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A consumer-based brand equity approach to detect perceived incongruity and its impact upon consumer perceptions

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A CONSUMER-BASED BRAND EQUITY APPROACH

TO DETECT PERCEIVED INCONGRUITY

AND ITS IMPACT UPON CONSUMER PERCEPTIONS

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ABSTRACT

An analysis of the retail market environment reveals two striking trends - remarkable growth of private brands, exerting increased pressure on national brands, and the increased market share of discounters and mass merchandisers stirring market competition with other retail types. These trends press the question - how do different product brand images interact with the variant images of different retailers?

In order to thoroughly address, a comprehensive multiple mediator model was devised and empirically tested, tapping into three literature streams: the psychological, sociological and business literature on incongruity; studies on Consumer-Based Brand Equity (CBBE; Keller 1993); and works on Retailer Brand Equity (RBE: Ailawadi and Keller 2004). In addition, various approaches discussing the quality concept in marketing were employed. Lastly, this research credited the emerging relevance of the "retailer as brand" concept (Burt and Sparks 2002).

In order to account for the impact of private versus national brand, the combined effect of store image and brand cues on perceptions of quality and behavioral intentions, an incongruity construct was incorporated into the model. The components of the empirical model were Retailer Brand Image (RBI), Product Brand Image (PBI), (in)congruity, perceived value (PV), CBBE (Overall Brand Equity; OBE) and purchase intent (PI).

Overall, the study was able to validate the proposed model, particularly in its focal incongruity condition (national brand – low image retailer). The findings across all conditions suggest that (in)congruity perceptions exert a decisive effect upon CBBE (OBE), mediated by

PV. In addition, it could be shown that CBBE (OBE) has a strong impact on purchase intent independent from the product brand / retailer brand constellation. RBI showed a strong effect upon incongruity in the key incongruity condition, whereas in other situations the effect was not as strong.

In summary, while private brands are well-received in both high and low image retailer settings, there is a definite perceived disconnect in consumer's perception of national brands offered at lower image retailers. It is a reoccurring phenomenon that lower image retailers seek to include high image national brands in their assortment, but this may be a risky endeavor for the national brand.

DEDICATION

This work is dedicated to my wife, Kristy, our precious daughter, Elizabeth, and in memory of my dear parents, Dr. Hans-Otto and Elisabeth Linnhoff.

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I. INTRODUCTION

A. Retail Branding

In a retrospective analysis of the retail market environment over the past two decades, two striking developments can be observed. Firstly, a remarkable growth of private brands has exerted increasing pressure upon national brands (Floor 2006). Secondly, the increased market share of discounters and mass merchandisers has stirred market competition with other retail types such as traditional supermarkets and specialty retailers (Kapferer 2008). The interplay between these two phenomena is of particular interest for this study.

Private and national brands are associated with different product brand images and are composed of distinct quality cues. Both are sold at various types of retail outlets, and these different types of retailers (e.g. specialty stores, discounters) are associated with varying levels of quality as well. It may very well then be asked, how do different product brand images interact with the variant images of retailers?

This question is not only interesting from a consumer behavior but also strategic perspective. Both product brand image and retailer brand image affect the mindset of consumers, for instance the willingness to purchase a certain brand or the preference for a certain brand (Keller 2008). In other words, the incorporation of certain product brands into the brand assortment may either incline or disincline consumers to buy, affecting both the positioning of retailers and eventually market success.

This evaluation corresponds with the need for coherence in marketing messages as posited by integrated marketing communication. It is in the interest of the retailer to make sure that all factors driving its image are coherent in order to better appeal to consumers and warrant profitability (Cant 2005; Cox and Brittain 2004). A misalignment of image cues may trigger incongruity effects that negatively affect consumer behavior (Keller 2008, Thorson and Moore 1996, Kapferer 2008). This explains why the interplay between brand assortment and retailer image was identified by Ailawadi and Keller (2004) as being "of critical importance" (p. 332).

The growing influence of discounters and mass merchandisers makes the problem even more relevant. In their endeavor to carry attractive national brands known for their higher quality, the risk of perceived dissonance between a low image retail outlet and the high quality product brand is intensified. The question then emerges – at what point do consumers begin to ask, "Is this item a fake or cheap knock-off?", or on the other hand "If this is sold here, is it good enough for me?"

Also, those cases raise concern in which high image retailers carry private brands that may be perceived as having a lower quality (e.g. store brand dog food is often perceived as having lots of fillers). In such cases, the high image of the retailer may itself "carry" the private store brand, making the consumer consider that a store of this caliber would surely only associate itself with a high quality product. However, it is also possible that customers may not appreciate finding an ordinary, relatively unknown store brand at a highly regarded specialty store.

This research seeks to investigate just such examples of the interaction between product brand image and retailer brand image. Further, the implications of moderate to high incongruity between the two will also be explored and considered.

B. Recent Trends in the Retail Market for Fast Moving Consumer Goods

1. The Rise of Private Brands

During the past years, private brands have been growing in popularity. The retail grocery sector experienced a steady increase in private brand market share at the cost of national brands across various grocery store categories (Lincoln and Thomassen 2009). Moreover, in numerous retail categories (e.g. supermarkets, drug chains, mass merchandisers) private label sales have spiked since 2007 when the first signs of an economic stagnation surfaced (Pirovano 2009). In late 2007, the market share of private brands in the field of consumer packaged goods grew to 17.5 % (Business Wire 2008), and by early 2009, this share was nearing 18% (Pirovano 2009). An even higher current market share of nearly 25% is reported by the Private Label Manufacturers Association (PLMA 2010).

This rapid market growth can be traced to the early 1990s. According to a consumer survey, in 1991 only 12% of consumers indicated they would frequently purchase private brands, whereas in 2006 the number had climbed to 41% (Shedden 2007). A further shift from national to private brands was catalyzed by the current world recession (Pirovano 2009), and private brand growth in the US as well as worldwide is expected to continue. Recent studies forecast the global market share of private brands to increase from 20% to about 65% in 2025 (Store Brands Decisions 2009).

Private brands are of high strategic value because they are often appealing to consumers and help differentiate retailers from their competitors (Lamey et al. 2007). Private brands have traditionally been offered as potential alternatives to national brands with a price advantage but possibly lower quality. Even though they are still predominantly used in the discount price

segment, it should be noted that private brands increasingly are offered as viable, quality-equivalent products (Rubio and Yagüe 2008).

On the one hand, private brands offer higher profit margins in spite of lower pricing (Dick, Jain, and Richardson 1996). On the other hand, private brands are riskier than national brands because they are managed under sole responsibility of the retailer. As such, the actions of the retailer are of crucial importance for the performance of the private brand. Because consumers can only buy a private brand at the respective store chain the success of both are linked in a unique manner (Dhar and Hoch 1997).

This particular link between a private brand and its respective retailer does involve inherent risk. Why then do retailers support the availability of private brands across product categories? A primary motivator is the opportunity for the retailer to differentiate itself, i.e. the retailer as brand, from its competitors (Grewal et al. 2004), and this is appealing to retailers of varying image characteristics. Indeed, private brands are not only found at Walmart and Dollar General, but also Whole Foods Market and Petsmart.

2. Brands and Retail Type

The growth of discounters/mass merchandisers as a trend has added complexity to the interaction between brand image and retailer image. As the variety of product offerings at these outlets increases and in turn these retailers seek to enter into more profitable and high image product brand categories, the tension between product brand image and the often low image of such retailers reaches potential breaking points.

For example, with regard to private brand labels offered by discounters/mass merchandisers, the low image of these types of retail outlets may carry over and negatively

influence store brand image. Further, in the case of national brands offered at these low image retailers, the incongruity between the high product brand image and low retailer image may overwhelm consumers. There is potential for alienation between consumers and their beloved product brands – disbelief that such high quality, well-known products should even appear in such low image retail outlets.

3. Increasing Relevance of the Pet Food Market

The product category chosen for the purposes of this study is pet food, in particular, dry dog food. The rationale behind this choice is two-fold, based on the following two key considerations: the growing importance of the pet food market, and the identification of pet food as a high involvement product. The appreciation of pets as family members by many owners has made the pet food market quite resilient in spite of the stagnant economic background (Agri-Food Trade Service 2010). This same emotional attachment makes pet food purchases high involvement decisions for their owners (O'Shaughnessy 2002).

Currently 62% of U.S. households own a pet. The number one pet in the US is dogs, found in approximately 46 million households (cats rank second in 38 million households). In 2009, $17.56 billion were spent on pet food (APPA 2010), and the pet food market has continually grown over the past years (Veterinary Practice News (2011)) in not only the U.S. but also worldwide (Business Wire 2007). In spite of the volatile economic environment, continued and even accelerated growth is expected especially in the premium pet food segment.

Both of the aforementioned trends in the retail market (growth in private brands and the shift to discounters/mass merchandisers) play out in the pet food market as well. Premium brands such as IAMS and Science Diet represent about one-third of total pet food sales. This is

remarkable because their price level is about twice as high as low-end brands like Friskies. Still, even with a boom in the premium segment, store brand pet foods have been even more successful. In fact, it is not a national brand but a store brand, Walmart's Ol' Roy that has emerged as the number one dog food brand in the US (Veterinary Practice News (2011)).

