Linking customer-based brand equity with brand market performance: a managerial approach

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Abstract

Purpose – The purpose of this paper is to attempt to bridge a gap in literature by defining and operationalizing specific brand equity constructs, and testing the relationships between customer-based brand equity and brand market performance. Current literature has focused on building and conceptualizing brand equity, there is no consensus on how it should be measured and what constructs should be included in the measurement process.

Design/methodology/approach – This study was conducted in two phases: a consumer-level analysis; and a brand-level analysis. A total of 6,410 observations have been identified (sample size consists of 5,598 usable observations). The second phase involved analyzing the data at the aggregate brand level. Analysis included testing hypotheses on the correlations between customer-based brand equity constructs and brand market performance. finally, detailed market and country-of-origin analyses are presented for managerial considerations.

Findings – Results from the consumer dataset have been averaged by brand (a total of 17 brands covering 76 percent and 75 percent of market shares in both economy and luxury markets). At the consumer-level, structural equation modeling was conducted to test research hypotheses. Results varied according to consumer usage. Attitudinal loyalty and satisfaction were found the strongest predictors of brand preference and intention to purchase. At the aggregate brand level, correlation analyses supported the hypothesis that customer-based brand equity constructs are correlated with brand market performance.

Practical implications – Analyses at the consumer and brand levels revealed interesting results about the US automotive market and suggested important managerial considerations. Specific recommendations are offered in order to help companies prioritize their resource utilization and improve their performance in the market.

Originality/value – This study offers a new model that links customer-based brand equity with brand market performance. It advances both academic and practical findings, and opens the door for new streams of research that link academic models with practical applications. It advances specific practical recommendations to companies and at the same time offers a reliable and valid academic model that could be applied on other industries and countries.

Keywords Brand equity, Customer loyalty, Brand management

Paper type Research paper

Introduction

The area of brand equity has received significant research attention in recent years. As a result, current marketing research studies attempt to conceptualize, measure, and manage brand equity in a way that drives brand market performance, and helps firms in strategic decision making. An emerging debate started to address whether brand equity should be thought of from a consumer-oriented or a market performance-oriented perspective. Motameni and Shahrokhi (1998) recognized the confusion and disagreement in conceptualizing and defining brand equity, and they identified two opposing perspectives or schools of thought: the marketing perspective and the financial accounting perspective. Keller (1993) posited that companies are motivated to study brand equity for two reasons: one is financially-based to estimate the value of a brand more precisely for financial reporting purposes; and the other is strategy-based to improve marketing productivity. He argued that evaluating the brand in the minds of consumers is prerequisite for brand market performance.

While current literature has focused on building and conceptualizing brand equity, there has been no consensus on how to measure it or on what constructs to include in the measurement process (Mackay, 2001a). This study attempts to bridge this gap in the literature by defining and operationalizing specific brand equity constructs, and developing an integrative brand equity model that links customer-based brand equity with brand market performance.

Brand equity measurement models

Several academic studies attempted to measure brand equity and offered different approaches and constructs to incorporate in the measurement process. Erdem and Swait (2004) classified brand equity measurement models into:

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- component-based models (Aaker, 1991, 1996; Keller, 1993, Lassar *et al.*, 1995; Keller and Lehmann, 2003);
- holistic models (Swait *et al.*, 1993; Park and Srinivasan, 1994; Kamakura and Russell, 1993).

While component-based models measure individual elements of brand equity, holistic models seek an overall evaluation of the brand. This study utilizes a component-based approach whereby brand equity is thought of as a multidimensional concept (Keller, 1993) because the main purpose is to test the effect of each customer-based brand equity construct on brand market performance.

Aaker (1991) defined brand equity as "a set of five categories of brand assets (liabilities) linked to a brand's name or symbol that add to (subtract from) the value provided by a product or service." He identified five brand equity constructs:

1 brand awareness;
2 brand perceived quality;
3 brand associations;
4 brand loyalty; and
5 other proprietary brands assets, such as patents, trademarks, and channel relationships.

This definition has been utilized in various brand equity empirical studies (Yoo and Donthu, 1997; Yoo *et al.*, 2000; Washburn and Plank, 2002; Baldauf *et al.*, 2003; Kim and Kim, 2004). Further, Keller (1993) defined "Customer-based brand equity" (CBBE) as "the differential effect of brand knowledge on consumer response to the marketing of the brand". According to Keller, the differentiation effect is determined by comparing consumers' reactions to the marketing of a brand with their reactions to same marketing of an unnamed version of the product. Keller highlighted two brand equity constructs: brand knowledge and brand response. Brand knowledge has been defined in terms of brand awareness and image, while brand response to marketing has been conceptualized in terms of consumer perceptions, preferences, and behavior arising from marketing mix activities. Aaker (1996) introduced a new model for measuring brand equity: "the Brand Equity Ten". This model included customer-based brand equity constructs, such as awareness, associations, perceived quality, perceived value, loyalty, and satisfaction, as well as market behavior measures, such as market share, market price and distribution coverage.

