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The role of brand logos in firm performance

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A B S T R A C T

This research demonstrates that the positive effects of brand logos on customer brand commitment and firm performance derive not from enabling brand identification, as is currently understood, but primarily from facilitating customer self-identity/expressiveness, representing a brand's functional benefits, and offering aesthetic appeal. This study examines whether brand names or visual symbols as logos are more effective at creating these benefits and whether or not the impact of the three aforementioned brand logo benefits on customer brand commitment and firm performance is contingent on the extent to which a firm leverages its brand (i.e., employs brand extensions to different product categories).

1. Introduction

> "Design moves things from an existing condition to a preferred one." (Graser, 2000, p. 8)

Brands are important intangible assets that significantly impact firm performance (Morgan & Rego, 2009; Rao, Agarwal, & Dahlhoff, 2004). Indeed, customers can develop deep, meaningful relationships with a brand (Fournier, 1998; Park, Jaworski, & MacInnis, 1986; Schau, Muñiz, & Arnould, 2009; Thomson, MacInnis, & Park, 2005), which result in increased brand purchase (Park, MacInnis, Priester, Eisingerich, & Iacobucci, 2010), reduced customer price sensitivity (Ailawadi, Lehmann, & Neslin, 2003), and lower marketing costs (Mizik & Jacobson, 2008). Yet, the harsh business reality for firms remains that customers view many brands as indistinguishable and commonplace.

A brand's logo has typically served as a means for resolving the problem of indistinguishability. As one of the most salient visual elements of a brand (Wallace, 2001), logos facilitate the identification of the brand and its differentiation from competing alternatives (Janiszewski & Meyvis, 2001; MacInnis, Shapiro, & Mani, 1999). Throughout history, logos have enabled the efficient identification of individuals (e.g., in ancient China, emperors used the dragon as a symbol of imperial power) and groups or movements (e.g., the cross is used on top of church buildings and the swastika on some Buddhist temples). However, logos can be more than simple tools for identification and differentiation. The Christian cross symbolizes sacrifice and life's victory over death, while in Buddhism the swastika embodies auspiciousness and good luck—hence suggesting that logos can, among others, convey key information about the brand they stand for.

In fact, prior research on branding notes that logos act as the primary visual representation of a brand's general image and meaning (Henderson & Cote, 1998; MacInnis et al., 1999; Swartz, 1983). As a result, logos can shape the brand's reputation (Baker & Balmer, 1997; Olins, 1989; Van den Bosch, de Jong, & Elving, 2005) along with consumers' attitudes, their purchase intentions (Woo, Chang-Hoan, Hyuck Joon, 2008) and their brand loyalty (Müller, Kocher, & Crettaz, 2011). Brand logos also have an impact on the financial value of a company (Schechter, 1993; Van Riel & Van den Ban, 2001). However, no available research investigates the specific nature of these relationships. This paper builds on extant research by examining the impact of brand logos on customer commitment and firm performance and extends current research in three critical ways.

First, this study investigates the mechanism(s) through which logos, as the summary representation of what a brand stands for, strengthen customer commitment and firm performance above and beyond the mere brand identification benefit noted in past work.

Second, since no prior work studies when logos are more effective at engaging customers beyond enhancing brand identification, this study explores the role of brand logo type in offering benefits to customers.

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Specifically, logos may show the brand name alone (e.g., Intel, Ford, Samsung, IBM), or in combination with a unique visual symbol (e.g., McDonald's golden arches, Mercedes-Benz's three-pointed star). In this latter case the symbols serve as the actual brand logos, such that the brand names appear as complements alongside the symbols, or may even be dropped altogether in favor of the visual sign (e.g., Apple, Target). This study assesses whether or not logos showing brand names alone and brand names accompanied by separate visual symbols have differential effects on providing customer benefits that go beyond mere brand identification.

Third, given that brands frequently use extensions to other product categories to leverage their current customer base and parent brand image (e.g., Aaker & Keller, 1990; Broniarczyk & Alba, 1994), this study addresses the question of how the frequency of such extensions influences the positive effects of brand logos. In sum, the overall purpose of this study is to identify *how* brand logos contribute to customers' brand commitment and firm performance, and *when* such impact is most pronounced.

An important caveat to the present study exists. Specifically, this study does not assume brand logos' effects to be independent of a brand's marketing efforts, nor does it intend to test the contribution of logos relative to other marketing strategy elements (such as product quality, distribution power, pricing). Instead, the study relies on the assumption that a firm's marketing activities are reflected in consumers' understanding of the firm's brand logo(s).

The following sections discuss the purpose and conceptual background of this study and then introduce a set of formal hypotheses. Afterward, the research method and results follow. Finally, a discussion of the findings' implications for management practice and future research ensues.

2. Conceptual background and hypotheses: brand logos and customers' brand commitment and firm performance

This study posits that from the customers' viewpoint, brand logos reflect the meaning of a brand and therefore serve as summary information about a brand's marketing efforts (Henderson & Cote, 1998; MacInnis et al., 1999; Van Riel & Van den Ban, 2001). How this summary information affects customers' relationship with a brand and subsequent firm performance is the key issue addressed in this research (see Fig. 1).

