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Explicating industrial brand equity: Integrating brand trust, brand performance and industrial brand image

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Abstract

Purpose – The purpose of this paper is to explore brand equity from multiple perspectives (tangible and intangible) and their joint consequences, namely, on industrial buyers' brand loyalty and their long-term commitment. The aim is to provide a more comprehensive framework of the buyer's behavioral response in the business-to-business context by integrating both trust elements and industrial brand attributes (brand performance and industrial brand image). In addition, the study explores the mediation effects of trust and brand attributes on industrial buyers' responses such as loyalty and long-term commitment.

Design/methodology/approach – Using a survey approach, the study includes respondents working in the heating, ventilating and air-conditioning (HVAC) industry in Malaysia, and data are collected in the industrial air-conditioning segment. The research model was tested with SEM.

Findings – Findings show that brand performance and industrial brand image directly affect brand trust but with different effects on buyers' commitment and loyalty. Interestingly, industrial brand image only mediates the responses via brand trust, while brand performance has a direct effect. Thus, both brand performance and industrial brand image build buyer trust. But in this context, it is brand performance rather than industrial brand image that influences long-term commitment and loyalty. The study concludes that in the HVAC industry, brand performance, industrial brand image, buyer trust, industrial loyalty and commitment build brand equity.

Originality/value – Significant research reveals that, in business-to-business contexts, brand equity depends on the supplier's brand trust and attributes of the brand such as brand image and brand performance. While useful in guiding a supplier's or industry's brand strategy, the study of both brand trust and brand attributes has led to only a partial explanation of the supplier's or industry's brand equity. The present research explores industrial brand equity, focussing on tangible assets (performance) and intangible assets (brand image), and their joint consequences.

Keywords Brand image, Commitment, Brand loyalty, Brand performance, Brand equity, Corporate brand

Paper type Research paper

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1. Introduction

Business-to-business markets are evolving and transforming worldwide due to global economic and market changes (e.g. Beverland *et al.*, 2007; Hur *et al.*, 2014). Competitive pressure has increased and firms face challenges from domestic and international firms alike (Cretu and Brodie, 2007; Melewar and Nguyen, 2015). Technological advancements, high-capacity information exchange and new supply chain management models all fuel the changing competitive landscape (e.g. Davis *et al.*, 2008). In addition, the differentiation of business-to-business products is fading as firms return to compete merely on pricing (Hinterhuber, 2004) and personal relationships (Han and Sung, 2008), consequently, eroding profits (Keh and Xie, 2009). The various cost reduction measurements adopted by firms, such as low-cost production and technology, exacerbate the problem and create generic markets with little differentiation (e.g. Kotler and Pfoertsch, 2007).

Thus, as a result of stiff competition, these industrial manufacturers are turning to industrial brand building activities by adopting differentiation strategies (e.g. via company brand image and supplier reputation) in order to achieve a sustainable competitive advantage (Bendixen *et al.*, 2004). Managing brands is crucial for industrial manufacturers as they increase the industrial brand equity through: first, providing firms with cash flow benefits and increased network power (Beverland *et al.*, 2007); second, clarifying and strengthening the corporate or (industrial) brand's identity (Beverland *et al.*, 2007); and third, building brand equity through corporate brand image and corporate reputation (Chi-Shiun *et al.*, 2010; Cretu and Brodie, 2007). Such benefits have led to several scholarly research focussing on industrial brand equity and covering more intangible attributes such as brand image and corporate reputation (Davis *et al.*, 2008; Van Riel *et al.*, 2005).

Corporate (industrial) branding in the industrial branding/B2B context itself is still largely a new area (Chi-Shiun *et al.*, 2010; Leek and Christodoulides, 2011). While research exists regarding most of the sources of industrial brand equity (such as brand loyalty, perceived quality, brand awareness, brand associations and brand satisfaction), "trust with the company/brand," considered an important aspect of brand equity and an emotional brand aspect (Ambler, 1997), is somehow, with exception of Han and Sung's (2008) study, rather rarely explored (Ambler, 1997; Chaudhuri and Holbrook, 2001). Indeed, there are conflicting views as to whether trust should be studied as part of, or separate to the brand equity concept (Ambler, 1997). There exists vast research regarding trust in other scholarship of literature, such as in business relationships (seller-buyer), but somehow this stream of research is not connected to branding. As such, the importance of understanding brand-related attributes under which evaluations take place in the B2B context have also been under-researched (Leek and Christodoulides, 2011).

Therefore, in the present study, we explore business customers' perceptions toward industrial brand attributes by combining multiple branding aspects (rational and emotional) and their effects on the purchase decision making (repeat buying and long-term commitment). We develop a comprehensive model to examine the relationships between brand performance (tangible), industrial brand image (intangible) and trust (intangible) in relation to industrial buyers' loyalty and their long-term commitment with the brand. Using the industrial air-conditioning brands in Malaysia, with participants involved in the purchase decision making of industrial air-conditioning systems from the commercial building and industrial plant sub-segments (purchasers, engineers, consultants, etc.), we explore their perceptions and feelings about industrial brand attributes. The heating, ventilating and air-conditioning (HVAC) industry is particularly

interesting, as branding becomes an afterthought due to: first, businesses exhausting their financial resources paying for fleets and equipment in order to run their business, and thus prefer to maintain costs at the very minimum levels and second, the contractors experiencing difficulties in competing as little differentiation exists in the type of product they manufacture, with little chance of being unique (Antonelli, 2012). Hence, we frame our research question as follows:

RQ1. How do industrial brands' tangible- and intangible-attributes influence customers' brand perceptions and purchase decision making in the HVAC industry in Malaysia?

The study contributes to existing literature in the three ways: first, we show the relative influence of both the intangible and tangible brand attributes by combining three bodies of literature, namely, branding, buyer-seller relationship (relationship marketing) and trust in the B2B context. Second, we incorporate the trust construct and develop and test a comprehensive brand equity model more systematically, confirming that trust may be viewed as an integral part of brand equity. Third, we reveal a hierarchical relationship of both tangible and intangible equity sources and confirm trust as a fully mediating effect in our model between brand image, loyalty and commitment. Consequently, we posit that brand performance (tangible) and industrial brand image (intangible) are primary drivers of brand equity (trust, loyalty and commitment), making critical propositions on their direct and mediating relationships, and cultivating important implications for managers the HVAC industry.

The remainder of our paper is organized as follows: we first present a brief review on the literatures on industrial brands and industrial brand equity. In the subsequent section, we develop a theoretical hypothesized model and present our methodology. We then present our research results and discuss managerial and theoretical implications with suggestions for future studies.

2. Industrial brand equity: what it is, its antecedents and outcomes

Although the awareness of the role of branding in marketing operations is increasing among industrial marketers, the question of how industrial brand equity is achieved still remains (Chi-Shiun *et al.*, 2010). As this study explores the drivers and outcome of industrial brand equity, we first define what we mean by industrial brand equity.

Brand equity is a customer/buyer perception of the overall industrial brand image, created through brand associations (Bendixen *et al.*, 2004; Michell *et al.*, 2001). Brand associations can be derived from both tangible and intangible attributes and represent the sources of brand equity (Dacin and Brown, 2006; Keller, 2000). Furthermore, using Aaker's (1991) notion on brand equity, Gordon *et al.* (1993) propose that brand equity is a development process that includes five stages: brand birth; creation of brand awareness and associations; building quality and value perception; emergence of brand loyalty; and launching of brand extension. In their studies, they find that brand equity is more related to increased purchase frequency, higher quality perception, greater brand loyalty and increased brand extensibility. Thus, behavioral responses such as increasing purchase frequency and brand loyalty are included as part of, rather than outcomes of brand equity (Van Riel *et al.*, 2005).