This study adds to above-mentioned research by identifying the constructs to be included in a customer-based brand equity model, linking them to brand market performance, and empirically testing this relationship on the US automotive industry.

Proposed brand equity constructs

The proposed model breaks down the CBBE into three dimensions:

1 knowledge equity (KE);
2 attitudinal equity (AE); and
3 relationship equity (RE).

This classification has been supported by several studies in the literature. First, Keller and Lehmann (2003) defined "Brand knowledge" (what is referred to as CBBE in this study), as consisting of awareness and associations, attitudes, and attachments. While awareness is a main component of knowledge equity in this model, attitudes and attachments represent attitudinal equity and relationship equity respectively. Similarly, Vakratsas and Ambler (1999) defined consumer-based effects in terms of cognition (knowledge equity), affect (attitudinal equity), and experience (relationship equity). Also, they supported using "Preference," and "Intention to purchase," as a result of the three CBBE constructs.

Knowledge equity (KE) is defined as the component of CBBE that evaluates consumers' awareness of the brand (recognition and recall), and their familiarity with brand characteristics, meaning, and functions. KE incorporates the cognitive dimension in the minds of consumers as per the "Hierarchy of effects model", and measures how effective the brand message reached the target consumers.

Attitudinal equity (AE) refers to consumers' attitudes towards a particular brand. AE incorporates the "affective" dimension in the minds of consumers as per the Hierarchy of Effects Model (Lavidge, 1961), and measures the effectiveness of the different marketing mix elements in influencing consumer perceptions. Lassar *et al.* (1995) recognized the following constructs:

- perceived quality, capturing the performance of the brand;
- perceived value, capturing the utility and affordability of the brand; and
- social image (what is referred to in this study as Prestige), capturing the social dimension.

Further, Percy and Rossiter (1992) posited that brand attitude has both cognitive and emotional dimensions. This study proposes to add "affect" to attitudinal equity constructs (which is supported by the Hierarchy of Effects Model) to capture the emotional dimension and render the scale more comprehensive.

Relationship equity (RE) includes both customers' satisfaction with as well as their attitudinal loyalty towards the brand. RE incorporates the attachment dimension between consumers and the brand as per the Hierarchy of Effects Model, and measures the effectiveness of marketing activities in building a relationship between the brand and its target consumers.

Attitudinal loyalty has been defined as "the level of commitment of the average consumer toward the brand", while behavioral loyalty has been defined as "the willingness of the average consumer to repurchase the brand" (Morgan, 2000; Chaudhuri and Holbrook, 2001). Table I highlights the studies in the literature supporting the recommended constructs.

An integrative brand equity model

Several studies attempted to link customer-based brand equity constructs with the "Hierarchy of Effects Model", an advertising effectiveness tool introduced by Robert Lavidge in 1961. The Hierarchy of Effects Model consists of three components:

1 cognitive;
2 affective; and
3 co-native (behavioral).

It assumes that potential buyers are new users who move from awareness to knowledge to liking to preference to intention to buy to actual purchase. More recent studies concluded that the adoption continuum could be heterogeneous and that

Table I Proposed brand equity constructs

Construct		Literature support
Knowledge equity (KE)	Awareness and familiarity	Lavidge (1961); Aaker (1991, 1996); Keller (1993); Agarwal and Rao (1996); Yoo and Donthu (1997); Yoo *et al.* (2000); Mackay (2001b); Washburn and Plank (2002); Keller and Lehmann (2003); Baldauf *et al.* (2003); Kim and Kim (2004)
Attitudinal equity (AE)	Affect	Lavidge (1961); Percy and Rossitier (1992); Chaudhuri and Holbrook (2001)
	Prestige	Lassar *et al.* (1995)
	Perceived quality	Aaker (1991, 1996); Lassar *et al.* (1995); Agarwal and Rao (1996); Yoo and Donthu (1997); Yoo *et al.* (2000); Mackay (2001b); Washburn and Plank (2002); Baldauf *et al.* (2003); Kim and Kim (2004)
	Perceived value	Lassar *et al.* (1995); Aaker (1996); Agarwal and Rao (1996); Mackay (2001b)
Relationship equity (RE)	Satisfaction	Aaker (1996)
	Attitudinal loyalty	Aaker (1991, 1996); Atilgan *et al.* (2005) Lassar *et al.* (1995); Yoo and Donthu (1997); Chaudhuri (1999); Yoo *et al.* (2000); Chaudhuri and Holbrook (2001); Washburn and Plank (2002); Baldauf *et al.* (2003); Kim and Kim (2004)

consumers do not have to follow all the steps in the Hierarchy of Effects Model (Copland, 1963; Achenbaum, 1968; Assael and Day, 1968; Poczter, 1987). This argument calls for segmenting consumers (cluster analysis) to group them based on their movement within the model steps.