Brand commitment and firm performance are two dependent variables theoretically linked to each other. Strong customer relationships are critical drivers of a firm's future cash flow, which in turn impacts the firm's financial performance and shareholder value (Srivastava, Shervani, & Fahey, 1998). Commitment, measured as the willingness of customers to stay with a brand and to sustain their brand relationship in the future, has been noted by prior research as one of the key measures of strong customer relationships (De Wulf, Odekerken-Schröder, & Iacobucci, 2001). Thus, this study expects customers' commitment to a brand to mediate the impact of strong brand logos on firm performance.

To the extent that brand logos (names only or with symbols) are the key visual representations of a brand, customers' understandings and judgments of a logo will affect their relationships with a brand in several ways. First, brand imagery bombards today's customer and a barrage of different and sometimes contradictory marketing messages surrounds customers (Luo & Bhattacharya, 2006). In such an environment, logos often create value to customers by making brand identification easier and enabling faster decision-making (Henderson & Cote, 1998; Janiszewski & Meyvis, 2001).

In addition to the well-documented benefit of enhanced brand identification, this study identifies the following three related but distinct mechanisms through which a brand logo creates value for customers, hence enhancing customers' brand commitment and strengthening firm performance: the facilitation of customer self-identity/expressiveness benefits, the communication of a brand's functional benefits to customers, and the provision of aesthetic appeal. The study discusses these three distinct mechanisms in greater detail below.

2.1. Brand logos and customer self-identity/expressiveness benefits

Brands have the ability to help express or define individuals' actual or desired selves (Chaplin & Roedder John, 2005; Escalas & Bettman, 2005) and to differentiate customers' selves from those of others (Kleine, Kleine, & Allen, 1995). For instance, a brand may reflect various parts of customers' identities, such as core beliefs/values

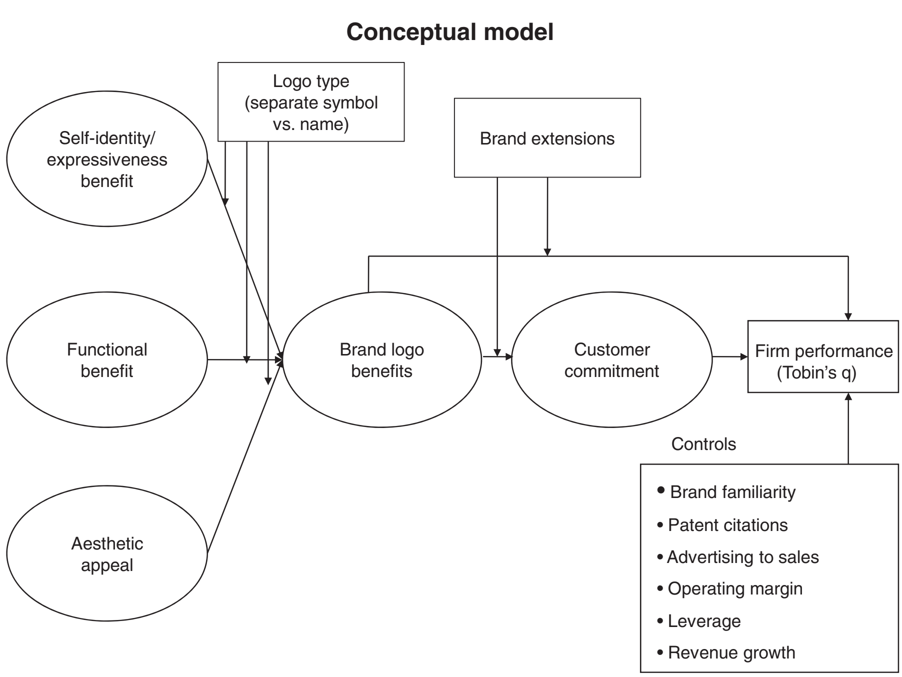

Fig. 1. Conceptual model.

(e.g., Rolex for uncompromising precision and attention to detail) or lifestyles (e.g., Quicksilver for a young-minded, individual, casual style) they adhere to (Escalas & Bettman, 2005). Brands also become relevant to customers by connecting the individual to others who share similar values and beliefs (Schau et al., 2009).

Since logos visually represent what the brand is and what it stands for, they have the potential to serve as a focal point of connection for customers by communicating and reinforcing a brand's core values. In other words, a brand's logo can be a critical tool for conveying associations between the brand and the self, which in turn helps people see the brand as part of themselves (Walsh, Winterich, & Mittal, 2010). Moreover, since logos provide brands with a face and may thus enhance a brand's authenticity and intimate appeal to customers (Henderson & Cote, 1998), logos have the potential to not only express such brand-self associations, but also to reinforce and strengthen them, thus enhancing customers' willingness to exert effort and invest resources towards sustaining their relationship with the brand (Park et al., 2010; Thomson et al., 2005). The importance of establishing a symbolic association with a brand can be particularly critical in an environment in which customers resent or even attack corporations that are perceived as faceless or distant from customers' selves, but develop a considerably stronger affinity towards brands that foster self-relevant relations with their customers (Escalas & Bettman, 2005).

H1a. Brand logos' self-identity/expressiveness benefit associates positively with customer brand commitment.

