CONSUMER PERCEIVED BRAND INNOVATIVENESS:

CONCEPTUALIZATION AND OPERATIONALIZATION

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ABSTRACT

Purpose: This paper aims to examine brand innovativeness. While innovativeness has been studied at the product and firm levels, there is little research at the brand level. This article argues for why this is needed, develops a conceptualization of consumer perceived brand innovativeness (CPBI) from a theoretical perspective, and then develops and validates a measure for CPBI.

Design/methodology: Three qualitative studies were conducted to generate an enriched and more detailed understanding of what brand innovativeness means to consumers. Data were collected using free association and open-ended elicitation techniques. Next, a CPBI scale was developed and validated in three quantitative studies.

Findings: The results indicate that innovative brands are related with several interesting core and secondary associations that have not been adequately addressed in previous research. CPBI is conceptualized as a unidimensional construct. Altogether six studies show that the proposed CPBI measure is valid and reliable.

Originality/value: The present study is the first to identify the limitations of product and firm innovativeness conceptualizations with regards to brand innovativeness. It develops a unique and theoretically supported conceptualization and operationalization of consumer perceived brand innovativeness. The first brand concept map for the concept of innovative brands is presented. The results of the studies indicate the measure's ability to successfully predict important consumer behavior variables such as purchase intentions, and to demonstrate superior predictive performance compared with a key related scale in the mobile phone category.

Keywords: Brand innovativeness, Consumer perceived brand innovativeness, Brand concept map and Scale development

Article classification: Research paper

INTRODUCTION

Firms invest significant resources in marketing programs to enhance innovativeness because innovativeness leads to growth and profitability (Aaker, 2007). Moreover, successful innovations (e.g., Apple iPod, iPhone, iPad) can help a firm create an image of market leadership and establish entry barriers for competitors (Srinivasan *et al.*, 2002). Researchers have also argued that *consumer* perceived innovativeness might develop sustainable competitive advantage for firms (Danneels and Kleinschmidt, 2001). However, many companies' new offerings fail within the first three years of innovation introduction (Wilke and Sorvillo, 2005) at an average cost of around US$15 million for each such offering (Steenkamp *et al.*, 1999). Considering these high estimates, clever firms must seek viable opportunities to maximize potential success in terms of a higher level of innovation adoption.

The present research proposes that in many cases a firm's success depends on how consumers perceive its *brand*(s) as offering innovations rather than the mere product attributes of the innovation. For example, both HTC and Samsung use the same cutting-edge technology of Android operating software in their smart phones and they have been hardly different in terms of objective product innovation (e.g., features and functions) (Williams, 2012). Yet, Samsung smart phones are proposed to be more innovative than those of HTC's (Einhorn and Arndt, 2010). It seems that there is another potential level of perceived innovativeness that consumers associate with *brand* names rather than product innovations.

Although the strategic impact of branding theory is duly recognized in the marketing literature (cf., Aaker, 1991; Keller, 1993), it is rarely treated extensively in the innovativeness literature. Established conceptualizations of perceived innovativeness from the consumer perspective, such as product innovativeness (Calantone *et al.*, 2006) and firm innovativeness (Kunz *et al.*, 2011) are limited in their ability to explain how consumers perceive innovativeness at the brand level. Moreover, the majority of the conceptualization and operationalization of perceived innovativeness relies on the managerial perspective (e.g., Lee and O'Connor, 2003; McNally *et al.*, 2010). Such lack of consideration of the consumer perspective is at odds with the current marketing practice that emphasizes the role of the consumer's perceptions in the success of innovations (e.g., Hanna, 2012).

Therefore, the central argument of the present study is that in order to have a more complete picture of consumers' innovativeness perceptions, it is essential to incorporate a branding perspective (Aaker, 1991; Keller, 1993) to the study of innovativeness. To be successful in positioning as an innovative brand, managers need to first understand how

consumers perceive innovativeness at the brand level - what we will formally call here *consumer perceived brand innovativeness* or CPBI for short and second, how to measure CPBI. While recent research begins to consider consumer perceived innovativeness at the brand level (Eisingerich and Rubera, 2010), we argue that the research confounds the notion of product innovativeness and brand innovativeness, not recognizing that the concept of brand is different and broader than the concept of product. As a result the only currently available brand innovativeness scale from the consumer's perspective does not provide a comprehensive operationalization of what brand innovativeness means for consumers. Hence, the present study specifically examines two key research questions, mainly in the mobile phone category. The paper starts with the basic question: *How do consumers perceive innovativeness at the brand level?* It then moves on to operationalizing CPBI by answering the question; *how can consumer perceived brand innovativeness be measured?*

The main contribution of this research is to develop the first theoretical framework on which to base branding and innovation interactions (as called for by Di Benedetto, 2012) by applying branding principles to innovation theory (Rogers, 2003), while simultaneously contributing to branding theory (Aaker, 1991; Keller, 1993) by applying the concept of innovativeness from the consumer perspective. The following section provides a review of the key findings in the literature on consumer perceived innovativeness. The discussion delineates the shortcomings of the current conceptualizations and operationalization of perceived innovativeness at the product, firm and brand levels.

LITERATURE REVIEW

There is relative agreement among marketing and innovation researchers that innovation is an outcome of firm activity (e.g. goods and services) (Crawford and Di Benedetto, 2011; Kunz *et al.*, 2011). An innovation is "an idea, practice, or object which is perceived as new by the individuals or other units of adoption" (Rogers, 2003, p. 11). It may be "a recombination of old ideas, a schema that challenges the present order, a formula, or a unique approach" (Van de Ven, 1986, p. 591). Depending on the basic need (utilitarian/ affective) that is meant to be served, innovations could be categorized as symbolic (e.g., fashion products such as Gucci sunglasses) or technological ones (e.g., iPod) (Hirschman, 1982). While technological innovations are centered in a product's tangible features, a symbolic innovation communicates a new social meaning (Dell'Era and Verganti, 2011).

However, the current literature on innovation diffusion does not provide a consensus on the exact meaning of innovativeness. There are two levels of conceptualization of innovativeness based on whether the subject of perception is the outcome of the firm (goods and services) or the firm itself. While the former is referred to as product innovativeness, the latter is labeled as organizational- or firm innovativeness. Both levels of conceptualization have been examined from the perspective of managers (e.g., Atuahene-Gima 1996) and consumers (e.g., Kunz *et al.*, 2011). *Consumer* perceived innovativeness is a very important brand association that positively affects consumer evaluations of products (Brown and Dacin, 1997) and firms (Aaker, 2007). Therefore, the present study takes a consumer-centric approach to the conceptualization of perceived innovativeness at the brand level.

1- Consumer Perceived *Product* Innovativeness

From the consumer's perspective, product innovativeness has been defined along two broad dimensions: (1) the classical notion of newness (novelty) defined in terms of the relative difference between new and previous offerings (Garcia and Calantone, 2002) and (2) meaningfulness (value, usefulness, utility or advantage) which is the degree to which any new offering is also perceived as appropriate and useful by consumers (Rubera *et al.*, 2011).

The theory of diffusion of innovations (Rogers, 1962) has been widely used to conceptualize product innovativeness from a consumer perspective (e.g., McNally *et al.*, 2010). Technology-driven innovation is the fundamental characteristic of this theory to the extent that the words innovation and technology are synonymous (Rogers, 1962, p. 12; Rogers, 2003, p.13). Although Rogers' definition of technology is broader than merely product characteristics, the conceptualization and operationalization of consumer perceived innovativeness at the product level in prior studies has typically focused on technological innovation in terms of product features and functionality (cf., Danneels and Kleinschmidt, 2001; Atuahene-Gima, 1995; Lee and O'Connor, 2003; McNally *et al.*, 2010).