Agarwal and Rao (1996) developed a model that links brand equity to the Hierarchy of Effects Model. They focused on single composite measures of brand equity, assessing the impact of individual measures on market share (Mackay, 2001b). They utilized the following brand equity constructs: awareness, familiarity, weighted attributes, value for money, and overall quality of brand name. Customer-based brand equity has been thought of as a prerequisite for brand preference, which in turn affects consumers' intention to purchase. Other empirical studies in the literature supported the positive relationship between CBBE constructs and brand preference and purchase intention (Cobb-Walgren *et al.*, 1995; Vakratsas and Ambler, 1999; Myers, 2003). The proposed model builds on the relationships proposed in these studies and links them with brand market performance (BMP). Aaker (1996) included BMP constructs in the Brand Equity Ten model. He proposed three BMP constructs:

1 market share;
2 price premium; and
3 distribution coverage.

Similarly, Chaudhuri (1999) developed a model that supports the impact of brand attitudes and brand loyalty on brand equity outcomes, defined as market share, price, and shelf spacing. Further, Chaudhuri and Holbrook (2001) operationalized BMP in terms of market share and price premium. Further, Keller (2001) defined "Macro" brand strength in terms of market leadership and market share. Also, Baldauf *et al.* (2003) assessed their impact on profitability, market performance, customer value, and purchase intention. Finally, Keller and Lehmann (2003) introduced the "Brand Value Chain" model, and emphasized the relationship between the customer mindset (awareness, associations, attitudes, attachments, and activity) and brand performance (price elasticity and premiums, cost structure, market share, profitability, and expansion success). This study utilizes market share as the main BMP measure. Finally, there are moderating variables in the model:

- usage: whether the respondent has tried the brand before or not;
- market: luxury versus economy sedan; and
- Country-of-origin of the car.

Figure 1 demonstrates the proposed integrative model.

Research hypotheses

Several studies in the literature support the relationships knowledge equity has with brand preference and intention to purchase (in case of non-users) or behavioral loyalty (in case of users) (Poczter, 1987; Cobb-Walgren *et al.*, 1995; Ghosh *et al.*, 1995; Agarwal and Rao, 1996; Vakratsas and Ambler, 1999; Mackay, 2001a, b). Most of these studies assume that consumer decisions are only rational (cognitive models):

H1. Knowledge equity positively affects brand preference.
H2. Knowledge equity positively affects intention to purchase/behavioral loyalty.

Similarly, many studies support the relationships attitudinal equity constructs have with brand preference and intention to purchase/behavioral loyalty. While by the Hierarchy of Effects Model (Lavidge, 1961) is the first study that links affect and preference, the Pure Affect Models support the relationships between attitudinal equity constructs and brand preference (Poczter, 1987; Agarwal and Rao, 1996; Vakratsas and Ambler, 1999; Mackay, 2001a, b):

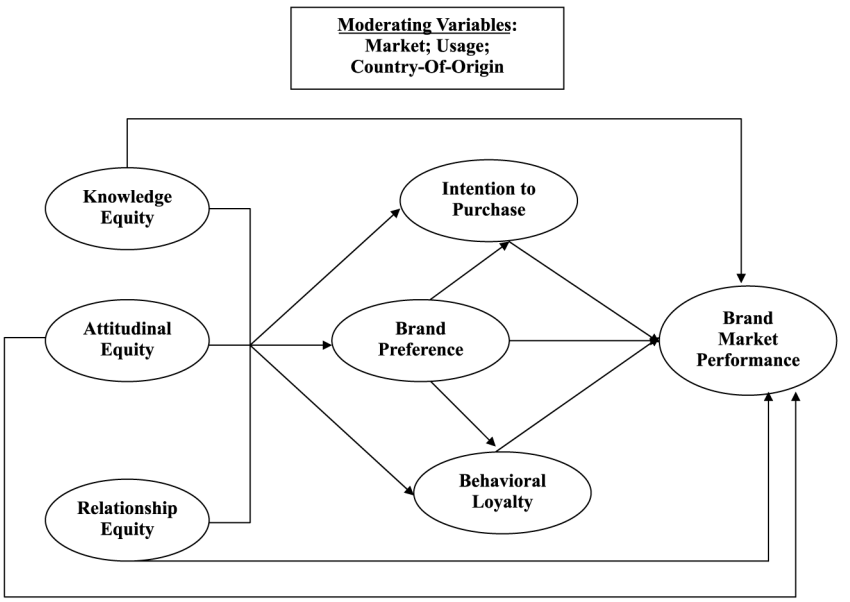
H3. Attitudinal equity constructs positively affect brand reference.
H4. Attitudinal equity constructs positively affect intention to purchase/behavioral loyalty.

Further, relationship equity constructs (satisfaction and attitudinal loyalty) positively affect brand preference and intention to purchase/behavioral loyalty (Cobb-Walgren *et al.*, 1995; Vakratsas and Ambler, 1999):

H5. Relationship equity constructs positively affects brand preference.
H6. Relationship equity constructs positively affects intention to purchase/behavioral loyalty.

The seventh hypothesis tests the relationships between brand preference and intention to purchase/behavioral loyalty. These

Figure 1 An integrative brand equity model



relationships are supported by the Hierarchy of Effects Model (Lavidge, 1961; Poczter, 1987):

H7. Brand preference positively affects intention to purchase/ behavioral loyalty.