Pet food has traditionally been the domain of grocery stores (Raugust 2006, Brumback 1999). However, in the current market, the number one retailer of pet food and pet accessories in the US, Petsmart, successfully competes with discount retailers such as Walmart and Dollar General. This is somewhat surprising considering that Petsmart prices are typically 10% higher than such discount retailers (LifeWhile 2008).

Just as the variety of retail outlets offering pet food has expanded, the willingness of these outlets to carry not only national but also private pet food brands has also grown. Store brands can now be found not only at Walmart (discounter / mass merchandiser) and Dollar General (general merchandise discounter), but also in Kroger (traditional grocery supermarket), Whole Foods Market (national specialized retailer) and even specialty retail stores such as Petsmart and its competitor Petco.

Indeed, even high-end specialty retailers like Petsmart do not want to miss this growing market and thus offer store brands for e.g. dog food, even though pet store brands have often been perceived as inferior in quality (Consumersearch.com 2010a). Interestingly, based on preliminary exploratory research for this study, Petsmart associates in informal interviews implied they were pretty much "hiding" their store brands in the very back of their stores in favor of the national brands for which they are known. These developments stir the question of possible incongruity effects.

As will be shown in detail later, the literature has dealt previously with such examples of incongruity effects upon consumer perceptions. The interplay between the perceived quality linked to store image and product brand image does in fact have an impact on consumer image ratings (Grewal, Monroe and Krishnan 1998). The following Table 1 provides examples of different constellations.

Table 1: Differently Branded Dog Food Products in Various Retail Outlets - Examples

Private Dog Food Brand	Private Dog Food Brand	Private Dog Food Brand	National Dog Food Brand
		Dry Dog Food 	
www.petsmart.com	Photo by Author	w*holefoodsmarket.com*	*www.hillspet.com*
"Authority"	"Everpet"	"365 Everyday Value" Dog food	"Veterinarian's Recommended Science Diet"
Petsmart = leading US specialty store for pet supplies and services	**Dollar General** = leading discount retailer of generic merchandise in the US	**Whole Foods** = leading retailer for natural and organic products	**Petsmart** = leading US specialty store for pet supplies and services

C. Retailer as Brand

'Retailer as brand' has been identified as "one of the most important trends in retailing" (Grewal et al. 2004, p. ix). This concept of retailer as brand describes a retailer's effort to coordinate all operational activities in a manner that facilitates the endeavored image (Dawson, Findlay and Sparks 2008). In sum, even beyond mere store image, retailers increasingly seek to be perceived as brands (Davies 1992).

The retailer as brand concept has become even more important with the rapid proliferation of private brands (Ailawadi and Keller 2004). Because private brands can only be found at a certain retailer, the images of product brand and retailer brand and the associated quality cues overlap. In contrast to national labels, consumers hold the retailer accountable for certain quality attributes of their private label products. Further, the brand assortment, the composition of national and private brands, no longer affects only retailer image but extends to retailer equity (Martenson 2007).

The term 'retailer as brand' further implies that retail outlets are no longer just transactional locations for the transfer of tangible goods, but a medium for communication with consumers. The process of establishing an adequate store image is not unidirectional. Retailer brand image rather emerges in course of the interaction with the consumer and his/her perceptions of quality cues associated with retailer image and product image (Jacoby and Mazursky 1984). This research further analyzed the retailer as brand concept within the proposed theoretical framework.

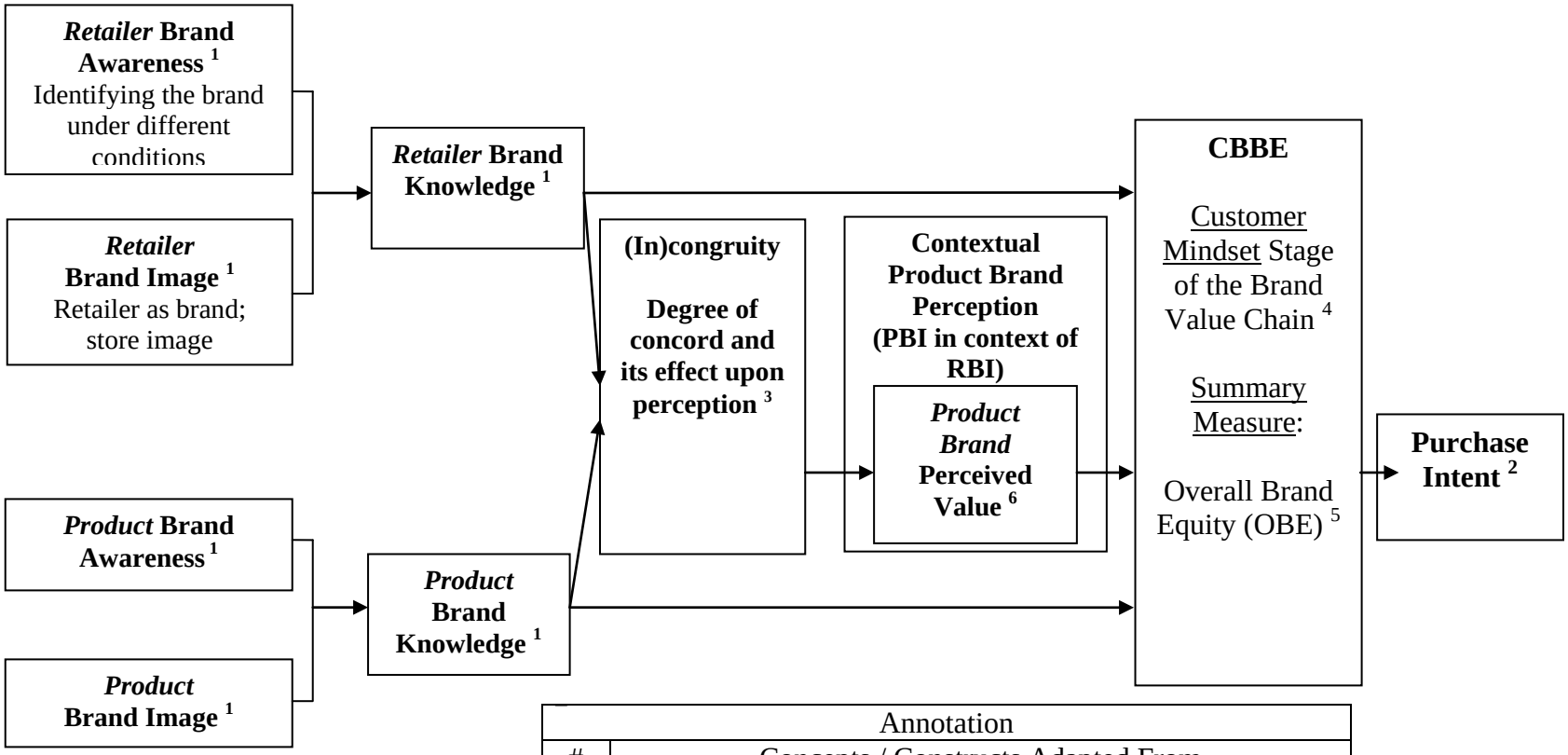
D. Overview of Research

The foundational conceptual model for this research study is illustrated in Figure 1 (p. 27 below). The framework is an extract (see appendix for a more comprehensive framework) and points to all key components of the research. It integrates the original model of Consumer-Based Brand Equity (CBBE) devised by Keller (Keller 1993, 2003) with the Retailer Brand Equity model developed by Ailawadi and Keller (2004).

The customer mindset is influenced by both retailer brand knowledge and product brand knowledge. Based on the notion that brand awareness is a necessary but insufficient condition for brand knowledge, one may consider both retailer brand image and product brand image as the key factors affecting the consumer. This model incorporates an (in)congruity construct that serves to explicate effects stemming from the perceived (lack of) concord between retailer brand image and product brand image. To the authors knowledge the incorporation of such an incongruity into a CBBE framework is unprecedented in the literature. Based on insights from mainly the brand extension, celebrity endorsement and event sponsorship literature it is expected that perceived incongruity will show negative consequences for the CBBE.

Subsequently, Figure 1 provides the conceptual framework. A detailed discussion of the relevant components of this model and of the hypotheses will be provided within the literature review.

Figure 1: Conceptual Framework – (In)Congruity and Its Effects Upon CBBE



Annotation	
#	Concepts / Constructs Adapted From
1	Ailawadi and Keller (2004, p. 332-335) founded upon Keller (1993), p. 7, figure 1
2	Churchill and Iacobucci (2005), p. 209
3	Speed and Thompson (2000), p. 229-230
4	Keller and Lehmann (2003), Keller (1993)
5	Yoo and Donthu (2001), p. 11, 14
6	Dodds, Monroe, and Grewal (1991), p. 31; Grewal, Monroe and Krishnan 1998, p. 48

E. Contributions of the Study

This research contributes to the literature in several ways. First, this study contributes to the contemporary concept of 'retailer as brand'. In order to establish an adequate framework to investigate the 'retailer as brand' phenomenon, this study integrates the Consumer Based Brand Equity (CBBE) model (Keller 1993) and the Retailer Brand Equity model (Ailawadi and Keller 2004).

Secondly, the impact on certain aspects of CBBE, namely brand preference (overall brand equity) and its impact on purchase intent will be empirically tested. In doing so, this research responds to the call for further research on topics like private brands or combination of store and national brands and its consequences stated by Grewal and Levy (2007). This study reacts to the request of the branding literature to investigate the impact of store versus national brand, the combined effect of store reputation and other information cues (price, brand) on perceptions of quality and behavioral intentions (Grewal, Levy and Lehmann 2004).