However, innovations may be adopted for either their cutting-edge technological features, their symbolic meanings that they convey to consumers or both (Dell'Era and Verganti, 2011). For instance, in the smart tablets market (e.g., Samsung's Galaxy Tab, ASUS Transformer, HTC's Flyer, Blackberry's Playback and Apple's iPad), the battle is mainly between Apple and Android. Surprisingly, it seems that the winner is Android, when it comes to product innovativeness and technological innovations from the perspective of technology experts (Raphael, 2010). From the more everyday consumer's perspective however, the iPad is still rated among top innovations around the world (McCracken, 2010)

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and Apple remains synonymous with innovativeness. It seems that the Apple brand has a special advantage regarding perceived innovativeness that could overcome the objective technology battle. Apple has its own language to appear innovative. It successfully utilizes both technology and non-technology drivers to create the image of innovativeness for its brand. Hence, the broader conceptualization of innovativeness at the brand level allows for a more complete picture of innovation adoption by emphasizing not only the product features and technology but also the special meaning that a brand signals to the market in order to create the image of innovativeness. Brands can use innovation language (e.g., color, feel and look, logo, design and brand name properties) to signal a specific meaning such as innovativeness (e.g., Verganti, 2008).

The above limitations of perceived innovativeness conceptualizations at the product level lead to another major limitation with the current research regarding the operationalization of consumer perceived product innovativeness. While acknowledging the necessity of the consumer's perspective, most previous studies (e.g. Calantone *et al*., 2006; Garcia and Calantone, 2002; Atuahene-Gima, 1995; Lee and O'Connor, 2003) assume that the consumer's perception of innovativeness is a single or multiple product judgment. Indeed, the majority of studies measure product innovativeness for the most recent new products launched in the market. For example, the results of a recent meta-review (Arts *et al*., 2011) of 77 studies in the innovation adoption literature between 1970-mid 2007 show that over 60% of the studies have focused on analyzing a single innovation and only 10% of the studies examined more than five different innovations. However, consumers' perceptions of new offerings are not simply a snap shot of the new launched product without any brand context because innovations are launched under their parent brand's name. Consumers (consciously or unconsciously) also use their brand knowledge in making judgments about innovativeness. For example, in terms of product features, the iPhone 6 represents only a minor increment from the iPhone 5s in terms of technological advancement; however, thanks to the name "Apple" all new Apple branded products are widely perceived to be innovative.

Finally, the majority of studies that examine consumer perceived product innovativeness, investigate consumer perceptions through managers' self-reported scales (e.g. Calantone *et al*., 2006; Atuahene-Gima, 1995, 1996; Lee and O'Connor, 2003; MacNally *et al*., 2010), although a few others take a slightly improved approach and validate managers' responses using a convenience sample of consumers (e.g. Sethi *et al*., 2001). This is inconsistent with the large body of literature emphasizing the importance of consumers' perceptions and the perceptual mismatch between managers and consumers (e.g. Danneels

and Kleinschmidt, 2001). In fact, "it is the characteristic of a new product not as seen by experts but as perceived by the potential adopter that really matters" (Rogers, 1962, p. 123).

2- Consumer Perceived *Firm* Innovativeness

From a consumer's perspective, firm innovativeness has been conceptualized from a long term perspective and defined as "a consumer's perception of an enduring firm capability that results in novel, creative, and impactful ideas and solutions for the market" (Kunz *et al.*, 2011, p. 817). Firm innovativeness, from the consumer's perspective, is viewed as the product of years of successful innovative tracks in the consumer's mind, which takes time to create (Henard and Dacin, 2010). This image creating approach is also suggested by other studies (e.g., Cowart *et al.*, 2008), emphasizing the usefulness of innovativeness image creation as a strategic tool that companies can apply to facilitate the diffusion of innovations. The few available conceptualizations of firm innovativeness from a consumer's perspective (e.g., Henard and Dacin, 2010; Kunz *et al.*, 2011) are closer to our branding perspective on perceived innovativeness. However, the main assumption that consumers' judgment of innovativeness is about firms, is one key difference underlying these studies.

While consumers may be familiar with firm (company) brands such as Apple or Sony, most consumers would have trouble identifying the products such as Oral-B, Tylenol and Dettol with companies that actually own them (i.e., Procter and Gamble, Johnson and Johnson, Reckitt Benckiser). Moreover, company brands may not be perceived at the same level of innovativeness for all of their product categories. For example, BMW is perceived as more innovative than Suzuki in the car category. However, in different product categories in which two brands compete, this may be different (e.g. BMW vs. Suzuki motorcycles). Hence, brand innovativeness can provide more precise information within and between product categories. Furthermore, it would be helpful for company brands such as Samsung to capture the innovativeness level of each of its smart phone brands that may contribute to brand innovativeness of the brand Samsung (e.g., Galaxy, Nexus or Omnia).

3- Consumer Perceived *Brand* Innovativeness (CPBI)

The term brand innovativeness has recently been introduced in the perceived innovativeness literatures. One of the first attempts to conceptualize the construct is offered by Quellet (2006) as "consumers' perceptions about a brand's tendency to engage in and support new ideas, novelty, experimentation, and creative processes" (p.312). However, it is not clear what the difference is between new ideas and novelty. Furthermore, the author does not clarify what is meant by experimentation in their definition.

Eisingerich and Rubera (2010) argue that consumers reciprocate with brands that view them as being focused on their needs. They conceptualize brand innovativeness as "the extent to which consumers perceive brands as being able to provide new and useful solutions to their needs" (p. 66). However, there are two main limitations in their proposed conceptualization of brand innovativeness. Firstly, they take a *product* level perspective to the notion of brand by narrowing the definition to product newness and usefulness. Secondly, under this definition, the innovativeness perception is dependent on a brand's capability to satisfy "their [consumers'] needs". Consumers may still have innovativeness-related associations for a focal brand, although they do not need its offerings. For example, people may not need a Google driverless car system, but they would still recognize this as an innovation. Their study is praised for developing the first brand innovativeness scale from consumers' perspective, but we believe there are conceptual and empirical limitations[1].

Finally and drawing on signaling theory (Spence, 1974), Henard and Dacin (2010) explore the notion of perceived innovativeness at the corporate brand level by conceptualizing *corporate reputation for product innovation* (RPI) as a "constituent-specific perception of a firm's track record of product innovations, degree of creativity, and potential for continued innovative activity in the future" (p. 321). The current study adapts the above definition for consumer perceived brand innovativeness and defines the construct as "*consumers*' perception of a *brand*'s track record of product innovations, degree of creativity, and potential for continued innovative activity in the future *in a given market*". An innovative brand needs to be concerned with its target market. A brand could be perceived as an innovative one by a group of consumers and simultaneously may not be associated with innovativeness by another target market.

Consumer perceived brand innovativeness is a subjective assessment based on the consumer's perception. CPBI could result from technological and/or symbolic innovations. It could result from really new offerings (e.g. breakthroughs and cutting-edge offerings), extensions, new product features, and new marketing communications. To build up consumers' perceptions of innovativeness, the characteristics and behaviors of brands should

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[1] A preliminary study (*n* = 163; product categories: mobile phones and shoes) was conducted to examine the dimensionality, reliability and scale sensitivity of Eisingerich and Rubera's brand innovativeness scale. In sum, two problems were detected with their proposed scale: Negatively worded items loaded on one dimension and positive worded items loaded on the second dimension, which can be attributed to the wording redundancy that is known to threaten the dimensionality of a measure (Netemeyer *et al.*, 2003). In addition, the scale performance appeared to be product category specific. While the scale worked for shoes, it was not sensitive enough to distinguish between highly and less innovative brand names in the mobile phone category.

be stable over time (Brown and Dacin, 1997) and consistent with such an image. The innovative efforts and offerings of a brand should be on a "continuous basis" (Eisingerich and Rubera, 2010, p. 66) and with a "historical consistency of action" (Henard and Dacin, 2010, p. 322). Customer perceived brand innovativeness is usually the outcome of years of demonstrated competence that takes time to create. To further elaborate the adapted definition for brand innovativeness, the theoretical foundations of the above conceptualization are discussed in the following section.

THEORETICAL FOUNDATION

In order to incorporate a branding perspective to the notion of innovativeness, the present study builds partly on signaling theory (Spence, 1974) and mainly on the associative network model of memory (Anderson, 1983).