Finally, this study aims to test four hypotheses, correlating CBBE constructs, brand preference, intention to purchase, and behavioral loyalty with BMP at the brand level:

H8. There is a positive correlation between CBBE Constructs and BMP.
H9. There is a positive correlation between brand preference and BMP.
H10. There is a positive correlation between intention to purchase and BMP.
H11. There is a positive correlation between behavioral loyalty and BMP.

Table II lists the literature supporting model relationships.

Data collection and sampling

An online survey was administered, targeting consumers in the USA who are capable and willing to buy a sedan car. This survey was constructed using Zoomerang software, an internet-based survey tool. This study focused on two car segments: "Economy" sedans and "Luxury" sedans. Table III details the scales utilized in the survey and their sources in the literature.

Brand market performance (BMP) data has been collected through the Automotive News web site (www.autonews.com). The most recent data on all car units sold and car prices in the US market has been purchased from the web site.

Three different models (or paths) have been identified based on usage:

1 a model that includes observations of consumers who never tried a particular brand (never tried);
2 a model that includes observations of consumers who have just tried a particular brand (tried);
3 a model that includes observations of consumers who own or owned a particular brand (owned).

A total of four random samples have been drawn (two samples per market). The first and second samples have been drawn from the "Economy" market, each asking questions related to five economy car brands. Similarly the third and fourth samples have been drawn from the "Luxury" market, each

Table II Literature supporting model relationships

Hypotheses	Literature support
H1* and *H2	Poczter (1987); Cobb-Walgren *et al.* (1995); Ghosh *et al.* (1995); Agarwal and Rao (1996); Vakratsas and Ambler (1999); Mackay (2001a, b)
H3* and *H4	Lavidge (1961); Poczter (1987); Cobb-Walgren *et al.* (1995); Agarwal and Rao (1996); Vakratsas and Ambler (1999); Mackay (2001a, b)
H5* and *H6	Cobb-Walgren *et al.* (1995); Vakratsas and Ambler (1999)
H7	Lavidge (1961); Poczter (1987)
H8	Lavidge (1961); Poczter (1987); Cobb-Walgren *et al.* (1995); Agarwal and Rao (1996); Vakratsas and Ambler (1999)
H9	Poczter (1987); Vakratsas and Ambler (1999)
H10	Lavidge (1961); Poczter (1987)
H11	Lavidge (1961); Chaudhuri and Holbrook (2001)

Table III Study scales

Construct	Scale description	Source	α
Knowledge equity	Three seven-point semantic differentials intended to measure a person's familiarity with a specified brand name	Simonin and Ruth (1998)	0.80-0.94
Perceived quality	Three seven-point semantic differentials measuring a person's attitude toward the quality of a specific brand	Keller and Aaker (1992)	>0.70
Perceived value	Four seven-point Likert-type statements that assess the utility derived from the perceived economic value of a particular product	Sweeney and Soutar (2001)	0.80-0.91
Prestige	Three seven-point Likert-type statements that measure how much a person considers some specific object to be high class and exclusive	Kirmani *et al.* (1999)	0.96
Affect	Three seven-point Likert-type statements measuring the degree of positive affect a consumer has toward a brand	Chaudhuri and Holbrook (2001)	0.96
Satisfaction	Three seven-point Likert-type items measuring the level of satisfaction a consumer experiences with a product's performance	Tsiros and Mittal (2000)	0.95
Attitudinal loyalty	Three five-point Likert-type statements attempting to capture consumer's general loyalty to a specified brand	Yoo *et al.* (2000)	0.90
Brand preference	Three five-point Likert-type statements measuring the degree to which a person views a focal brand as preferable to a referent brand	Sirgy *et al.* (1997)	0.72-0.98
Intention to buy	Three seven-point Likert-type scale measuring the degree to which a consumer means to buy (or at least try) a specified brand in the future	Putrevu and Lord (1992)	0.91
Behavioral loyalty	Three nine-point Likert-type scale, measuring the likelihood that a person will use an object again	Cronin *et al.* (2000)	0.93

asking questions related to five luxury car brands. The brands utilized in this study represent 76.3 percent and 74.5 percent of the economy and luxury sedan markets respectively. The samples have been drawn using zSample, Zoomerang's survey respondent service, which includes 2.5 million Zoomerang zSample participants (the study's sampling frame).

The target of this study was to collect at least 200 responses per sample (a total of 800 responses). As a typical response rates for online survey = 20 percent, A total of 4,000 surveys (1,000 per sample) have been randomly distributed. This study generated an overall response rate of 32 percent, yielding a total of 1,282 responses.

The four samples have been distributed almost evenly between males and females (49 percent females and 51 percent males). The distribution of age and income across all samples is reasonably representative of the study population. Further, the distribution of people across States has been representative, yielding a Pearson Correlation Coefficient of 0.96 between the actual population distribution and the sample distribution across States (significant at $p = 0.00$).