2.2. Brand logos and the functional benefits of a brand

Park, MacInnis, and Priester (2006) indicate that brands can be managed to reduce uncertainty in individuals' lives and enable their selves by facilitating control and efficacy in attaining (avoiding) desirable (undesirable) outcomes. Hence, brands can create a sense of an efficacious and capable self, helping individuals handle daily tasks more effectively. Logos, as visual representations of brands, are capable of reminding customers of a brand's functional benefits and/or communicating such benefits to them (Fischer, Schwartz, Richards, Goldstein, & Rojas, 1991; Loken, Joiner, & Peck, 2002). Nike's “Swoosh” logo, for instance, suggests the superior physical form that athletes strive for (Goldman & Papson, 1998) or consider Red Bull's logo of two charging bulls in front of a bright sun and the brand's promise to “vitalize body and mind”.

Given that customers perceive firms that address their needs–hence making their lives easier–as fair exchange partners (Schneider, Goldstein, & Smith, 1995), and are less likely to switch from such firms (Bhattacharya & Sen, 2003; Eisingerich & Rubera, 2010), this study expects logos that convey a brand's functional benefits to encourage customers to reciprocate and rely on the brand as a solution for certain problems, hence enhancing customers' brand commitment. Therefore, brand logos may have the potential to communicate and reinforce a brand's promise to assist customers in their daily lives, and in so doing, those logos will strengthen customers' relationships with the brand.

H1b. Brand logos' functional benefit communication associates positively with customer brand commitment.

2.3. Brand logos and aesthetic appeal

Aesthetic appeal and design have been of interest to human beings and have captured their imagination throughout history. The crafting and admiration of idols with attractive forms is as old as human civilization itself (Bloch, 1995). Not surprisingly, therefore, prior research underscores the role of brand logos in offering pleasing aesthetic qualities to consumers (e.g., Goldman, 2005; Pittard, Ewing, & Jevons, 2007). However, in addition to providing visual gratification, aesthetically appealing brand logos can prompt customers to develop an emotional bond with what they perceive as near and dear to themselves.

As Goldman (2005) suggests, brands high in aesthetic attractiveness are more likely to build connections with their customers than are brands with low or unappealing aesthetic qualities. For instance, Walt Disney's logo, which includes the image of a fairytale castle, effectively provides visual gratification and an emotional connection to customers. Similarly, Hello Kitty, the appealing white cat with a red bow and no mouth, manages to build deep relationships with customers worldwide based on *kawaii* (Japanese for “cute”) design and looks (Economist, 2011). Thus, the aesthetic appeal of brand logos is an essential component of a brand's ability to endear customers and emotionally connect to them, thereby enhancing their commitment.

H1c. Brand logos' aesthetic appeal associates positively with customer brand commitment.

2.4. Brand logos' impact on customer commitment through identity-expressiveness, functional, and aesthetic benefits vs. brand identification

As De Wulf et al. (2001) note, commitment represents customers' willingness to exert effort on behalf of their relationship with a brand. Mere identification bears hardly any relationship to commitment—that is, simply because one can successfully identify a person does not mean one will be committed to him/her. Brand logos can help customers identify and choose a brand out of convenience (e.g., the brand is easier to find), which, however, does not mean that customers are willing to invest their own resources towards maintaining a relationship with the brand. In contrast, brand logos' self-identity/expressiveness and functional benefit communication as well as their aesthetic appeal will help a brand build deeper relationships with customers. The positive impact of these three benefits on customer commitment should hence be greater than that of enhanced brand identification.

H1d. Brand logos' self-identity/expressiveness, functional benefit communication, and aesthetic appeal are more strongly associated with customer commitment than the brand identification benefit is.

2.5. Separate visual symbols vs. brand names as logos

Firms frequently decide whether to employ brand names only (e.g., Ford) or in combination with separate visual symbols (e.g., Starbucks' mermaid) as logos for their brands. Visual symbols may personalize a brand and provide customers with a sense of connection better than brand names alone do, possibly because symbols are an effective means of communicating information to people (MacInnis et al., 1999), and, to the extent that they are perceived as richer and more tangible representations of a firm than words or names are, symbols work better for brand differentiation (Swartz, 1983).

Symbols with an appealing visual design can help brands become more salient and vivid in individuals' minds, hence facilitating favorable attitude formation and memory retrieval (Fischer et al., 1991; Henderson & Cote, 1998), and eliciting strong affective and behavioral responses (Bloch, 1995). Symbols more easily signify a brand's benefits and transcend language barriers than text or names. Therefore, brand logos that incorporate visual symbols should be more effective than purely brand name-based logos at offering self-identity/expressiveness benefits, representing a brand's functional value, and providing aesthetic appeal.

H2. Separate visual symbols as logos are more effective than brand names as logos at offering self-identity/expressiveness benefits, functional benefit communication, and aesthetic appeal.

2.6. Customer commitment and firm performance

A number of factors influence a company's market performance, including the firm's strategic insights and how effectively the firm implements its chosen strategy. However, one of the key drivers of a firm's performance is the customers' commitment to the firm's brand (Srivastava et al., 1998). The extent to which customers are loyal to a firm's brand clearly influences the stability and growth of the firm's revenues and profits over time, effectively protecting the firm from competitive threats.

H3. Brand commitment mediates the positive impact of brand logos on firm performance.