Signaling Theory

CPBI can act as a signal to consumers. According to signaling theory (Spence, 1974), firms possess tangible as well as other intangible attributes (e.g., brand innovativeness) that are subject to manipulation. Most product markets are associated with the imperfect and asymmetric information state that leads to consumer uncertainty about brands and their attributes (Stiglitz, 1987). Consumer uncertainty leads to consumer perceived risk because consumers cannot readily evaluate the product quality (Robertson *et al*., 1984). In these markets brands can serve as signals of product positions and convey information about product attributes and consequently reduce the consumer perceived risk (Erdem and Swait, 2004).

Information asymmetries are likely to also exist among consumers of innovative brands in a new product marketplace. Within the context of this research, CPBI is viewed as an intangible company asset that is subject to manipulation (via signaling) by the company. Given that the marketplace is inherently uncertain, a promotion of brand innovativeness serves as a signal to potentially influence consumers' behavior (Henard and Dacin, 2010; Stock, 2011).

However, there are two underlying limitations for signaling theory that lead to an incomplete picture for conceptualizing CPBI. First, signaling literature largely draws on information economics in which consumers are assumed to be rational decision-makers that make trade-off decisions to adopt the brand's offering (e.g., an innovation) by considering two factors; namely, expected utility and perceived risk (Stiglitz, 1987). However, recent

studies report that the innovation adoption process could be emotion generating (hedonic) and independent from the net of utilities (Wood and Moreau, 2006). In fact, innovativeness excites consumers and is associated with surprise (Haberland and Dacin, 1992).

Second, although signaling theory is useful to demonstrate the strategic role of CPBI as a firm's signal and its possible effects on consumers' behavior, this theory is not capable of incorporating the meaning of brand innovativeness in the minds of consumers, which is the primary goal of the present study. Thus, although the adapted definition of the CPBI concept is originally based on signaling theory (refer to Henard and Dacin's (2010) conceptualization of corporate reputation for product innovation), the full conceptualization of CPBI encompasses both rational and emotional dimensions in the present study. To draw a more complete picture of CPBI, we also build on the associative network model of memory.

The Associative Network Model of Memory

The associative network model of memory (Anderson, 1983) has been used in marketing to explain the structure of memory (Krishnan, 1996) and to represent the organization of a brand in human memory (John *et al*., 2006). This model will be used to argue how innovative brands are represented in memory and processed by consumers. The associative network model views semantic memory or knowledge as a cognitive system, consisting of a set of nodes and associative links. These nodes are pieces of information such as brand names that become connected via associative links with varying degrees of strength (Krishnan, 1996). Thus a brand is a collection of associations (Keller, 1993). When information about an item is retrieved, the activation of the concept representing that item is increased, and activation spreads through the network, enhancing the activation of other nearby concepts (Anderson, 1983). The amount of activation is purported to be a function of the strength of associative links, or distance between nodes (Krishnan, 1996).

Consistent with the associative network memory model, brand knowledge consists of a brand node in consumers' memory with a variety of associations that are linked to it. For example, the brand node "Samsung" can have an association with the node "innovativeness", such that each entity becomes part of the other's association set. The strength of the link between "Samsung" and "innovativeness" provides the opportunity for node activation. If the node "Samsung" is activated and "Samsung" is strongly associated with "innovativeness", then the node "innovativeness" in the context of Samsung is likely to be activated in the consumer's mind. This activation process may operate in the reverse direction.

Powerful brands (e.g., a highly innovative brand) have richer associative networks with stronger linkages between the brand node and other nodes. According to the associative network memory model, innovativeness would act as an additional node in memory which is associated with a brand node. These links in memory, such as the links between innovativeness and a brand, can vary in strength of association. Multiple associations for a brand make it easier to locate the brand node in consumers' mind (Aaker, 1991). Moreover, for a highly innovative brand, nodes such as innovativeness, novelty, forward-looking and up-to-date (Eisingerich and Rubera, 2010; Kunz *et al.*, 2011) are more strongly linked to the brand name and collectively help bring up the brand name when the consumer thinks about innovativeness.

For example, one of the most recent innovations in the automobile market is the introduction of hybrid automobiles. Interestingly, while Honda actually launched the first product innovation in this market, Toyota (under the brand name of Toyota Prius) was successful in creating the image of market leader for hybrid innovations. One explanation for this success could refer to Toyota's rich innovativeness-related association network over its history with strong linkages between Toyota (i.e., brand node) and newness, creativity, innovation and extended car line in the consumer's mind. Consumers may consider Toyota cars more related to innovativeness than Honda cars.

Finally, brand associations can be classified into two major categories of *performance* such as style and design (i.e., meeting consumers' functional needs) and *imagery* such as personality and values (i.e., meeting consumers' psychological and social needs) (Keller, 2008). Strong, favorable and unique associations help to produce feelings for brands (Keller, 1993; 2008).

As argued earlier, a highly innovative brand will likely have richer associative networks with stronger linkages between the innovative brand and other nodes. Consider IKEA as a highly innovative brand in the furniture industry in terms of the design and style of its products (*performance* associations). The brand node of "IKEA" is strongly associated to the node "design". Furthermore, most innovative brands will likely have the "excitement" personality (*imagery* associations) in the consumers' mind and are strongly associated to daring, spirited, imaginative and up-to-date (Aaker, 1997). These strong and favorable associations for an innovative brand may produce feelings of fun and excitement for consumers.

METHOD

Six studies were conducted in two successive phases: exploratory and then scaling investigations. In phase 1, exploratory studies 1 to 3 address the first research question: how do consumers perceive innovativeness at the brand level? These qualitative studies were aimed at determining how consumers define brand innovativeness and the characteristics they associate with it. Then, a CPBI measurement scale is developed and validated in phase 2. Scaling studies 4 to 6 address the second research question; how can consumer perceived brand innovativeness be measured?

1- Participants

Six different convenience samples of students were recruited for studies 1 to 6. The samples were collected at a large, cosmopolitan Australian university. Students have been found to exhibit similar cognitive processing mechanisms to the wider population (Anderson, 1981).

2- Data Gathering and Analytical Approaches

2-1- Phase 1. Exploratory Studies 1-3

To ensure that (i) both explicit and implicit innovative brand knowledge (Koll *et al*., 2010) are retrieved and (ii) a more comprehensive concept map for CPBI is produced, two complementary methods including free association (Nelson *et al*., 2000) and open-ended elicitation techniques (Netemeyer *et al*., 1995) were used.

Study 1- Free association tasks study

This study was aimed at eliciting innovativeness-related associations at the brand level. Free association is the most powerful method to profile brand associations (Keller, 1993), which focuses on retrieving easily accessible verbal associations from semantic memory (Krishnan, 1996). The method asks informants to produce the first words to come to mind that are related in a specified way to a presented stimulus (e.g., brand name) (Nelson *et al*., 2000). Brand innovativeness was the stimulus in this study. Participants ($n = 100$, 53% female) were asked to list up to three words that come to mind when they think of an innovative brand. Two PhD students (major in marketing) independently coded all innovative brand associations. They used one code for each association consumers elicited. All disagreements were then resolved through discussion with one of the authors. For a given word to be considered as a brand association, it needs to be retrieved at least two times (Nelson *et al*., 2000). The most important brand associations can be identified using frequency analysis to assess saliency (Creswell, 1998).

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Study 2- Brand concept mapping (BCM) study

In order to expand the results from study 1, this study was aimed at identifying core and secondary innovativeness-related associations at the brand level and how the associations are *connected* to each other in the consumer's mind. The data were collected using an open-ended elicitation procedure (e.g., Eisingerich and Rubera, 2010) and allows consumers to retrieve deeper and more explicit brand knowledge at their own discretion.

Another convenience sample of university students ($n = 103$, 56% female) was asked to write the name of a brand [product category] (e.g., Samsung TVs) that they consider as an innovative brand [product category] and then write their thoughts about the nominated brand [product category] with reference to the following questions; "what comes to your mind when you think about an innovative brand [product category]? ," "how would you describe an innovative brand [product category]?" and "why do you think some brands are more innovative than other brands in a specific product category?" Question wording was carefully adapted from the innovativeness literature (e.g., Eisingerich and Rubera, 2010; Kunz *et al*., 2011; Quellet, 2006). For example, while the firm innovativeness literature (Kunz *et al*., 2011) has used the wording "give reasons why these companies are innovative in your opinion", we put emphasis on brand names in a specific product category.