Thirdly, unprecedented is the introduction of an incongruity construct to this framework to account for the aforementioned consequences. Fourthly, the study empirically investigates how the combinatory mechanism of different PBI and RBI results in varying degrees of perceived concord on behalf of the consumer in a high involvement product category (high involvement: pet food). Hence, (in)congruity is not purely understood as a dichotomous concept. Retailers of various kinds are inclined to incorporate product brands (national, private) assumed to be profitable. The study endeavors to show that there may be a tipping point that switches congruity to incongruity perceptions with potentially detrimental consequences. As such, this research responds to advice from parts of the literature to emphasize rather the notion of (in)congruity as a continuum (Lee and Thorson 2008). Furthermore, the dissection and

comprehension of how the brand assortment offered by retail outlets is connected to store image is considered of paramount importance by leading brand researchers (Ailawadi and Keller 2004).

Finally, it is the first time a model that incorporates incongruity and perceived value constructs is devised and tested. Regardless of the rich literature streams that already exist the interaction between perceived value and quality is considered of continuing importance (Sweeney and Soutar 2001). The communication of superior value is considered a vital trend of retailing in the 21st century (Grewal et al. 2010). The lasting relevance of value is rooted in the finding that consumers are value-driven (Levy 1999).

II. LITERATURE REVIEW

The rationale of the conceptual model in figure 1 is predicated upon the view that the key dimensions of retailer and product brand image can be related to quality perceptions. It will be hypothesized that the degree of congruity affects holistic dimensions of CBBE, namely overall brand equity and eventually purchase intent.

But first, it has to be clarified what quality actually is within the scope of marketing. The following analysis discusses:

- the definitions of quality
- subsequently perceived quality (and provides reasons why a separate perceived quality construct is not included in the model)
- an overview of key theories of quality linked to CBBE

A subsequent discussion focusing upon CBBE and Retailer Brand Equity, underlying theories and the hypothesized relationships of the constructs then follows.

A. Quality in Marketing

1. Definitions of Quality

Historically, before the advent of consumer based brand equity in the 1990s (Keller 1993) and the service-dominant logic (Vargo and Lusch 2006), the quality concept was predominantly investigated within the context of physical characteristics of products with only a minor focus upon intangible product features (Sweeney and Soutar 1995; Steenkamp 1990; Zeithaml 1988).

The definitions of quality reflect this procession from a manufacturer focused perspective to a consumer-focused definition of quality.

There exists no uniform definition of quality in the business or non-business literature. “Quality” is a Greek-derived word meaning “of what kind” (Merriam-Webster Online 2009). In the philosophical literature quality is equated with innate excellence and a state of “ideal” (Oliver 1997). In economics quality is linked to products and price – price differentiation typically implies quality differentiation (Feldstein and Auerbach 2002). The rationale of economic models is the notion that price is the main driver of consumer choice (Reeves and Bednar 1994). Within the field of total quality management (TQM) quality indicates an organizational process and control principle geared toward meeting certain goals in order to achieve customer satisfaction and enhance shareholder value (Johnson, Chvala and Voehl 1995). The TQM definition of quality is related to the technical approach. This approach being also labeled as manufacturer or objective quality defines quality as an objective benchmark. This approach prescribes the compliance with certain standards in order to confirm the existence of quality (Reeves and Bednar 1994).

In contrast, the consumer-based approach, sometimes also called the user-based approach, defines quality based upon consumer perceptions (Schneider and White 2003). This research focuses on consumer expectations and thus will resort to the subjective quality literature. Furthermore, the consumer-based approach is superior to the other definitions because it is eventually the consumer who chooses whether to purchase a product or not (Garvin 1984; Steenkamp 1990).

2. Quality and Meeting Expectations

a. The Difference between Perceived Quality and Meeting Expectations

Perceived quality is subjective quality (Steenkamp 1990). Perceived quality is to be carefully distinguished from meeting expectations. There are significant research streams that employ meeting expectations and quality synonymously (Reeves and Bednar 1994).

For example, in the service environment authors define quality in view of the potential discrepancy between customer expectations and perceptions. Quality is predicated upon the consistent delivery of service. The term service expresses what the consumer receives and the manner in which the service is provided (Parasuraman, Zeithaml and Berry 1985).

One could argue that this is the appropriate definition of quality even in a product related context like this one. After all, the service-dominant logic accentuates that service is the basis for exchange and proposes that goods are mere distribution vehicles for the service provision (Vargo and Lusch 2004; Lusch, Vargo and O'Brien 2007; Vargo and Lusch 2008). But there are two caveats: older research streams accentuate the difference between services and products, and the resulting difference in quality perceptions (Zeithaml 1981, 1985; Levitt 1981). In addition, quality as meeting and / or exceeding expectations is considered a complex construct. Due to its complexity, it is also most intricate to measure (Reeves and Bednar 1994). Firstly, the conceptual profile of term "expectations" is not unequivocal (Grapentine 1994, 2003; Roest and Pieters 1997). Secondly, the advocators of applying consumer expectations as a proxy for quality delineate expectation as a conjecture of product or service performance (Devlin, Dong and Brown 1993; Parasuraman, Zeithaml, and Berry 1988). But consumers do not always know what they expect. Consumers may only know after consumption whether a product or service met their expectations or not (Bowen and Schneider 1988; Reeves and Bednar 1994). In addition,

consumers may also not always know what they expect because they encounter a new product or service and do not have a clear reference point to anticipate a certain performance (Al-Dabal 2001; Gilmore 2003).

b. Expectation Scales and the Perceived Quality Construct

The validity of expectation scales as a tool to measure product and service quality is debated quite controversially (Grapentine 1994, 2003). Some research results gravely discredit expectation scales as invalid methods to measure quality (Teas 1993, 1994).

Research has found ways to circumvent this problem. In the more recent literature, it can be observed that authors often apply a perceived quality construct because it is easier to measure than meeting expectations (Grewal, Monroe and Krishnan 1998).

For this research, the focus will be on perceived quality although it purposefully does not incorporate a perceived quality construct that was conceptualized by research streams outside the CBBE literature. That research often incorporates perceived quality as their central construct to account for effects of brand name, store name etc. and their impact on value perceptions (see e.g. Grewal, Monroe and Krishnan 1998).

This research will rather seek to capture core dimensions of CBBE that are linked to perceived quality. The following section explorers the key facets of perceived quality paving the way for some of the hypotheses.

3. Perceived Quality

It is beyond the scope of this research to trace the full discussion in the literature on the conceptualization on quality (Steenkamp 1990; Grewal 1995). But the literature has developed

the following profile of perceived quality: perceived quality represents a continuum of consumer evaluative judgments (Steenkamp 1989). Furthermore, perceived quality includes preference and an interaction between the consumer and an object (Steenkamp 1990).

a. Quality as Preference – Key Theories of Quality

The preferential aspect of quality implies that the consumer makes an evaluative judgment (Steenkamp 1990). Such subjective assessment is necessary because consumers do not have absolute knowledge about product quality. Thus, consumer decision-making is most often based on perceived product attributes and consequently involves a level of uncertainty about product quality. Because product characteristics are not known with certainty, consumers rely on quality cues.

These quality cues are used by the consumer to infer the existence of certain quality attributes. For instance, the consumer cannot test dog food product prior to purchase to determine the desired quality attributes (e.g. nutritional, healthy) but takes the cues to infer the product has these attributes. Some of the most important cues are physical features of the product, the brand and price (Steenkamp 1990). This important function of quality cues also serves Keller to explicate the components of his CBBE framework (1993). Cues have been analyzed within the scope of the cue utilization theory.

i. Cue Utilization Theory

This psychological theory is a consumer choice theory that is considered fundamental and often is employed in the retail research domain (Brown and Dant 2009). Cue utilization theory accounts for the complexity of the consumer choice process and the challenge to discern and

assess the relevant product attributes in view of the inherent limited information processing capability (Rao and Monroe 1989; Bettman 1970, 1979). The information-processing model is based upon the concept of bounded rationality expressing the limited capability of consumers to process information (Bettman, Luce and Payne 1998; Simon 1955).

The intricateness of the choice process is enhanced by the myriad of available brands in retail, the impossibility to oversee the quality of the manufacturing process and the similarity of goods offered in many outlets (Maynes 1985). In order to simplify the decision-making process and to reduce the inherent risks of the purchase decision, consumers resort to cues.

Cue utilization theory seeks to answer the question of what product feature(s) among a multitude of potential indicators turns out to be the most influential one within the consumer decision process (Cox 1967). All products represent a conglomerate of cues (Steenkamp 1989). In a two-stage process, the consumer selects the stimuli s/he deems relevant and evaluates the quality of the product afterwards (Olson and Jacoby 1972). According to the theory, products are composed of intrinsic and extrinsic stimuli that provide quality cues. Intrinsic cues are inextricably intertwined with the core product characteristics such as taste, scent and texture (Collins-Dodd and Lindley 2003). In contrast, extrinsic cues can be altered without changing the core product itself because they are external. Consumers usually rely upon both kinds of cues when judging quality.

