



## The relative importance of brands in modified rebuy purchase situations

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### ABSTRACT

Prior research suggests that while business-to-business (B2B) brands influence organizational buying decisions, their relative importance is modest at best. Unfortunately, extant studies are largely silent about the determinants of brand importance in business markets. This research effort begins to address this important knowledge gap by investigating the moderated relationships between brand consciousness, brand preference, brand sensitivity, and brand importance. We propose that these four constructs represent a belief-attitude-intention-behavior hierarchy of effects (HOE) capable of explaining why the relative importance of brands differs across purchase situations. Data provided by 273 organizational buying center members provide strong support for the proposed HOE model and suggest that: (1) under conditions of low competitive intensity or when marketing maintenance repair and operations (MRO) supplies, brand consciousness is the primary determinant of brand importance, and (2) under conditions of high competitive intensity or when marketing high-tech products, brand preference is the primary determinant of brand importance. Moreover, the results indicate that distinctions between the four HOE brand constructs evaluated within this study are important and have substantive implications for branding research and practice.

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Over the last decade, business-to-business (B2B) branding phenomena have begun to receive increased attention from marketing scholars (e.g., Low & Blois, 2002; Mudambi, 2002). In general, extant research finds that brands do indeed influence decision-making in B2B markets (Gordon, Cantone, & di Benedetto, 1993; Kotler & Pfoertsch, 2006). However, the relative influence of brands on organizational buying decisions appears to be modest and not as pervasive as in brand-laden consumer markets (Bendixen, Bukasa, & Abratt, 2004; Hutton, 1997; Mudambi, 2002; Saunders & Watt, 1979). For instance, Bendixen et al. (2004) find that price and delivery are more important to organizational buyers than the brand name, which accounts for only 16% of the variation in product choice decisions.

Although studies suggest that brands do play some role in organizational decision-making, they do not provide as much insight as to when brands are more or less likely to be influential. This is an important omission because the relative influence of brands on organizational decision-making—and therefore organizational returns from B2B brand building investments—is likely to vary as a function of numerous contextual and non-contextual factors (Webster &

Keller, 2004). The identification of such factors is critical to the development of effective B2B brand strategies and is the focus of this research effort.

This study examines four constructs that capture the extent to which brands play an important role (i.e., “matter”) in B2B markets. Specifically, this study examines the properties and relationships among brand consciousness, brand preference, brand sensitivity, and brand importance, and it evaluates how the relationships between these constructs vary as a function of market, customer, and product characteristics. Despite being conceptually similar, we propose that these four constructs are distinct and represent a belief-attitude-intention-behavior hierarchy-of-effects (HOE) particularly well-suited to explaining variation in the relative importance of brands across organizational purchase decisions. As such, the study’s results have important implications for marketing practice and suggest alternative strategies for successful B2B brand-building across different marketing contexts.

This study contributes to the branding literature in at least two important ways. It is the first to examine the relative influence of different brand phenomena (e.g., brand consciousnesses vs. brand preference) on organizational buyer decision-making across situations (e.g., high vs. low competitive intensity). In addition, the study makes a valuable contribution to the brand measurement literature. Numerous marketing scholars, including Lehmann, Keller, and Farley (2008), Srinivasan, Park, and Chang (2005), Washburn and Plank (2002), and

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Yoo and Donthu (2001) lament the current state of brand measurement, particularly as it relates to the lack of systematic research on the topic and the proliferation of non-discriminant measures. Our research begins to address some of these concerns by demonstrating that brand measures are generally amenable to systematic organization through an HOE framework and that important differences exist between conceptually related brand constructs, which may have substantive implications for the results of empirical studies.

The remainder of the manuscript is organized as follows. First, we begin with a background section, which includes (1) a summary of major empirical studies on B2B branding, (2) a discussion of the differences between business and consumer markets as well the implications of these differences for the relative importance of brands, and (3) a brief presentation of the results of in-depth interviews with managers regarding branding in B2B markets. Then, we advance our conceptual framework and, in doing so, develop our hypotheses. Next, we describe our methodological approach and proceed to report on the results of the hypotheses tests and post hoc analyses. We conclude with a discussion of research and managerial implications, followed by suggestions for further research.

## 1. Background

### 1.1. Summary of empirical studies on B2B branding

Despite increased interest in B2B branding, empirical studies on the subject are relatively rare and have largely focused on a limited set of issues. As is indicated in Table 1, which provides a summary of key

empirical studies on B2B branding, extant studies have largely focused on: (1) establishing that brands “matter” or are perceived to be useful in business markets (e.g., Bendixen et al., 2004; Gordon et al., 1993; Michell, King, & Reast, 2001), and (2) identifying the customer and firm-performance implications of B2B brand-building efforts (e.g., Hutton, 1997; Kotler & Pfoertsch, 2007; Mudambi, 2002). Moreover, given the nascent nature of B2B branding (as compared to business-to-consumer (B2C) branding), it is not surprising that roughly half of all the empirical studies represented in Table 1 have been largely descriptive in nature and are generally oriented towards managerial (as opposed to academic) audiences. Importantly, with the exception of Hutton (1997), none of these studies addresses brand measurement issues in B2B settings. Finally, a majority of the studies to date have employed a very narrow, industry-specific sample, which naturally limits the generalizability of their findings.

Rather than investigating whether B2B brands matter (which has clearly been established), the current study focuses on understanding when brands are more or less likely to matter in business markets. This issue has not been addressed in the literature and is of substantial importance to the development of successful B2B brand building programs. Furthermore, our study moves beyond the descriptive and emphasizes the rigorous testing and validation of a set of brand constructs with the objective of determining whether distinctions among these conceptually related phenomena are empirically supported and are of theoretical and/or managerial importance. Finally, our study employs a cross-industry sample drawn from both the manufacturing and services sectors. The nature of the sample enhances the generalizability of the study's findings and serves to

**Table 1**

A summary of select empirical studies on B2B branding.

Study	Audience	Study description	Sample	Major findings
Saunders and Watt (1979)	Managers	Examines the attempts made in an industry to overcome loss of identity by branding at the consumer level.	100 female “housewives” and 29 managers of British textile firms.	• Brand strategies can be confusing and have mixed effectiveness.
Gordon et al. (1993)	Managers	Explores the concept of brand equity, including whether brand equity exists in B2B markets.	300 building and electrical contractors.	• Brands have an important influence on buying decisions. • Company name, and not the product brand, is the main purchase influencer.
Shipley and Howard (1993)	Managers	Seeks to confirm use and importance of brands in B2B markets (with a focus on the brand naming process).	135 marketing decision-makers of U.K. manufacturing companies.	• UK industrial companies use brand names widely and perceive them to be important, particularly small firms.
Hutton (1997)	Academics	Explores the effects of B2B branding on important customer-level outcomes.	429 members of the National Association of Purchasing Managers.	• Branding influences buyers' willingness to pay a premium price, recommend and buy other products with the same brand name. • Brand appeals are more effective when perceived purchase risk is heightened.
Michell et al. (2001)	Managers	Examines the extent to which B2B managers perceive that there is competitive value in branding.	70 senior executives.	• Brands are associated with perceived quality, image, market leadership, company reputation and credibility.
Mudambi (2002)	Academics	Examines whether the effects of company reputation differ across market segments.	116 UK industrial buyers.	• Company reputation has different influences among loyal vs. non-loyal customers.
Bendixen et al. (2004)	Managers	Explores the existence of brand equity in a specific geographic market and evaluates the relative importance of brand vs. other purchase criteria on product choice.	54 decision-makers of industrial companies.	• Brands influence product choice, but price and delivery are more important. • Brand name explains 16% of product choice decisions.
Cretu and Brodie (2005)	Academics	Investigates the influence of corporate reputation and product brands on important customer outcomes.	377 managers of hair salons.	• Product brands have more influence on customers' perceptions of quality. • Company reputation has more influence on customer's perceptions of customer value and loyalty.
van Riel, de Mortanges and Streukens (2005)	Managers	Evaluates the role of brand equity in B2B settings and considers issues related to its conceptualization and measurement.	75 industrial customers of a multinational specialty chemical company.	• Product brand equity is influenced by physical attributes and distribution. • Corporate brand equity is influenced by service attributes and employees.
Kotler and Pfoertsch (2007)	Managers	Examines the performance implications of B2B brand-building.	Largest B2B companies listed in the DJIA.	• Long-term branding strategies and B2B brand performance are positively correlated with stock prices.
Ghosh and John (2009)	Academics	Employs a transaction cost lens to examine the factors that motivate buyers (OEMs) to enter into branded component contracts.	191 purchasing managers and directors drawn from three industry sectors.	• OEMs enter into branded component contracts to leverage the suppliers' brand and/or as a mechanism to incentivize suppliers to make idiosyncratic investments in the relationship.

update prior estimates (e.g., [Bendixen et al., 2004](#)) regarding the relative importance of brands (vis-à-vis other purchase criteria) in business markets.