Further, the different scales utilized to measure model constructs were analyzed to verify their reliabilities. While all scales have been driven from the literature, they have all been found reliable with Cronbach Alpha (α) ranging from 0.78 to 0.98. According to Nunnally (1994), a scale of $\alpha > 0.7$ is considered reliable.

Results

The data analysis process was conduced in two phases. First, at the consumer-level, model relationships have been tested using structural equation modeling. Then, results have been averaged out by brand to form a brand dataset (consisting of 20 brands total) in order to test the correlations between model constructs and brand market performance.

Consumer-level analysis

Data analysis follows three steps:

1 exploratory factor analysis to determine the appropriate number of factors to be utilized in the analysis;
2 confirmatory factor analysis for each of the three models (never tried, tried, and owned) to test the adequacy of the measurement models; and
3 structural equation modeling for each of the three models, based on the results of the confirmatory factor analysis, to analyze relationships between latent constructs and test research hypotheses.

While the measurement model specifies relationships between latent variables and their indicator variables, the structural model specifies relationships between the latent constructs (Hatcher, 1994).

First, exploratory factor analysis revealed that three attitudinal equity constructs (affect, prestige and perceived quality) loaded on the same factor. As a result, a new construct: Image was introduced, combining these three constructs. Second, various tests were utilized to check the adequacy of the measurement models (confirmatory factor analysis), such as Chi square analysis, CFI (>0.90), NNFI (>0.90), *t*-values of manifest variables (>1.96), normalized residuals distribution, composite reliabilities (>0.70), and variance extracted (>0.50). The results reveal that all three measurement models are adequate and fitting the data. Finally, this study utilizes various tests to check the adequacy of the structural equation models, such as Chi square analysis, CFI (>0.90), NNFI (>0.90), *t*-values of manifest variables (>1.96), normalized residuals distribution, PNFI (>0.60), and Chi square difference. The results reveal that all structural models are adequate and fitting the data. The following section details the results of the structural equation models for the three "Usage" cases: never tried, tried, and owned.

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Model 1: never tried

For consumers who never tried a brand, Table IV details the results of the structural equation modeling.

The structural equation model reveals the following regression equations:

$$\text{Preference} = 0.34\ (\text{Value}) + 0.23\ (\text{Image})\ 0.84 \quad [R^2 = 0.29]$$

$$\text{Intention to buy} = 0.49\ (\text{Preference}) + 0.72 \quad [R^2 = 0.48].$$

The results above show that value and image are the primary drivers of brand preference, which in turn affects intention to purchase (consistent with the Hierarchy of Effects Model). However, the predictability of both regression equations is not high (0.29 and 0.48 respectively). Figure 2 demonstrates the results of this model.

Model 2: tried:

For consumers who tried a particular brand, Table V details the results of the structural equation modeling.

The structural equation model reveals the following regression equations:

$$\text{Preference} = 0.08\ (\text{Value}) + 0.23\ (\text{Satisfaction}) + 0.67\ (\text{Attitudinal Loyalty}) + 0.49 \quad [R^2 = 0.76]$$

$$\text{Intention to buy} = 0.79\ (\text{Attituduinal Loyalty}) + 0.62 \quad [R^2 = 0.79].$$

The results above show that that attitudinal loyalty is the primary driver of both brand preference and intention to buy. Further, the predictability of both regression equations is high compared to the previous model (0.76 and 0.79 respectively). This high predictability means that relationship equity is crucial in predicting brand preference and intention to buy. Figure 3 demonstrates the results of this model.

Model 3: owned

For consumers who own a particular brand, Table VI details the results of the structural equation modeling.

Table IV SEM-never tried

Condition	Result	Evaluation
Chi square and *p*-value	1,231 (<0.0001)	Results affected by sample size
Chi square/DF	14.6 (>2)	Results affected by sample size
CFI	0.94 (>0.90)	Model fits the data
NNFI	0.93 (>0.90)	Model fits the data
Manifest variable *t*-values and SE	All > 1.96	Model fits the data
Normalized residuals distribution	Centered @ zero, Symmetric	Model is acceptable
PNFI	0.75 > (0.60)	Model is parsimonious
Chi square difference test	Chi square difference = 21 df difference = 4	Model's fit is worse than the measurement model fit
Coefficients of determination	PF: 0.29 INT: 0.48	Low predictability: explains 29 per cent and 48 per cent of the variance in the data

Figure 2 Model 1 (never tried): final structural model

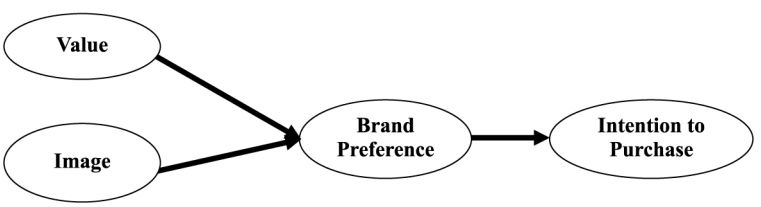

Table V SEM-tried

Condition	Result	Evaluation
Chi square and *p*-value	2,840 (<0.0001)	Results affected by sample size
Chi square/df	16.2 (>2)	Results affected by sample size
CFI	0.95 (>0.90)	Model fits the data
NNFI	0.94 (>0.90)	Model fits the data
Manifest variable *t*-values and SE	All > 1.96	Model fits the data
Normalized residuals distribution	Centered @ zero, Symmetric	Model is acceptable
PNFI	0.77(>0.60)	Model is parsimonious and simple
Chi square difference test	Chi square difference = 40 df difference = 7	Model's fit is worse than the measurement model fit
Coefficients of determination	PF: 0.76 INT: 0.79	High predictability: explains 76 per cent and 79 per cent of the variance in the data