The literature has determined the following as extrinsic quality cues*:* store name (Dodds 1995, 1991), brand name (Dodds 1991), price (Brooker, Wheatley and Chiu 1986), packaging and labeling (McDaniel and Baker 1977). In which product categories intrinsic or extrinsic cues are more relevant is discussed controversially in the literature (Steenkamp 1990). Very similar to cue utilization theory and also often applied within the quality literature is signaling theory.

ii. Signaling Theory

Signaling theory is a microeconomic theory that much like the cue-utilization theory emphasizes cues as risk-reducers (Brown and Dant 2009; Erdem and Swait 1998). Such theories are especially relevant as research reveals that consumers are inclined to be risk-averse in most situations (Erdem, Swait and Valenzuela 2006).

While these theories are in fact complimentary, compared to cue utilization theory, signaling theory lays greater emphasis upon the notion that consumers have only limited information available with which to assess a product (Erdem, Swait and Valenzuela 2006). This information economics perspective postulates that there exists an information asymmetry between consumers and providers of brands (retailers and manufacturers) regarding the quality of the product. The consumer cannot always detect the quality of the product before consumption (Boulding and Kirmani 1993).

Products like pet food are “experience goods” (Steenkamp 1990; Wright and Lynch 1995). Because of this unobservable quality, consumers are dependent upon the brand and the associated quality claim by the provider. A product that does not meet the consumer expectation evoked by the signal leads to an economic punishment, e.g. no repurchase, negative word of mouth, etc. (Montgomery and Wernerfelt 1992; Wernerfelt 1988).

This theory primarily points to the firm’s reputation as a vital factor to motivate consumers to purchase a product. Studies dealing with this theory mainly focus upon the relevance of warranties, price and advertising as part of the marketing mix (Helm and Mark 2007). Price and advertising are relevant factors for consumers in their decision to buy dog food. For example, consumers are exposed to advertising messages. Based upon these messages they

associate, for instance, “Science Diet” with certain features (e.g. healthy, nutritional for dogs). Hence, the producer’s name – Science Diet – communicates a signal of quality.

Based upon the logic of signaling theory the advertised message is linked to quality in the sense that a company, which invests a great deal in promotion, would suffer a significant loss in the eyes of the consumer when a low-quality product is delivered. In the same vein, authors speak about the concept of brand credibility, defined as the believability of information associated with the brand (Dawar 1998; Erdem and Joffre 1998).

As such, the brand is an extraordinary signal within the portfolio of marketing mix elements for two reasons. First, consumers make inferences about tangible and intangible quality attributes of the product to reduce risk (Klein and Leffler 1981; Özsomer and Altaras 2008). Secondly, the brand represents the distillate of past firm activities. This historical aspect constitutes firm reputation in the signaling theory literature (Herbig and Milewicz 1995). Not to deliver what is promised undermines brand credibility (Erdem and Swait 2004; Özsomer and Altaras 2008).

As has been implied, signaling theory has not only been linked to the producer’s reputation but also the retailer’s image. When a positive or negative brand image influences consumers in a favorable manner, it may be expected that also the store image (retailer as brand) influences the consumer quality perception (Bloemer and de Ruyter 1998; Osman 1993).

The image of the selling retailer is at particular stake in case of store brands. A buyer of “Science Diet” dog food can clearly discern the producer of the product and can hold the respective manufacturer accountable for the level of quality. Regarding store brands, this information is not always easily detectable. Consequently, consumers rely on the ‘retailer as

brand' as a key quality signal. They can hold the quality of the store brand against the retailer issuing this private brand (Brown and Dacin 1997; De Wulf et al. 2005).

iii. Means-End Chain Theory

The interplay between quality cues and attributes is best described as a means- end relationship. The quality cues are a vehicle, a means, for consumers to obtain the desired benefits associated with the product (Steenkamp 1990). This also supports the use of means-end laddering as one way to test aspects of Keller's CBBE model (Keller 2008).

The foundational reasoning of this theory is the assumption that consumers obtain products for specific benefits associated with these objects (Grunert et al. 1995). Consumers associate products with attributes that are connected to personal goals (e.g. "healthy dog") and are then motivated to purchase products perceived to match these goals. According to this theory, consumers are goal-driven and conduct conscious, and make voluntary choices between alternative products. Their selection is guided by the desire to seek positive outcomes and to avoid negative ones (Olson and Reynolds 2001). Terminologically, the difference between attribute and cue is that an attribute is a cue, which the consumer has processed (Steenkamp 1989; Steenkamp and Trijp 1997). The term "means-end" implies that consumers associate the means, or the attributes of objects (products and services) with the ends, benefits or results these attributes represent for the desired personal goals (Meiselman and MacFie 1996).

b. Quality as Interaction between Consumer and Product

There are various factors described in the literature as facets of subject (consumer) – object (product) interaction. For this research, the subsequent factors appear especially relevant:

due to the limited processing capability, consumers will resort to varying choice processes depending if they are in a high or low involvement situations (Bettman 1979). In high involvement settings, consumers refer to more extended mental processing (Steenkamp 1990; Olson and Jacoby 1972). This process is catalyzed in purchase situations that go along with certain risk perceptions regarding product quality attributes (Meyer 1981; Rajagopal 2007). In other words, if consumers particularly desire that a product to be associated with certain quality attributes, a few cues like brand name and labeling gain elevated relevance.

B. Brand, Brand Equity Models and Quality Perceptions

1. The Definitions of Brand

Brand and brand image are inherently related because the brand communicates information, whereas brand image reflects the consumer's perception of the brand. Hence, the term brand is defined as a foundation for later elaboration on brand image.

In review of the literature one can differentiate between three kinds of brand definitions, a technical, legal and psychological definition. The technical definition is linked to tangible attributes of the brand. The technical definition of brand has also been called the formal approach (Homburg and Krohmer 2006; Morschett 2002). This definition reflects the original form of a brand as a sign of ownership associated with a brand (Meffert 2000). After all, historically the term "branding" in the US originates in the practice of branding a sign of ownership on cattle (Moore and Reid 2008). The traditional element has been incorporated into a contemporary definition of brand as a "name, term, design, symbol, or any other feature that identifies one seller's good or service as distinct from those of other sellers" (AMA Dictionary 2009). This comprehensive definition reflects the early definitions emphasizing the tangible aspects of the

product brand as well as the modern approach to analyze intangible facets of the brand phenomenon (Keller 2003).

Due to their economic value, brands can be legally protected as trademarks: “the legal term for brand is trademark” (AMA Dictionary 2009). The legal definition of brand corresponds to the technical one above: in legal terms, a trademark is “a word, phrase, symbol or design, or a combination of words, phrases, symbols or designs, that identifies and distinguishes the source of the goods of one party from those of others” (US PTO 2010). Brands serve to mark products, services, and combinations of the two in a manner that individualizes them. (Due to the scope of this research, the term product will henceforth be employed most of the time.) The individualizing effect of the brand allows differentiating a product for the one of the competition.

From a managerial perspective, the brand is a “characteristic that identifies a product and distinguishes it from others” (Keller 2008, p. 2). In this context, it is important to emphasize that brand and product are not identical. Historically, brands were put on the same level as goods. This approach is considered obsolete (Exler 2008).

In strategic terms, a brand is intended to be a means of differentiation and to provide orientation to consumers (Aaker 1996; Keller 2008). The differentiating function of the brand implies that brands have an effect upon consumers. In the literature, one can find psychological definitions of brands that, in effect, employ the brand and its psychological effects synonymously: a brand is “distinctive image of a product or service, solidly anchored in the psyche of the consumer” (Meffert, Burmann and Koers 2002, p. 6).

It is preferable to conceptualize clearly brand and its effects differently (Lorenz 2009). The brand triggers consumer responses in form of cognition, affect and resulting choice possibly resulting in purchase behavior (cognative aspect) (Aurifeille, Clerfeuille, and Quester 2001).

According to the psychological definition, brands create a psychological, subjective picture of the consumer in response to a brand representing a brand image (O'Brien 1971). The literature often resorts to schema theory to explain the psychological mechanism. Schema theory is a part of associative network models presented in detail later. The brand image forms a schema consisting of a semantic network of associations (e.g. Coca Cola is linked to "red", "Atlanta", "American icon", "refreshing", "soda" etc.). Moreover, brand image is defined as "perceptions about a brand as reflected by the brand associations held in consumer memory" (Keller 1993, p. 3).

Having distinguished between brand and its effects as well as product and brand, the added value represented by the brand is subsequently discussed. The notion of "added value" is connected to brand equity.

2. Brand Equity

a. Definition of Brand Equity

A brand provides added value that elevates the product or service from the consumer perspective above the non-branded form (Farquhar 1989). The added value is constituted in the information that the brand transmits to the consumer regarding the tangible and / or intangible nature of the product (Keller 2008). Provided a brand is positively perceived by a consumer, the brand embodies a strategic value for the firm. Positive brand perception influences consumer purchase and brand usage frequency (Wansink and Ray 1996). Simply said, water is tastier if it is from Perrier (example adapted from: Esch 2010).

The observation that brands – dissociated from the actual product or service – can be traded for large amounts of money facilitated the emergence of the term brand equity in the 1980s. It substituted the previously ill-defined and blurry term brand image (Jones 1999). The

early history of the brand image shows an effect in the later literature that tried to conceptualize and measure this construct. For this reason, brand image is still called a “noisy construct” – discussed later in detail.

Even though there is agreement that brand equity relates to brand value, a review of the literature reveals variant definitions with one common denominator: brand equity expresses the incremental value of a product or service because of the brand name (Srivastava and Shocker 1991). Other authors speak of total utility (Swait et al. 1993) or incremental utility (Simon and Sullivan 1993).