### 1.2. B2B vs. B2C branding

Research suggests that brands play meaningfully different roles in B2B (relative to B2C) settings due to various market and task characteristics that influence the procurement process (cf. [Bendixen, Bukasa & Abratt, 2004](#); [De Chernatony & McDonald, 1998](#); [Kim, Reid, Plank, & Dahlstrom, 1998](#); [Kotler & Pfoertsch, 2007](#); [Webster & Keller, 2004](#)). [Table 2](#) identifies key differences between business and consumer markets as well as concludes that these differences generally suggest a diminished role for B2B brands when compared to their B2C counterparts. Because of their more limited role, understanding when brands are more or less likely to influence buyer decision-making is critical for managers who want to achieve performance gains from B2B brand-building efforts and is also an important next step in the development of the B2B branding literature.

### 1.3. Branding in practice

To better understand the current state of branding, we conducted 11 depth interviews with business market researchers ( $n=4$ ) and marketing executives ( $n=7$ ). Four of the executives worked for B2C firms and three worked for B2B firms, while the market researchers had experience and clients in both sectors. The interviews were conducted following a semi-structured interview format consisting of a set of open-ended questions designed to further explore practitioners' views on brand measurement in general and their process of selecting brand constructs in particular (e.g., How do you determine which measures to use when conducting branding research?).

Three major themes surfaced from these interviews. First, there is still some ambiguity about the general importance of brands among B2B marketers, perhaps due to the relative novelty of branding in business markets or to the unique characteristics of the business market in general. One executive stated,

*"We talk a lot about branding and marketing, but all rewards seem to be for selling, so branding gets neglected. Maybe things are different in consumer markets."*

Second, consistent with concerns expressed in the academic literature ([Yoo & Donthu, 2001](#); [Lehmann et al., 2008](#)), marketing

practitioners are often confused by the array of brand conceptualizations and measures employed in practice. This confusion is reinforced by one market researcher's frustration:

*"There are so many ways to measure [brand phenomena]...What we do know is the power of brands whenever we make a mistake."*

Third, brand consciousness (i.e., a belief that well-known brands are superior to lesser-known brands) emerges as a particularly relevant construct in business markets. One of the market researchers noted,

*"In the B2B world, [buyer] brand consciousness equals relevance."*

Additionally, a marketing executive echoed this sentiment by noting,

*"Brand-conscious customers think that branding is important. Brand conscious customers are sensitive to brands and quality. So it appears to me that brand consciousness is the root and other [measures] are consequences of brand consciousness."*

To summarize, questions about the relative importance of brands in business markets still persist and—perhaps for that reason—several practitioners indicated that brand consciousness is likely to be an important driver of brand outcomes in business markets. In addition, marketing practitioners' views coincided with concerns expressed in the academic marketing literature regarding the wide array of measures employed to quantify the value and impact of brands.

## 2. Conceptual framework

[Keller and Lehmann \(2006\)](#) contend that brand performance is dependent on a prospective buyer's "mindset" — their beliefs, perceptions, attitudes, and actions. Consistent with this basic framework, we propose that brand consciousness, brand sensitivity, brand preference and brand importance are distinct constructs that can be conceptually organized using a four-stage HOE model (i.e., beliefs→attitudes→intentions→behaviors) that adequately captures the different manifestations of brand influence within an organizational buying context.

HOE models are based on information processing and persuasion theories, and capture the decision-making process in general. They are well-established in the decision-making literature (see [Lavidge &](#)

**Table 2**  
Business vs. consumer market differences and their implications for the relative importance of B2B brands.

Market differences	Description	Implications for the relative importance of brands in business markets		
		Decreased	Increased	Rationale
Decision-making process	Purchase processes are more systematic and objective-driven ("rational") in business than consumer markets; purchase situations impact perceived risk ( <a href="#">Bendixen et al., 2004</a> ; <a href="#">Kotler &amp; Pfoertsch, 2007</a> ); <a href="#">Rosenbroijer, 2001</a> ; <a href="#">Webster &amp; Keller, 2004</a> .	✓		Systematic decision-making, which is subject to supervisor review, is less susceptible to the influence of emotional or attitudinal (e.g., brand) factors.
Group dynamics	Purchase decisions in business markets often involve groups of individuals with distinct roles and agendas while individual decision-making tends to be the norm in consumer markets ( <a href="#">Johnston &amp; Bonoma, 1981</a> ; <a href="#">Kim et al., 1998</a> ; <a href="#">Webster &amp; Keller, 2004</a> ).	✓		The likelihood that brand considerations permeate the deliberation process is reduced, given that brand awareness and purchase criteria likely differ across buying center participants.
Nature of demand	Demand for business products is derived from the demand for consumer products ( <a href="#">Webster &amp; Keller, 2004</a> ).	✓		The inherent value of brands as a vehicle for self-expression is generally reduced in business markets.
Branding emphasis	Corporate (as opposed to product) branding is more prevalent in business than consumer markets ( <a href="#">De Chernatony &amp; McDonald, 1998</a> ; <a href="#">Malaval, 2001</a> ; <a href="#">Michell et al., 2001</a> ).		✓	Corporate brands can be leveraged across product categories and purchase situations to influence buyer decision processes.
Marketing communications mix	Interpersonal communication (e.g., personal selling) has a heightened role in business markets when compared to consumer markets ( <a href="#">Gilliland &amp; Johnston, 1997</a> ; <a href="#">Minett, 2002</a> ; <a href="#">Turley &amp; Kelley, 1997</a> ).	✓		Brand considerations are reduced to a supplemental role as interpersonal interactions strongly inform buyer decision processes.

Steiner, 1961; Palda, 1966 for early applications of the model), and have been effectively utilized to model brand phenomena and to capture differences in brand-knowledge structures in prior studies (e.g., Cobb-Walgreen, Ruble, & Donthu, 1995). Notably, Agarawal and Rao (1996) and Mackay (2001) viewed the relationships between various brand equity measures through an HOE lens. Furthermore, branding scholars assert that levels of customer brand equity can generally be conceptualized within the familiar HOE frameworks that model brand phenomena from awareness or beliefs to activities or behaviors (Keller, 2003; Keller & Lehmann, 2006; Lehmann et al., 2008).

Brand consciousness, brand preference, brand sensitivity, and brand importance were selected for evaluation because they generally focus on the relative importance of brands and capture distinct facets—with cognitive, attitudinal or behavioral undertones—of the decision-making process. Specifically, *brand consciousness* refers to the organizational belief that well-known brands are superior to lesser-known brands (i.e., brand consciousness is cognitive in nature; Sproles & Kendall, 1986). *Brand preference* refers to the extent to which an organization views a focal brand as more desirable than comparable alternatives (i.e., brand preference is an attitude; Moschis, Moore, & Stanley, 1984; Ratchford & Vaughn, 1989). *Brand sensitivity* refers to the degree to which brand names and/or corporate associations are actively considered in organizational buying deliberations (Kapferer & Laurent, 1988). As such, brand sensitivity reflects the extent to which the buying center intends to rely on brand information for decision-making purposes. Finally, *brand importance* refers to the relative importance assigned to brand names in organizational buying decisions (i.e., it captures actual behaviors by revealing the extent to which buying center members rely upon brand information when making a purchase decision; Hutton, 1997).

### 2.1. Organizing the brand dimensions: the main effects

Having defined each of the brand dimensions as either a belief, an attitude, an intention or a behavior, it is now possible to advance main effect hypotheses detailing how the dimensions are expected to relate to each other and, ultimately, how they are likely to affect organizational buying behavior. Our expectations regarding the relationship between the constructs in the brand-measures hierarchy are formally presented in *Hypotheses 1–4* (below) and are graphically depicted, along with proposed moderators of these main effect relationships, in *Fig. 1*. Given that the HOE organizing framework is well established in the literature, we have purposefully limited our development of the main effect hypotheses and will focus our theoretical argumentation, in a subsequent section, on the moderating conditions that influence the main effect relationships.