Data ($n = 103$) were thematically analyzed. The analysis constitutes aggregate (across-informant) brand knowledge. In order to reduce the potential effect of coders associated with manual content analysis techniques, computer-generated methods of coding were applied. Specifically, Leximancer software was used. The Leximancer software provides a method for transforming natural language into semantic patterns in an unsupervised manner (Smith, 2003). The technique has been found to provide valid and reliable concept mapping results (e.g., Smith and Humphreys, 2006).

Study 3- Validation study

This study was aimed at validating the results from studies 1 and 2 by cuing the respondents with *brand names rather than innovativeness as the stimulus*. By applying this technique, we examined if the previously identified innovativeness related associations could be extracted without reminding the consumers about innovativeness. The free association technique was used. Participants ($n = 82$, 60 % male) were randomly assigned to one of the three versions of the questionnaire, with five different brand names included in each version (15 brand names in total). To choose the brand names, results from the BCM study were used. Each version of the questionnaire included two sections, following procedures described by Nelson *et al*., (2000). In section 1, respondents read through a column of

different words, in which innovative brand names were interspersed among unrelated words (e.g., ocean, golf, and etc.). Respondents were asked to write the first word that came to their mind in response to each given word. In section 2 of the questionnaire, five innovative brands were included along with their logos. Respondents were asked to write the first four words that came to their mind for each of the brands.

2-2- Phase 2. Scaling Studies 4-6

Based on the procedures proposed by Churchill (1979) and Netemeyer *et al.*, (2003), a CPBI measurement scale was developed in studies 4 to 6.

Study 4. Scale purification and refinement

After a careful consideration for the item generation process (see Analysis and Results section for details), the factor structure of the proposed 10-item CPBI scale was examined in study 4. Following conventional exploratory factor analysis (EFA), confirmatory factor analysis (CFA) using AMOS 21 was performed on the proposed CPBI scale to determine the fit of the measurement model. Theoretical considerations as well as model fit indices guided the analysis of the data ($n = 300$, 60% female) and the evaluation of the model fit. Following Bagozzi and Yi (2012), the RMSEA and SRMS (about 0.08 or less), TLI and CFI (above 0.95) values used to assess the model fit.

Study 5. Discriminant validity

The discriminant validity of the CPBI scale vis-a-vis related constructs (product and firm innovativeness) was tested using a sample of 255 university students (55% female). Following procedures recommended by Bagozzi *et al.* (1991) a series of CFAs were conducted. For each pair of constructs in the measurement model, we tested whether a two-factor model would fit better than a single factor model. The chi-square difference test exhibiting a probability < 0.05 was employed. If the two-factor model provides significantly better fit than the one-factor (constrained) model then discriminant validity is supported.

Study 6. Nomological, predictive and comparative validities

Another sample of 150 university students (57% female) was used to establish nomological, predictive and comparative validities of the proposed CPBI scale. To test nomological validity, inter-factor correlations were calculated between the CPBI and CPPI dimensions and brand attitude. A series of bivariate regression analyses were then conducted on the pooled data to test for predictive validity. The comparative validity of the CPBI scale was assessed by comparing the predictive ability of the measure relative to Eisingerich and Rubera (2010)'s four-item scale of brand innovativeness.

ANALYSIS AND RESULTS

Phase 1. Exploratory Studies 1-3

Study 1- Free association tasks study

The results of the frequency analysis (see Table 1) indicate that innovative brands are related to creativity, uniqueness, newness, popularity, quality, usefulness, different, forward thinking, technology and surprise. Moreover, innovative brands are related to several unexpected and surprising associations (e.g., design, simplicity, fun, color, fashion, stylish, clever, customization and flamboyant) that have not been adequately captured in the current perceived innovativeness conceptualizations and operationalizations at the firm and the product levels.

Table 1. Results of word association tasks study (n = 100)

F*	Key Innovativeness-related Associations at the brand level					
25	creative					
20	unique	new				
10	popular	design	quality	convenient-simple		
7	fun	useful	different			
4	functions	forward thinking	wow-surprise	technology	attractive	
3	interesting	exciting	fashion	stylish	first in the market	
	value	clever, smart	color	improving	adaptive	superior
2	special	identifies needs of consumers	new ideas	new concept	cutting edge	reputation	features
	customer services	tasty	recognizable	expensive	new product	customization	impressive
	revolutions	user-friendly	flamboyant			

Note: * Frequency of the association when the two coders' categorizations were similar for the nominated association

However, by focusing on conscious brand knowledge, the above technique is not capable of providing insight into implicit brand knowledge (Koll *et al*., 2010). Also, listing the innovativeness related associations would be of less value without considering the relationships between these associations in consumers' minds. Therefore, to gain a deeper understanding about the associations identified from the free association tasks study, a brand concept mapping (BCM) study was also conducted.

Study 2- Brand concept mapping (BCM) study

Participants named Adidas shoes, Apple iPhone, BMW cars, Channel fashion, Coca Cola soft drinks, Ebay online shopping, Facebook social media, Google search engine, Nike shoes, Samsung smart phones, Sony TVs, Toyota cars, and Virgin mobile services as innovative brands [product category]. The results of the text analysis are presented in Figure

1 and Table 2. The results present a brand concept map (John *et al*., 2006) which is a network of innovativeness related brand associations. A brand concept map could be considered an approximate representation for how brand associations are organized in the consumer mind consistent with the associative network memory model of Anderson (1983). The brand concept map identified the associations that are linked directly or indirectly (through other associations) to the brand and which associations are grouped together. As it is illustrated in Figure 1 innovativeness is related to nine core (e.g., ideas) and nine secondary (e.g., fresh) associations. Core (black nodes) associations are directly linked to brand innovativeness. Secondary (green nodes) associations are indirectly linked to brand innovativeness.
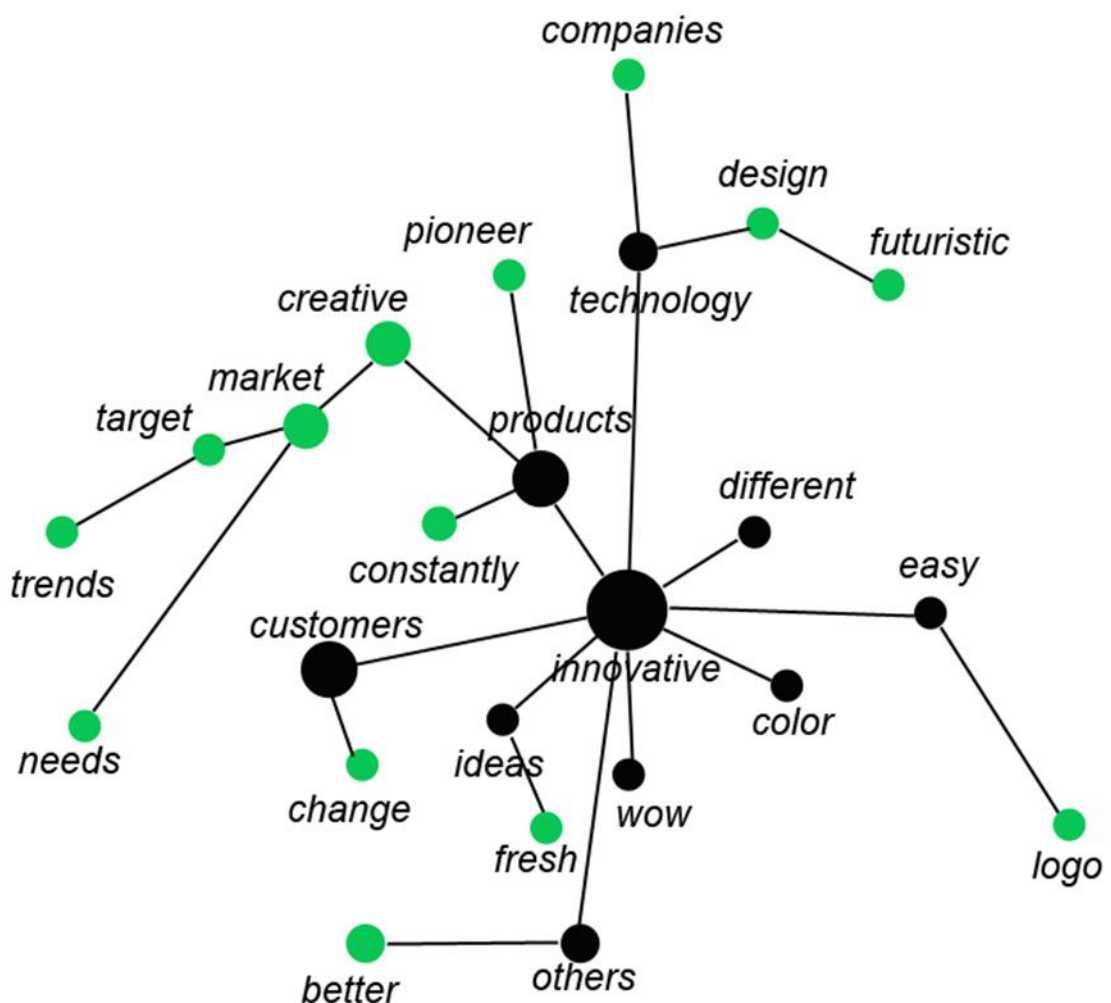