Definitions of two of the most influential brand researchers may serve to illustrate this notion of incremental brand value: according to Keller (1993, p. 1) brand equity in the broadest sense represents “the marketing effects uniquely attributable to the brand”. Aaker (1996, p. 7) defines brand equity as “a set of assets (and liabilities) linked to a brand’s name and symbol that adds to (or subtracts from) the value provided by a product or service to a firm and / or that firm’s customers.” Aaker’s definition indicates the two sides inherent to brand equity, the firm and the consumer component. This is why the majority of authors differentiate between two approaches to brand equity, the financial and / or the consumer perspective (Srivastava and Shocker 1991).

b. Two Perspectives on Brand Equity

The financial and consumer perspective on brand equity find their expressions in the three manners in which the term brand equity has frequently been employed. Researchers often link brand equity to the associations consumers hold on brands. Others focus upon brand equity as an indicator of the strength of consumer brand attachment. Finally, authors also conceptualize

brands as assets whose total value can be listed in a balance sheet (Jones 1999; Feldwick 1996). The first two statements both relate to the consumer based perspective, whereas the asset view refers to the financial perspective. These applications of the term brand equity are actually not mutually exclusive but in fact complement each other: the consumer perspective on brand equity analyzes consumer perceptions potentially leading to purchases. This purchase behavior may translate into repeat purchases and brand loyalty.

Brand strength is a function of favorable consumer perceptions and purchased behavior. The consumer behavior may have positive financial consequences for the firm. Brand value reflects the degree of financial success a firm can generate as a consequence of consumer behavior. The research at hand deals with consumer based brand equity. These stages leading to brand value are incorporated into Keller's Brand Value Chain presented below.

3. Components of the Framework and Hypotheses

a. CBBE and Retailer Brand Equity within the Brand Value Chain

i. CBBE and Retailer Brand Equity – An Overview

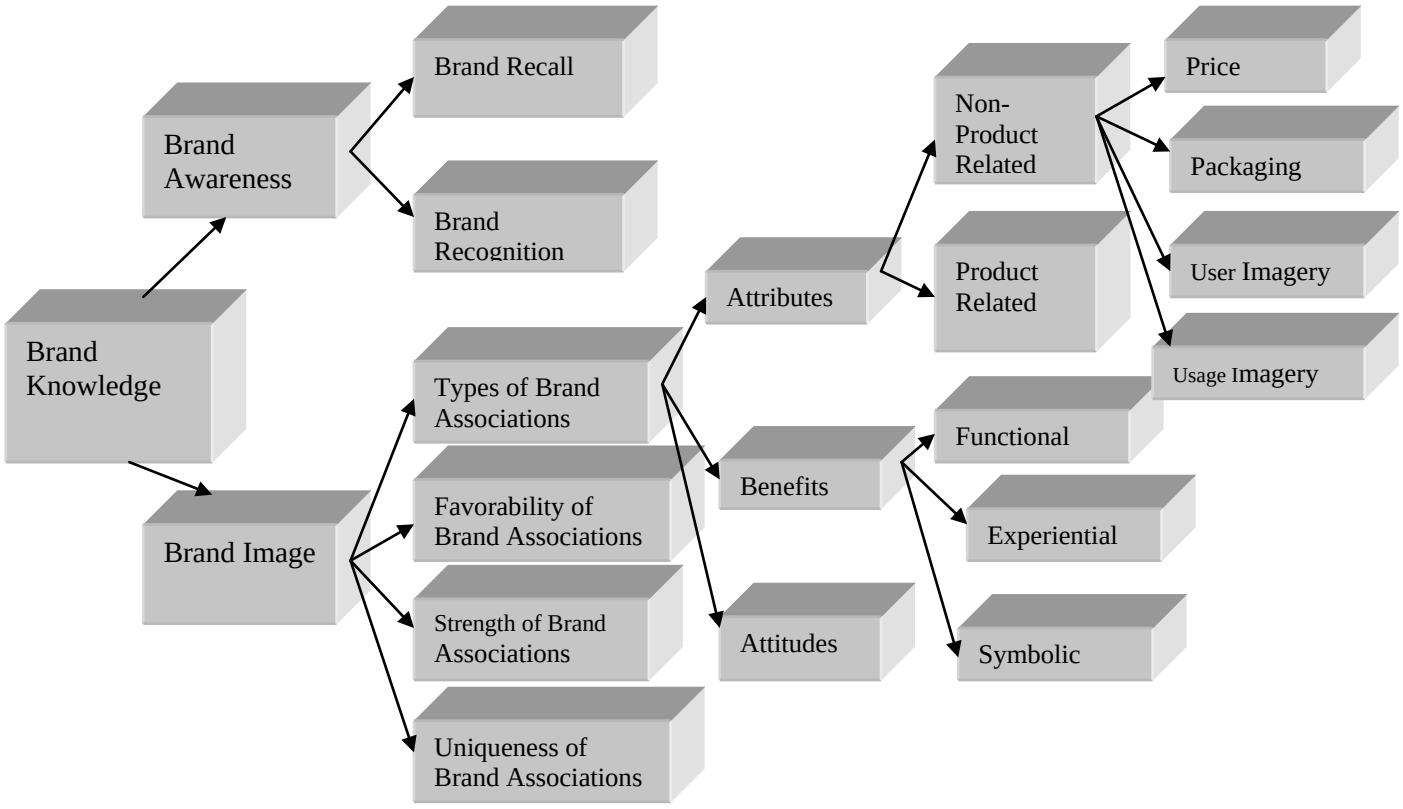
The CBBE framework is part of the Brand Value Chain framework. The Brand Value Chain provides a brand management tool to analyze the impact of the firm's marketing activity upon brand performance (Keller 2008). The CBBE framework is usually applied to product and service brands (Keller 1993). However, considering the focus of this research it will only be spoken of product brands.

The original CBBE framework explores brand knowledge as a multidimensional concept composed of brand awareness and brand image. Brand awareness indicates the ability of consumers to identify the brand under different conditions. It is a necessary but insufficient

condition of brand image, as brand image is built upon brand awareness. This consideration is accentuated by Keller (2008, p. 51): “brand awareness is a necessary, but not always sufficient, step in building brand equity. Other considerations, such as the image of the brand, often come into play.” This understanding has been supported by the literature (Esch and Armbrecht 2009).

Brand image is driven by associations predicated upon attitudes. These attitudes are functions of product attributes and benefits. CBBE emerges in the wake of brand knowledge (Keller 1993; Keller 2003). Enhanced brand awareness and brand image improve brand equity (Srinivasan, Park and Chang 2005). The following figure displays the original CBBE model by Keller (1993, figure 1, p. 7):

Figure 2: Original CBBE Framework
(Keller 1993, Figure 1, p. 7)

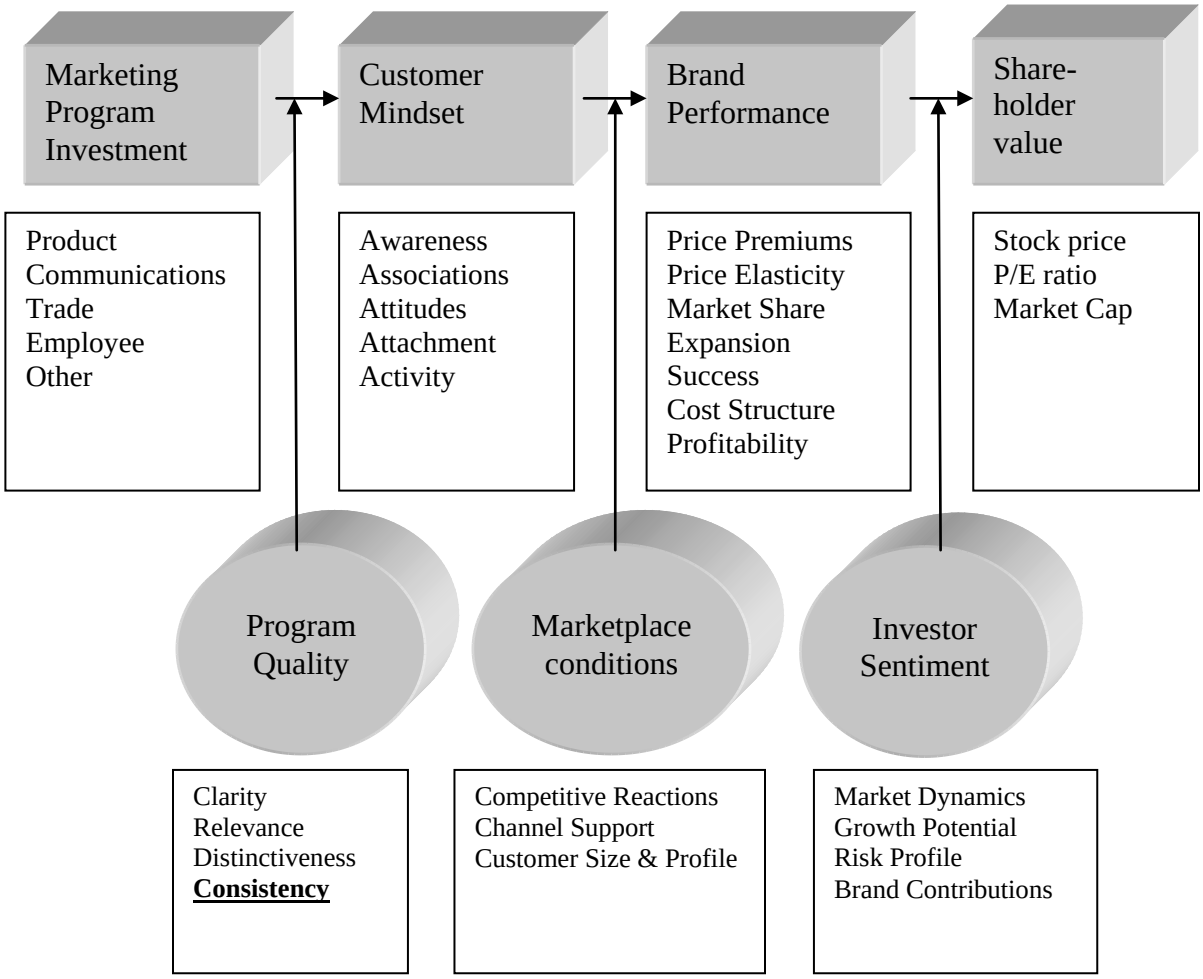


The components of the CBBE were later applied to retailer brands (meaning retailer as brands). The section of the CBBE model dealing with attitudes toward product brands and their effects upon (types of) brand associations was substituted with drivers of retailer brand image, namely access (location), store atmosphere, price and promotion, as well as brand assortment.