The more branding permeates organizational buying deliberations (i.e., the more deliberations focus on the comparison of brands), the more likely that brand name will become a deciding factor in the organizational buying decision (i.e., intentions→behaviors). Consequently, we can expect:

**H1.** Brand sensitivity is positively related to brand importance.

The more organizational buyers believe that well-known brands are superior to lesser-known brands, the more likely they are to be concerned about brand names when evaluating different product choices (i.e., beliefs→intentions). Therefore:

**H2.** Brand consciousness is positively related to brand sensitivity.

The more organizational buyers believe that well-known brands are superior to lesser-known brands, the more likely they are to have preferred brands in a particular product category (i.e., beliefs→attitudes). Therefore:

**H3.** Brand consciousness is positively related to brand preference.

The more organizational buyers consider a focal brand to be more desirable than available alternatives, the more likely they are to be concerned about brand names when evaluating different product choices (i.e., attitudes→intentions). Therefore:

**H4.** Brand preference is positively related to brand sensitivity.

### 2.2. Brands as a mechanism for dealing with information overload in organizational buying contexts: moderation effects

*Information processing theory* (e.g., Bettman, 1979; Cyert & March, 1963; Galbraith, 1974; Petty, Cacioppo, & Schumann, 1983) argues that individuals and organizations have limitations in their capacity to process information. Furthermore, it holds that information overload results when decision-makers' processing capacity is exceeded, which in turn negatively affects decision-making quality (Chernev, 2003; Jacoby, 1984; Lurie, 2004; Malhotra, 1982). Evidence from consumer studies suggests that decision-makers often deal with information overload by relying on brand information to make product assessments, predict product quality and performance, and make choice decisions (e.g., Oxoby & Finnigan, 2007; see Van Osselaer & Alba, 2000 and Janiszewski & Van Osselaer, 2000 for a discussion on how brand cues are utilized to predict product performance and hence make product choices). We expect that brands will also serve as a mechanism for dealing with information overload in organizational buying contexts.

Information overload is likely to occur in environments characterized by numerous competitive brands. *Resource availability theory* (e.g., Donthu & Yaveroglu, 2008; Miller, 1956) contends that individuals have limited resources to process information from multiple brands. In addition, given these individuals' limited resources, information overload is likely to be a more significant factor among buying centers within smaller firms than among those within larger customer firms. Consistent with the role of brand cues as a mechanism for dealing with information overload, we expect that the relationship between the constructs in the brand hierarchy will be moderated by external market factors and internal firm factors that affect information processing requirements and capabilities within buying firms. Specifically, we argue that the number of brands vying for business in a particular category (referred to here as competitive intensity; Lehmann & Pan, 1994) and an organization's size will influence the extent to which branded offerings are considered (Dean & Sharfman, 1993) and thus the relationship between constructs in the hierarchy. Building on information processing theory and resource availability theory, we formally express our expectations regarding the moderating role of competitive intensity and firm size in *Hypotheses 5–8* below.

The main effect hypothesis (H2) posits a positive relationship between brand consciousness and brand sensitivity. We expect that this positive relationship will be stronger in environments characterized by low levels of competition. In highly competitive environments, organizational buyers are likely to rely on brand information as a cue for choice simplification. More precisely, when the competitive environment is replete with competitors, organizational buyers are likely to utilize brand information as a means of discriminating between providers and forming choice sets (Johnson & Payne, 1985; Payne, 1976). The same is not true for less competitive environments. When there are few competitors in the environment, brand information is not a useful cue for decision-making purposes and brand sensitivity is thus likely to be low. Nonetheless, this expectation does not apply to brand-conscious organizational buyers, who are likely to consider brand information for decision-making purposes even in low competition environments. More formally, we expect the following:

**H5.** Competitive intensity moderates the relationship between brand consciousness and brand sensitivity such that the relationship is stronger under conditions of low (as opposed to high) competitive intensity.

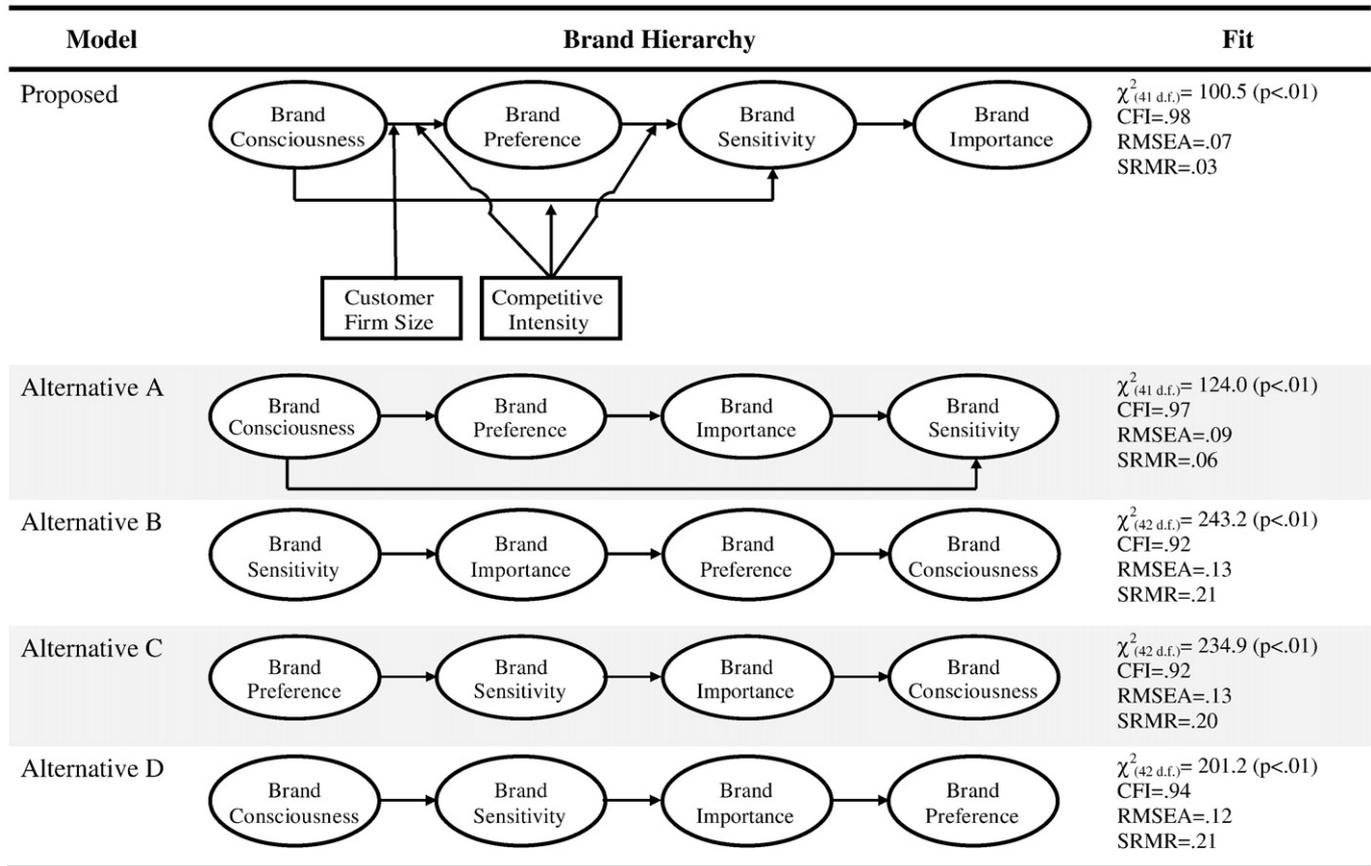


Fig. 1. Comparison of competing brand construct hierarchies.

