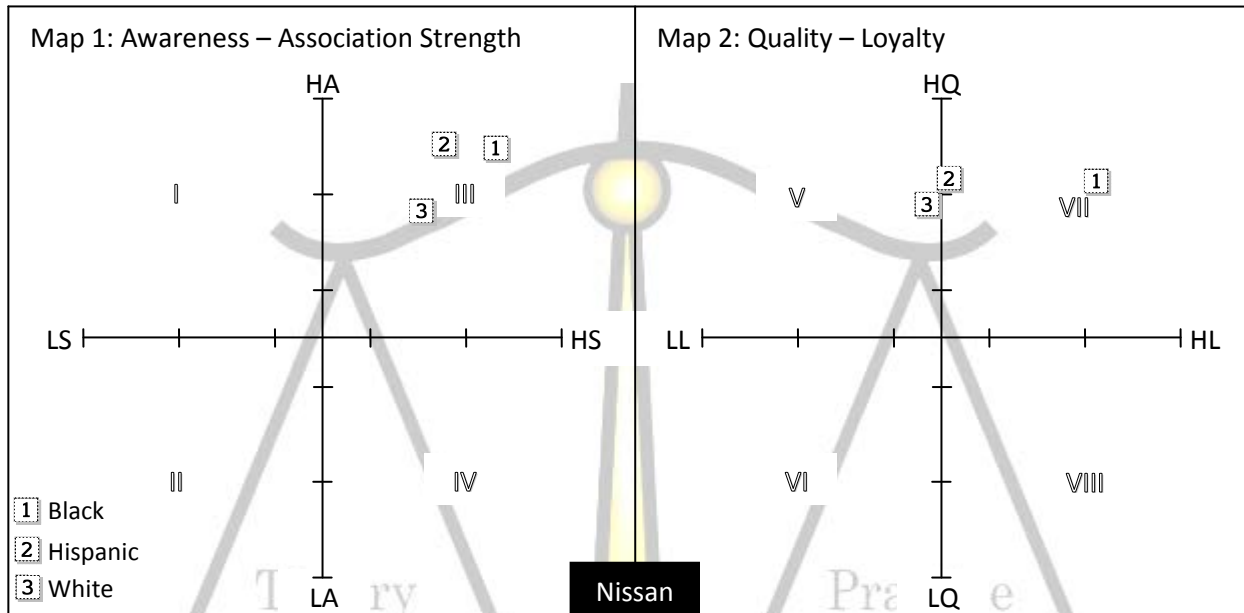


Figure illustrates brand’s position for Black (1), Hispanic (2), and White (3) consumers based on the mean dimension scores for each group. Each axis represents 5-point MBE scales (1 = low and 5 = high). Map 1: Awareness – Association strength space: LA = Low Awareness, HA = High Awareness; LS = Low Association Strength, HS = High Association Strength. Map 2: Perceived quality – Brand loyalty space: LQ = Low Quality, HQ = High Quality; LL = Low Loyalty, HL = High Loyalty.

Pontiac: Consumer Segment Brand Equity Perceptual Maps

Pontiac, the brand with the lowest overall brand equity in this study, has a consistently weak position with each analyzed consumer group, as shown on both maps in Figure 5. Although each segment occupies Quadrant III on Map 1, Pontiac is positioned lower on brand awareness and has weaker brand associations compared to Toyota and Nissan. Of the three segments, Pontiac is positioned slightly stronger with White (3) consumers on awareness-association strength space, while occupying a position with Hispanics (2) near Quadrant I.

Shown on Map 2-Figure 5, Pontiac’s position with each consumer group is toward the bottom of Quadrant V, with low to moderate perceived quality and low brand loyalty ratings. Black (1) and White (3) respondents occupy space that is borderline Quadrant VI, illustrative of both low

loyalty and perceived quality scores. Map 2, in particular, illustrates the consistently low ratings across segments for this brand, with the groups in close proximity in Quadrant V. Pontiac is positioned slightly higher on perceived quality for Hispanics (2), and somewhat better with White (3) consumers on brand loyalty.