Figure 3 Model 2 (tried): final structural model

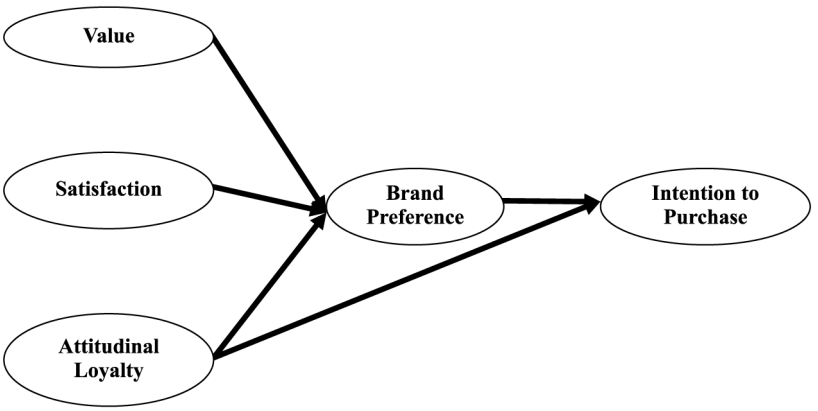

Table VI SEM-owned

Condition	Result	Evaluation
Chi square and *p*-value	1,063 (<0.0001)	Results affected by sample size
Chi square/df	6.1 (>2)	Results affected by sample size
CFI	0.98 (>0.90)	Model fits the data
NNFI	0.97 (>0.90)	Model fits the data
Manifest variable *t*-values and SE	All > 1.96	Model fits the data
Normalized residuals distribution	Centered @ zero, Symmetric	Model is acceptable
PNFI	0.81(>0.60)	Model is parsimonious and simple
Chi square difference test	Chi square difference = 32 DF difference = 7	Model does not fit the data, but results affected by sample size
Coefficients of determination	PF: 0.78 INT: 0.91	High predictability: explains 78 per cent and 91 per cent of the variance in the data

The structural equation model reveals the following regression equations:

$$\text{Brand preference} = 0.14\ (\text{Satisfaction}) + 0.77\ (\text{Attitudinal Loyalty}) + 0.47 \quad [R^2 = 0.78]$$

$$\text{Behavioral Loyalty} = 0.37\ (\text{Satisfaction}) + 0.6302\ (\text{Attitudinal Loyalty}) + 0.31 \quad [R^2 = 0.91]$$

Similar to the previous model, attitudinal loyalty is the primary driver of both brand preference and intention to buy; along with customer satisfaction. Also, the predictability of both regression equations is high (0.78 and 0.91 respectively). Figure 4 demonstrates the results of this model.

Brand-level analysis

A correlation analysis has been conducted at the brand-level because of the small sample size (20 brands). All research hypotheses have been supported. Results indicated that BMP had strong and significant correlation with knowledge equity, relationship equity (satisfaction and attitudinal loyalty), brand preference, intention to purchase and behavioral loyalty. Only attitudinal equity constructs (value and image) were not found significantly correlated with BMP. Table VII summarizes the results of the correlation analysis.

Effect of moderating variables

While "Usage" effect is interpreted within the structural equation modeling analysis, the other two moderating

Figure 4 Model 3 (owned): final structural model

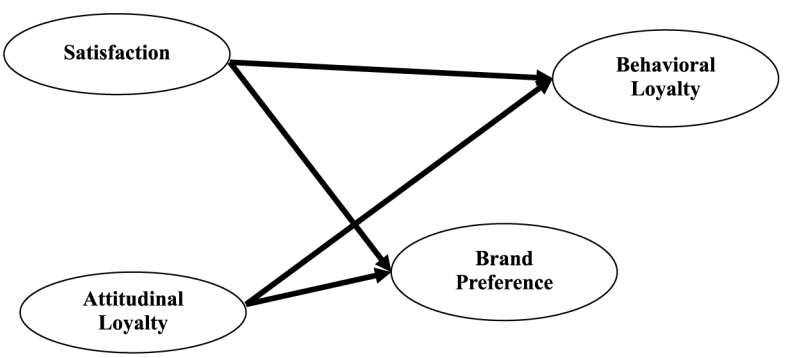

Table VII Correlation analysis results

	KE	Value	Image	SAT	AL	PF	INT	BL
BMP	0.718**	0.290	0.394	0.531*	0.704**	0.741**	0.485*	0.508*

Notes: * Significant at 0.05 level; ** significant at 0.01 level

variables (market and country-of-origin) are analyzed in this section in order to draw managerial implications.