The main effect hypothesis (H3) argues for a positive relationship between brand consciousness and brand preference. We expect that this positive relationship will be weaker in environments characterized by high levels of competition. When competitive intensity is low, brand-conscious organizational buyers have little to choose from and thus are likely to form strong preferences as a means of “acting upon” their belief that all providers are not created equal. However, when competitive intensity is high, the brand-conscious organizational buyer has many potentially acceptable products to choose from and thus may be more likely to rely heavily on other attributes rather than on brand reputation. For instance, prior research has shown that when competitive intensity is high, investments in advertising result in increased consumer price sensitivity instead of enhanced brand differentiation and preference (Gatignon, 1984). Therefore, we anticipate the relationship between brand consciousness and brand preference to be attenuated in highly competitive environments, as organizational buyers are likely to become more concerned about differences in other attributes more than differences in brands. More formally, we expect the following:

**H6.** Competitive intensity moderates the relationship between brand consciousness and brand preference, such that the relationship is weaker under conditions of high (as opposed to low) competitive intensity.

The main effect hypothesis (H4) argues for a positive relationship between brand preference and brand sensitivity. We expect that this positive relationship will be stronger in environments characterized by high levels of competition. In highly competitive environments, organizational buyers are likely to limit their choice sets to the preferred brand and promoted brands as a mechanism for dealing with information

overload (Siddarth, Bucklin, & Morrison, 1995). This choice simplification heuristic draws attention to brand information in the subsequent evaluation process and therefore increases brand sensitivity. In contrast, strong brand preferences are unlikely to enhance brand sensitivity in low competition environments because the product choice has essentially already been made. Consequently, we expect the following:

**H7.** Competitive intensity moderates the relationship between brand preference and brand sensitivity such that the relationship is stronger under conditions of high (as opposed to low) competitive intensity.

The main effect hypothesis (H3) argues for a positive relationship between brand consciousness and brand preference. We expect that this relationship will be stronger for organizational buyers within large firms than for organizational buyers within small firms. When compared to large firms, small firms have a much smaller set of human and financial resources, which they must allocate as efficiently as possible. Hence, regardless of their level of brand consciousness, organizational buyers within small firms are likely to commit to a particular provider or develop strong brand preferences as a way of balancing the tradeoffs associated with an extensive product search and evaluation process (Hauser & Wernerfelt, 1990). The same is not true for organizational buyers within large firms. Given that large firms have greater human and financial resources, organizational buyers within these firms can avoid committing to a particular provider or developing strong brand preferences. That is, as suggested by the resource availability theory, they have the means to evaluate multiple alternatives if they desire to do so. Hence, non brand-conscious organizational buyers within large firms are likely to have relatively weak brand preferences. However, brand-conscious organizational buyers within large firms are likely to develop strong brand

preferences as a way of exercising their belief that some brands are better than others. We can thus expect the following:

**H8.** The size of customer firms moderates the relationship between brand consciousness and brand preference such that the relationship is stronger when firms are large (as opposed to small) in size.

### 3. Method

#### 3.1. Data collection and sample

A field survey of business managers was undertaken to test the proposed model and hypotheses. Business managers from e-Rewards Market Research®, an industry leader in online business panels, were recruited for participation in the study. Panelists were limited to U.S.-based buyers who described their current functional role as procurement and B2B managers who were decision-makers and/or influencers in purchasing raw materials/components at their respective companies. Participants were required to be mid-level or senior executive managers.

The survey instructions asked respondents to think about a recent work situation in which they were part of a buying team or committee responsible for selecting or recommending a particular product for their business. The respondents were then instructed to keep the purchase situation in mind and to report on the buying team's views when responding to survey questions. Furthermore, the participants were instructed that the purchase situation they selected should: (1) involve typical business market products (according to Hutt & Speh, 2007, for example) including the purchase of either materials/parts (e.g., raw materials, ingredients, manufactured materials, or parts), capital items (e.g., equipment used in production/operations), or operating supplies (e.g., repair/maintenance items), (2) be for a product their firm had purchased in the past but for some reason felt like it was time to consider other alternatives (i.e., a modified rebuy situation), and (3) involve a "fairly expensive" product. Modified rebuy situations were selected because, unlike new or straight rebuy situations, they tend to involve a balance between sufficiently high buyer risk and buyer autonomy (Hawes & Barnhouse, 1987). "Fairly expensive" products were selected to limit the purchase situations to those where company brand may play some role in the purchase evaluation. According to Minett (2002), such "mid-range purchases" fall between trivial, commodity-type purchases, which tend to be influenced solely by price and major capital investments (e.g., infrastructure for a national telecom system), which tend to be influenced more by politics and have significant socio-economic consequences.

The data collection effort yielded a total of 314 respondents. Of those, 41 were discarded because of either excessive missing data or obvious answer patterns. The exclusion of these surveys from the sample resulted in a total of 273 usable questionnaires. Responses of early and late respondents were compared across select study constructs to assess the potential of non-response bias. The responses of early and late responders did not differ across any of the constructs tested. Consequently, it appears that non-response bias is not a serious concern in our study (Armstrong & Overton, 1977).

#### 3.2. Respondent characteristics

The resulting sample was almost evenly split among males and females, with a slight majority (55%) of respondents identifying themselves as males. Respondents were distributed across a variety of age groups, with about 25% of respondents self-selecting into one of each of the following age categories: (1) 25–34, (2) 35–44, and (3) 45–54. A majority of the respondents described themselves as white (76.4%) and as college graduates (77%; includes undergraduate and post-graduate degrees). A majority (51%) of respondents reported being employed with their current company for over six

years and having yearly procurement responsibilities of less than \$100,000 (56%). Finally, respondents reported being employed with services (46%) and manufacturing companies (23%), which varied in terms of number of employees and dollar sales (e.g., 28% have less than nine employees while 24% have more than 5000 employees; 37% have less than \$1 million in yearly sales while 18% report company sales of over \$1 billion).

#### 3.3. Construct measures

We measured brand sensitivity using a three-item scale adapted from prior research (Kapferer & Laurent, 1988; Lachance, Beaudoin, & Robitaille, 2003). The items, anchored on a seven-point "strongly disagree" to "strongly agree" scale, generally asked respondents to indicate the extent to which the buying center considered brand information in their decision-making process. The scale exhibits high levels of internal consistency reliability ( $\alpha = .89$ ). We provide a list of all the measurement items used in the study in Appendix A.

Respondents assessed brand consciousness using a three-item scale adapted to the study's context from the work of Sproles and Kendall (1986). The items were anchored on a seven-point "strongly disagree" to "strongly agree" scale and asked respondents to indicate the extent to which the buying organization views well-known brands as desirable or favorable. The scale's coefficient alpha ( $\alpha = .90$ ) suggests high levels of internal consistency.

Brand preference was assessed using a four-item measure, also anchored on a seven-point "strongly disagree" to "strongly agree" scale. The measure was taken from Yoo and Donthu (2001), and was adapted for the purposes of this study. The measure's items capture the extent to which organizational buyers hold a strong preference for the selected brand even if virtually identical competing brands are available. The measure is highly reliable, as indicated by a coefficient alpha ( $\alpha$ ) of .94.

A constant-sum scale was utilized to assess brand importance. Specifically, respondents were instructed to divide 100 points between a series of attributes—including, support services, functionality, brand name, logistics, and technology used—based on the relative importance each attribute played in the product selection process. The measure was developed based on the work of Hutton (1997), who asked respondents to indicate (using Likert-type items) the importance of different decision criteria when selecting a focal product under consideration.

We measured competitive intensity using a four-category nominal scale on which respondents indicated the number of major brands present in their supplier environment. Responses from the four categories were collapsed into two categories to create a binary variable for model estimation purposes, where 0 = no major brands and 1 = many major brands. Similarly, we measured firm size using a multi-category, annual revenue nominal question, collapsed to create a binary dummy variable for the analysis (where 0 = less than \$1 million, and 1 = more than \$1 million).