Figure 1. Innovative brand concept map (n = 103)

Black nodes: core associations, Green nodes: secondary associations

Table 2. Results of BCM study (n = 103)

Core and secondary innovativeness-related associations			
Core	**Related Secondary**	**Core**	**Related Secondary**
ideas *(19)**	fresh	different *(26)*	
other *(44)*	better	technology *(26)*	design, companies
wow (surprise) *(2)*		products *(98)*	pioneer, creative, constantly
color *(3)*		customers *(60)*	change
easy *(9)*	logo		

Note: *Co-occurrence of the core associations with the node "innovative" is reported in parentheses.

To read the map we start from a core association, for example, "idea" and its connected secondary associations (i.e., fresh and creative) and keep reading counterclockwise to reach the same place in the map consistent with the previous studies (John *et al.*, 2006). To facilitate readability the findings from the map is back up with relevant responses from participants. The concept map suggests that:

An innovative brand is associated with fresh ideas. The following account, of respondent 69, illustrates the importance of fresh ideas. *"An innovative brand is one which keeps continually creating new and fresh ideas"* (Respondent 69). Also, an innovative brand is perceived to be better than others. For example, the first respondent believes that: *"Samsung recently did well for the smart phone sales and services. It is better than Apple as well because it just beat iPhone 4 by getting the title the best smart phone in 2011"* (Respondent 1).

An innovative brand surprises consumers and makes them feel "wow" as it is described by respondent 89: *"Innovative brands have the 'wow' factor that sets them apart from their competitors and makes it so they can be branded as the best"* (Respondent 89). As stated before innovative brands have strong associations with excitement, being imaginative (Aaker, 1997), distinctiveness, sophistication, and more of a status symbol (Alpert and Kamins, 1995).

An innovative brand considers the importance of color and logo in its brand elements (aesthetics), such that it *"stands out from others,* [is] *catchy, easy to say, sick colors,* [and] *has a logo you want to look at…"* (Respondent 84; "sick" in the Urban Dictionary sense of "crazy, cool, insane"). Aesthetic considerations such as size, shape, materials and color have been stressed as performance associations in the literature (Keller, 2008). These associations which are grouped as design-related attributes (Keller, 2008; Verganti, 2008) are becoming more relevant to innovation consumption research as discussed by Dell'Era and Verganti (2011). Design is also reaped as a secondary association connected to technology and futuristic associations. It seems that innovative brands pay attention to detail in their new products' designs and their offerings may look futuristic: *"When I think about an innovative brand,* [the] *first few words that come to my mind are the fancy design, high technology as well as a human friendly product"* (Respondent 36).

It is unique and different: *"An innovative brand is one that will stick in my mind by being different"* (Respondent 16). Prior research found that consumers generally viewed these brands as more distinctive (Alpert and Kamins, 1995).

In addition, as the BCM shows innovative brands may have strong associations with performance associations. The technology of a new product is an essential product-related attribute (Keller, 1993). An innovative brand uses advanced technologies as it is explained in the following account: *"Innovation is the application of new technology. Therefore it is important to see the visibility of this application"* (Respondent 38).

Furthermore, innovative brands constantly improve and offer creative products which contribute to their leadership: *"An innovative brand is brave as it introduces something new to the market, becomes a leader in their field and leads the rest of the market by continuously innovating and changing their product"* (Respondent 37). In this comment brand innovativeness is also linked to being brave, daring and up-to-date behaviors which are acknowledged as personality associations in prior studies (Aaker, 1997). Finally, it is also mentioned to be related to willingness to change and dynamic behavior (Kunz et al., 2011): *"When I think of an innovative brand, I think of one that is dynamic and willing to change itself to meet the needs of the consumer rather than trying to convince a consumer to buy a product"* (Respondent 24).

The findings also confirm the results of study 1 regarding the existence of some interesting core and secondary associations that are currently absent in the conceptualization and operationalization of innovativeness at the product and firm levels (e.g., color, design and surprise). Furthermore, respondents' writings about innovative brands were found useful in the item pool generation process of the CPBI measurement. However, the directness of the design of the questionnaires in studies 1 and 2 could be seen as leading to and effectively priming innovation responses (though we do not see that as a problem because even if primed their responses are natural and not directed to specific associations). Therefore, to further validate our findings, we examined the cuing effect in the opposite direction in study 3.

Study 3- Validation study

Results of the frequency analysis support the previous findings from studies 1 and 2. Almost half of the innovativeness-related associations (20 out of 43 associations) that had been listed in studies 1 and 2 were identified by respondents in the validation study. Because of indirect cuing effects, this list of elicited associations was not as rich as those from the previous two studies. Results are presented in Table 3. The expected associations (e.g., innovative, technology) as well as the surprising associations are produced (e.g., design, simplicity, fun, fashion, stylish and color).

Table 3. Results of validation study (n = 82)

F*	Key Innovativeness-related Associations at the brand level			
22	innovative			
18	expensive			
15	fashion	fast		
14	quality			
11	popular			
10	technology	color	luxury	
8	fun			
7	design	useful		
5	wow/surprise	reliable	creative	new
4	stylish	feeling	strong	prestige
3	simple			
2	unique	cool	value	

*Note: * Frequency excluding product category names (e.g., cars, mobiles, bags)*

Consistent with the results of literature review and the proposed conceptualization for the CPBI construct theorized in the previous section, the findings of the above exploratory studies provide further evidence to consider CPBI as a related but distinct concept from product or firm innovativeness concepts (see Discussion and Conclusion section for more details). Building on the findings of the exploratory studies, scaling studies will now examine how to operationalise CPBI.

Phase 2. CPBI Scale Development

Item generation and content validation

Following established guidelines for measure development (e.g., Netemeyer *et al.*, 2003), a total set of 30 items was generated. This item pool originates from the review of the literature on consumer perceived innovativeness at the product (e.g., Dell'Era and Verganti, 2011), firm (e.g., Kunz *et al.*, 2011) and brand (Eisingerich and Rubera, 2010) levels, consumer innovativeness (e.g., Goldsmith and Hofacker, 1991) as well as the results of the exploratory studies in phase 1. In addition, using a deductive approach, two expert judges were asked to suggest additional items based on the conceptual definition of CPBI (Netemeyer *et al.*, 2003). This process developed a complete range and set of relevant items of the consumer perceived brand innovativeness phenomenon.

In order to assess the content validity of the identified items, three expert judges (marketing faculty members) and two PhD students were provided with the definition of

CPBI. The judges were asked to pay attention to content validity and representativeness. When two or more judges deemed an item not to be representative, the item was deleted. Also, some items were reworded to address the judges' comments. This procedure yielded 19 remaining items. Examples of non-representative items deleted from the item pool are "It is not complicated to use [brand name]'s [product category name]" and "[Brand name] always consider product customization as an important factor".