Market analysis

One of the major objectives of this study is to compare economy and luxury markets and possibly identify different strategies to be deployed per market.

Independent samples *t*-tests have been conducted for all metric variables in the model. Table VIII includes the means of all metric variables per market as well as the significance of the differences for each construct.

It could be concluded that luxury consumers tend to be more knowledgeable about their car brands than economy consumers. This could be attributed to the intense image-based advertising for luxury car brands. Also, luxury consumers perceive their brands' image (quality, prestige, and affect) significantly better than economy consumers. On the other hand, economy consumers rate their brands as providing higher value for money. Therefore, it could be inferred that luxury consumers emphasize image, while economy consumers emphasize value.

Also, while luxury consumers are significantly more satisfied with their car brands than economy consumers, the latter tend to be more loyal. An explanation for this interesting finding is that luxury consumers are satisfied with the excellent quality and image of their cars; yet they tend to switch brands because of lack of differentiation. On the other hand, economy consumers recognize that their cars are not of the best quality, thus their satisfaction with their cars is not very high; yet, they are not willing to switch brands to avoid taking risk as they are happy with the current value offered.

Country-of-origin analysis

An important objective of this study is to test whether country-of-origin has an impact on CBBE constructs. The car brands covered in this study have three countries of origin: American (Dodge, Buick, Ford, Chrysler, Chevrolet, and Cadillac); Japanese (Toyota, Nissan, Honda, Mazda, Acura, Lexus, and Infiniti); and European (BMW, Audi, Mercedes, and Volvo).

Table VIII Mean comparisons: independent samples *T*-tests

Variable	Economy	Luxury	Difference (E-L)	Sig. (*p*-value)
KE	5.49	5.78	−0.29	0.00
Quality	4.56	4.98	−0.42	0.00
Value	4.50	4.10	+0.40	0.00
Prestige	3.76	4.69	−0.93	0.00
Affect	4.37	4.62	−0.25	0.00
Image	4.23	4.76	−0.53	0.00
AE	4.30	4.59	−0.30	0.00
Preference	2.66	2.62	+0.05	0.21
Satisfaction	4.74	4.92	−0.18	0.00
Attitudinal loyalty	2.72	2.59	+0.13	0.01
RE	3.73	3.75	−0.02	0.60
Behavioral loyalty	5.29	5.17	+0.12	0.40
Intention to buy	2.28	2.08	+0.20	0.00

An analysis of variance (ANOVA) has been conducted for all metric variables in the model, analyzing the differences in means across their countries of origin. ANOVA's *f*-test indicated that, for all metric variables in this study, the means of at least two countries of origin differ (the null hypothesis that the three means are the same has been rejected at a significance level of $p < = 0.00$). Further, in order to identify which means differ and which country of origin is superior, the Scheffe A-Posteriori test has been utilized. Table IX details the findings of this test.

From Table IX, a series of interesting conclusions could be drawn. First, Japanese cars are significantly behind American and European cars in terms of knowledge equity (awareness, recognition, and familiarity). This means that Japanese car brands have the potential to increase familiarity, which in turn might affect business performance. A further analysis by brand could identify more specific results.

Second, European car brands enjoy a significantly better image (quality, prestige, and affect) than Japanese and American car brands. This might be partially attributed to the fact that all selected European brands are in the luxury market. Nevertheless, consumers' perceptions indicate that European cars have higher quality, prestige, and likeability than other car brands. Also, overall attitudinal equity (AE) has been found significantly superior for European car brands.

Third, Japanese car brands are perceived to offer a higher value for money than American and European cars. This is an expected conclusion, especially for the Economy market. Fourth, consumers are significantly more satisfied with Japanese car brands, and accordingly, their attitudinal loyalty is significantly higher. As a result, consumers have higher relationship equity (RE) for Japanese cars than both European and American cars. Also, consumers' intentions to purchase or repurchase Japanese cars are significantly higher than European and American cars.

Finally, while American cars enjoy a high level of knowledge equity (KE) that is superior to Japanese cars, they suffer from significantly low attitudinal equity (AE), relationship equity (RE), and intentions to purchase or repurchase. It could be concluded that American car brands need to capitalize on the high KE and build a strong AE that would drive higher RE and lead consumers to purchase their brands. While European car brands clearly focus on Image and enjoy superior AE, they focus on the Luxury market, which is characterized by low levels of loyalty. Japanese car brands, on the other hand, have the potential to further grow in the future by increasing KE. They emphasize value, and they are successful in building superior RE, retaining customers, and attracting new customers.