Ambler (1997) puts forward another perspective of brand equity and suggests that brand equity is a measure of marketing performance that expresses financially, attitudinally or behaviorally outcomes. For example, an attitudinally expressed outcome relates to an overall attitude evaluation of, for instance, brand image and

brand trust, while behaviorally expressed equity relates to greater associations with the brand (e.g. commitment with the brand) as well as greater purchases and usage (brand loyalty) (Ambler, 1997; Han and Sung, 2008). According to Ambler (1997) and Han and Sung (2008), the brand equity models from the previous B2B branding research lack the integration of a crucial element, namely, those of brand trust as most studies explores the sources of industrial brand equity (see, Bendixen *et al.*, 2004; Chi-Shiun *et al.*, 2010; Mudambi, 2002; Mudambi *et al.*, 1997). However, there are some mixed perspectives on whether trust should be part of, or separate from the brand equity concept. These issues are explicitly explored in the present study.

Drawing from the above discussion, we define industrial brand equity as a process of two psychological components: attitude and behavioral. The process begins with attitude, that is, brand association, referring to the performance of the brand (a tangible attribute), which in turn, helps to explain how the customer perceives the overall industrial brand image (an intangible association). This will then lead to trusting the brand (overall attitude component) and subsequently, result in a behavioral component, either brand loyalty and/or customer commitment (Gordon *et al.*, 1993; Han and Sung, 2008; Van Riel *et al.*, 2005). Hence, the current study explores five main constructs of industrial brand equity: brand performance (tangible association); industrial brand image (intangible association); brand trust; brand loyalty; and customer commitment among the buyers in the HVAC industry. We now describe these constructs next and develop the hypotheses therein.

2.1 Brand performance and industrial brand image

As highlighted, industrial brand image, referring to the intangible association a customer has with the brand or industry, derives from the evaluation of the performance of the brand. Several studies have attempted to understand the interactions between both the tangible and intangible and the cognitive and affective aspects of brands; however, the hierarchical structure or causality between both elements remains unresolved and debatable (Agarwal and Malhotra, 2005; Franzen and Bouwman, 2001). According to Franzen and Bouwman (2001), in satisfaction studies, the relationship between both (cognitive and affect) may be a dual process. Most historic discussion of branding, customer behavior and psychology infer that the affective and emotional elements usually stem from cognitive evaluation (Franzen and Bouwman, 2001). In other words, the cognitive process takes place first, leading to an emotional or affective reaction. This in turn may lead to an overall attitude evaluation followed by behavior intention (loyalty) and subsequently, actual behavior.

Likewise *et al.* and De Chernatony (2002) explain that, "brand is a cluster of rational and emotional values that enable stakeholders to recognize a promise about a unique and welcome experience," and customers will generally assess an industrial brand in a hierarchical sequence: the rational values first, before proceeding to a higher level – the emotional values. This progression represents a hierarchical structure in a customer's brand knowledge (Da Silva and Syed Alwi, 2008). Additionally, Van Riel *et al.* (2005) and Bendixen *et al.* (2004) explain that, when choosing an industrial brand, the customers' initial concern is with the functional or rational values of the product or company and the brand image. Understanding how the rational attribute impacts on the overall brand image will be useful for a clear industrial brand positioning (Leek and Christodoulides, 2011). Thus, the study posits that:

H1. Brand performance has a direct effect on industrial brand image.

2.2 The effect of brand performance on brand trust, brand loyalty and commitment

Researchers started their exploration into industrial branding in the 1970s. Saunders and Watt (1979) studied the effectiveness of brand names in fiber products. Since then, most studies on industrial branding focus on product performance (Gordon *et al.*, 1993), characteristics (Hutton, 1997) and other tangible features of the products (Shaw *et al.*, 1989) such as usage and design (Mudambi *et al.*, 1997). In this study, brand performance encompasses the performance of industrial brand attributes (such as price, product and service quality, distribution and competence) that may explain an industrial brand image. Selnes (1993) suggests that a business-to-business purchase decision is often made by evaluating extrinsic cues such as price and packaging because intrinsic cues such as service or product quality are not available at the time of purchase. In the conventional business-to-business market, the product is thought to be the heart of a brand. Research shows that the product's physical presence strongly influences on the customers' experiences and how they perceive a brand (Dwyer *et al.*, 1987; Han and Sung, 2008). It is thus perceived that firms communicate brands by promoting the tangible attributes of a product. However, according to Keller (2008, p. 64), designing and delivering a product that fully satisfies customer needs and requirements are prerequisites for successful marketing, regardless of the product form.

Another important brand performance dimension is price. Price influences customers' purchase decision making and affects firms' profit margin in relation to sales (Lehman and Winer, 2005). Mudambi *et al.* (1997) show that buyers rate price as the most important factor affecting their purchase decision of industrial brands. They find that buyers estimate price to account for 70 percent of the final decision. Bendixen *et al.* (2004) show that price is an important factor that affects the brand equity of industrial products. Additionally, customer loyalty and commitment can only be preserved with trade discounts from suppliers of respective brands. Scholars view that global industrial markets such as HVAC are moving in this direction. As the market becomes increasingly sensitive to price, researchers and marketing strategists propose to rethink their approaches. They note that integrating brand concepts into the sales and marketing may overcome the focus on price. For example, Davis *et al.* (2008) points out that branding transforms a commodity to a differentiated and customer focussed product.

In the study of brand performance, Mudambi *et al.* (1997) created a pinwheel of brand value to customers. Their brand pinwheel consists of four performance components, namely: product, distribution services, support services and firm. These brand values are interrelated, revolve and merge together in operations, indicating the brand's overall performance. Drawing from this framework, in the present research, we examine these elements of brand performance indicators, notably, distribution, quality and competence. Our conceptual model is influenced by Mudambi *et al.*'s (1997) and Kuhn *et al.* 's (2008) frameworks on brand performance, Keller's (2008) work on customer-based brand equity, as well as Bendixen *et al.*'s (2004) study on tangible attributes in the industrial branding. According to Kuhn *et al.*'s (2008) and Keller's (2008) model, distribution, quality, competence and price comprise dimensions of brand performance. We, thus, hypothesize that price, distribution, product and service quality and competence are several factors that make up the industrial brand performance and thus correlate to brand equity (brand trust, brand loyalty and commitment).

The preceding section indicates that little attention has been paid to brand trust despite its relationship with brand equity (Ambler, 1997; Han and Sung, 2008). Trust is predicted as a significant contributor to positive attitudes and commitment to a certain brand, which support the success of relationship (Morgan and Hunt, 1994). Given that

brand performance is an antecedent of the overall attitude evaluation of brand trust and brand equity as highlighted earlier (Han and Sung, 2008; Kuhn *et al.*, 2008), we suggest, that these dimensions (i.e. price, distribution, product and service quality and competence), categorized under brand performance affect the sources of brand equity (brand trust, brand loyalty and commitment). Hence, it is hypothesized that:

H2a. Brand performance has a direct effect on brand trust.