Figure 5
Pontiac: Consumer Segment Brand Equity Perceptual Maps

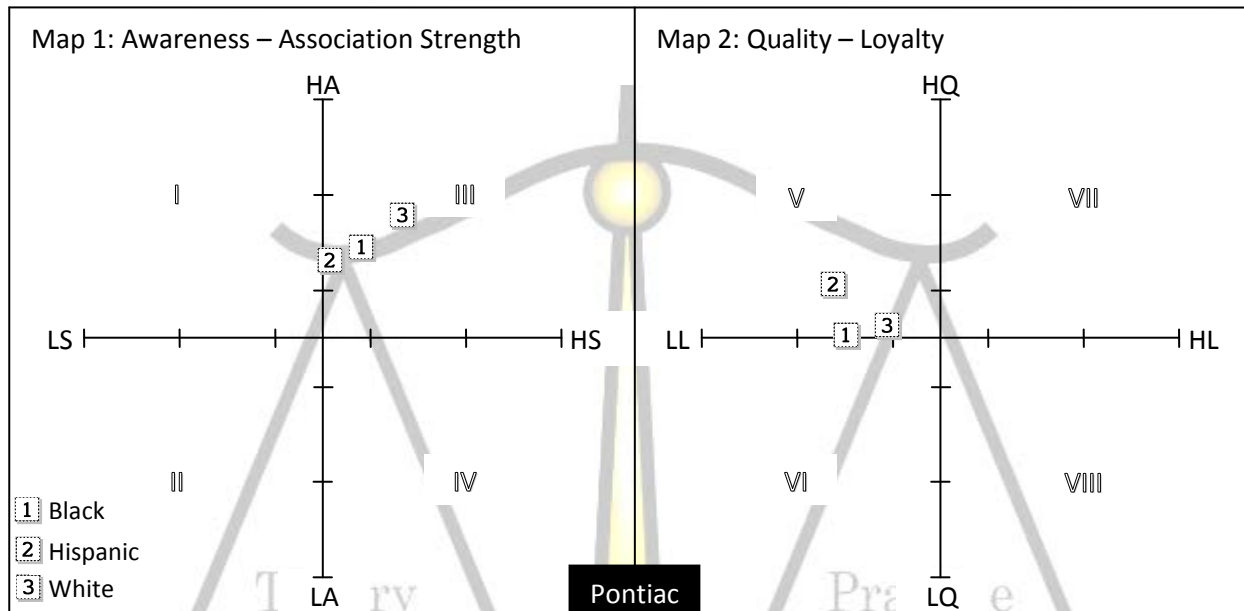


Figure illustrates brand’s position for Black (1), Hispanic (2), and White (3) consumers based on the mean dimension scores for each group. Each axis represents 5-point MBE scales (1 = low and 5 = high). Map 1: Awareness – Association strength space: LA = Low Awareness, HA = High Awareness; LS = Low Association Strength, HS = High Association Strength. Map 2: Perceived quality – Brand loyalty space: LQ = Low Quality, HQ = High Quality; LL = Low Loyalty, HL = High Loyalty.

DISCUSSION

Perceptual mapping captured the competitive landscape for six brands, illustrating their position on four brand equity dimensions at the time of data collection. Of the two maps, the awareness-association strength maps typically showed plotted stimuli in relative close proximity in Quadrant III, evidence of established brand memory (i.e., high-awareness and association strength). This is because the study used well-known brands to ensure most respondents could evaluate them. On the quality-loyalty perceptual maps, there was generally more differentiation between plotted stimuli, making salient the positions of higher-equity brands.

Unfortunately, the employed brand equity scales did not measure the favorability of a brand’s image associations. Brands with unfavorable associations can also occupy Quadrant III. Even

though a brand is well known, the strong brand associations forged in consumer memory are negative. Such brands would likely score low on perceived quality and brand loyalty ratings and, therefore occupy quadrants on the quality-loyalty map illustrative of lower overall brand equity similar to the brand Pontiac.