## 4. Results

#### 4.1. Confirmatory factor analysis

We subjected the four brand construct measures to a confirmatory factor analysis (CFA) using Mplus 5.1 (the analysis included a combined total of 11 measurement items). As previously indicated, the brand importance construct was assessed using a constant-sum scale; here, a single-item indicator was used to represent this construct in the measurement and structural models. Following convention, the construct's reliability ( $\alpha$ ) was assumed to be .85 for model estimation purposes (see, e.g., Cannon & Homburg, 2001). Given this assumption, the construct's measurement error was specified as  $(1 - \alpha)$  times the variance of the measure. In Table 3,

**Table 3**  
Summary of construct properties.

	Mean	S.D.	AVE	SKEW	$r_{\text{intra-construct}}$	$r_{\text{inter-construct}}$	1	2	3	4	5	6	7
1. Brand Sensitivity	4.60	1.69	72.6%	-.51*	.74	.46	<b>.89</b>	.48	.34	.22	-	-	-
2. Brand Consciousness	4.06	1.39	75.6%	-.22	.76	.45	.62*	<b>.90</b>	.32	.09	-	-	-
3. Brand Preference	4.33	1.46	80.3%	-.30*	.81	.42	.54*	.55*	<b>0.94</b>	.05	-	-	-
4. Brand Importance <sup>a</sup>	12.26	13.2	SI	.27	SI	.25	.40*	.25*	.21*	<b>SI</b>	-	-	-
5. Competitive Intensity (0 = Low)	BI (Low = 38.1%)				BI	BI	.40*	.24*	.20*	.06	<b>BI</b>	-	-
6. Customer Firm Size (0 = Small)	BI (Small = 37.4%)				BI	BI	-.28*	-.09	-.22*	-.26*	.09	<b>BI</b>	-
7. Product Type (0 = Tech Product)	BI (Tech = 77.5%)				BI	BI	-.22*	-.08	.02	-.16	-.21	.21	<b>BI</b>

S.D. = standard deviation. AVE = average variance extracted. SKEW = skewness. SI = single-item construct. BI = binary variable, with percentages for the baseline category reported in parentheses.  $r_{\text{intra-construct}}$  = average item-to-item correlation for all items in a construct.  $r_{\text{inter-construct}}$  = average item-to-item correlation between items used to measure the focal construct and all items used to measure other model constructs. Entries below the diagonal of the correlation matrix are construct correlations. Polychoric correlations are reported for the association between binary and continuous variables. Polychoric correlations are reported for the association between two binary variables. All other correlations are Pearson Product Moment correlations. Estimates marked with an asterisk (\*) are statistically significant ( $p < .05$ ). Italicized entries above the diagonal of the correlation matrix represent shared variance between the constructs. Coefficient  $\alpha$  is shown in bold on the correlation matrix diagonal.

<sup>a</sup> A square root transformation was applied to this construct to more closely approximate a univariate normal distribution. The transformation was successful in accomplishing this goal.

we report the means, standard deviations, and other relevant construct properties and correlations for each measure.

The CFA results suggest that the model provides a very good fit to the data (Hu & Bentler, 1999) ( $\chi^2 = 98.7$ , 39 *df*,  $p < .01$ ; comparative fit index [CFI] = .98; standardized root means squared residual [SRMR] = .032; root mean square error of approximation [RMSEA] = .075). The good fit of the measurement model and a detailed evaluation of CFA model residuals support the fundamental assumption of unidimensional measurement (Anderson & Gerbing, 1988).

As is also summarized in Table 3, additional evidence derived from the CFA suggests that the resulting measures are reliable and valid (Fornell & Larcker, 1981; Gerbing & Anderson, 1988). More specifically, the scales' reliability is indicated by their high reliabilities (coefficient  $\alpha$  ranging from .89 to .94) and average variances extracted (ranging from 72.6% to 80.3%). In addition, evidence of the measures' convergent validity is provided by the fact that all factor loadings are significant and that the scales' exhibit high levels of internal consistency. Moreover, two separate tests support the conclusion that the measures possess discriminant validity. In particular, six additional CFA models were specified and tested in which the correlation between a pair of the model constructs was specified as being perfectly correlated. For all pairs of constructs, the additional constraint resulted in a statistically significant worsening of the model's fit ( $p < .01$ ;  $\chi^2$  difference scores ranged from 20.1 to 48.2). Finally, the measures' discriminant validity is also confirmed by the fact that the average variance extracted (AVE) for each of the constructs (lowest AVE = 72.6%) is substantially greater than the largest shared variance (i.e., squared, error-corrected correlation; 48%) between any of the constructs in the model (consistent with this finding, the average intra-construct item-to-item correlations are substantially larger than the average inter-construct item-to-item correlations).

#### 4.2. Correlates of the brand dimensions

While the results of the CFA suggest that the four brand dimensions are empirically distinguishable, their conceptual relatedness is undeniable. As a result, we assessed the potential merits of distinguishing between the four dimensions by testing whether the relationship between each dimension and 10 different variables or correlates differed significantly. Our intent in doing so was to determine whether employing constructs from different levels of the hierarchy led to a substantially different pattern of results. The correlates—which are identified, defined and described in Appendix B—were drawn largely from extant studies and represent product and market characteristics, organizational attributes or individual buyer differences which may influence buying center purchase decisions. The correlate analysis was performed in Mplus 5.1 by specifying a covariance model in which the

four brand dimensions and each of the correlates (considered separately) were allowed to freely covary and then specifying a series of models in which the relationship between a pair of the brand dimensions and the correlate were constrained to be equal. The change in model fit, which follows a  $\chi^2$  distribution with one degree of freedom, was utilized to determine whether the pair of brand dimensions evaluated related differently to the focal correlate. This procedure resulted in a total of 6 comparisons per correlate, for a total of 60 comparisons across the 10 correlates.

The results of the correlate analysis, summarized in Table 4, reveal that important differences exist in how the brand dimensions relate to other variables. Out of the 60 comparisons made, 34 significant ( $p < .05$ ) differences were identified. Importantly, there was a discernable pattern in the differences. First, the relationship between brand importance and the correlates was generally different than the relationship between the correlates and the remaining three brand dimensions. Second, with one exception, brand preference and brand sensitivity related very similarly to the 10 brand correlates evaluated. Finally, brand consciousness behaved markedly differently than either brand preference or brand sensitivity.<sup>3</sup> Collectively, these results suggest that the brand dimensions are not empirically interchangeable (with the exception, perhaps, of brand sensitivity and brand preference), and that the choice of brand dimensions selected for investigation may have important implications for the pattern of results obtained in any given study. Given these results, the conceptual differences between the brand dimensions, and the evidence of the constructs' discriminant validity, investigation of the relationship between the four constructs seems relevant and warranted.

#### 4.3. Relative importance of brands as a decision criterion

Before discussing the results of the hypothesis tests, it is worth underscoring respondents' assessments of the relative influence of brands on their decision-making process. Respondents ranked brands as the fifth (out of six) most important factor in their product choice decision ( $x = 12.3$ , *s.d.* = 13.2). Logistical ( $x = 23.2$ , *s.d.* = 17.1) and price ( $x = 21.2$ , *s.d.* = 16.3) considerations were rated as the two most important factors, followed by technology used ( $x = 16.3$ , *s.d.* = 14.0) and support services ( $x = 15.4$ , *s.d.* = 14.7). Product functionality was rated as the least important factor ( $x = 11.6$ , *s.d.* = 10.1). In addition, brand importance was negatively related to all other factors considered, with the strongest relationships being with logistics

<sup>3</sup> This result is noteworthy given the modestly strong correlation between the brand consciousness, brand preference, and brand sensitivity dimensions (see Table 2 for details).

**Table 4**  
Differences in the association between the brand dimensions and relevant correlates.

Brand correlate	Dimension A	Dimension B	Dimension C	Dimension D
	Brand consciousness	Brand preference	Brand sensitivity	Brand importance
Procedural control	.19** (D)	.16** (D)	.17** (D)	-.06 (A,B,C)
Cost orientation	.23** (C,D)	.12* (D)	.04 (A)	-.07 (A,B)
Purchase importance	.19** (B,D)	.31** (A,D)	.24** (D)	-.17** (A,B,C)
Purchase complexity	.14* (D)	.15* (D)	.03 (D)	-.18** (A,B,C)
Relationship quality	.22** (B,C,D)	.32** (A,D)	.32** (A,D)	.01 (A,B,C)
Product tangibility	.31** (C,D)	.35** (D)	.39** (A,D)	-.02 (A,B,C)
Consumer demand	.27**	.29**	.28**	.20**
Purchasing involvement	.13* (B,C)	.23** (A)	.27** (A,D)	.11 (C)
Product experience	.09	.14*	.12* (D)	-.02 (C)
Organizational rank	-.03 (B,C,D)	-.14* (A)	-.19** (A)	-.22** (A)
Individual risk propensity	.27** (C,D)	.24** (C,D)	.35** (A,B,D)	-.11 (A,B,C)

\*\* $p < .01$ ; \* $p < .05$ .