H2b. Brand performance has a direct effect on brand loyalty.

H2c. Brand performance has a direct effect on customers' commitment.

2.3 The effect of industrial brand image on brand trust, brand loyalty and commitment

Researchers define brand image in numerous ways. Dobni and Zinkhan (1990) refer to brand image as the customer's mental picture of the offerings. Brand image also includes the symbolic meanings associated with the specific attributes of a product or service (Padgett and Allen, 1997). Various stimulants such as symbol, logo, firm name and slogans can bring the brand into the mind of the customer. Such memories represent the image of the brand in the heart of buyers and is called brand image (Aaker, 1991). For example, one of the specific attributes is the perceived brand quality (Cretu and Brodie, 2007), which denotes the customer's perception about the durability, reliability, strength and the build quality of the brand.

While certain rational or tangible attributes relate more to the performances of the brand, the emotional attributes relate to a higher or abstract level of the brand. This includes the corporate or industrial brand image (Balmer and Gray, 2003; Lynch and De Chernatony, 2004). For example, the corporate or industrial brand values may represent this abstraction, which is based on the overall (attitude) perception of the company (Stern *et al.*, 2001). Similarly, Stern *et al.* (2001) explain that in a corporation, institution or company, the image of a corporation refers to external world perceptions (or impressions that reside in stakeholder minds), which represent "gestalt" or the overall impressions of a brand. Although brand image can mean many different things – brand association, brand attitude, global total impression of memory and the symbolic meaning of a brand – it is commonly associated with the global total impression relating to the brand, which is stored in memory and which is shared by members of a culture or subculture (Franzen and Bouwman, 2001). This overall perception can relate to the service offered, reliability, innovativeness and brand trust/trustworthiness (Mudambi, 2002; Keller, 2008). Identifying the overall attitude or intangible aspect of the brand is crucial as this could then lead the firm in the B2B context to guide its brand positioning and sustainable differential advantage (Cretu and Brodie, 2007). Additionally, brand image concerns the emotional perception that the consumer attaches to specific brands (Low and Lamb, 2000).

Nevertheless, the over-reliance of previous studies on rational attributes alone does not fully explain the logic behind many business-to-business purchase decisions (e.g. Mudambi *et al.*, 1997). Thus, not only do tangible attributes like price and quality influence industrial buyers, but also the intangible features such as trust, brand association, supplier's image and reputation (Cretu and Brodie, 2007; Leek and Christodoulides, 2011).

In Keller's (2008) model, brand meaning consists of two elements: brand performance (tangible element) and brand image (intangible element). He proposes

that brand meaning leads to brand equity. Thus, in industrial branding, from a buyers' perspective, achieving industrial brand equity could rest upon several set of relationships: tangible and intangible brand attributes and behavioral outcomes. Brand equity can be acquired during the process of shaping the image of a brand (Cretu and Brodie, 2007), that is, a strong brand image is a strong driver of brand equity, here referred to increased brand trust, brand loyalty and commitment (Ambler, 1997; Davis *et al.*, 2008). Brand equity arising from brand image is even more critical in cases where product differentiation is difficult based on tangible features (Mudambi *et al.*, 1997). Strong customer orientation and emphasis on creating customer-valued innovation can enhance brand image (Aaker, 1996; Nguyen *et al.*, 2015). When these attributes integrate into the brand value proposition, and with effective communication, customers are more likely to purchase a brand. According to the commitment-trust theory (Morgan and Hunt, 1994), trust is key variable in the development of an enduring desire to maintain a long-term relationship with a brand, thus by not controlling the effect of the brand trust, it is possible to attribute excessive importance to satisfaction when developing a customer base committed to the brand (Han and Sung, 2008, p. 811). Therefore, based on the above discussion, we posit that:

H3a. Industrial brand image is positively related with brand trust.

H3b. Industrial brand image has a direct effect on brand loyalty.

H3c. Industrial brand image has a direct effect on customers' commitment.

2.4 Brand trust as a mediator construct between brand performance, industrial brand image and brand loyalty and commitment

In the B2B context, trusting the brand can arise from two different but related aspects: the brand performance, and the industrial brand image (overall attitude evaluation). Brand trust concerns the capability of a supplier (of a brand) to fulfill their promises and maintain consistency in product and service performance, and influences their brand loyalty and commitment. Being successful in fulfilling promises and maintaining performance consistency leads to the favorable behavior of the customers or buyers of a brand. This favorable behavior appears in the form of a high degree of belief in the brand (Han and Sung, 2008). Scholars consider that this favorable behavior appears in the form of a high degree of belief and trust in the brand (Morgan and Hunt, 1994). According to Temporal (2006) brand trust is a key dimension of brand equity, although others refer to trust as a separate concept (Ambler, 1997).

Trust appears when both the customer and brand anticipate a consistent level of performance and behavior from each other (Roberts and Merrilees, 2007). This is because a B2B purchase often carries a relatively high level of risk. It is more important that there is recognition by customers that they can rely upon the brand to perform the required task or job. Trust pertains to the customer's confidence and faith that the brand will be reliable and willing to act in the customer's interest (De Ruyter *et al.*, 2001). Therefore, customer trust is vital during the brand (or supplier) selection process (Heide and Weiss, 1995). Being a trusted partner will lead to the customers' commitment to a long-term relationship.

According to the commitment-trust theory (Morgan and Hunt, 1994), trust is the main variable in the development of an enduring desire to maintain a long-term

relationship with the brand. Many researchers recognize trust as a prerequisite to building customer commitment (Morgan and Hunt, 1994). Keh and Xie (2009) explain brand trust as a customer's overall perception toward the ability (i.e. skills and competencies of the trustee), benevolence (i.e. the extent to which a trustee is perceived as being willing to take the other party's interests into account when making decision) and integrity (i.e. the truster's belief that the trustee is honest and fulfills its promises) of a brand.

Another factor relating to industrial brand image results from the experience of the brand: from this experience, industrial buyers develop an overall brand perception (image) about the brand (the company or/and the product itself) (Dacin and Brown, 2006). In business-to-business marketing, customer experience and perception emerge as important indicators of trust. Dwyer *et al.* (1987) suggest that the purchase experience of a brand generates associations and feelings that are more certain (which will eventually turn into trust). Additionally, brand trust is generated not only via brand experience, but also from the intangible or emotional quality attributes (Temporal, 2006). The feeling of security and the willingness to trust a brand often perform as indicators to measure the emotional quality that will lead to brand trust.

While most sources of industrial brand equity are the subject of previous empirical research linking it to brand loyalty, perceived quality, brand awareness, brand associations and brand satisfaction (see, Chi-Shiun *et al.*, 2010; Cretu and Brodie, 2007; Van Riel *et al.*, 2005), "trust with the company/brand" however, which is also an important aspect of brand equity (Ambler, 1997), is somehow absent from these studies when concerned with the industrial branding context. Yet, it is argued that trust (an emotional brand aspect) should be seen as part of brand equity and not separate (e.g. Ambler, 1997) as it is a vital part of the brand-customer relationship and therefore brand equity. Dowling (1986) and Michell *et al.* (2001) point out that the company and its corporate and product brands may pertain to the brand equity's sources and help to enhance the "trust" and credibility of the corporate image and the firm's commitment to customers. Finally, industrial buyers are not subject to the influence of tangible attributes like price and quality (service and product), but also intangible elements such as trust, brand association, supplier reputation and brand image (Cretu and Brodie, 2007; Mudambi, 2002); however, these intangible attributes are under-researched historically (Chi-Shiun *et al.*, 2010; Leek and Christodoulides, 2011). Given the centrality of the brand trust concept between both brand associations (tangible and intangible associations) to the brand equity's outcome (such as brand loyalty and commitment) as discussed above, we develop a unifying, comprehensive framework, and thus posit that:

H4. Brand trust mediates the relationship between brand performance and loyalty.