An unexpected result of this study was that brands with the highest overall brand equity (i.e., Nike) and the lowest overall brand equity (i.e., Pontiac) displayed consistent positions with the consumer segments, illustrated by their close proximity on both perceptual maps for these brands. The illustrated data pattern suggests consumer response moderates brand equity is partly a function of the response consistency across target audiences. Overall, the brand equity perceptual maps proved useful segmentation analysis tools. Take, for example, the results for the brand Nissan.

Higher ratings from Black respondents drove Nissan's overall brand equity, though lower ratings from the other segments, particularly White respondents, diminished the brand's overall equity. Nissan occupied a similar position with all segments on the perceived quality dimension. Rather, it was Nissan's significantly stronger position on brand loyalty with Black respondents that separated the segments in brand equity space. Nissan needs to focus building equity with White and Hispanic consumers, while maintaining a strong position with Black consumers. Specifically, for White consumers, Nissan needs to strengthen brand presence and establish more enduring, favorable associations to increase overall brand equity.

The suggested map quadrants characterize a brand's position in four-dimension brand equity space and facilitate strategic thinking. When plotted on both maps, combined quadrants suggest generic brand equity types. For example, the highest-equity brands occupy the strongest positions in Quadrants III and VII. Nike is a Quadrant III-VII high brand equity type, while both Converse and Reebok (i.e., moderate equity brands) are Quadrant III-V brands, that is, well-known brands, with moderately high quality ratings, though lower brand loyalty. Low equity brands are Quadrant II-VI brands; however, this study did not catalog this brand type.

Three of the eight quadrants present unique brand equity positions. One, Quadrant VIII, depicts a situation where a brand is rated low quality, with strong brand loyalty ratings. Even though the quality score diminishes an overall brand equity score, such a brand still garners loyal customers. One may consider a Quadrant VIII brand type a strong equity brand in the proper context, such as a "value" category. Two, Quadrant V represents brands that have good potential to increase brand equity because they have established perceived quality, though consumers are not brand loyal.

Rather than diminish resources on building image and knowledge structures, a Quadrant V brand strategy should focus efforts building long-term consumer relationships and countering competitive incentives. Three, Quadrant IV (low-awareness and strong brand associations) is a position that appears in principal, an improbable situation to have brands with strong images, yet consumers have difficulty recalling the brand. A similar quadrant would exist if brand awareness were paired with either brand loyalty or perceived quality, illustrating the foundational role brand awareness plays in overall brand equity.

Conclusions

Brand equity and positive, differentiating consumer thoughts need protection as well as techniques to facilitate their management. The central goal of this study was to demonstrate the usefulness of perceptual mapping in brand equity research and empirically document techniques applicable with any multifaceted brand equity systems, as a means of increasing the practical usefulness of the brand equity construct. In particular, the present study demonstrated the strategic implications of treating brand equity as relative and comparing brands on all equity indicators, rather than focusing on a single number resulting from measurement or an aggregate score from a population of respondents. In short, expressing brand equity in relational terms provides better assessment and valuation with the construct.

Limitations and Future Research

The main limitation of this study was that it relied on a convenience sample of university students, not necessarily representative of all university students or the general population of consumers. The sample was also skewed with more women (71%) than men (29%) and more than half (54%) of sampled respondents were Hispanic. One should not generalize the results of this study beyond the population of students in the sample.

The number of brands in each product category was limited by the capacity of the dataset, a complete picture of a product category would foster a better understanding of each brands' actual competitive brand equity position. The study was also limited by a single-demographic segmentation analysis, more complex segmentation schemes, and different groups would produce even further insight and help identify the most valued audiences. Finally, other measures of brand equity may have produced different results.

Future research should use probability sampling methods of other populations and a wider range of brands from different product categories. The development of measures to gauge the favorability of brand associations will enhance the usefulness of brand equity measurement, particularly to differentiate between brands with high brand association strength, currently both positively and negatively viewed brands occupy similar brand equity space. In general, brand equity assessment and theory would benefit from the development of scales that measure the favorability and uniqueness of brand associations, important variables related to a brand's overall identity.