The table reports standardized parameter estimates for the covariation between each brand dimension and the correlate listed. The letters in parentheses identify relationships that are significantly different ( $\chi^2$  difference test, 1 *df*,  $p < .05$ ) across the brand dimensions. For example, the cell corresponding to the relationship between brand consciousness and procedural control reads as follows: “.19\*\* (D).” The .19 represents the correlation between brand consciousness and procedural control (which is significant at  $p < .01$ ). In addition, the (D), suggests that the correlation between brand consciousness and procedural control is significantly different ( $p < .05$ ) than the relationship between dimension D (i.e., brand importance) and procedural control.

( $r_{xy} = -.26$ ,  $p < .01$ ) and price ( $r_{xy} = -.19$ ,  $p < .01$ ). Finally, brand importance was rated significantly ( $p < .01$ ) higher among smaller firms ( $x = 16.3$ ) than larger firms ( $x = 10.2$ ), but did not differ ( $p > .05$ ) across low-competition ( $x = 12.2$ ) versus high-competition ( $x = 12.3$ ) environments. Overall, these findings confirm the results of prior studies which suggest that brands do play a role, albeit a modest one, in product choice decisions (Saunders & Watt, 1979; Benedixen et al., 2004).

#### 4.4. Test of main effect hypotheses

The proposed model (see Fig. 1) was specified and estimated using structural equation modeling techniques as implemented in Mplus 5.1. The analysis suggests that the proposed model fits the data well (Hu & Bentler, 1999) ( $\chi^2 = 100.5$ , 41 *df*,  $p < .01$ ; CFI = .98, SRMR = .03, RMSEA = .07). In addition, the model accounts for 22%, 33%, and 52% of the variance in brand importance, brand preference and brand sensitivity, respectively.

The structural path estimates and their associated significance values are provided in Table 5. As the table indicates, the results provide strong evidence in support of the main effect hypotheses. Consistent with H1, brand sensitivity was found to be positively related to brand importance ( $b = .52$ ,  $p < .01$ ). In addition, brand consciousness was found to be positively related to brand sensitivity (H2;  $b = .66$ ,  $p < .01$ ) and brand preference (H3;  $b = .60$ ,  $p < .01$ ). Finally, the data confirm the expected (H4) positive relationship between brand preference and brand sensitivity ( $b = .31$ ,  $p < .01$ ).<sup>4</sup>

#### 4.5. Test of competing main effect models

Prior to testing the moderation hypotheses, it was important to establish whether the proposed main effects model best captures the relationship among the constructs in the brand hierarchy. The main effects model—as proposed—is consistent with a traditional beliefs→attitude→intention→behavior HOE model. However, different construct hierarchies are also possible and should be considered.

Towards that end, we compared our proposed hierarchy to four competing plausible models (alternative models A, B, C and D) which varied to differing extents from each other, and the proposed model (see Fig. 1 for a depiction of the four competing models and their respective fit indexes).

Alternative model A suggests that brand consciousness leads to the formation of strong brand preferences. Organizational buyers with strong brand preferences, in turn, tend to place greater importance (relative to other decision criteria) on brand information when making product choice decisions. Greater relative brand importance ultimately translates into heightened levels of brand sensitivity during organizational product choice deliberations. Alternative model B represents a bigger departure from the proposed hierarchy. It proposes that brand sensitivity during purchase deliberations leads to the greater importance of brand information, relative to other decision criteria. The increased importance of brand information, in turn, leads to the formation of strong brand preferences, which ultimately serves to heighten organizational brand consciousness. Alternative model C posits that organizational buyers with strong brand preferences will be more sensitive to brand information when making product choice decisions. This increased brand sensitivity will lead to greater relative importance of brand information when product choice decisions are made. Furthermore, as the relative importance of brands increases, organizational buyers are likely to become more brand conscious. Finally, alternative model D suggests that brand-conscious buyers will be more sensitive to brand information when considering alternative products. This increase in brand sensitivity will lead to a greater relative importance of brand information during product selection decisions, which will eventually lead firms to form stronger brand preferences.

The results of the test of competing models re-affirm the adequacy of the proposed HOE model. Precisely, model fit comparisons<sup>5</sup> (as judged by the  $\chi^2$  statistic) suggest that the proposed hierarchy of effects provides a better fit to the data than the alternative models considered. Thus, at least for this particular study, the beliefs→attitude→intention→behavior HOE model appears to best-capture the relationship between the brand dimensions. Given this finding, the hypothesized moderation tests were deemed to be relevant and are thus considered in the following section.

<sup>4</sup> Following the guidelines offered by Podsakoff, MacKenzie, and Lee (2003), we evaluated the potential influence of common method variance on the results of our main effects mode. Introduction of a methods factor into the structural model had no substantive impact on the factor loading or structural relationships, a finding which suggests that common method variance is unlikely to be responsible for the pattern of effects identified in the study.

<sup>5</sup> All path estimates were statistically significant ( $p < .05$ ) in all comparison models evaluated.

**Table 5**  
SEM standardized coefficient estimates.

Relationship	Single group	Competitive intensity as moderator		Customer firm size as moderator		Product type as moderator <sup>a</sup>	
		Low competitive intensity	High competitive intensity	Small firms	Large firms	Tech products	MRO supplies
Brand consciousness→brand sensitivity <sup>b,d</sup>	.66***	.79***	.36***	.57***	.54***	.36***	.82***
Brand consciousness→brand preference <sup>c</sup>	.60***	.58***	.54***	.38***	.68***	.48***	.48***
Brand preference→brand sensitivity <sup>b,d</sup>	.31***	.02	.41***	.27**	.24**	.41***	-.06
Brand sensitivity→brand importance	.52***	.46***	.49***	.36***	.52***	.47	.70

MRO = maintenance, repair and operations.

\*\*  $p < .05$ .

\*\*\*  $p < .01$ .

<sup>a</sup> Post-hoc test of moderation based on the types of products reported on by respondents.

<sup>b</sup> Moderating effect of competitive intensity is significant ( $p < .01$ ).

<sup>c</sup> Moderating effect of customer firm size is significant ( $p < .01$ ).

<sup>d</sup> Moderating effect of product type is significant ( $p < .01$ ).

#### 4.6. Test of moderation hypotheses

The proposed moderation hypotheses were tested using the SEM multi-group procedure<sup>6</sup> (Jaccard, Turrisi, & Wan, 1996). The results suggest that competitive intensity is a significant moderator of the relationship between (1) brand consciousness and brand sensitivity (H5;  $\chi^2$  difference = 14.72,  $p < .01$ ), and (2) brand preference and brand sensitivity (H7;  $\chi^2$  difference = 7.94,  $p < .01$ ). However, the data do not support H6 which posited that competitive intensity moderates the relationship between brand consciousness and brand preference ( $p > .10$ ). Finally, the results also reveal that customer firm size is a significant moderator of the relationship between brand consciousness and brand preference (H8;  $\chi^2$  difference = 7.81,  $p < .01$ ).

As is illustrated in Fig. 2 (inset A, B, C), the pattern of results is consistent with the expectations set forth in H5, H7 and H8. More precisely, Fig. 2 inset A reveals that the association between brand consciousness and brand sensitivity is weaker under conditions of high (as opposed to low) competitive intensity (H5). In addition, Fig. 2 inset B reveals that the relationship between brand preference and brand sensitivity is stronger under conditions of high (as opposed to low) competitive intensity (H7). Finally, Fig. 2 inset C indicates that the association between brand consciousness and brand preference becomes stronger when customer firms are large (as opposed to small; H8).

While the data support the proposed positive relationship between brand consciousness and brand preference (H3), it did not support the proposed moderating role of competitive intensity (H6). Contrary to expectations, the results suggest that regardless of the number of brands available in the environment (i.e., competitive intensity), brand consciousness is positively related to brand preference. Stated differently, the availability of many competing brands does not appear to preclude the brand-conscious organizational buyers from forming strong brand preferences. While unexpected, this finding has important practical implications that are addressed in the final section of the manuscript.