H5. Brand trust mediates the relationship between brand performance and customer commitment.

H6. Brand trust mediates the relationship between the industrial brand image and brand loyalty.

H7. Brand trust mediates the relationship between industrial brand image and customer commitment.

The following model (Figure 1) diagrammatically explains the theoretical propositions for the current study.

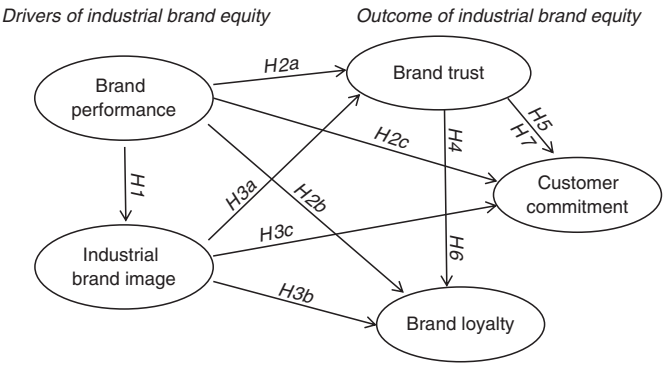


Figure 1.
Proposed conceptual model

3. Research methodology

3.1 The study's context and data collection

The study explores the industrial and business buyers of the HVAC industry in Malaysia. This context is of interest due to several reasons: first, HVAC businesses often deplete their financial resources by investing in fleets and equipment, and thus forced to position themselves as low-cost providers; second, the industry sector suffers from stiff competition; third, there is a lack of brand differentiation and unclear brand identity due to the nature of the HVAC industry, and as a result, the industry has unclear brand promise (Antonelli, 2012). In Malaysia, only four major players (or brands) dominate the industrial air-conditioning market, namely, Carrier, Trane, York and Dunham Bush. These major brands have manufacturing plants in Malaysia and distribute their products via their respective subsidiaries (formed for sales and marketing activities) or dealers. Incorporating industrial brand image and brand trust in this highly competitive industry is of great interest as the study hopes to shed some light onto how corporate/industrial brands are positioned as well as finding sources for brand differentiation.

We conducted data collection in two phases. In the first phase, we manually distributed questionnaires to the respondents by hand through a face-to-face/drop-off/pick-up method as proposed by Heslop *et al.* (1998). This technique combines many of the benefits of in-person and mail surveying while reducing the disadvantage of each and assuring relatively high-response rates (Heslop *et al.*, 1998). We obtained information regarding our respondents by contacting several main companies within the HVAC industry, requesting their cooperation and permission to contact their buyers/customers for our research purpose. We provided a detailed explanation on why we needed the data and in return offered to present the study's findings on request. Through these companies, we managed to obtain a list of business customers to whom we contacted with the companies' permission. Upon receiving consent from the respondents, arrangement was made to distribute the questionnaire at their office and later to collect. Most of the respondents were decision makers in their respective organizations; their roles included purchasing (22 percent), engineering for maintenance/facility for their companies (50 percent), design and consultation (37 percent) and project management (17 percent). With this method, we minimized problems such as those of non-response from respondents and the loss of documents during posting. Moreover, many respondents had the opportunity to complete the questionnaires on the spot or return the questionnaire within a week of receiving it.

The questionnaire was in English, which is widely spoken in Malaysia. Due to geographical coverage limitations, we limited the manual distribution of our questionnaires to the capital city – Klang Valley/Kuala Lumpur – itself. In terms of generalization, collecting information from the capital city is justified due to the high concentration of industrial buyers within this area (Cox, 2013). The first phase yielded 89 responses from 110 companies contacted, giving an 80.9 percent response rate.

However, since 89 samples are insufficient for reliable and consistent statistical analyses, we launched a second phase of data collection to complement the first phase. In this phase, we sent another batch of questionnaires (100 sets) to respondents from the list we had, however, this time to those outside of Kuala Lumpur from different categories via e-mail. The second phase of data collection yielded a lower response rate of only 23 percent. Many targeted respondents did not reply to the questionnaires, for various reasons: broken e-mail link; e-mail address no longer valid (due to resignation, change of e-mail address, etc.) and addressee did not respond to electronic questionnaires. To minimize the impact of the above-mentioned incidents, we followed up by contacting those respondents via telephone who did not return the questionnaires. As a result, we collected an additional 37 subjects, making a total of 126 industrial and business respondents from different backgrounds.

From this total of participants in the study, 33 were contractors and property developers (representing 5.5 percent from a total of 600 in the country), 19 were trading house (9.5 percent from a total of 200), 35 were consulting engineers (29.2 percent) and 39 were industrial plant and large commercial buyers. This number although slightly small is acceptable due to the unique group of respondent profile, who operates within the Malaysian HVAC industry. The group of respondents comprises a unique pool of customers that come from diverse business natures, representing decision makers from various segments: contractors, trading firms engineering consultants, project management and direct end-users. The respondents' business nature profiles are reported in Table I.

3.2 The measures

There are five main constructs under study: brand performance, industrial brand image, brand trust, brand loyalty and customer commitment. The study consulted the extant literature extensively for the purpose of generating the item measures for these constructs. The final research instrument was carefully pre-tested for content and face validity.

As conceptualized earlier, industrial brand equity can be expressed via attitude and behavioral elements. The attitudinal elements are represented by brand performance, industrial brand image and brand trust, and the behavioral aspects of the equity can be expressed through brand loyalty and customer commitment (Ambler, 1997). Brand performance was conceptualized earlier as comprising the tangible and functional and rational attributes, and to capture this, measures were developed from

Business nature	Frequency
Contractors/property developers	33
Trading house	19
Consulting engineers/design engineers	35
Industrial plant/large commercial buyers	39
Total	126

Table I.
Business nature of respondents' organization

Chi-Shiun *et al.* (2010), Cretu and Brodie (2007), Hinterhuber (2004), Liu *et al.* (2005) and Mudambi *et al.* (1997). The construct is represented by five dimensions, namely, competence of brand (supplier); distribution; product quality; service quality and price. Price is measured using an adapted five-scale item, as advocated by previous studies (Cretu and Brodie, 2007; Liu *et al.*, 2005). In total, brand performance is represented by five constructs, measured by 25 items. Industrial brand image was defined as an affective and emotional construct, representing the outcome of brand performance or overall attitude evaluation. This was consistent with those others academics (i.e. Franzen and Bouwman, 2001; Stern *et al.*, 2001) that distinguished the institutional, company or corporate brand image as more about the intangible or affective and emotional side of the brand rather than its functional or tangible aspects. Measures included a total of seven items, operationalized and adapted from Cretu and Brodie (2007), Davis *et al.* (2008) and Mudambi *et al.* (1997): perceived technical level of brand; perceived reliability of brand; perceived innovation of brand; perceived customer focus of brand; perceived product focus of brand; management of the brand; history and experience of the brand. Brand trust, which is the focal construct of the current study, refers to the supplier's (brand's) capability to fulfill their promises and maintain consistency in product and service performance, and is captured though trustworthiness; sense of security in buying this brand; being able to rely on this brand (see in particular, Han and Sung, 2008).