The usefulness of brand equity perceptual mapping will benefit from further refinement of the presented maps. Researchers should catalog brands that occupy each map quadrant and test relationships with other brand performance variables (i.e., purchase intention and brand trust) in order to further develop the descriptions of each quadrant space. Development of similar mapping techniques, with comparable models that use brand equity indicators outside the employed four-dimension construct, would validate and complement the usefulness of the presented maps.

Perceptual mapping techniques will help track brand equity changes over time, aiding longitudinal research. Because mapping techniques capture a snapshot of brand equity at the time of data collection, they would prove useful in illustrating directional changes in the competitive field and with valued target audiences. In a similar manner, mapping brand equity before and after a promotional campaign or other marketing activities will assist in monitoring a firm's and its competitors' brand equity changes that result from different tactics.



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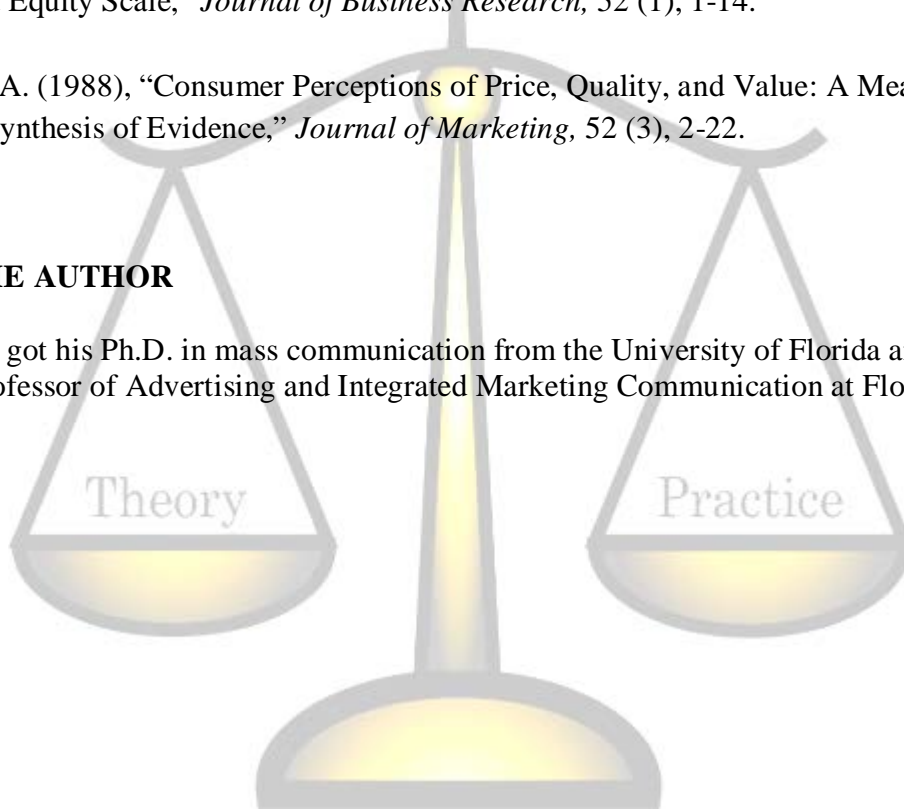
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ABOUT THE AUTHOR

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APPENDIX A: BRAND EQUITY AND ATTITUDE CORRELATION TABLES

Table 5
Nike: Brand Equity and Attitude Correlation Coefficients

Variable	Aw.	As-St.	Qu.	Lo.	MBE	B.A.
Aw.	1					
As-St.	.53**	1				
Qu.	.15	.09	1			
Lo.	.31**	.22*	.37**	1		
MBE	.62**	.52**	.60**	.85**	1	
B.A.	.31**	.30**	.58**	.62**	.72**	1

Note. Pearson correlation coefficients (*r*) show the strength of the relationship between brand equity dimensions (Aw. = Awareness, As-St. = Brand association strength, Qu. = Perceived quality, and Lo. = Brand loyalty), overall multidimensional brand equity (MBE), and brand attitude (B.A).