2.7. Brand extensions and the effects of brand logos

Firms frequently attempt to extend their brands to different product categories. Brand extensions enable firms to expand their customer base and to take advantage of business opportunities in different product markets (Aaker & Keller, 1990; Milberg, Park, & McCarthy, 1997). However, brand extensions can potentially harm a parent brand by diluting or altering its core meaning (Gürhan-Canli & Maheswaran, 1998; Loken & Roedder John, 1993). This study posits that when brand logos facilitate customers' self-identity/expressiveness, represent a brand's functional benefits, and provide aesthetic appeal, brand extensions to different product categories can further strengthen the positive impact of these brand logo benefits on firm performance. In other words, the aforementioned positive effects of brand logos on customer commitment and firm performance are stronger, not weaker, when firms extend their brands. This is because people naturally want to be close to an entity they are self-connected to (Bowlby, 1980; Park et al., 2010; Thomson et al., 2005), and by offering additional connection points in daily life (e.g., Arm & Hammer shower gel in the morning in addition to the use of baking soda in the kitchen or in the fridge), brand extensions allow people to consume and be close to their favorite brands in a variety of contexts.

Similarly, extensions enable consumers to enjoy the pleasant aesthetics offered by a logo more frequently and can thus make a brand logo's pleasant design even more salient in customers' minds. Finally, since customers attach value to feeling capable and in control of daily life activities (Park et al., 2006), the positive impact of a logo representing the functional benefits of a brand is more pronounced when customers see the brand helping them with different tasks and problems.

Taken together, extensions to different product categories create additional connection points and consumption experiences that should not weaken, but rather strengthen, the positive effects of the brand logo benefits. This study expects the number of extensions of a brand to influence the positive effects of the brand logo benefits on firm performance either directly or through brand commitment. Specifically, the more often consumers expose themselves to the symbolic meaning and aesthetic appeal of a brand, the more committed they become to the brand, as people gain additional value and pleasure from being close to a brand they share a self-connection with (Park et al., 2010) or whose aesthetics they adore (Bloch, 1995). Additionally, since people frequently struggle to keep up with different daily tasks and often end up feeling at a loss, they should be more committed to a brand that appears to make one's chores somewhat easier or more bearable in a variety of contexts. Such an increase in customer commitment should in turn enhance the firm's performance.

In addition to their positive financial effect through commitment (which represents an *indirect* effect), brand extensions should also strengthen the *direct* impact of the brand logo benefits on firm performance, as a logo's self-identity/expressiveness benefit, communication of functional benefits, and aesthetic appeal contribute to the intangible value of a firm, while extensions increase a firm's strategic flexibility and risk diversification (Wernerfelt & Montgomery, 1998). Despite the difficulty in predicting a priori which effect (direct or indirect) is stronger, this study expects both to be present for the three brand logo benefits.

The above argument does not imply that any type of brand extension can enhance the positive effects of brand logos on firm performance. Certainly, when a brand makes inappropriate extensions (i.e., extensions very low in fit; see Aaker & Keller, 1990), the presence of such extensions may decrease or even eliminate the beneficial impact of the brand's logo on commitment and performance. However, by and large, most firms typically make generally appropriate extensions (i.e., extensions with a reasonable level of fit with the parent brand) in reality.

H4. The higher the number of a firm's brand extensions, the stronger the positive impact of the firm's brand logo on customer commitment and firm performance.

3. Pilot study

The aim of the pilot study is twofold. First, the study intends to verify that the three proposed brand logo benefits have external validity, as perceived by both consumers and brand managers. Secondly, given that no scales specifically capture the benefits offered by brand logos, the study further aims to create a set of scales that best reflects these benefits, while tapping a wide range of industry perspectives. For this purpose, 94 customers and 37 managers agreed to participate in face-to-face, in-depth interviews. During these interviews, participants indicated which brand logos they perceived as most and least effective in offering any kind of benefits, and explained their rationale using open-ended responses. Two trained coders who were not part of the research team subsequently coded the open-ended responses.

The coded data revealed substantial evidence for each of the three brand logo benefits proposed by the authors. More specifically, participants did indeed describe the ability of logos to foster self-association with a brand (e.g., “Black is my favorite color. The Harley Davidson logo is me”), reflect a brand's functional benefits (e.g., “The logo of BMW reminds me of an aircraft propeller, performance, agility…I can see myself soaring through the air; it's like BMW engines are so reliable and powerful they could be used for airplanes”), and provide aesthetic appeal (e.g., “I adore the Apple logo. It is so gorgeous. I want to bite it”).

Next, based on the responses collected, the authors generated a pool of 20 items to account for different shades of meaning (Churchill, 1979) of the brand logo benefit scales, and pretested the generated items with a sample of 112 undergraduate students from a large research university. Participants pointed out any ambiguities in responding to the individual items, upon which the authors followed Thomson et al.'s (2005) procedure to remove poorly understood items. Each brand logo scale included one reverse-coded item, so as to minimized yea- or nay-saying response bias (Baumgartner & Steenkamp, 2006).