Finally, brand loyalty refers to "the degree to which a business-to-business buyer has repeatedly purchased a supplier's particular brand and customer commitment is about long term desire to maintain a valuable ongoing relationship with another" (Morgan and Hunt, 1994), The measures for these constructs comprise five and four items, respectively, based on previous conceptualizations and developed from Han and Sung (2008).

We collect data through means of a structured survey, and all construct dimensions and measurement items are measured using a seven-point Likert scale, ranging from "1 = Strongly disagree to 7 = Strongly agree." In total, we employed 45 items for the measurement of each construct. A detailed listing of each item and the source of these items are tabled in Table AI.

4. Data analysis and hypothesis testing

The study utilized a two-step SEM approach (Anderson and Gerbing, 1988), using the latest version of AMOS 20, by the default method – Maximum Likelihood – to test the measurement model's validity and reliability (in step 1) and the nomological validity of the proposed theoretical model (step 2). The study also executed an item parceling procedure (Bandalos and Finney, 2001) on the brand performance construct. Following a partial aggregation procedure (Bagozzi and Heatherton, 1994), items were combined to create five indicators per factor. For example, the research combined 25 items measuring five dimensions of brand performance (represented as a latent construct), namely, product quality, service quality, price, competence and distribution), by averaging, to create five indicators of brand performance. By employing this procedure, the number of variables is reduced and hence the model's degree of freedom is kept reasonable. Hence, instead of having a full total disaggregation method where it is necessary to individually estimate all constructs of brand performance (product quality, service quality, price, competence and distribution), we run them as partial aggregation (the summation of each construct's items) and represent it in the second order manner as proposed by Bagozzi and Heatherton (1994). The technique is beneficial in a study of small sample size, provides

a more stable parameter estimation and more importantly, it retains the idea of a single underlying factor such as the brand performance construct in the current study (Bagozzi and Heatherton, 1994). In addition to reducing random errors, the technique will also simplify a complex model and simultaneously maintain the concept of multiple indicator measurement (Garver and Mentzer, 1999). Prior to combining items, five items from the developed 25 in brand performance were deleted due to low or insignificant loadings that highly correlated with other items with high modification indexes (MI). West *et al.* (1995) caution researchers that before conducting the parceling procedure and items are combined, the validity and reliability must be dealt first, as "it must be conducted within a set of one-dimensional items to avoid obscure rather than clarify the factor structure of the data." Once the measurement model is acceptable, the analysis then proceeds to "the Step Two Approach" known as the full structural model.

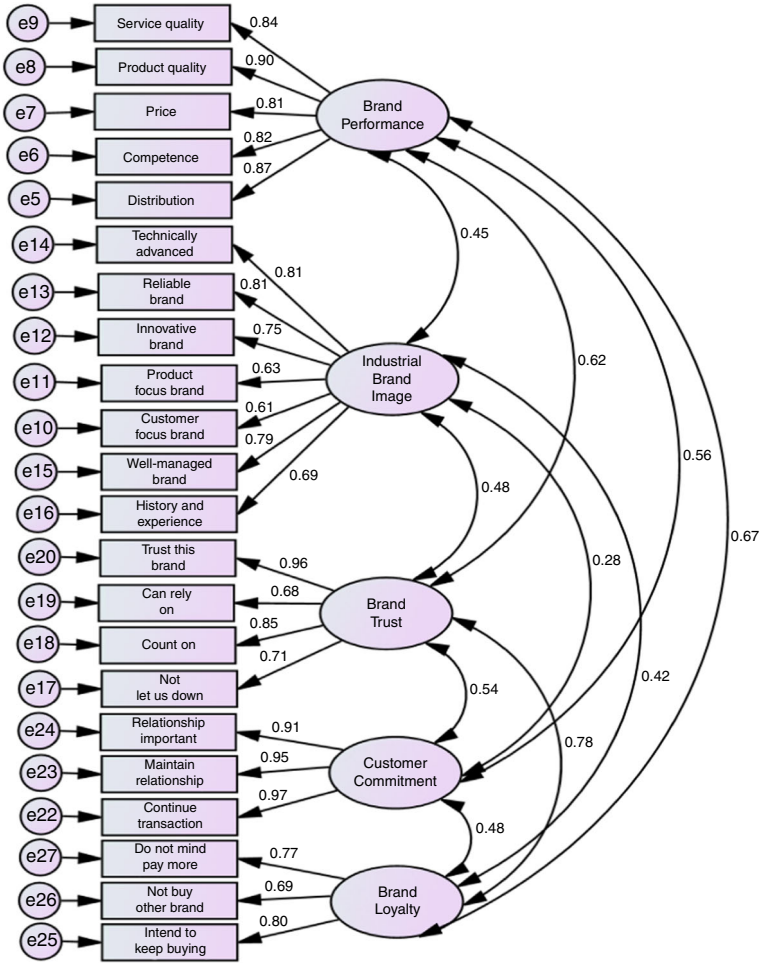
4.1 Step 1: the measurement model

The first order model ran all developed items together. Three further items (two from brand loyalty items with MI: 31.98 and 27.34, respectively) and (one from customer commitment item with MI: 29.56) were dropped from further analyses due to high MI, large standardized residuals (> 2.58) (Byrne, 2001) and cross-loading in more than one dimension (Long, 1983). The full measurement model (as in Figure 2) shows an acceptable fit at $\chi^2 = 372.111$, $p < 0.001$; $\chi^2/\text{df} = 1.879$; GFI = 0.802; IFI = 0.924; CFI = 0.922; RMSEA = 0.08, with all standardized loadings being > 0.5 and statistically significant at $p < 0.001$, which supports the convergent validity of each parameter estimate (Kline, 1998).

4.2 Step 2: the structural model

The concern in the step 2 approach is to test the study's theoretical models (as presented in Figure 1) as well as the hypotheses. The summary of the full model result with all direct and indirect effects is reported in Figure 3. The step 2 model indicates an acceptable fit ($\chi^2 = 372.111$, $p < 0.001$; $\chi^2/\text{df} = 1.89$; GFI = 0.801; IFI = 0.923; CFI = 0.921; RMSEA = 0.08), with no deletion of items. Convergent validity is supported in this study, with all parameter estimates > 0.5 (Kline, 1998), and all items statistically significant at $p < 0.001$ (Anderson and Gerbing, 1988). Construct reliability tests were performed using both composite and Cronbach's α and all are above the recommended level, as shown in Table II. The correlation (the covariance) among the constructs is also acceptably low, ranging from 0.28 to 0.78, and AVE $\geqslant 0.5$ (Fornell and Larcker, 1981) (see, Table II). Additionally, discriminant validity is confirmed for all latent constructs since the square root of each construct's AVEs are all greater than the bivariate correlation (coefficients ranges from 0.36 to 0.67, $p < 0.001$) (see, Table II). Cross-loadings between both measured and error terms also do not suffer from substantial cross-loadings, with standardized residuals all < 0.258 (Garver and Mentzer, 1999; Steenkamp and van Trijp, 1991). Thus, the assessment results support the adequacy of the discriminant validity of the measurement model.