** $p < .01$

* $p < .05$

Table 6
Converse: Brand Equity and Attitude Correlation Coefficients

Variable	Aw.	As-St.	Qu.	Lo.	MBE	B.A.
Aw.	1					
As-St.	.76**	1				
Qu.	.38**	.35**	1			
Lo.	.29**	.43**	.54**	1		
MBE	.62**	.52**	.60**	.85**	1	
B.A.	.53**	.60**	.60**	.62**	.76**	1

(See note in Table 5)

** $p < .01$

* $p < .05$

Table 7
Reebok: Brand Equity and Attitude Correlation Coefficients

Variable	Aw.	As-St.	Qu.	Lo.	MBE	B.A.
Aw.	1					
As-St.	.51**	1				
Qu.	.42**	.31**	1			
Lo.	.01	.16	.23*	1		
MBE	.71**	.78**	.71**	.48**	1	
B.A.	.24*	.33**	.52**	.33**	.52**	1

(See note in Table 5)

** $p < .01$
 * $p < .05$

Table 8
Toyota: Brand Equity and Attitude Correlation Coefficients

Variable	Aw.	As-St.	Qu.	Lo.	MBE	B.A.
Aw.	1					
As-St.	.58**	1				
Qu.	.39**	.47**	1			
Lo.	.33**	.41**	.48**	1		
MBE	.66**	.76**	.77**	.82**	1	
B.A.	.41**	.55**	.69**	.56**	.73**	1

(See note in Table 5)

** $p < .01$
 * $p < .05$

Table 9
Nissan: Brand Equity and Attitude Correlation Coefficients

Variable	Aw.	As-St.	Qu.	Lo.	MBE	B.A.
Aw.	1					
As-St.	.67**	1				
Qu.	.54**	.46**	1			
Lo.	.31**	.40**	.45**	1		
MBE	.77**	.82**	.76**	.78**	1	
B.A.	.60**	.59**	.68**	.59**	.79**	1

(See note in Table 5)

** $p < .01$

* $p < .05$

Table 10
Pontiac: Brand Equity and Attitude Correlation Coefficients

Variable	Aw.	As-St.	Qu.	Lo.	MBE	B.A.
Aw.	1					
As-St.	.73**	1				
Qu.	.28**	.13	1			
Lo.	.27**	.22*	.38**	1		
MBE	.85**	.79**	.59**	.58**	1	
B.A.	.28**	.23**	.58**	.36**	.49**	1

(See note in Table 5)