In a second step, content validity of the items was further established by having two practitioners (sales managers) review the generated items' relevance and adequacy with respect to what was intended to be measured. The appropriateness of the included items was confirmed by the practitioners. Finally, an informal pretest was conducted to assess how the generated items worked in an empirical setting. Fifteen consumers participating in a pilot study were asked to rate their current mobile phone on the item pool. After the completion of the task, the researcher used the debriefing approach (see Hunt *et al.,* 1982) to ask respondents about the clarity and readability of the questions. The overall feedback obtained from consumers was positive. Only one item was found to be problematic ([Brand name] makes new smart phones with unusual colors) and thus eliminated. The resulting 18-item pool was retained for further (quantitative) analysis.

Selection of product category and brand names

We selected the mobile phone category which (a) offers variation in innovativeness, (b) has several well-established brands available to consumers and (c) has personal relevance for the young sample used. We identified mobile phone brand names that were perceived to be of high and low perceived innovativeness using a pre-test. A convenience sample of university students ($n = 75$) and non-student adults ($n = 25$) were asked to name their three most and three least innovative mobile phone brands. The results of frequency analysis indicate that participants consider iPhone ($n = 103$), Samsung ($n = 98$) and HTC ($n = 40$) as the most innovative mobile phone brands and Nokia ($n = 73$), Motorola ($n = 39$) and BlackBerry ($n = 28$) as the least innovative mobile phone brands. These brand names were used in the main study.

Measure development and validation
Study 4. Scale purification and refinement

A sample of 300 university students (60% female) filled out a questionnaire relating to one of the six brand names in the mobile phone category (Apple: $n = 75$, Samsung: $n = 57$; HTC: $n = 30$; Nokia: $n = 49$; Motorola: $n = 51$ and BlackBerry: $n = 38$). Participants were

free to choose which brand they would prefer to answer questions about, based upon how knowledgeable or familiar they felt with the chosen brand. Respondents rated the 18 CPBI items on a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree). Preliminary analysis of the data was carefully conducted. The data were checked and there were no major departures from the assumptions required for use of Maximum Likelihood estimation (e.g., independence of observations, multicollinearity, homoscedasticity and normality).

First a series of exploratory factor analyses (EFAs) was conducted on the pool of items (n = 18). The KMO coefficient of sampling adequacy was 0.97 and significant. Maximum Likelihood analysis (direct oblimin rotation) yields a one factor structure (eigenvalue value > 1) corresponding to the uni-dimensional conceptualization of CPBI. Furthermore, the evaluation of the number of factors was qualitatively confirmed from the scree plot that was generated. Items that load higher than 0.60 are retained, resulting in a 10 item pool for CPBI. The one-factor solution explained 61% of the common variance in the items. The coefficient alpha estimate of internal consistency was comfortably high (α = 0.95).

A series of confirmatory factor analyses (CFAs) on CPBI scale was subsequently performed (see Table 4). The overall fit statistics of the final CFA model was satisfactory (χ^2 [34] = 113.930, p < 0.001; NFI = 0.956; CFI = 0.968; TLI = 0.958; RMSEA = 0.079; SRMR = 0.028) with all fit indices above and within the recommended cut-offs. All factor loadings were positive (0.74–0.85) and highly significant (p < 0.001). Squared multiple correlations for each item were also well above the recommended benchmark of 0.50 (Fornell and Larcker, 1981), ranging from 0.55 to 0.74. Finally, none of the absolute standardized residual covariance values were greater than 2.58 (see Table 4).

Table 4 CPBI final scale items (n = 300)

Items	Estimates*	t-value	Factor loading	Squared multiple correlations
1. [Brand name] sets itself apart from the rest when it comes to mobile phones.	1.17	14.79	0.74	0.55
2. With regard to mobile phones, [brand name] is dynamic.	1.25	17.69	0.84	0.70
3. [Brand name] is a cutting-edge mobile phone brand.	1.32	17.32	0.83	0.68
4. [Brand name] mobile phones make me feel "Wow!"	1.38	18.12	0.85	0.72
5. [Brand name] launches new mobile phones and creates market trends all the time.	1.42	17.76	0.84	0.70
6. [Brand name] is an innovative brand when it comes to mobile phones.	1.39	18.54	0.86	0.74
7. [Brand name] makes new mobile phones with superior design.	1.37	17.73	0.84	0.70
8. With regard to mobile phones, [brand name] constantly generates new ideas.	1.26	16.97	0.81	0.66
9. [Brand name] is a new product leader in the mobile phone market.	1.41	16.57	0.80	0.64
10. [Brand name] has changed the market with its mobile phones.	1.42	15.62	0.77	0.59

*Note: * significant at $p < 0.001$*

Study 5. Discriminant validity

Participants (student sample, $n = 255$, 55% female) again were asked to choose and fill out one of the six survey instruments (Apple: $n = 71$, Samsung: $n = 53$; HTC: $n = 24$; Nokia: $n = 48$; Motorola: $n = 29$ and BlackBerry: $n = 30$). They completed the CPBI scale and also scales measuring CPPI (including two dimensions of new product newness and new product meaningfulness) and consumer perceived firm innovativeness. Specifically, new product newness and meaningfulness were measured using a 10-item semantic differential scale ($\alpha = 0.92$) from Andrews and Smith (1996), which has been adapted in previous studies (e.g., Sethi *et al.,* 2001). CPFI was measured using a seven-item seven-point Likert scale ($\alpha = 0.93$) of Kunz *et al.* (2011).

Similar to the procedures explained in study 4, the data were checked and there were no major departures from the assumptions required for use of Maximum Likelihood estimation. To check the stability of the scale, EFA and CFA analyses were conducted. Results supported the proposed uni-dimensional 10-item measurement for CPBI. All factor loadings were positive (0.78–0.88) and highly significant (p < 0.001). Next, chi-square difference tests indicated that, in all cases, the fit for the two-factor model was significantly

better than the fit for the single factor model ($\Delta df = 1$; $p < 0.001$), providing support for discriminant validity (see Table 5) .

Table 5. CFA results for discriminant validity (n = 255)

Factors	Two-factor model		One-factor model			
	χ^2	df	χ^2	df	$\Delta\chi^2$	Δdf
CPBI & CPPI-N	482.915	118	715.759	119	232.844	1*
CPBI & CPPI-M	199.847	64	365.937	65	166.090	1*
CPBI & CPFI	338.889	118	1416.353	119	1077.464	1*

*Notes: *p < 0.001*. CPBI = Consumer perceived brand innovativeness; CPPI-N = Consumer perceived product innovativeness - Newness dimension; CPPI-M = Consumer perceived product innovativeness-Meaningfulness dimension; CPFI = Consumer perceived firm innovativeness.

Study 6. Nomological, predictive and comparative validities

The nomological validity of the measure was tested by linking it to CPPI dimensions and overall brand attitude. Positive relationships between CPBI and CPPI dimensions (i.e., new product newness and new product meaningfulness) were expected. Previous studies suggest product innovativeness perceived by the consumer as a possible contributor to the building of CPBI (Aaker, 2007). Also, a positive relationship was expected between CPBI and brand attitude because brand attitude has been suggested in the literature as being important outcome of CPBI (Eisingerich and Rubera, 2010).

To demonstrate predictive validity, the extent to which the proposed CPBI measure can effectively predict excitement toward the brand, customer satisfaction and purchase intentions was assessed. Previous research indicates that consumer perceived innovativeness at the firm level has a positive impact on excitement toward the firm (Henard and Dacin, 2010). There is also empirical evidence to say that consumer perceived brand innovativeness positively affects customer satisfaction (Pappu and Quester, 2013). Consumer perceived innovativeness at the product level is found to positively affect intention to buy (Rubera *et al.*, 2011). Therefore, excitement toward brand, customer satisfaction and purchase intentions constitute valid criteria for testing the CPBI scale's predictive validity. For comparative validity, we aimed to establish whether the CPBI measure was a better predictor of the above dependent variables than Eisingerich and Rubera (2010)'s scale.