The testing of all direct effects provided significant positive effects (*H1-H7*) excepting three parameters – *H3b*, (the effect of industrial brand image on brand loyalty), *H3c* (the effect of industrial brand image on customer commitment), and (the effect of brand loyalty on customer commitment) – thus, the study rejected these parameters. The study found both brand performance and industrial brand image to be statistically significant, however, explaining brand trust with brand performance as having the most effect ($\beta = 0.51$, $p = 0.000$ and $\beta = 0.25$, $p = 0.000$, respectively). Industrial brand image interestingly does

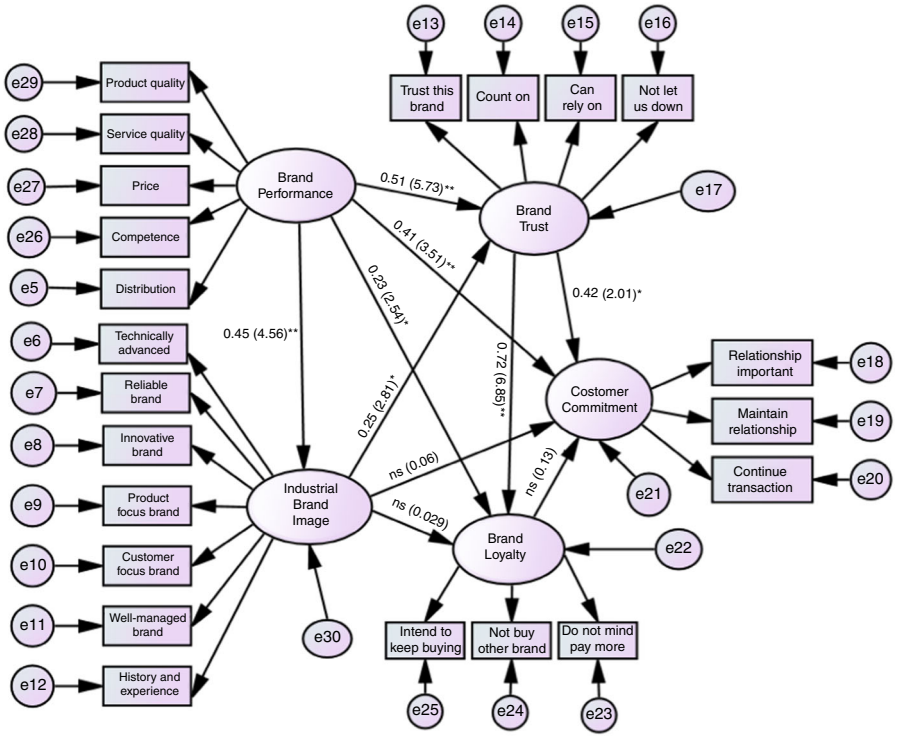


Note: All loadings were significant at $p < 0.001$

Figure 2.
Step 1: the measurement model

not directly affect brand loyalty ($\beta = 0.029$, $p = 0.76$) or customer commitment ($\beta = 0.06$, $p = 0.74$), but is mediated through brand trust ($\beta = 0.72$, $p = 0.000$). Brand performance also affects industrial brand image, ($\beta = 0.45$, $p = 0.000$).

To establish the mediation effects (*H4-H7*) as conceptualized earlier, the study tested all significant parameters using guidelines from: Kelloway (1995) for partial or full mediation conditions; Zhao *et al.* (2010) for indirect or direct effect conditions; and SEM's standardized indirect effect output. First, brand trust showed a complementary mediation (Zhao *et al.*, 2010) between brand performance on both brand loyalty and customer commitment, as both direct and indirect paths are significant. For example, brand performance → brand trust → brand loyalty revealed ($\beta = 0.51$, $\beta = 0.72$, $p = 0.000$ for indirect path) and ($\beta = 0.23$, $p = 0.000$ for the direct path) and brand performance → brand trust → customer commitment showed ($\beta = 0.51$, $\beta = 0.42$, $p = 0.000$ for indirect path) and the direct path ($\beta = 0.41$, $p = 0.000$), thus supporting *H4* and *H5*.



Notes: NS indicates insignificant loadings. *,**Significant at the $p<0.005$ and $p<0.001$ levels, respectively

Figure 3.
Step 2: the structural model with hypothesized parameter estimates

	Brand performance	Industrial brand image	Brand trust	Brand loyalty	Customer commitment	Composite reliability	Cronbach α	AVE
Brand performance	1	0.360**	0.541**	0.472**	0.567**	0.94	0.91	0.76
Industrial brand image	0.360**	1	0.425**	0.346**	0.335**	0.88	0.88	0.52
Brand trust	0.541**	0.425**	1	0.675**	0.656**	0.88	0.89	0.65
Brand loyalty	0.472**	0.346**	0.675**	1	0.569**	0.80	0.80	0.57
Customer commitment	0.567**	0.335**	0.656**	0.569**	1	0.96	0.86	0.89

Note: **Correlation is significant at the 0.01 level (two-tailed)

Table II.
Zero-order correlations, composite reliability, Cronbach's α and AVE

Whilst there is a complementary mediation effect for brand performance, for industrial brand image only indirect paths are significant. For example, industrial brand image shows a full mediation on both brand loyalty and customer commitment (via brand trust) because only indirect paths are significant (Zhao *et al.*, 2010). For example, industrial brand image → brand trust → brand loyalty ($\beta = 0.25$, $p = 0.000$ and $\beta = 0.72$, $p = 0.001$)

and ($\beta = 0.25$, $p = 0.000$ and $\beta = 0.42$, $p = 0.001$), while insignificant, occurs on the direct path between industrial brand image → brand loyalty ($\beta = 0.029$, $p = 0.76$) and industrial brand image → customer commitment ($\beta = 0.06$, $p = 0.74$).

Full mediation thus occurs on one parameter, namely, industrial brand image, while brand performance has both mediation effects (direct and indirect via brand trust). That is, first, brand performance will affect brand loyalty and customer commitment both directly or indirectly via brand trust; and second, industrial brand image will affect brand loyalty and customer commitment only via brand trust, thus *H6* and *H7* are supported, and *H3b* and *H3c* are not supported. Additionally, Zhao *et al.* (2010) emphasize that to determine the mediation, whether via regression or SEM, only indirect effects need to be significant (i.e. $a \times b$ is significant with c being insignificant), and full mediation occurs when the β coefficient nears zero or is insignificant concerning the direct effect between X and Y when m (mediation) is introduced. Second, the magnitude of the indirect effect is given by the product of the standardized coefficients of the paths linking the two variables (Bentler, 1995). Table III summarizes the hypotheses' results, the direct and indirect parameter estimates.