Next was a final pretest of the three brand logo scales (logo self-identity/expressiveness, functional benefit, and aesthetic appeal) with a different sample of 165 undergraduate students from the same university. The results confirmed that the retained items minimally loaded .70 on their respective hypothesized factors and maximally loaded .35 on other factors. All loadings were significant ($p<.01$) (Table 1 lists detailed scale items anchored by (1) = “not at all” and (9) = “completely”). In support of the scales' reliability, Cronbach's alphas for all scales were uniformly high ($\alpha>.80$) and composite reliabilities were all greater than .80. The average variance extracted exceeded the recommended threshold of .70, indicating convergent validity (as Table 2 shows). Correlations appear in Table 3. Furthermore, the squared correlation between any pair of constructs was indeed less than the respective average variance extracted for each of the constructs, thus supporting discriminant validity (Fornell & Larcker, 1981).

Finally, the measurement model for the constructs listed in Table 1 demonstrated a good data fit (Comparative Fit Index (CFI) = .99; Tucker–Lewis index (TLI) = .98; Root Mean Square of Approximation

Table 1
Scales and factor loadings.

Scales	Measurement	Factor loadings
Logo identification	[Brand name]'s logo attracts my attention.	.97
	[Brand name]'s logo helps me identify the brand.	.98
	[Brand name]'s logo does not attract my attention.[a]	.89
Logo functional benefit	[Brand name]'s logo represents the functional benefits I can expect from the brand.	.98
	[Brand name]'s logo does not ensure me of the brand's functional benefits.[a]	.95
	[Brand name]'s logo ensures me that the brand assists me in handling my daily life competently.	.93
Logo aesthetic appeal	[Brand name]'s logo is aesthetically (visually) pleasing to me.	.99
	[Brand name]'s logo provides aesthetic pleasure to me.	.85
	[Brand name]'s logo is not aesthetically (visually) appealing to me.[a]	.96
Logo self-identity/ expressiveness benefit	[Brand name]'s logo makes me think that [brand name] makes my life richer and more meaningful.	.93
	[Brand name]'s logo makes me think that [brand name] expresses who I am as a person.	.94
	[Brand name]'s logo makes me think that [brand name] does not represent my deepest values.[a]	.93
Commitment	I feel loyal towards [brand name].	.95
	Even if [brand name] would be more difficult to buy, I would still keep buying it.	.91
	I am willing "to go the extra mile" to remain a customer of [brand name].	.93

[a] Note: Reverse coded.

(RMSEA) = .05), thus suggesting that a three-factor solution accurately represents the brand logo benefit scales developed as part of this pilot study.

4. Main study

Following the development and validation of a set of scales for measuring the three benefits provided by brand logos, the main study aims to show that these benefits can explain the relationship between brand logos and customer commitment/firm performance, and to examine the effectiveness of logo type (brand name as logo vs. brand name accompanied with a visual symbol as logo) and number of extensions as potential moderators of the relationship between brand logos and customer commitment and firm performance.

Table 2
Descriptive statistics.

	AVE	CR	M	SD	Minimum	Maximum
Variables						
Firm performance (Tobin's q)			2.3	1.79	.35	11.27
Commitment	.86	.95	5.0	2.17	1.00	9.00
Logo identification	.89	.96	5.1	2.66	1.00	9.00
Logo functional benefit	.90	.96	4.9	2.71	1.00	9.00
Logo aesthetic appeal	.83	.93	3.8	2.33	1.00	9.00
Logo self-identity/ expressiveness benefit	.87	.95	4.7	2.64	1.00	9.00
Brand extensions			7.3	6.54	1.00	37.00
Controls						
Familiarity			4.7	2.42	1.00	9.00
Advertising to sales			.0	.04	.00	.29
Patent citations			169.4	296.46	.00	1387.00
Operating margin			.1	.12	−.75	.29
Leverage			.1	.15	.00	.83
Revenue growth			52.6	93.75	−68.67	623.43

Notes: AVE = average variance extracted; CR = composite reliability; N = 4244 for customer-level variables; N = 77 for brand-level variables (i.e., firm performance, brand extensions, logo name dummy, advertising to sales, patent citations, acquisitions, operating margin, leverage, and revenue growth).

4.1. Stimuli

For the stimuli, the authors randomly drew a sample of 77 corporate brands from the *Fortune 500* published listing, for which all required data was available through COMPUSTAT. The sample was representative of the Fortune 500 firms as a whole, since the selected firms did not differ from the remaining Fortune 500 firms on any critical financial or marketing indicator, including average market value, number of acquisitions and patent citations, and advertising-to-sales ratios (p = n.s.). The focus was on corporate rather than product-level brands since no data are available for examining the relationship between brand logos and firm performance at the individual product level (e.g., product brands such as Häagen-Dazs and Butterfinger are owned by Nestlé, which owns and manages several hundred other product brands worldwide). After selecting the brands, securing official brand logos from the companies' websites and annual reports occurred next. Forty-four of the 77 brand logos consisted only of the company name, while the rest included visual symbols.

4.2. Sample and procedure

Four hundred and fifty undergraduate students participated in the study. Based on random assignment, each participant evaluated ten different brand logos in a paper-and-pencil questionnaire. The questionnaire included one logo on every page, followed by the set of items shown in Table 1. Each logo in the sample received roughly the same number of responses.