Table IX Scheffe test for COO analysis

	American – Japanese		American-European		Japanese-European	
Variable	**Mean diff.**	**Sig.**	**Mean diff.**	**Sig.**	**Mean diff.**	**Sig.**
KE	+0.201*	0.000	−0.096	0.095	−0.296*	0.00
Quality	−0.822*	0.000	−1.108*	0.000	−0.286*	0.00
Value	−0.284*	0.000	+0.416*	0.000	+0.700*	0.00
Prestige	−0.779*	0.000	−1.705*	0.000	−0.926*	0.00
Affect	−0.742*	0.000	−0.791*	0.000	−0.048	0.75
Image	−0.781*	0.000	−1.201*	0.000	−0.420*	0.00
AE	−0.656*	0.000	−0.796*	0.000	−0.140*	0.01
Preference	−0.097	0.053	+0.016	0.954	+0.113	0.10
Satisfaction	−0.889*	0.000	−0.724*	0.000	+0.165	0.06
Attitudinal loyalty	−0.459*	0.000	−0.116	0.277	+0.343*	0.00
RE	−0.675*	0.000	−0.422*	0.000	+0.253*	0.00
Behavioral loyalty	−2.029*	0.000	−1.097*	0.000	+0.932*	0.00
Intention to buy	−0.387*	0.000	−0.137*	0.049	+0.250*	0.00

Note: * The mean difference is significant at the 0.01 level

Conclusions

This study advances an integrative brand equity model that links customer-based brand equity (CBBE) with brand market performance (BMP). CBBE constructs are identified from the literature, integrated in the proposed model, and linked with brand preference and intention to purchase at the individual consumer level. Exploratory factor analysis revealed that CBBE consists of five constructs: knowledge equity (KE), perceived value, image (an aggregate of perceived quality, prestige and affect), satisfaction, and attitudinal loyalty. The model was validated using confirmatory factor analysis, and the hypotheses were tested using structural equation modeling.

Results indicated that attitudinal loyalty and satisfaction (relationship equity constructs) are the primary drivers of brand preference and intention to re-purchase among brand users. This is an important finding for companies that need to emphasize loyalty programs and after-sale services, especially in the luxury market where brand switching is high. Among non-users of the brands, value and image are the primary drivers of brand preference, which in turn affects intention to purchase. However, the model's predictability (R^2) is very low. Therefore, car companies in the USA must focus on test drives and consumer experience with the brands besides normal image building activities. Further, findings showed that brand market performance is significantly correlated with customer-based brand equity constructs.

An interesting finding revealed that value is the key driver of brand preference among luxury consumers, while image is the main factor affecting brand preference among Economy consumers. While this conclusion seems counter-intuitive, it is attributed to the fact that luxury consumers are brand switchers who perceive most luxury brands as somehow of similar image. Therefore, image is a "Point-of-parity", while value is the "Point-of-difference" that would differentiate one brand from another. Similarly, economy consumers recognize the value offered by the different brands "Point-of-parity", but they appreciate the image "Point-of-difference" of some of the brands and accordingly stick to them.

Further, analysis by market supported the above conclusion. Economy consumers were found to have stronger knowledge about the brands than luxury consumers. Economy consumers rely on heavy research before making this high involvement decision. Also, economy consumers are price-sensitive and emphasize value, while Luxury consumers appreciate the image of the luxury brands in the market. Interestingly, economy consumers tend to be more loyal as they want to minimize risk, while luxury consumers are brand switchers due to the lack of differentiation among luxury brands in the American market.

The final analysis conducted involved assessing the differences in consumers' perceptions of the different countries-of-origin (American, European and Japanese). It was concluded that American brands are only strong in terms of knowledge equity, while they are significantly inferior to both European and Japanese brands in all other constructs. Also, European brands are superior in terms of Image, while Japanese brands are the best in terms of offering value and retaining customers. This is an alarming finding for American brands about their future in the market. In fact, this problem has been magnified by the recent financial crisis. It is also important to recognize that Japanese brands are improving their image in the American market, and at the same time, they are emphasizing relationship equity elements (loyalty and satisfaction) which have been found to be the primary drivers to preference and intention to purchase.

Agenda for future research

This study opens the door for a series of research streams that could be useful in advancing knowledge in the area of brand equity measurements. First, this study concludes that satisfaction and attitudinal loyalty are the primary drivers of brand preference and intention to purchase. Future research should identify the antecedents of satisfaction and attitudinal loyalty. It would be interesting to determine which marketing and branding activities would help increase consumer satisfaction and drive attitudinal loyalty in the US automotive industry. Also, future research should attempt to

analyze brand image, and determine what aspects of image should be emphasized, particularly in the luxury market.

Further, the models offered by this study should be replicated on other industries in order to identify the primary factors affecting preference, intention to purchase, and ultimately brand market performance. It would also be interesting to test the model on the automotive industry internationally in order to assess cultural differences. This would help generalize the proposed model globally and drive international marketing strategies.

Finally, a longitudinal research should follow the proposed study to assess causal relationships between CBBE and BMP. One of the limitations of this study is that BMP data precedes CBBE data. This means that causality cannot be assessed at the aggregate brand level. A longitudinal study might help determine the time lag between consumers' perceptions of a certain brand, and the translation of these perceptions into BMP results. Further, a time series analysis could be useful in tracking trends in each market, and offering a comprehensive model that predicts BMP based on changes in consumer perceptions.

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