** $p < .01$

* $p < .05$

APPENDIX B: CONSUMER SEGMENT BRAND EQUITY PERCEPTUAL MAPS – NIKE, REEBOK, CONVERSE

Figure 6

Nike: Consumer Segment Brand Equity Perceptual Maps

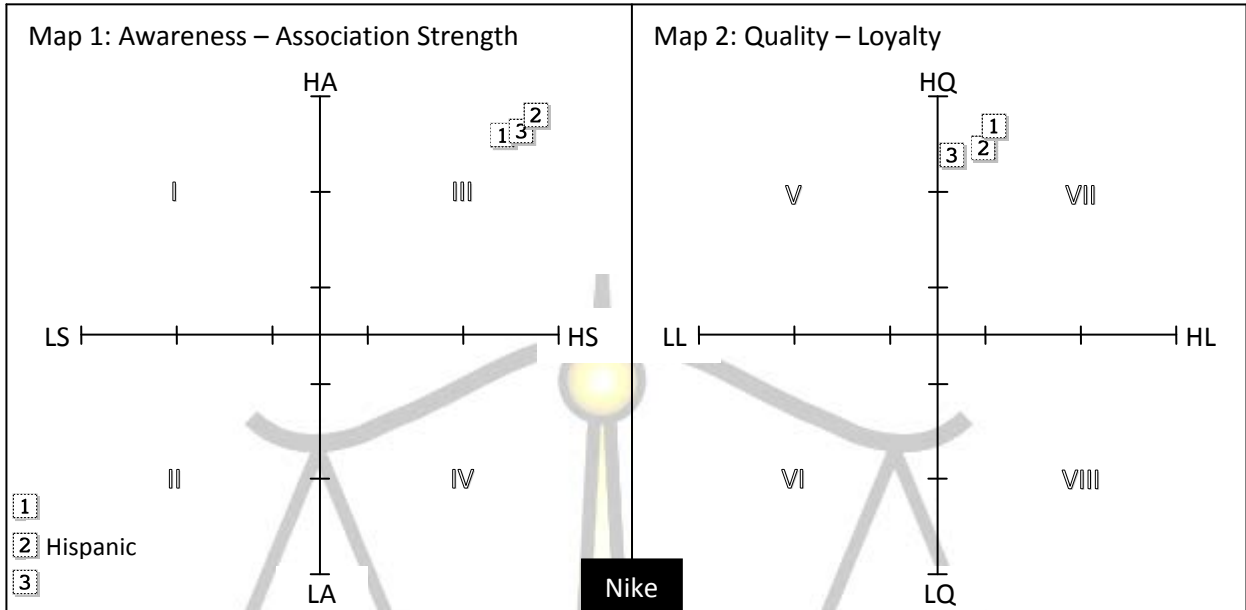
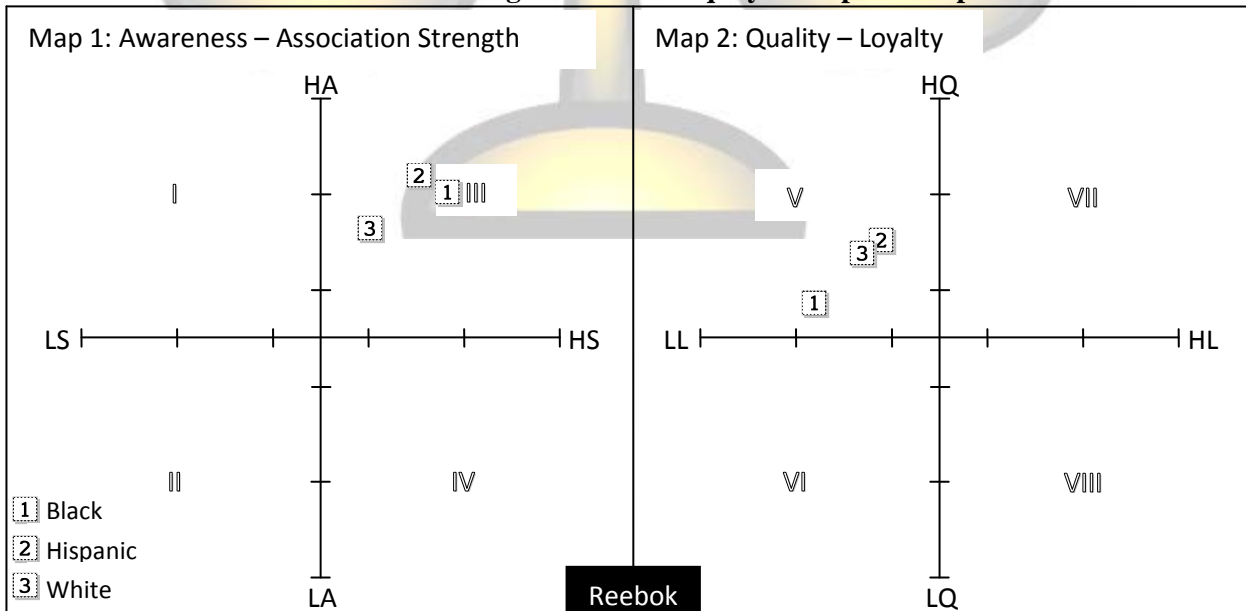


Figure illustrates brand's position for Black (1), Hispanic (2), and White (3) consumers based on the mean dimension scores for each group. Each axis represents 5-point MBE scales (1 = low and 5 = high). Map 1: Awareness – Association strength space: LA = Low Awareness, HA = High Awareness; LS = Low Association Strength, HS = High Association Strength. Map 2: Perceived quality – Brand loyalty space: LQ = Low Quality, HQ = High Quality; LL = Low Loyalty, HL = High Loyalty.