4.3. Measures

In order to measure customer commitment, the authors adapted 3 items from the scale by De Wulf et al. (2001). The scale measured customers' willingness to stay with a brand and make efforts to sustain their brand relationship into the future (Cronbach's α = .94). The scales developed in the pilot study measured the brand logo benefits. For the number of brand extensions, the authors relied on Hoover's database, from which they obtained the number of industry segments in which each firm operates (i.e., number of separate North American Industry Classification System operating codes). This approach resulted in a proxy measure for the number of brand extensions. For validation purposes, the authors followed the same procedure using the COMPUSTAT database and found no difference between the two resulting measures (p = n.s.).

For the examination of firm performance it was important to select a forward-looking and cumulative measure that is comparable across corporate brands in different industries. In this regard, Tobin's q has received wide acceptance in the current marketing literature as an appropriate measure of performance (e.g., Anderson, Fornell, & Mazvancheryl, 2004; Luo & Bhattacharya, 2006; Morgan & Rego, 2009). Tobin (1969) defined the value of a company's q as the ratio of the company's market value to the current replacement cost of its assets. Chung and Pruitt's (1994) approximation served as a basis for measuring each company's q. In Eq. (1) below, the numerator represents a firm's market value, while the denominator captures the replacement cost of the firm's physical assets. When a firm's market value exceeds the replacement costs of the firm's assets, the firm creates shareholder value; thus, the higher Tobin's q, the better the company's performance.

The specification for Tobin's q is as follows:

$$q = \begin{bmatrix} Share\ \ price \times number\ \ of\ \ shares\ \ outstanding \\ +total\ \ value\ \ of\ \ preferred\ \ stock + long - term\ \ debt \\ +short - term\ \ debt \end{bmatrix} / Total\ \ assets. \quad (1)$$

Table 3
Correlations.

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Firm performance	1.00											
2. Commitment	.53**	1.00										
3. Identification benefit	.48**	.40**	1.00									
4. Self-identity benefit	.55**	.61**	.47**	1.00								
5. Functional benefit	.50**	.64**	.42**	.73**	1.00							
6. Aesthetic appeal	.49**	.62**	.40**	.69**	.72**	1.00						
7. Familiarity	.01	.01	−.02	−.01	−.01	.01	1.00					
8. Advertising to sales	.07	.12*	.12*	.13*	.15*	.16*	.01	1.00				
9. Patent citations	−.02	.08	.05	.04	.15*	.14*	.00	−.14	1.00			
10. Operating margin	.49**	.37**	.28**	.35**	.34**	.34**	.01	.04	.18	1.00		
11. Leverage	.01	−.03	.04	.01	.01	.00	.00	.26*	−.25*	−.00	1.00	
12. Revenue growth	.70**	.24**	.27**	.26**	.23**	.24**	.01	−.10	−.05	.32**	−.17	1.00

Note: *$p<.05$; **$p<.01$; N = 4244 for evaluating pairwise correlations among customer-level variables and customer- and brand-level variables; N = 77 for evaluating pairwise correlations between brand-level variables.

Since multiple potentially confounding factors for the examination of brand logos' impact on customers' commitment and firm performance exist, the present analysis controlled for several factors, as indicated below.

First, participants indicated their *familiarity* with individual brand logos (anchored by 1 = "not at all familiar" and 9 = "strongly familiar"). Controlling for familiarity is important since some customers' brand commitment may be a result of having a long history of purchasing a certain brand or simply knowing much more about the brand than about its competitors.

Furthermore, the analysis controlled for the *advertising spending to sales* ratio, which measures a firm's efficiency at employing marketing resources. The lower this ratio, the more firms can invest in other measures that might further strengthen commitment and firm performance (Barth, Clement, Foster, & Kasznik, 2003).

A range of intangible benefits can influence customer commitment and firm performance including a firm's ability to provide innovative and meaningful benefits to customers (Sethi, Smith, & Park, 2001). Therefore the analysis controlled for a firm's innovativeness by using patent citation counts. As previous research indicates, simple patent counts and research and development expenditures are weaker measures of the true worth of a firm's intangible assets than patent citations (Hall, Jaffe, & Trajtenberg, 2001). A patent citation count reflects the number of times subsequent patent applications cite the original patent when trying to win an award for a new patent. The more important or fundamental an innovation, the more will subsequent patent applications cite the original patent protecting that innovation. Thus, citation counts can serve as a good proxy for the worth of a firm's intangible assets. In order to obtain the exact patent citation count for each firm in the sample (for the year preceding the data collection in this study), the authors used Delphion, an online database that provides Derwent World Patents Indices.

The analysis also controlled for a firm's operating margin, leverage, and past revenue growth. Arguably, the higher a firm's operating margin, the greater investors' expectations of the firm's future cash flow and value (Barth et al., 2003). The ratio of net income before depreciation to total sales was the measure of operating margin. Furthermore, the analysis controlled for financial *leverage*, which can have a positive influence on firm performance by enabling firms to trade upon tax benefits by deducting interest costs and, therefore, to benefit from higher cash flows. The ratio of a firm's long-term debt to total assets was the measure of financial leverage. Finally, since previous revenue growth may significantly influence a firm's Tobin's q (Barth et al., 2003; Rao et al., 2004), the firms' revenue growth over the previous three years served as another control in this study.