ii. Nature of the Brand Value Chain

The Brand Value Chain is a value creation model that allows one to determine the antecedents of brand equity, i.e. brand value. The different stages of the value chain provide levels of analysis. Brand equity can be investigated on the consumer, product or financial level. Keller and Lehmann (2003) call the Brand Value Chain a "holistic, integrated approach" (p. 27). In spite of the detailed components and definitions of the variables, the Brand Value Chain should not be mistaken for a theory. A list of definitions and variables alone does not justify a theory claim (Stewart and Zinkhan 2006). The framework is not empirically testable and thus misses one of the key criteria for a theory (Hunt 2010). Actually, the operationalization of sections of this model has been one of the demanding challenges faced by the literature (Keller and Lehmann 2006). The Brand Value Chain is not a theory but a structured overview to identify brand equity antecedents and outcomes. Rather than being a theory, the "boxes and arrows" of the Brand Value Chain are helpful accessories that offer visualizations of certain relationships (Sutton and Staw 1995).

Figure 3: The Brand Value Chain
by Keller and Lehmann (2003)



iii. The Stages of the Brand Value Chain

Figure 3 provides an overview of the Brand Value Chain (Keller and Lehmann 2003, exhibit 1, p. 29). In the following elaboration, weight is given to those elements of the Brand Value Chain that are of particular relevance in this research project:

The Brand Value Chain rests upon the essential assumption that brand value cannot be imagined and conceptualized without the consumer. The value process is initiated by marketing

investments that affect the consumer mindset. These investments are defined as deliberate or non-deliberate marketing activities affecting brand value creation.

Marketing investments and expenditures are comprised of products (their research, development and design), trade (or intermediary support), employees (selection, training, support) and marketing communication (advertising, promotion, personal selling etc.) (Keller and Lehmann 2003).

Because integrated marketing communication will play an important role later in profiling the incongruity construct, it should briefly be clarified how integrated marketing communication fits into the Brand Value Chain. The AMA defines integrated marketing communication as "A planning process designed to assure that all brand contacts received by a customer or prospect for a product, service, or organization are relevant to that person and consistent over time" (AMA 2009). Because integrated marketing communication implies a planning process, it is an intentional form of communication. Based upon the aforementioned definition of marketing investments, the Brand Value Chain consists of but is not limited to integrated marketing communication.

Consumer mindset relates to any psychological response regarding these marketing investments. The response is expressed in brand awareness (i.e. the ability to identify brands under different conditions), brand associations (strong, favorable, unique perceptions of brand attributes and benefits), brand attitudes (overall assessment of brand-related information), brand attachment (consumer loyalty emotions toward the brand) and brand activity (consumer brand usage, information gathering, word of mouth) (Keller 2008). A comparison between Keller's CBBE approach and the Brand Value Chain unveils that the customer mindset level of the Brand Value Chain corresponds to the facets of the CBBE. The Brand Value Chain serves as a means to

illustrate the antecedents of brand knowledge and extends the CBBE by linking it to the subsequent stages of market performance and shareholder value. This psychological consumer response translates into a reaction in the marketplace. This market performance is inter alia expressed in varying price elasticities, market share, expansion success, cost structure as well as profitability.

Brand equity is associated with the willingness to pay a price premium. The higher the willingness to pay a price premium the greater is the brand value (Keller 2008; in their 2003 article Keller and Lehmann speak of "brand performance").

For this project, it is relevant to emphasize that brand performance is especially linked to the purchase intent. Higher levels of brand equity engender significantly greater preferences and purchase intentions (Cobb-Walgren, Ruble, and Donthu 1995). Market performance is observed by investors and leads to financial performance in the form of shareholder value. Shareholder value is indicated by stock price, P/E ratio and market capitalization.

b. Product Brand Knowledge

i. Product Brand Awareness

Brand awareness expresses the capability of the consumer to identify the brand under various circumstances (Keller 2008). Brand awareness is composed of brand recall and brand recognition. Brand recall accounts for the consumer's ability to retrieve the brand from memory when a cue (e.g. a verbal or visual clue) is provided. Brand recognition expresses that the consumer has seen or heard of the brand before (Keller 1993). As has been previously pointed out, brand awareness is a necessary but insufficient condition of brand image. It will be

accounted for during the data collection (see methods section), but brand awareness is not a part of the operational model.

ii. Product Brand Image

(A) Interplay between Brand Image and Brand Identity

(1) Overview

Certain parts of the literature employ brand image and brand identity synonymously (Ind 1990). Compared to brand image, brand identity is a concept that is of more recent origin (Boulding 1956; Kapferer 1997). But the majority of the recent literature tends to treat both as separate constructs (Nandan 2005). In terms of academic attention, some diagnose brand identity to have become a stronger focal point of the contemporary literature (Harris and de Chernatony 2001).

In terms of corporate branding, the management of a firm devises a product's unique value offering and is subsequently responsible for communicating this offering to the consumer through its employees in a coherent manner (de Chernatony 1999a). According to de Chernatony (1999a) and Harris and de Chernatony (2001) brand identity encompasses six facets: brand vision and culture (core values, corporate culture), positioning (what the brand stands for, whom the brand addresses), personality (emotional traits associated with the brand and emerging from its core values), relationships (interplay between consumers and the brand), presentation (the brand is to mirror the consumer's needs), and reputation. Reputation indicates the past and present potentiality of the brand to provide value to its stakeholders.

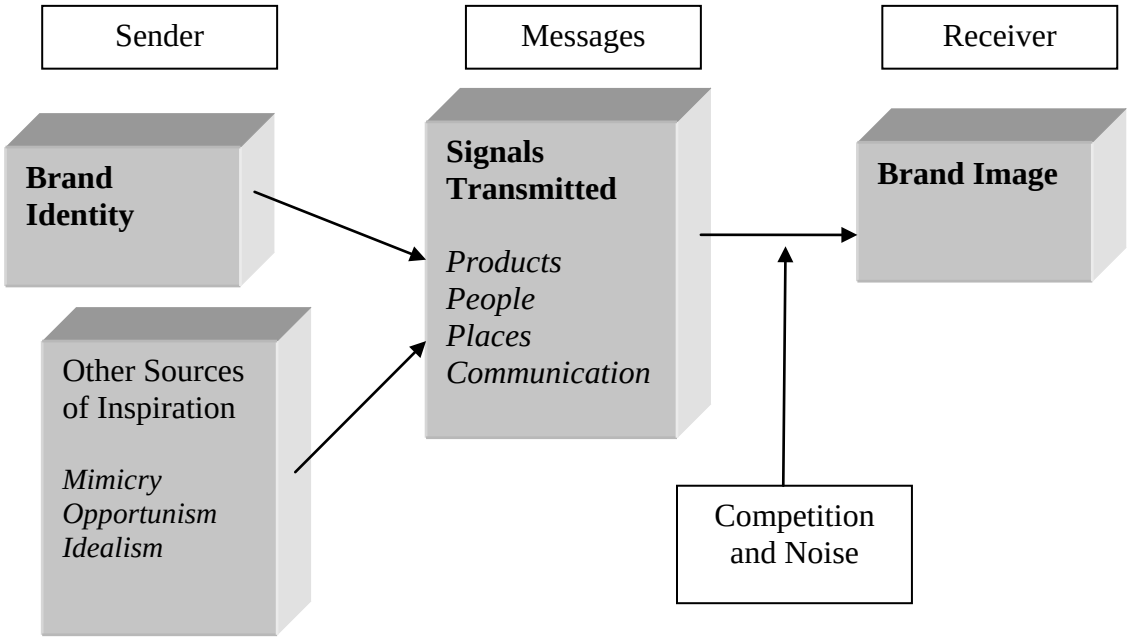
The reputation component illustrates one of the key differences between brand image and brand identity: brand identity is a stable, aggregated assessment of the brand based upon the

different images it has communicated to consumers. The different images of the past and present are in effect “summed up” in a balance embodied in the reputation facet of brand identity. In contrast, brand image tends to be more dynamic as it accounts for current, potentially fluctuating consumer perceptions (de Chernatony 1999b; Fombrun and van Riel 2004). Regardless of its dynamic feature, brand image is a concept emerging over longer periods among the target groups of the brand (Meffert, Burmann and Koers 2005).