As per the procedure from studies 4 and 5, participants (student sample, *n* = 150, 57% female) filled out the survey instrument on one of the six mobile phone brands (Apple: *n* =

57, Samsung: $n = 52$; HTC: $n = 22$; Nokia: $n = 3$; Motorola: $n = 10$ and BlackBerry: $n = 6$) that they felt most familiar with. Respondents were asked to rate their most familiar mobile phone brand on the CPBI measure ($\alpha = 0.96$) as well as on previously established scales of the above interested variables and Eisingerich and Rubera (2010)'s four-item scale of brand innovativeness ($\alpha = 0.70$). New product newness and meaningfulness measures were similar to study 5. Brand attitude was measured using a four-item semantic differential scale ($\alpha = 0.97$) of Holbrook and Batra (1987). Excitement toward brand was measured using a five-item Likert scale ($\alpha = 0.96$) based on Henard and Dacin (2010). For customer satisfaction we used the five-item Likert scale ($\alpha = 0.94$) of Stock (2011). Purchase intentions was measured using a three-item Likert scale ($\alpha = 0.95$) based on Rubera *et al.*, (2011). For excitement toward brand, customer satisfaction and purchase intensions seven-point Likert scales were used where "1 = Strongly Disagree" and "7 = Strongly Agree".

Similarly, EFA and CFA analyses supported the findings from studies 4 and 5 with all items loaded on one factor (0.78–0.89). Consistent with theoretical expectations, results revealed positive and significant intercorrelations between CPBI and CPPI dimensions (new product newness = 0.747, $p < 0.01$; new product meaningfulness = 0.659, $p < .01$) and between CPBI and brand attitude (0.736, $p < 0.01$). These results support nomological validity of the CPBI scale.

Results of regression analysis ($n = 150$) indicated that CPBI had a significant and positive effect on excitement toward the brand, customer satisfaction and purchase intentions. The strongest impact was on excitement toward the brand with a standard coefficient of 0.846 (see left panel of Table 6). Moreover CPBI explained 72% of the variance in excitement toward brand, 60% in customer satisfaction and 58% in purchase intentions (see left panel of Table 6). These results confirm the predictive validity of the CPBI scale.

Table 6. Predictive and comparative validities (n = 150)

	CPBI scale		E & R scale	
	β	R^2	β	R^2
Excitement toward brand	0.846*	0.716	0.597*	0.357
Customer satisfaction	0.778*	0.605	0.553*	0.306
Purchase intention	0.761*	0.580	0.550*	0.303

Notes: *$p < 0.001$. E & R = Eisingerich and Rubera (2010)

Finally, a comparison between the results of the regression analyses provides clear empirical support for the comparative validity of the CPBI scale because the scale explains substantially more variance in the dependent variables than the Eisingerich and Rubera's scale (excitement toward brand: 72% versus 35%; customer satisfaction: 60% versus 31% and purchase intentions 58% versus 30%, respectively; see Table 6).

DISCUSSION AND CONCLUSION

In an effort to answer the standing calls by researchers to consider the importance of branding in the study of innovativeness (Di Benedetto, 2012), the present study aimed at conceptualizing and operationalizing consumers' perceived innovativeness at the brand level. Specifically, above and beyond the current innovativeness literature, the present study makes an important contribution to innovation theory by applying branding theory, and simultaneously contributes to branding theory by applying the concept of innovativeness.

Studies 1 to 3 aimed to determine how consumers define brand innovativeness. The three studies showed consistent results, including identifying some noteworthy brand innovativeness-related associations that current consumer perceived firm/product innovativeness conceptualizations and operationalization have paid limited attention to (e.g., wow factor). Figure 2 summarizes the findings from literature review and studies 1 to 3. CPBI shares "newness" as the essential association underling the notion of being innovative with the concepts of CPPI and CPFI. Consistent with previous research on CPPI (Rubera *et al.*, 2011), CPBI is associated with "being different". Consistent with previous research on CPFI (Henard and Dacin, 2010; Kunz *et al.*, 2011), CPBI is associated with "launching new product", "trend-setter", "leadership", "innovative", "dynamic", "cutting-edge", "changing market with its offers" and "constantly generating new ideas". However, CPBI demonstrates to be a distinct concept by being related to some other specific core and secondary associations such as "wow", "color" and "different from other brands".
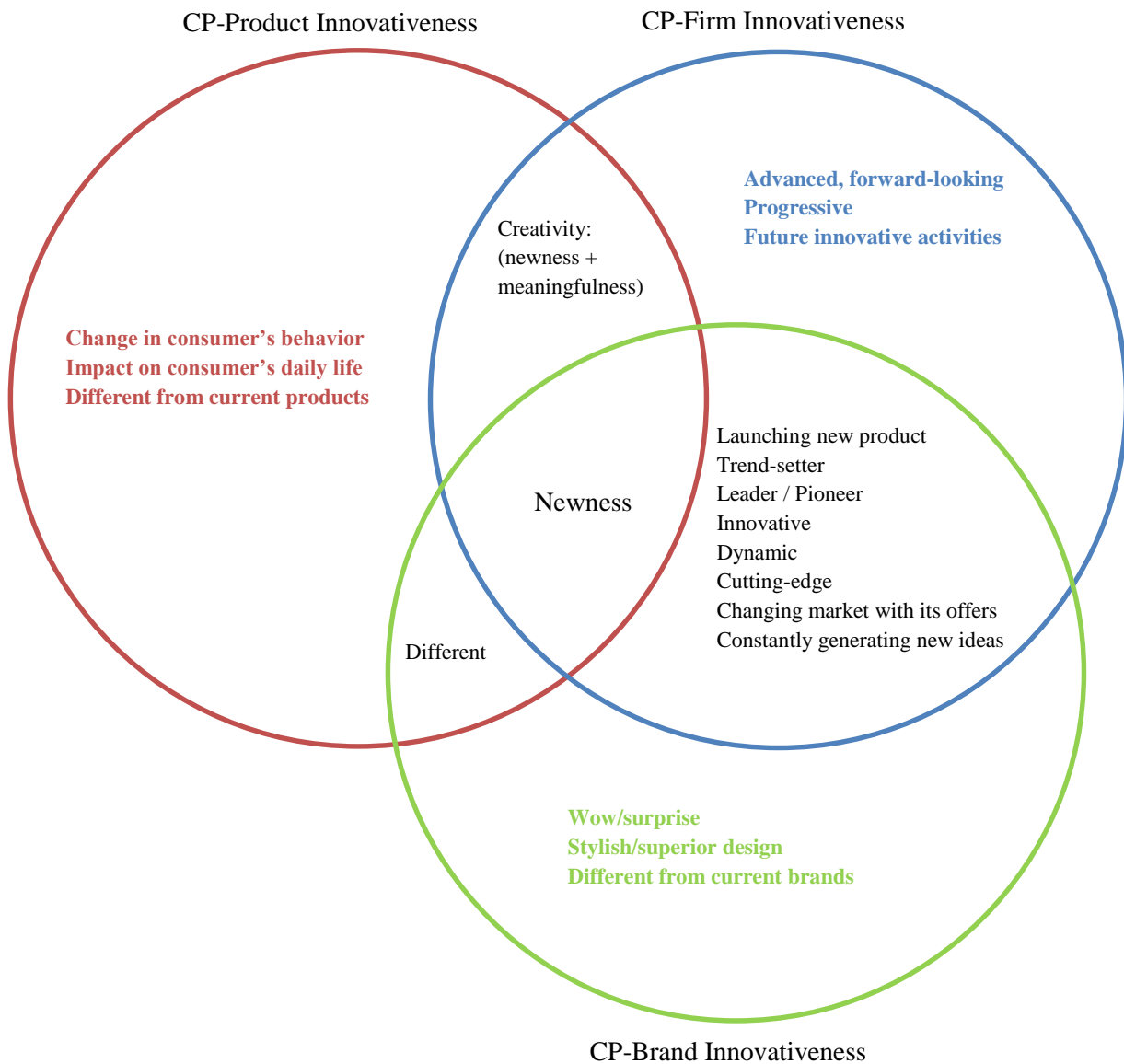
CP-Product Innovativeness   CP-Firm Innovativeness

Creativity:
(newness +
meaningfulness)

Advanced, forward-looking
Progressive
Future innovative activities

Change in consumer's behavior
Impact on consumer's daily life
Different from current products

Newness

Launching new product
Trend-setter
Leader / Pioneer
Innovative
Dynamic
Cutting-edge
Changing market with its offers
Constantly generating new ideas

Different

Wow/surprise
Stylish/superior design
Different from current brands

CP-Brand Innovativeness

Figure 2. Consumer perceived innovativeness associations

Building on (1) the evidence provided in literature review and phase 1 in favor of considering CPBI as a related but distinct concept from product or company innovativeness, and (2) the lack of a valid and reliable measure for CPBI, phase 2 (studies 4-6) examined how to operationalize CPBI consistent with the exploratory findings.