4.4. Analysis and results

4.4.1. Brand logo benefits and customer commitment

The first analysis examined whether brand identification or the three proposed brand logo benefits have a stronger impact on customer commitment. Due to the nested structure of the data (i.e., multiple participant responses for each brand logo) and to overcome the limitations of traditional methods in analyzing such nested data (Hofmann, 1997), the model estimation relied on full maximum likelihood and empirical Bayes procedures in hierarchical linear modeling (HLM; Bryk & Raudenbush, 1992). In examining the predictors of customers' brand commitment, the authors followed Raudenbush, Bryk, Cheong, and Congdon's (2004) recommendation to balance theoretical comprehensiveness (i.e., a valid depiction of reality) with model parsimony. Using the HLM 6 software package (Raudenbush et al., 2004) the authors evaluated the incremental nested models in different phases, as shown in Table 4. With mean-centered variables, inflation factors were less than 2.0, indicating no multicollinearity.

Model 1 contains only an intercept term, with no customer- or brand-level predictors. An evaluation of this model reveals that customer commitment varies significantly among brands. Model 2 includes, in addition to the intercept term, the main effects of customer- and brand-level variables along with random slope effects. This model is meant to examine any significant differences in customer brand commitment for brands with varying levels of brand logo benefits. Table 4 shows that Model 2 explains 21% of the variance in brand commitment. By examining the difference in deviance statistics (−2 log-likelihood criterion) between Models 1 and 2–a difference that has a chi-square distribution with degrees of freedom equal to the difference in the number of estimated parameters between the two models (Kreft & Leeuw, 1998)–the authors find that, considering the degrees of freedom lost, Model 2 represents a significant improvement in variance explained over Model 1 ($\Delta Dev = 1057.19$, $df = 12$, $p < .01$).

The results in Table 4 illustrate that the ability of a brand's logo to enhance brand identification is not significantly related to brand commitment ($\hat{y} = -.01$, p = n.s.). In contrast, commitment is significantly associated with each of the three suggested logo benefits: facilitating brand self-associations ($\hat{y} = .12$, $p < .01$), representing the functional benefits of a brand ($\hat{y} = .19$, $p < .01$), and providing aesthetic appeal ($\hat{y} = .18$, $p < .01$). The results hence provide support for H1a–1c. Together, these findings further support H1d, since the self-identity/expressiveness, functional, and aesthetic benefits of brand logos are all positively associated with customer commitment ($p < .01$) while brand identification through logos is not (p = n.s.). The effect of familiarity on brand commitment is not significant, a finding that is in line with the authors' original expectations, as basic familiarity should not suffice to

Table 4
Hierarchical linear model results: brand logos and customers' brand commitment.

Variables	Model 1	Model 2	Hypotheses
Intercept	5.00** (.18)	5.02** (.10)	
Identification benefit		−.01 (.01)	
Self-identity/expressiveness benefit		.12** (.02)	H1a
Functional benefit		.19** (.02)	H1b
Aesthetic benefit		.18** (.03)	H1c
Familiarity		.01 (.01)	Control
Patent citations		.00 (.00)	Control
Advertising to sales		1.29 (2.21)	Control
Deviance (−2 log-likelihood)	15,668.61	14,611.42	
Deviance difference (Δ Dev)		1057.19**	
Proportion of variance explained		20.77%	

Note: *$p<.05$; **$p<.01$; Unstandardized coefficients are reported with standard errors in parentheses.

impact customers' willingness to stay with a brand and to sustain their brand relationship in the future. Finally, the other controls have no significant effects either (p = n.s.).

4.4.2. Brand names and symbols as brand logos

To determine whether logos consisting of brand names or visual symbols are more effective at creating brand-self associations, communicating functionality benefits, and offering aesthetic appeal, the authors split the sample into two groups and conducted a series of *t*-tests. The results indicate that logos based on brand names accompanied by visual symbols (as opposed to brand names only) offer greater self identity/expressiveness benefits (M = 7.9 versus 4.7, respectively; $t(75)=2.02$, $p<.05$), functional benefit communication (M = 5.9 versus 4.2, respectively; $t(75)=2.42$, $p<.05$), and aesthetic benefits (M = 7.9 versus 3.5, respectively; $t(75)=2.38$, $p<.05$). Together, these results support H2.

4.4.3. Brand logos, customer commitment, and firm performance

A structural equation modeling (SEM) analysis assessed whether the above mentioned brand logo benefits affect not just customer commitment, but also firm performance. To allow for the potential lagged effects of the logo benefits on performance, the authors calculated firm performance (Tobin's q) one year following the collection of the survey data. Normality and heteroskedasticity test statistics indicate that the standard assumptions are met. The SEM results show that the brand logo benefits have a positive and significant impact on customer commitment ($\gamma=.78$, $p<.001$), which in turn positively influences firm performance (Tobin's q) ($\gamma=.54$, $p<.001$).

Additionally, the results reveal a significant, direct influence of the brand logo benefits on firm performance ($\gamma=.31$, $p<.001$), indicating that customer commitment acts as a partial mediator in the brand logo benefits–firm performance relationship. Together, these results support H3. With regard to the control variables, as expected, revenue growth acts as the strongest determinant of firm performance ($\gamma=.78$, $p<.001$). In addition, a firm's advertising-to-sales ratio ($\gamma=.09$, $p<.05$), operating margin ($\gamma=.11$, $p<.01$), and leverage ($\gamma=.08$, $p<.01$) positively influence performance, though no positive effect exists for familiarity and patent citations. The brand logo benefits that this study examines and the set of controls explain a significant amount of variance in firm performance (.75), and the model fits the data well (Comparative Fit Index (CFI) = .98; Tucker–Lewis index (TLI) = .97; and Root Mean Square of Approximation (RMSEA) = .06 (90% confidence interval = .05 to .06)). The results empirically demonstrate the important contribution of the three brand logo benefits to customer commitment and to a firm's financial performance.