#### 4.7. Post-hoc analyses

While we did not instruct respondents to focus on particular product categories when responding to the survey, we conducted

<sup>6</sup> Given that the proposed moderators are categorical in nature, the multi-group procedure was deemed appropriate. However, as is indicated by the polyserial correlations reported in Table 2, the proposed moderators show modest levels of association with the four brand constructs. Therefore, the moderation hypotheses were also tested using product terms in regression, such that the independent variables, the moderators (coded as binary variables) and the product term were entered into the prediction equation. This estimation technique yielded nearly identical results to the multi-group estimation procedure, with all statistical conclusions and effect patterns remaining unchanged despite significant (but modest) main effects of the moderators on the dependent variables.

post-hoc analyses to evaluate whether relationships across the brand hierarchy differed systematically based on the product category.<sup>7</sup> To achieve this goal, we created a categorization scheme and independently coded respondents' open-ended answers regarding the specific product they were reporting on for the purposes of the study (agreement rate = 97.5%; disagreements were resolved through discussion). The coding process generated two large enough categories for meaningful comparisons: (1) branded technology products (e.g., Xerox copiers, HP printers, etc), which represented 52.4% of the total sample, and (2) maintenance repair and operation (MRO) supplies (e.g., cleaning chemicals, lumber, sheet metal), which represented 15% of the total sample (refer to Table 2 for further details). The potential moderating role of product category was once again tested using the SEM multi-group procedure. The results of the post-hoc analyses, which are summarized in Table 4, indicate that product category moderates the brand consciousness→brand sensitivity and brand preference→brand sensitivity relationships ( $p < .01$ ). As is graphically illustrated in Fig. 2, insets D and E, the relationship between brand consciousness and brand sensitivity is stronger for MRO supplies ( $b = .82$ ,  $p < .01$ ) than tech products ( $b = .36$ ,  $p < .01$ ) while the relationship between brand preference and brand sensitivity is stronger for tech products ( $b = .41$ ,  $p < .05$ ) than MRO supplies ( $b = -.06$ ,  $p > .05$ ).

In addition, a series of post-hoc analyses were performed to test for the presence of non-linear relationships between the HOE constructs. We deemed this to be important for two reasons. First, past research suggests that the failure to control for non-linear effects might lead to the identification of spuriously significant interaction effects (e.g., Cortina, 1993). Second, non-linear effects are interesting in their own right and may serve to complement study findings. The results of these analyses suggest that unmeasured nonlinear terms do not account for the significant interactions identified in the study. Nonetheless, two significant nonlinear effects were identified. The first such effect is a quadratic effect for the relationship between brand consciousness and brand preference, moderated by firm size (the interaction term for both the linear and quadratic terms was significant,  $p < .05$ ). While the non-linear effect does not change the substantive interpretation of the interaction, it does suggest that the relationship between brand consciousness and brand preference is relatively flat when brand consciousness increases from low to moderate levels and becomes substantially steeper when brand consciousness increases from moderate to high levels (incremental variance accounted for by the moderated nonlinear term is approximately 1%). The second non-linear (cubic) effect concerns the relationship between brand sensitivity and brand importance. As is

<sup>7</sup> We thank one of our anonymous reviewers for this suggestion.

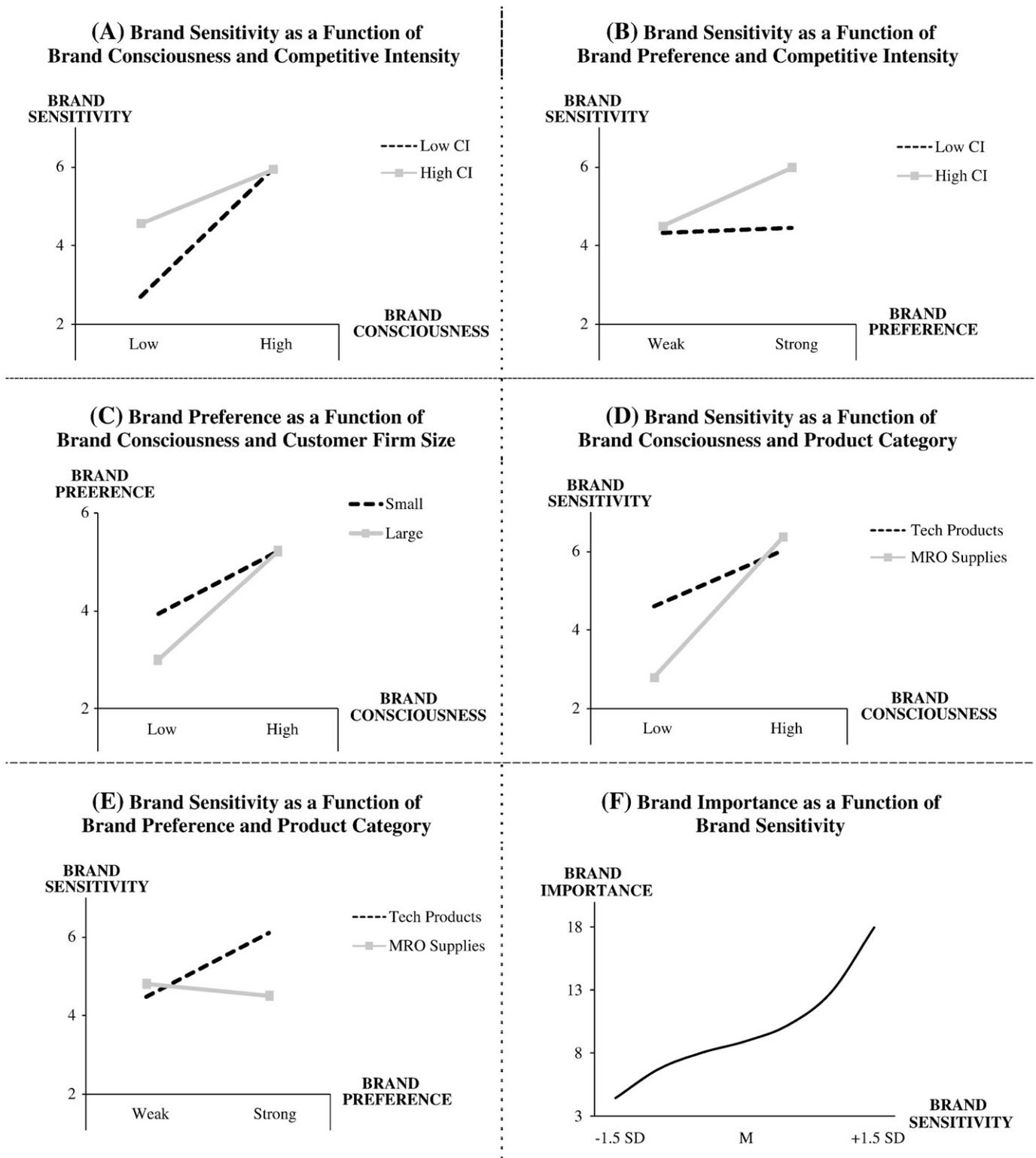


Fig. 2. Graphical summary of construct relationships.

graphically illustrated in Fig. 2 inset F, the relationship between brand sensitivity and brand importance is strongest at the lowest (linear term:  $b = 2.4, p < .01$ ) and highest levels (cubic term:  $b = 2.6, p < .05$ ) of brand sensitivity and is relatively weaker at the more moderate levels of brand sensitivity (quadratic term:  $b = -4.5, p < .05$ ). The addition of the non-linear effect accounts for an additional 2% of the variance in brand importance.

### 5. Discussion, implications and future research

The results of this study confirm that while brands do influence organizational buyers' decision-making, their influence is limited and secondary to other factors such as logistics, pricing and service. Consistent with the primary objective of this research effort, this finding reinforces the need to develop a better understanding of the

drivers and conditions under which the importance of brands is heightened.

The analyses strongly support the proposed brand hierarchy (H1–H4), which identified brand sensitivity as being the brand dimension most proximally antecedent to brand importance. This result suggests that as brand considerations permeate the decision process (i.e., as brand sensitivity increases), the relative importance of brands (vis-à-vis other decision criteria) also increases. Importantly, our analyses indicate that this relationship is not linear. Rather, the relationship is stronger at the lowest and highest levels of brand sensitivity, suggesting a flattening effect at moderate levels of brand sensitivity. This finding thus implies that relatively high levels of brand importance are only likely to result when brand sensitivity is a dominant factor in product choice deliberations.