Even though there is no uniform perspective on the facets of brand identity, the subsequent distinctions can be stated: brand image originates in the perception of the consumer, whereas brand identity reflects the corporate perspective (Harris and de Chernatony 2001). In other words, brand image expresses how consumers actually perceive the brand, whereas brand identity indicates how the firm intends the brand to be perceived (Aaker 1996). Brand identity is a cornerstone of the brand-building effort (Aaker and Joachimsthaler 2009).

Based on the classic model of communication, brand identity could be described as the message transmitted by the company to the receiving consumer who in reaction perceives a brand image (see figure 5; Kapferer 2008; Nandan 2005). Hence, brand identity and brand image are interwoven concepts. It is the strategic marketing goal to bring both brand identity and brand image in alignment (Aaker 1996).

Figure 4: Brand Image and Brand Identity from a Communications Perspective
(Kapferer 2008, figure 7.1, p. 174)



(2) CBBE and Brand Identity

In alignment with the aforementioned discussion, Keller delineates the following as part of the strategic objective for corporations: to enhance brand identity and to be less susceptible to market competition and volatility (Keller 2001).

According to Keller (2008), brand identity is composed of all existing brand elements. Brand elements are "those trademarkable devices that identify and differentiate the brand" (Keller 2008, p. 176). Brand elements are, for example brand name, design, slogans and spokespeople. These brand elements can be strategically utilized to improve brand awareness and to enhance strong, favorable and unique associations leading to brand image (Keller 2008; Keller and Lehmann 2006).

Looking at Keller's CBBE model and reviewing his elaborations on brand identity, one can state that each component of the CBBE model is linked to a term reflecting the corporate aim of brand building: the two essential components of brand knowledge, brand recognition and brand image, correspond to two brand building factors, brand identity and meaning. Brand identity is a function of brand awareness strength facilitated by brand salience. Within the CBBE model brand awareness is composed of brand recall and brand recognition. From a brand building perspective, brand recall corresponds to awareness depth (ease of recall), whereas brand recognition finds its counterpart in awareness breadth (consumer thinks of brand in various environments). In view of the brand, salience helps consumers to answer the question "who are you?"

Brand meaning is determined by consumer brand associations. Brand meaning is a function of brand performance being linked to attributes and benefits. Brand meaning is intended to form the answer to the consumer's question "what are you?" (Keller 2008; Keller 2001).

(B) Product Brand Image – A Complex Construct

The previous section points to one of the key guiding principles of market psychology and the relevance of brand image: the consumer directs his / her behavior not so much based upon the business deal as it objectively is but mainly how s/he thinks it is (Theis 2006, p. 245).

Brand image has been a topic in key research streams due to its influence upon consumers' choice (Ballantyne, Warren and Nobbs 2006). There exists a multitude of definitions, compartmentalizations and operationalizations of brand image as well as different ways to integrate the construct into a model. In their comprehensive review of the literature Dobni and Zinkhan (1990) present 28 different kinds of formal definitions of brand image alone.

Patterson (1999) complements the work of Dobni and Zinkhan (1990) and has collected brand image definitions since their publication. The common denominator of the various definitions is that brand image represents the consumer perceptions regarding a brand. The subjective character of brand image is accounted for by speaking of the beliefs consumers have toward a brand (Kotler 1997).

Table 2: Definitions of Brand Image – A Synopsis
Adapted from Dobni and Zinkhan (1990) and Patterson (1999)

Definition	Author(s)
Blanket Definitions	
A product, then, is the sum of the meanings it communicates, often unconsciously, to others when they look at it or use it.	Newman 1957
A brand can be viewed as a composite image of everything people associate with it. Brand images may have several dimensions: functional, economic, social, psychological...The limits are set by the brand image built through styling and advertisements as well as other product attributes.	
Brand image is the sum total of impressions the consumer receives from many sources. All these impressions amount to a sort of brand personality which is similar for the consuming public at large, although different consumer groups may have different attitudes toward it.	Herzog 1963
Practitioners of the soft sell approach typically create ads that appeal to the images associated with the use of the product, images that one may gain and project by using the product. ...Typically the copy associated with these ads emphasizes the image of the product or, more specifically, the images associated with the use of the product.	Snyder and DeBono 1985
The concept of image can be applied to a product ... It describes not individual traits or qualities, but the total impression an entity makes on the minds of others.	Dichter 1985
An image is not anchored in just objective data and details. It is the configuration of the whole field of the object, the advertising, and more important, the customer's disposition and the attitudinal screen through which he observes.	
A particular product position is also referred to as a product or brand concept if the product does not yet exist, or a brand image if the product does exist.	Runyon and Stewart 1987

Emphasis on Symbolism	
People buy things not only for what they can do, but also for what they mean... The things people buy are seen to have personal and social meanings in addition to their functions.	Levy 1959
The purchased item is conceptualized as having two kinds of value for the owner, one for its concrete functional utility and the other for its utility as a prestige symbol. ...functional value is that which is conventionally meant by utility as a good, while symbolic value (i.e., image) is the extent to which a purchase enhances the worth of the person in his own eyes (self-esteem) and in the eyes of others (status).	Pohlman and Mudd 1973
...the advertiser formulates a claim of superiority or distinction based on factors extrinsic to the product. Often products are associated with symbols, either socially extant or created by or for the advertiser. ...the effort to differentiate die product is psychologically rather than physically based.	Frazer 1983
From this perspective (i.e. semiotics) commodities are studied as signs whose meaning is the consumer's 'brand image'. Semantic components of a brand image...include technical matters, product characteristics, financial value or social suitability.	Noth 1988
Emphasis Upon Meanings Or Messages	
The concept of brand image aptly sums up the idea that consumers buy brands not only for their physical attributes and functions, but also because of the meanings connected with the brands.	Levy and Glick 1973
At times, imagery is indeed largely an illusion.	
An image is an interpretation, a set of inferences and reactions to a symbol because it is not the object itself, but refers to it and for it.	
...the meaning that a product has ... perceived product symbolism	Sommers 1963
...the psychic or symbolic value of goods purchased in the marketplace	Grubb and Grathwohl 1967
In symbolic consumer behavior, interest lies in investigating the role of products as "messages" or "nonverbal communication" transmitted by the user/owner.	Swartz 1983
...the set of meanings and associations that serve to differentiate a product or service from its competition	Reynolds and Gutman 1984
what the brand connotes or means symbolically in the eyes of consumers	Durgee and Stuart 1987
Emphasis Upon Personification	
...an "adult" image and a "child" image of the product	Bettinger, Dawson and Wales 1979

Products are assumed to have personality image, just as people do... These personality images are not determined by the physical characteristics of the product (e.g. tangible products, suppliers, and services) alone, but by a host of other factors such as advertising, price, stereotype of the generalized users, and other marketing and psychological associations.	Sirgy 1985
Also known as "brand personality" or "brand character", it involves nothing more than describing a product as if it were a human being.	Hendon and Williams, 1985
In positioning and repositioning products, advertisers often work to create a gender image for a brand.	Debevec and Iyer, 1986
Emphasis Upon Cognitive and Psychological Elements	
The sets of ideas, feelings and attitudes that consumers have about brands	Gardner and Levy 1955
The social and psychological nature of products	
...a character or personality that may be more important for the overall status (and sales) of the brand than many technical facts about the product.	
...the product or brand image is a symbol of the buyer's personality	Martineau 1957
An image...is the mental construct developed by the consumer on the basis of a few selected impressions among the flood of total impressions; it comes into being through a creative process in which these selected impressions are elaborated, embellished and ordered.	Reynolds 1965
...(brand image is) an attitude about a given brand.	Bird, Channon and Ebrenberg 1970
Emphasis Upon Cognitive and Psychological Elements	
...brand preference is a function of the perception space associated with the alternatives. The author takes the position that perception consists of two components, the individual's ability to obtain measures of the brand attributes on factors he considers important, and the "image" of each brand. The term "image" as usually defined and discussed in the marketing literature is an abstract concept incorporating the influences of past promotion, reputation and peer evaluation of the alternative. Image connotes expectations of a consumer. The interaction of these two variables, individual attribute measurements and image, is assumed to vary across product types and across individuals.	Gensch 1978
...in marketing theory, image generally is assumed to have a more significant role in product situations in which the individual has difficulty obtaining objective measures on the important product attributes...	
A brand image is a constellation of pictures and ideas in people's minds that sum up their knowledge of the brand and their main attitudes towards it.	Levy 1978

A brand's image is what people think and feel about it: and those thoughts and feelings will not - cannot - be universally identical ...The image lies in the mind of the beholder - and is conditioned at least as much by the nature of the beholder as by the nature of the object itself.	Bullmore1984
A brand image is not simply a perceptual phenomenon affected by the firm's communication activities alone. It is the understanding consumers derive from the total set of brand related activities engaged in by the firm.	Park, JaworskI and Maclnnis 1986
The image is a perception created by the marketer's management of the brand. Any product theoretically can be positioned with a functional, symbolic or experiential image.	
...the consumer's understanding and evaluation of the product	Friedmann and Lessig 1987
Definitions Since 1990 (Collected by Patterson 1999)	
A symbolic meaning commonly shared by the majority of consumers	Lee 1990
That cluster of attributes and associations that consumers connect to the brand name	Biel 1993
Brand image is the perceptual concept of a brand that is held by the consumer.	Kirmani and Zeithaml 1993
Brand image refers to the organized set of perceptions consumers have formed about the brand.	Foxall and Goldsmith 1994
The image refers to the manner in which [a brand's] public decodes all the signals emitted by the brand through its products, services and communication program.	Kapferer 1995
Favorable connotations which are not necessarily associated with the product's properties	Lancaster and Reynolds 1995
Generally synonymous with either the brand's strategic personality or its reputation as a whole	Upshaw 1995
How customers and others perceive the brand	Aaker 1996
A brand image is a complex of symbols and meanings associated with a brand.	Zikmund and d'Amicao 1996
The total impression created in the customer's mind by a brand and all its associations, functional and non-functional.	Thompson cited in Gordon 1996

(C) Construct Definition of Product Brand Image

Keller (1993) defines brand image as "perceptions about a brand as reflected by the brand associations held in consumer memory." (p. 3). Based on Keller (1993) the subsequent definition is applied: product brand image is the perception of a product brand in the minds of consumers. Price and quality are key dimensions of product brand image (Lybeck, Holmlund-Rytkönen, and Sääksjärvi 2006, p. 476; Steiner 2004).