Figure 7

Reebok: Consumer Segment Brand Equity Perceptual Maps



(See figure 6 legend)

APPENDIX C: CONSUMER SEGMENT BRAND EQUITY DIMENSION SCORES

Table 11
Nike: Consumer Segment Brand Equity Dimension Scores

Segment	N	Brand Awareness		Association Strength		Perceived Quality		Brand Loyalty	
		Mean	SD ^a	Mean	SD ^a	Mean	SD ^a	Mean	SD ^a
Black	46	4.57	0.49	4.57	0.58	4.71	0.44	3.14	1.20
Hispanic	134	4.65	0.64	4.72	0.50	4.44	0.72	3.01	1.22
White	54	4.59	0.52	4.66	0.58	4.41	0.63	2.66	1.16

Note. Brand awareness, association strength, perceived quality, and brand loyalty score values are the sample mean of the combined MBE scale items for each dimension reported on 5-point scales for Black, Hispanic, and White respondents.

^aStandard deviation.

Table 12
Converse: Consumer Segment Brand Equity Dimension Scores

Segment	N	Brand Awareness		Association Strength		Perceived Quality		Brand Loyalty	
		Mean	SD ^a	Mean	SD ^a	Mean	SD ^a	Mean	SD ^a
Black	46	3.85	1.02	3.67	1.00	3.07	0.65	1.78	0.92
Hispanic	134	4.55	0.67	4.21	1.07	3.82	0.94	2.72	0.96
White	54	4.43	0.72	4.16	0.89	3.54	0.82	2.43	1.12

Note. (See note in table 11)

Table 13
Reebok: Consumer Segment Brand Equity Dimension Scores

Segment	N	Brand Awareness		Association Strength		Perceived Quality		Brand Loyalty	
		Mean	SD ^a	Mean	SD ^a	Mean	SD ^a	Mean	SD ^a
Black	46	4.07	0.78	3.79	0.90	2.85	0.65	1.28	0.39
Hispanic	130	4.29	0.67	3.54	1.07	3.58	0.94	1.88	0.96
White	54	3.68	0.72	3.02	1.19	3.43	0.77	1.68	0.89

Note. (See note in table 11)

Table 14
Toyota: Consumer Segment Brand Equity Dimension Scores

Segment	N	Brand Awareness		Association Strength		Perceived Quality		Brand Loyalty	
		Mean	SD ^a	Mean	SD ^a	Mean	SD ^a	Mean	SD ^a
Black	46	4.92	0.18	4.98	0.28	4.85	0.37	3.36	1.20
Hispanic	134	4.58	0.60	4.40	0.74	4.33	0.77	2.60	0.89
White	54	4.50	0.50	4.04	0.75	4.02	1.15	2.09	0.96

Note. (See note in table 11)

Table 15
Nissan: Consumer Segment Brand Equity Dimension Scores

Segment	N	Brand Awareness		Association Strength		Perceived Quality		Brand Loyalty	
		Mean	SD ^a	Mean	SD ^a	Mean	SD ^a	Mean	SD ^a
Black	46	4.42	0.83	4.35	0.73	4.14	0.75	4.14	1.23
Hispanic	132	4.43	0.74	3.83	0.98	4.24	0.71	2.59	1.14
White	54	4.15	0.67	3.52	0.90	3.84	1.88	2.43	1.19

Note. (See note in table 11)

Table 16
Pontiac: Consumer Segment Brand Equity Dimension Scores

Segment	N	Brand Awareness		Association Strength		Perceived Quality		Brand Loyalty	
		Mean	SD ^a	Mean	SD ^a	Mean	SD ^a	Mean	SD ^a
Black	46	3.40	1.25	2.97	1.26	2.52	1.13	1.52	0.87
Hispanic	126	3.33	1.23	2.60	1.25	3.12	0.89	1.41	0.72
White	52	3.78	1.46	3.35	1.37	2.64	0.98	1.93	0.96

Note. (See note in table 11)