Importantly, the results also provide insight as to when this is most likely to occur. With regards to this issue, they suggest that both brand consciousness and brand preference may influence brand sensitivity, subject to the effects of several moderating conditions. Specifically, the results suggest that competitive intensity moderates the relationship between brand consciousness and brand sensitivity (H5), such that the relationship is stronger under conditions of low competitive intensity. Follow-up analyses also reveal that this relationship is also moderated by product type, such that the relationship is stronger for MRO supplies than technology products. In contrast, the relationship between brand preference and brand sensitivity was found to be stronger under conditions of high competitive intensity (H7) and to be stronger for technology products than for MRO supplies.

The preceding set of results identify several conditions under which brand sensitivity is likely to be a dominant factor in product choice deliberations and thus have important managerial implications. More precisely, the results suggest that B2B marketers who (1) are operating under conditions of low competitive intensity or (2) sell MRO supplies can maximize buyers' level of brand sensitivity by devoting a significant amount of effort to engendering brand consciousness (as opposed to brand preference) among the target market. In contrast, the results indicate that B2B marketers who (1) are operating under conditions of high competitive intensity or (2) sell technology-based products can maximize buyers' levels of brand sensitivity by devoting a significant amount of effort to building brand preference (as opposed to brand consciousness) among its target market. The opposite recommendations would apply to a B2B marketer with a weak brand presence.

The results also offer some insight as to when organizational buyers are likely to develop strong brand preferences. As suggested by the HOE framework, the data indicate that brand consciousness may be a strong influence on buyers' formation of brand preferences. Moreover, the relationship was found to be independent of the competitive intensity of the environment (contrary to the expectations set forth in H6), but to be stronger among larger (as opposed to smaller) firms (consistent with H8). These results are managerially important for at least two reasons. First, the results for H6 suggest that brand conscious buyers are likely to possess strong brand preferences in spite of highly competitive environments. In other words, brand-conscious buyers do not appear to become "brand switchers" in the face of highly competitive environments. Second, the results for H8 reveal that, overall, buyers within small firms are more likely to form strong brand preferences than buyers in larger firms. We attribute this finding to the fact that smaller firms have fewer resources available to dedicate to the product search and evaluation process and hence are more likely to form strong brand preferences. Consequently, while smaller firms are likely to purchase less than their larger counterparts, it may be more profitable to serve small firms in the long run because of their propensity to form stronger preferences towards focal brands and because of their limited bargaining power.

The study's results also have important implications for brand measurement, as they offer a strong indication that while brand consciousness, brand preference, brand sensitivity and brand importance

are conceptually related phenomena, they are in fact distinct and empirically distinguishable constructs that are amenable to organization via a hierarchy-of-effects framework. Consistent with this assertion, the correlate analysis reveals that—to varying extents—the constructs relate differently to other variables of interest, therefore suggesting that the dimensions are not interchangeable within business branding models. In addition, the results of the correlate analysis offer two additional insights that are particularly noteworthy. First, the relationship between brand importance and the correlates was vastly different from the relationships between the three remaining dimensions and the correlates. Given that brand importance was measured using a constant-sum scale while the other three dimensions were measured using Likert-type scales, it is likely that these differences are driven by both conceptual and scale-related differences. Future studies should not only account for this possibility, but also consider the relative predictive adequacy of constant-sum scales which—unlike commonly employed Likert-type measures of brand equity—force respondents to make trade-offs between elements of an offer. Second, despite being moderately correlated, brand consciousness behaved differently towards the correlates evaluated than either brand preference or brand sensitivity. These results suggest a potentially unique role for brand consciousness within B2B contexts, consistent with findings emerging from our depth interviews.

Overall, this study represents an important first step towards developing a better understanding of when brands are most likely to "matter" in business markets. However, the understanding of this phenomenon is still limited and in need of further research attention. Future studies should seek to identify other drivers of brand importance and context-specific variables, which may be particularly relevant to understanding how brands operate or influence decision-making in business markets. Moreover, future studies should also investigate B2B brands from both a process and an entity perspective (see Stern, 2006) and across cultures (see Strizhakova, Coulter, & Price, 2008) as these distinctions are likely to offer important insights regarding how brands operate in business markets. Finally, future studies should move beyond the modified rebuy context to explore whether B2B brands behave differently under new task or straight re-buy conditions.

## Appendix A. Measurement items

BRAND SENSITIVITY (1 = strongly disagree, 7 = strongly agree)

1. When we made this purchase, the brand name was considered.
2. With this purchase, the brand name was important to us.
3. When evaluating products like this, we prefer recommending well-known brands.

BRAND CONSCIOUSNESS (1 = strongly disagree, 7 = strongly agree)

1. We prefer buying the best-selling brands.
2. The most recognized brands are usually very good choices.
3. A product has to be considered the best to satisfy our organization.

BRAND PREFERENCE (1 = strongly disagree, 7 = strongly agree)

1. Even if they generally have the same specs, it makes sense to buy the brand we selected instead of other competing brands.
2. It seems smarter to purchase the brand we selected if another brand is not different in any way.
3. Even if another brand has the same specs, we'd prefer to buy the brand we selected.
4. We'd prefer to buy the brand that was selected even if there was another brand with the same specs.

BRAND IMPORTANCE (Constant-Sum Scale; Item employed bolded below)

Please divide 100 points between the following attributes in terms of the relative importance they played in the product selection process.

Note: Allocating a larger number of points to an attribute would indicate that it is relatively more important than an attribute with a smaller number of points.

- Support services (e.g., pre-sale and post-sale services including training, maintenance, call center support).
- Functionality (e.g., precision, strength, durability, reliability).
- **Brand name (e.g., reputation, how well known the manufacturer is, how others view it in general terms, company history, associations, loyalty level).**
- Logistics and distribution (e.g., availability of product, ease of ordering, lead time, delivery reliability and convenience, capacity to handle the order).
- Price (e.g., quoted price, degree of discount, financial support services).
- Technology used (e.g., innovativeness, upgradeability, compatibility, ease of use, latest technology).

COMPETITIVE INTENSITY (A dichotomous variable was created based on responses to the question; No major brands = categories 1 and 2; Many major brands = categories 3 and 4; Frequencies are reported in parenthesis for each response category).

Which of the following best describes the supplier environment you've been recalling?

1. Has no major brands (14.1%).
2. Has a small number of major brands (24.1%).
3. Has an even mix of major brands and less well-known brands (30.7%).
4. Has many major brands (31.1%).

#### CUSTOMER FIRM SIZE

Firm annual sales in millions of dollars (Frequencies are reported in parenthesis for each response category).

1. Less than \$1,000,000 (37.4%).
2. More than \$1,000,000 (62.4%).

#### Appendix B. Brand dimension correlates: definition and sample measurement items

Correlate	Definition	Sample measurement items
Procedural control	Extent to which established policies, procedures, or transaction precedents guide a buying center's purchase evaluation.	We had clear cut rules about how to make this purchase.
Cost orientation	Extent to which cost-control is emphasized by the purchasing function.	My supervisors worry about cutting costs more than other factors.
Purchase importance	The buying center's perception of the financial and strategic impact of the product purchase as it relates to business objectives.	Compared to other purchases your firm makes, this product is: important–unimportant.
Purchase complexity	The buying center's perception of the relative level of sophistication or elaborateness of the product being considered.	Compared to other purchases your firm makes, this product is: simple–complex.
Relationship quality	Trust in, satisfaction with, and commitment to a supplier.	This supplier could be relied on to keep its promises. This was among the best supplier relationships that our company had. We had a strong sense of loyalty to this supplier.
Product tangibility	Extent to which a product is mentally accessible or imaginable to members of the buying center.	We felt that this item was very abstract–very concrete.
Consumer demand	Level of derived demand for a business product.	To what extent do end-consumers demand the brand of the product you selected?

#### Appendix B (continued)

Correlate	Definition	Sample measurement items
Purchasing involvement	Extent to which the buyer is involved in the organization's purchasing activities.	To what extent are you involved in purchasing materials in your company?
Product experience	The buyer's level of product-relevant procurement experience.	How many years of experience have you had with the product you've been recalling?
Organizational rank	The buyer's hierarchical position within the firm.	How many levels separate you from the principal/chief executive in your firm?
Risk propensity	The buyer's tendency to avoid uncertain outcomes or propositions.	I avoid risky things.

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