Constructs/hypotheses (testing direct and indirect effects)	Direct path estimates	p	Indirect path estimates	Hypothesis result
H1 Brand performance → industrial brand image	0.45	0.000		Supported
H2a Brand performance → brand trust	0.51	0.000		Supported
H2b Brand performance → brand loyalty	0.23	0.000		Supported
H2c Brand performance → customer commitment	0.41	0.000		Supported
H3a Industrial brand image → brand trust	0.25	0.001		Supported
H3b Industrial brand image → brand loyalty	0.029	0.766		Not supported
H3c Industrial brand image → customer commitment	0.06	0.744		Not supported
H4 Brand performance → brand trust → brand loyalty (indirect path)[a] *H2b* Brand performance → brand loyalty (direct path)[a]	0.23	0.000	Path 1: $\beta = 0.51$, $p = 0.000$ and Path 2: $\beta = 0.72$, $p = 0.000$	Supported
H5 Brand performance → brand trust → customer commitment (indirect path)[a] *H2c* Brand performance → customer commitment (direct path)[a]	0.41	0.000	Path 1: $\beta = 0.51$, $p = 0.000$ vs Path 2: $\beta = 0.42$, $p = 0.000$	Supported
H6 Industrial brand image → brand trust → brand loyalty (indirect path)[b] *H3b* Industrial brand image → brand loyalty (direct path)[b]	0.029	0.766	Path 1: $\beta = 0.25$, $p = 0.000$ vs Path 2: $\beta = 0.72$, $p = 0.000$	Supported
H7 Industrial brand image → brand trust → customer commitment (indirect path)[b] *H3c* Industrial brand image → customer commitment (direct path)[b]	0.06	0.744	Path 1: $\beta = 0.18$, $p = 0.000$ vs Path 2: $\beta = 0.76$, $p = 0.000$	Supported

Table III.
Hypotheses summary

Notes: [a]Complementary (or partially) mediated occurs as both direct and indirect paths are significant (Zhao *et al.*, 2010); [b]full mediation occurs as only indirect path is significant (Zhao *et al.*, 2010)

5. Discussion

5.1 Theoretical implications

This study has contributed to the literature in the following ways: first, the extant research was studied, and with the exploration of the effect of brand attributes on brand trust, loyalty and commitment, we combined three bodies of literature: branding, buyer-seller relationship (relationship marketing), and trust in the context of B2B. In this vein, we studied the relative influence of both the intangible and tangible brand attributes. Second, while prior research provides scarce empirical evidence to explain whether trust is an integral part of, or separate from brand equity (e.g. Ambler, 1997), we incorporated the trust construct and developed and tested a comprehensive brand equity model more systematically. We found that as customer commitment appeared as an outcome of brand equity and can be derived from the behavior of trust and loyalty. Third, the study revealed a hierarchical relationship of both tangible and intangible equity sources and confirmed two fully mediating effects in the model, namely, with brand trust as a mediator between industrial brand image, brand loyalty and commitment.

First, a key finding in this paper is that both tangible and intangible components appear to be equally important in explaining brand trust, however, the tangible aspect – brand performance – appears to explain even more. So, although industrial brand image is not a necessary condition for buyers' commitment, due to the insignificant relationship found herein, through brand trust, the industrial brand equity has been explained. Brand performance, referring to product and service quality, price, distribution and competence, is a clear touch point for differentiation and helps to explain the brand values including industrial brand image. We thus confirm that business-to-business purchase decision making is a rational process, where customers are less influenced by emotions (e.g. Bendixen *et al.*, 2004), extending the previous single dimensional approach that only explained a partial impact. By examining both brand associations in a comprehensive model, the study has helped to clarify industrial brand equity leading to clearer strategic corporate (industrial) brand positioning (Abratt and Kleyn, 2012; Chi-Shiun *et al.*, 2010).

For example, innovation, competence and technical advancement are associated with HVAC, and featuring these elements will help firms find a source of brand differentiation in their branding strategies within this context. Featuring both intangible attributes (quality, reliability and performance) (Bendixen *et al.*, 2004) and intangible attributes (trustworthiness and expertise and corporate reputation) (Mudambi *et al.*, 1997) associate the firm as "being a world class brand, technical leadership with a global presence" (Mudambi *et al.*, 1997), and can thus all help to contribute toward a successful differentiation strategy (Leek and Christodoulides, 2011). This is particularly important in a situation of stiff price competition. Lynch and De Chernatony (2004) recommends, for example, that B2B marketers establish their own brand identities and associate the brand with superior service. Additionally, Davis *et al.* (2008) explain, with reference to the B2B electrical type industry, that product brand tends to confuse the customer; instead, promoting a brand using a manufacturer's image could be a better, more profitable strategy. Many firms should therefore portray a clear and distinctive image among their corporate customers as this enables those customers to recognize them easily. Such branding efforts should be of strategic value as they maintain sustainability, counter competitive pressure and create competitive advantage (Roberts and Merrilees, 2007).

Second, this study has provided empirical evidence to support the conceptual notion of Ambler's (1997) work to integrate trust as the key relational variable in the brand equity construct. It was confirmed in the present context that trust may be viewed as an integral part of brand equity, and considered as vital in improving the customer-brand relationship (Han and Sung, 2008; Selnes, 1993). The theoretical model identified brand trust as a very important mediator to explain behavioral response (brand loyalty and customer commitment), and the inclusion of brand trust has appeared useful, particularly when identifying which element should be emphasized during industrial brand positioning in the industrial context. Both brand attributes – brand performance and industrial brand image – drive brand trust with brand performance demonstrating the strongest effect. Trust is thus integral to brand equity, and part of the buyer-seller relationship, as previously suggested by Ambler (1997). While there are already a few B2B industrial brand equity studies, they are mostly exploratory and limited in their generalizability (Leek and Christodoulides, 2011; Chi-Shiun *et al.*, 2010). Thus, the study verifies the role trust in the B2B sector and its importance to brand equity (Chi-Shiun *et al.*, 2010).

Third, the study's findings offer some insight into which brand attribute is considered to be more important in an industrial context, and simultaneously helps to address the issue concerning which emotional component to emphasize on when designing marketing strategies for industrial businesses. The current study has not only integrated the dimensions of brand performance and industrial brand image in a single model; it has also tested this model in two different ways, namely, with the effect on brand trust (including dimensions that explain brand trust), and the hierarchical/sequence effect between rational (cognitive) and affect (emotional). The study's framework on hierarchical effect has drawn from several scholars from consumer behavior, brand psychology theories (Agarwal and Malhotra, 2005; Franzen and Bouwman, 2001) and antecedents and outcomes of corporate branding (Abratt and Kleyn, 2012; da Silva and Syed Alwi, 2008). While these scholars stress on the need to investigate the hierarchical effect on corporate brands (e.g. De Chernatony, 2002), the empirical result of testing these theoretical relationships in the corporate brand area has been limited, with most of the works' focus remaining conceptual in nature or as theoretical discussions. One of the key findings of this study is that industrial brand image is in fact the "outcome" of brand performance (Lynch and De Chernatony, 2004). For example, product and service quality may possibly explain why both the innovative, technically advanced and reliable brand emerges, and the customer focussed brand, while product quality, competence and effective distribution strategies may explain the way in which customers evaluate how reliable, experienced and well managed the brand is.

Finally, this study has extended the industrial sample into engineers, service businesses and contractors. Van Riel *et al.* (2005) explain that research is needed on the determinants of industrial brand equity for a broad range of industrial markets and different samples, not limited to merely engineers. Thus, this research has broadened the sampling scope by incorporating not only engineers but also other relevant and important segments. The study also explored industrial brands at a corporate brand level by incorporating elements of industrial brand image. In addition, within the limited extant B2B brand equity research, most works investigate the Western context (with the exception of Chi-Shiun *et al.*, 2010), making their generalization to Asian buying context doubtful. Additionally, Balmer and Liao (2007) explain that corporate brand differs geographically, as the degree of importance attached to corporate

branding varies as much between countries as it does between institutions; while Van Riel *et al.* (2005) points out that different types of brand possess specific or different types of equity, thus the industrial brand equity developed in this study is an example of another context relative to the existing work on corporate brand or product brand equity.