4.4.4. The moderating role of brand extensions

To examine whether the number of brand extensions moderates the impact of brand logo benefits on customer commitment and firm performance, the authors split the sample of stimuli into four groups. First, they created two groups of brands, based on whether the brand logos showed brand names alone or in combination with visual symbols. Each group further consisted of two subsamples of firms, one with a high, and one with a low total number of brand extensions. This procedure was meant to help verify whether the moderating effect of brand extensions depends on the type of brand logo (name vs. symbol). Testing metric invariance reveals that the different factors do indeed measure the same underlying latent constructs (brand logo benefits and commitment) in both the high and the low number of brand extension groups (see Steenkamp & Baumgartner, 1998).

SEM results show that, when firms use visual symbols as logos, having a high (versus low) number of extensions strengthens the relationships between brand logo benefits and firm performance. Specifically, a high number of extensions result in a stronger indirect effect (via customer commitment) of brand logo benefits on firm performance ($\gamma=.55$, versus $\gamma=.36$, $p<.001$), as well as a stronger direct effect ($\gamma=.47$, versus $\gamma=.30$, $p<.001$). The same results also hold for firms that employ brand names as logos, such that a high number of extensions enhance both the indirect ($\gamma=.36$, versus $\gamma=.19$, $p<.001$) and the direct effect ($\gamma=.34$, versus $\gamma=.21$, $p<.001$) of brand logo benefits on firm performance. The difference between the two models (high vs. low number of extensions) is significant in the case of both separate symbols ($\Delta\chi^2=276.54$, $p<.001$) and brand names ($\Delta\chi^2=252.39$, $p<.001$) as logos. Together, these results provide support for H4 by demonstrating that extending a brand to several different product categories enhances the positive impact of the brand's logo on customer commitment and brand performance. Moreover, this effect holds whether firms use the brand name or a visual symbol as their brand logo. Taken together, the findings in this study show that the impact of a brand's logo on customer commitment and firm performance is greatest when brands use symbols (as opposed to brand names only) as logos, and when firms have a high (vs. low) number of extensions to different product categories.

5. Discussion and implications

The results of this research indicate that managers need to consider brand logos as more effective and powerful tools in the management of customer–brand relationships than previously thought. More specifically, just because consumers can quickly identify a brand based on its logo does not mean that they will invest resources towards sustaining their relationship with the brand. That is, brand logos that are easily recognizable, yet which do not convey the brand's symbolic and functional benefits or do not provide aesthetic gratification, fail to take full advantage of their own potential.

Visual symbols as brand logos offer an untapped opportunity frequently. This study's findings indicate that brands with symbols as logos are more effective at providing self-identity/expressiveness benefits than logos that consist purely of brand names. They are also more successful at communicating the functional benefits of a brand than brand name-based logos are. Finally, the finding that the aesthetic appeal of brand logos significantly strengthens customers' commitment to a brand answers the need for business academics to examine the positive effects of visual attractiveness on consumers (e.g., Bloch, 1995). Managers should further take note that visual symbols as logos appear particularly effective at providing aesthetic appeal to customers. Taken together, these results clearly demonstrate the added value of using visual symbols for branding purposes.

Today's marketplace is very noisy. Brands must be particularly clear about what they want consumers to remember about them. This study shows that focusing on the management of brand logos–as the summary representation of what a brand stands for–provides marketers with a valuable, largely untapped tool in their efforts to deepen customer–brand relationships and enhance firm performance. In addition, contrary to what one might expect, a brand's extension efforts to different product categories strengthen, rather than weaken, the benefits of brand logos. This bodes well for brands' future growth and rejuvenation strategies, as logos can help customers connect with a brand across product categories.

We consider several limitations of the present research when interpreting the results. First, the study controls for customers' familiarity with a brand, the worth of a firm's intangible assets, advertising spending-to-sales ratio, as well as operating margin, leverage, and past revenue growth, all of which can affect firm performance and customer brand commitment. Due to lack of data, the authors do not account for changes to brand logos over time (e.g., some corporate brands continuously modify their logos while others do not alter them for long periods of time), which can interact with customer commitment to impact firm performance (Walsh et al., 2010). They do, however, acknowledge the importance of testing the present model using longitudinal data, and invite future research to explore how brand logos impact customer–brand relationships over time. Second, since managers can develop a brand's visual identity not only through logos (including colors and shapes), but also through elements such as packaging and product design, future research can expand the model proposed in this research by accounting for the multitude of ways in which brands connect to customers' selves, communicate functional benefits, and offer aesthetic appeal.

Third and finally, the effectiveness of a visual logo likely depends on multiple design properties of the logo (e.g., color, shapes, and sizes). Because an analysis of specific logo design elements is beyond the scope of the present study, the authors encourage future research that addresses these shortcomings.

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