First, in study 4, a unidimensional 10-item scale was established for CPBI. The results of study 5 provided empirical support for the distinctions among CPPI, CPFI and CPBI constructs by demonstrating discriminant validity of the CPBI scale vis-a-vis these constructs. In study 6, nomological validity was demonstrated by linking CPBI to its possible antecedent (i.e., CPPI) and consequence (i.e., brand attitude). Predictive validity was then

supported by the strong relationship between the CPBI measure and excitement toward the brand, customer satisfaction and purchase intentions. Finally, study 6 shows the CPBI scale performs better in terms of predicting the above constructs than the only existing brand innovativeness scale (Eisingerich and Rubera, 2010). In sum, results of phase 2 studies support the view that the proposed unidimensional 10-item CPBI measure is valid and reliable.

The theoretical contributions are as follows. This research provides the first conceptualization of consumer perceived brand innovativeness based on the associative network memory model (Anderson, 1983) and signaling theory (Spence, 1974). The empirical test of the proposed CPBI conceptualization provides evidence for the application of the associative network memory model as a robust theoretical foundation to understand innovativeness at the brand level and from consumers' perspective. Moreover, through the integration of signaling theory, the theoretically-grounded conceptualization was built on two streams of literature to guide future research efforts. These theoretical perspectives represent complementary approaches for the conceptualization of consumer perceived brand innovativeness.

The present research empirically argues for the importance of addressing both affective and cognitive dimensions of innovation consumption at the brand level. Specifically, we found that perceptions of an innovative brand not only elicit associations of leadership in terms of technology and product level innovations, but also feelings of amazement (i.e., wow-factor) and surprise. Notably, this affective response to innovativeness does not appear to emanate only from the product (i.e., innovation in the technology) - it may also result from any marketing activity of the brand that signals innovativeness (such as catchy colors in the brand logo). Hence, this broader perspective of the experience of innovativeness at the brand level is another contribution to the current consumer perceived innovativeness literature.

Furthermore, we found that associations like color and design can also be important contributors to CPBI. This finding expands the emerging literature on design-intensive innovations (within the product innovativeness literature) which examines the diffusion of non-tech innovations (Dell'Era and Verganti, 2011). Although "color" was found to be one of the core associations in phase 1, the item to measure this association dropped from the final scale during scale development studies in phase 2. The final scale includes an item to measure the importance of "design" which is a broader construct and includes "color" as one of its contributing attributes (Bloch et al., 2003).

Additionally, the CPBI scale occupies the middle ground between the CPPI scales, which are product (technology feature) specific and thus miss the broader meaning of brands, and the CPFI scales (Henard and Dacin, 2010; Kunz *et al.*, 2011), which are aimed at measuring the aggregate consumer perceived innovativeness at the firm level that may include multiple brands, with different brands in different product categories.

Managerial Implications

In general, this research may assist in the following managerial domains. First, as this research has shown, to create the perception of brand innovativeness managers should focus on differentiating their brand by generating new ideas and launching innovations which incorporate advanced technology (new product features and functions) and/or superior design (new product language).

Incorporating branding principles in conceptualizing perceived innovativeness signifies that consumers' perceptions of innovative brands go beyond those of technology-driven new offerings. In fact, success in building an innovativeness image for brands such as Apple iPhones is based on a broad strategic approach to convey innovativeness to consumers not only through technological advances in each single innovation, but also through the use of innovation language (e.g., color, design, name, feel and look, [Dell'Era and Verganti, 2011]) in all of its new offerings, advertising, marketing campaigns, websites and on-line activities. The rationale is that while it may be easy for competitors to imitate a brand's innovation on intrinsic attributes such as product features, differentiation on the basis of extrinsic cues such as image association through innovation is more likely to be cost-effective and durable.

Managers can also apply the newly developed and validated CPBI scale in practice to measure and track perceived brand innovativeness. Alternative marketing program changes can be tested for their impact on the CPBI measure. Furthermore, the relative influence of CPBI on key outcomes (such brand attitude, excitement toward brand, customer satisfaction and purchase intentions) in their industry could be tested, which in turn can be used to decide whether to stick with the current degree of brand positioning on innovativeness or change it accordingly.

In addition, brand managers can apply the measure to compare different brands [product categories] of the firm to identify the most and least important CPBI contributors within the brand [product category] portfolio. For example, the CPBI of Samsung's mobile-phones, TVs and laptops may lead to different values for each product category and can be used to examine the relative influence of each CPBI on overall consumer perceived firm

innovativeness (CPFI). In a similar vein, comparisons of the focal brand vis-à-vis other brands within the same product category (e.g., Samsung mobile-phones versus Apple iPhone) would help managers to better understand their actual level of innovativeness perceived by consumers in the marketplace.

Furthermore, we believe that the measure could be particularly useful in longitudinal studies aimed at tracking changes on CPBI scores over time. Managers could evaluate CPBI before launching the innovation, immediately after launching the innovation and at appropriate time intervals afterwards (e.g., every four months). If, over time, there is a significant drop in CPBI, the management team could be alerted to take appropriate action. Because of the CPBI scale's ease of administration and parsimony, these longitudinal studies could include other competitive brands as well to elicit a more comprehensive understanding of the brand's innovative activity within the marketplace and over time.

Also, CPBI could be a useful new product development tool. Potential innovations could be tested for their impact on CPBI. In particular, softer innovations such as design-focused new products could be tested. New product managers need to pay attention to design elements such as color, ease of use and simplicity (Hanna, 2012). These attributes are effective in conveying innovativeness without relying on cutting-edge technology features (Dell'Era and Verganti, 2011).

Finally the present study is among the first in the area of innovation research to offer an innovative brand concept map using the machine-learning-based text analysis program, Leximancer. As a network of associations, this concept map forms the image of innovative brands in the consumer's mind, allowing managers to identify effective strategies to leverage innovativeness image in the marketplace (Aaker, 1991).

Limitations and Future Research Directions

The main purpose of the new measure of CPBI is to provide an assessment of how innovative a brand is in the mind of consumers; however, it is not sufficient for analyzing whether the company has targeted "motivated" consumers (i.e., individual differences in responsiveness to brand innovativeness), which is a related issue in the consumer innovativeness literature (Goldsmith and Hofacker, 1991). Exploring the relationship between consumer innovativeness and CPBI would be of interest.

While there is no theoretical indication that the results of the present study will not extend to non-student samples, the generalizability of the findings might be limited to

younger generations (Peterson, 2001). Future research is invited to test the generalizability of the proposed scale for non-student samples.

While our research argues for the importance of incorporating advanced technology (new product features and functions) and/or superior design (new product language) in developing brand innovativeness, for some brands the design of the product may not be their first concern (e.g., food industries). The proposed scale could simply be adapted to meet industry requirements.

Another interesting topic from both a theoretical and practical perspective would be to determine the antecedents of CPBI and to discover how stable CPBI is over time. Finally, another potentially fruitful research avenue would be to combine projective eliciting techniques such as collage (Koll *et al.*, 2010) with free association and story writing methods to retrieve more in-depth and unconscious brand knowledge. While we do not expect that these approaches would result in a different CPBI scale, in-depth brand knowledge would be helpful for identifying possible differences among CPBI(s) in different product categories for the parent brand (e.g., Samsung mobile-phone versus Samsung laptops).

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