5.2 Managerial implications

For managers, it is important to understand the nature of industrial brands and the elements influencing them. Decision makers for business-to-business purchases are always rational, suggesting that functional benefits are always the main consideration for purchase decision making. Our research has confirmed this explanation by demonstrating that brand performance and price are more influential than brand image. Therefore, we suggest that marketing strategies for industrial brands shall be built around the functional benefits. Industrial brand equity is essential to guide effective industrial brand positioning and to increase the brand equity. As finding the unique feature of HVAC has been challenging, studying industrial brand equity by looking at both tangible and intangible attributes and relating it to brand trust, brand loyalty and commitment has shed light onto how long-term point of differentiation is achieved to ensure the corporate or industrial brand equity of the organization with its stakeholders (Hatch and Schultz, 2009; Rowley, 2004).

For example, the framework developed in this study helps the industrial brand to position itself at two different levels: at the product level, emphasizing on price and product quality, and at the corporate (industrial) level, featuring the competence, innovativeness and reliability of the brand. This is particularly relevant when buyers emphasize that trusting the brand is about a brand's or supplier's promises relating to values such as reliability and trustworthiness. Michell *et al.* (2001) explain that brands can be viewed as the promise to a customer from a firm's members of the firm's standard. Most industrial branding portrays the brand at product level, and thus cannot address issues at the corporate brand level, where it is necessary to utilize a more abstract brand values such as brand image and brand trust to address issues pertaining to many groups of customers/stakeholders (Balmer and Gray, 2003). Industrial brand image is particularly useful in the HVAC context. As Keller (2000, p. 124) further explains, "the intangible corporate (industrial) image associations may provide valuable sources of brand equity and could serve as critical points-of-difference in terms of positioning with respect to competitive offers." As a result, a strong brand image may enable firm to charge premium prices, possess lower price elasticity, and provide a barrier to competition that can be difficult to imitate and extend a brand's life (Michell *et al.*, 2001).

Managers must, however, not forget the complementary roles of intangible attributes in industrial branding. Integrating emotive elements into the marketing plan will help boost business-to-business brands, and the study highlights the key role of trust in all aspects of industrial brand building, which seemingly combines varying rational and emotional influencers, considered important toward achieving a favorable buyer response. Carrier, one of the industrial air-conditioning system manufacturers under study, has successfully combined brand performance and brand image into its marketing campaign. Apart from promoting its products as performance products, Carrier also emphasizes the communication of its industrial experience and history with customers. In addition, managers should pay more attention to the effect brought about by price. Past research shows that price is an important element in brand and

will affect the brand position of products. For example, Hinterhuber (2004) suggests that price is a cue of perceived quality for business-to-business products. Therefore, we suggest that price shall always be included in the strategic planning of business-to-business products and industrial brands, yet combined and balanced with other branding attributes and associations explored in the present study. Effective brand-price positioning is proven to be beneficial to firms and extra revenue brought by proper pricing may be used to reinforce the brand image and brand performance (Walley *et al.*, 2007).

6. Conclusion and future research directions

The findings of this research provide insights to management personnel, system manufacturers and suppliers. Effective tactical approaches and brand strategies can be formulated via the information available from our research. Based on our framework, we report brand performance as the main generator of brand equity, while industrial brand image has little impact on brand equity. We also find brand trust is a strong mediator variable between both brand performance and industrial brand image, with brand loyalty and customer commitment. Although industrial brand image may not play a direct role as regards behavioral response, the construct is vital as, together with brand performance, it shapes brand trust.

We acknowledge some limitations in our research. These limitations must be overcome to improve the accuracy and validity in the interpretation of this study. The first limitation is related to the geographical distribution of respondents. Most of the respondents work for firms based in Selangor, Kuala Lumpur, Penang and Johor Bahru. Although most of the important respondents come from these states, it is better to have geographically diversified respondents. Hence, the results may not be comprehensive enough to generalize to the whole industry. Therefore, increasing sampling to respondents from other states will increase the accuracy of the research. Second, there are many factors that can influence the importance of brand in the HVAC industry. However, only a few factors were selected based on the results of the pre-research interviews with several industrial HVAC system buyers. Their opinion only represents a fraction of the HVAC system buyers in the market. Some important factors may be missing in this research. Therefore, this research still has room for improvement and a more comprehensive research to be done.

Further study is strongly recommended to examine the influence of brand performance elements individually (product quality, price, service quality, distribution and competence) as this is outside the scope of the current study. Additionally, we note that the study on brand image typically focusses on the customer's perception of a product. Firms are now moving toward corporate branding, where brand management is centered on the corporate image rather than individual image of the product. Hence, the corporate image will be given equal attention in future research.

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Appendix

Construct	Item	Source
Brand performance		
Product quality	Reliable brand	Van Riel *et al.* (2005)
	Durable brand	Mudambi *et al.* (1997)
	Brand is consistent in quality	
	The brand is synonym to high-quality product in overall	
Service quality	Satisfied with technical support	Cretu and Brodie (2007)
	Level of skill/expertise	Mudambi *et al.* (1997)
	Professional and helpful brand	
	Responsive to problem	
	Excellent service quality	
Price	Worth for what is paid for	Han and Sung (2008)
	Value for money	Liu *et al.* (2005)
	Reasonable price	Hinterhuber (2004)
	Great deal/discounted	
	Will pay more for the brand	
Competence	Tells exactly what product(s) will be supplied	Han and Sung (2008)
	Prompt and correct delivery	
	High-quality products	
	Invests time and energy in R&D	
	Excellent supply management	
	Understand (client) needs	
Distribution	Convenient for customers to order	Mudambi *et al.* (1997)
	Available when needed	
	Able to meet (client) delivery request (lead time, delivery methods, etc.)	
	Able to offer distribution channel(s) (buy direct, through dealer, etc.)	
	Reliable distribution	
Industrial brand image	Technically advanced brand	Chi-Shiun *et al.* (2010)
	Reliable brand	Davis *et al.* (2008)
	Innovative brand	Cretu and Brodie (2007)
	Product-focus brand	Mudambi *et al.* (1997)
	Customer-focus brand	
	Well-managed brand	
	Rich in history and experience	
Brand trust	Trustworthy	Han and Sung (2008)
	Can count on	Delgado-Ballester and Munuera-Alemán (2001)
	Reliable	
	Will not let down	Garbarino and Johnson (1999)
Brand loyalty	Intend to keep buying the brand	Han and Sung (2008)
	Will not buy other brand despite other brand(s) are having trade promotions	Van Riel *et al.* (2005)
	Do not mind to pay more to buy the brand	
	Will defend the brand from negative comment	

(*continued*)

Table AI. The survey constructs and items

Construct	Item	Source
	Will recommend the brand to others who cannot decide which brand to buy	
Customer commitment	Maintain committed in maintaining relationship with the brand	Han and Sung (2008)
	Feel that the relationship with the brand is important	Van Riel *et al.* (2005)
	Plan to maintain relationship with the brand	
	Have intention to continue transaction in the industrial market with the brand	

Table AI.

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