(D) Drivers of Product Brand Image

A positive brand image is created by strong, favorable, unique and consistent brand associations. Brand associations are linked to the brand meaning that already is embedded in consumer memory.

(1) Positive Brand Associations

Positive brand image and thus positive CBBE emerges when the consumer holds strong, favorable and unique brand associations in memory (Keller 1993). These types of associations are important to help consumers differentiate between brands and catalyze brand positioning (Keller, Sternthal, and Tybout 2002). In low involvement situations strength, favorability and uniqueness are not as important as in high involvement consumer decision situations (Thorson and Moore 1996).

(2) Attitudes, Attributes and Quality Perceptions

Attitudes are brand associations, and attitudes are a function of attributes and benefits. Attributes and benefits are themselves brand associations as well. Attributes can be product related or non-product related.

(a) Product-Related Attributes

Product-related attributes refer to the physical, intrinsic composition of a product. The specific composition depends upon the product category. In the realm of pet products, the physical composition refers to their ingredients (Ferreira, Hall and Bennett (2008). In areas in which products are similar, consumers depend more on non-product-related attributes than product-related ones in their assessment of consumption decisions. Product-related attributes usually correspond to the functional benefits (O'Cass and Lim 2001).

(b) Non-Product Related Attributes

Non-product related attributes relate to extrinsic features of the product, namely user imagery, usage imagery, price and packaging. Usage imagery indicates the specific circumstances under which the product is used. Of great importance in this study is packaging in relation to different brand types, whereas price will not be included in this research.

Price is a vital non-product related attribute. But in order to distill the effect of brand types, this research will hold the price variable constant and solely focus upon packaging. This procedure is justified based upon the subsequent rationale: in the first place, if other extrinsic cues such as brand name are readily available, these cues tend to have a relatively stronger impact on perceived quality than price (Alhabeeb 2004; Zeithaml 1991). In the second place,

research, which examined the relationship between price and perceived quality, showed inconsistent results (Alhabeeb 2004; Rao and Monroe 1989). This is why there will not be any major discussions on price in the following.

Packaging attributes vary with regard to different brand types, national and private labels. The subsequent section provides an overview of the product brand taxonomy and the interplay between brand types and quality perceptions.

Packaging is one the strongest factors influencing consumer brand associations (Keller 2008). Packaging and its link to quality perceptions has been subject to a significant research stream in the literature (Underwood 2003; Rigaux-Bricmont 1982; Bonner and Nelson 1985; Stokes 1985). Packaging concerns the whole exterior of the product, and is a set of extrinsic quality cues that comprises design and brand name (Olson and Jacoby 1972). The focus of this brand equity research is not the design but the name of the product in relation to brand type.

The quality of product brand types cannot be discussed without concurrently providing an overview over the key taxonomy of retail product brands. In the area of branded consumer goods, brands can be categorized based upon the legal ownership and the authority to execute marketing related decisions. The commonly accepted taxonomy predicated upon ownership and control can be traced back to Schutte (1969). One can observe that the original terminology has undergone only slight modification: the term ‘national brand’ appears now more common than ‘manufacturer brand’. The older term ‘distributor’s own brand’ in the contemporary literature is frequently substituted by ‘private brand’ or ‘store brand’.

In case of a national brand, the manufacturing company is responsible solely for labeling its products (this is why the term manufacturer brand is traditionally employed). The national brand is the traditional form of a product brand. From this perspective, national brands are often

characterized by a higher price, better quality and a higher level of awareness among consumers facilitated by nationwide availability (Britt 1970). They are meant to be distributed via various channels and retail outlets (McEnally and Hawes 1984).

Some researchers prefer utilizing a dichotomy between ‘private label’ (rather than ‘private brand’) and the term ‘brand’ (Dumke 1996). This categorization appears to be misleading because it may adhere to the notion that private brands, from a historical perspective, were sometimes considered not to be “real” brands but “cheap and nasty substitutes” (Kumar and Steenkamp 2007, p. 13, citing the Economist), especially in difficult market environments. Even though accelerated growth in the area of private brands can be observed in times of recession, and a downswing in times of economic recovery, the overall increase in market share has been stable for decades (Kumar and Steenkamp 2007; Lincoln and Thomassen 2009).

A private or store brand is owned by the distributing company, i.e. in the context of consumer goods, the retailer. This explains why next to the term ‘private brand’ and the expressions ‘own-label-brand’ or ‘distributor’s own brand’ are synonymously used as well. Here it is in the realm of the retailer’s responsibility to decide upon production and quality standards as well as marketing activities. Private brands are not produced by the retailer but manufactured by an assigned company that may also produce differently branded products such as national brands. The company holding the rights of the private brand usually distributes it exclusively through its channels.

Private brands usually have lower prices than national brands but the promotions claim brand attributes that are similar to national brands (“me too” products). But in spite of marketing communication efforts to market these private brands as products of equal quality, consumer research unveils that the traditional perspective on private brands still perseveres: compared to

private brands consumers rate national brands as superior and are willing to pay a higher price (Steiner 2004; Sethuraman 2000). Interestingly, consumers are inclined to pay a price premium for national brands even when they rate the quality of private and national brands as equal (Sethuraman 1995). Consequently, the brand name – private vs. national brand – can be called a decisive factor in consumer quality perceptions.

(3) Benefits and Quality Perceptions

Benefits are positive aspects "consumers think the product…can do for them" (Keller 1993, p. 4). Consumers hope for advantages that go along with the consumption of a product. The CBBE model distinguishes between functional, symbolic and experiential benefits. Functional benefits are related to the foundational tiers of Maslow's hierarchy of needs, namely health and safety. In view of BSE and other threats, food consumption decisions are increasingly motivated by health concerns (Shiu, et al. 2004). Symbolic benefits are extrinsic advantages of product consumption. They refer to underlying needs for social approval, personal expression, and outer-directed self-esteem. Symbolic benefits are, for example, status, exclusivity and fashionability (Orth and Marchi 2007). Experiential benefits are emotions related to the product.

It has been discussed earlier that quality perceptions can be linked to the means-end rationale that consumers desire products to be associated with benefits for a certain goal (e.g. to have a healthy dog). Hence, benefits can readily be linked to quality perceptions.

c. CBBE Outcome Variable and Construct Definition

Several researchers developed measures for CBBE, namely Lassar, Mittal and Sharma (1995), Aaker (1996), Washburn and Plank (2002), Yoo, Donthu and Lee (2000), Yoo and Donthu (2001) and Netemeyer et al. (2004). In addition, quite a few authors have developed brand equity scales in an eclectic manner by resorting to components of measures of the above mentioned authors and modifying them (e.g.; Brown and Dacin 1997; Pappu, Quester and Cooksey 2005; Pappu and Quester 2006).

This research endeavors to detect impacts upon a key summary measure of CBBE, overall brand equity (Yoo and Donthu 2001). Yoo and Donthu (2001) devised this measure to analyze preferential quality perceptions. The following construct definition applies: CBBE is overall brand equity in the sense of preferring a brand to another.

d. The Relationship between Product Brand Image and CBBE

Considering the importance of brand equity and the relevance of the CBBE framework, a significant number of literature streams exist that seek to analyze the relationship between product brand image and CBBE in different contexts such as advertising. In these analyses, brand image is tied to different dimensions of CBBE outcome variables. The extant literature has found positive relationships between product brand image and satisfaction (Glynn 2009; Glynn and Brodie 2004), loyalty (Jacoby and Chestnut 1978) and brand preference (Agarwal and Rao 1996; Allen 2001; Keller 2008; O'Cass and Lim 2001; Park, JaworskI and Maclnnis 1986; Park and Srinivasan 1994). In sum, a positive product brand image impacts brand preference in a favorable way.

It is to be noted that the research linking product brand image and CBBE has been conducted across various product categories. Considering the intricate differences between e.g. durables versus non-durables and non-groceries and groceries, it appears lucid that several studies deliberately focused upon a specific product class or category (Lassar, Mittal and Sharma 1995: pens and jeans; Vazquez, del Rio, and Iglesias 2002: sports shoes; Washburn and Plank 2002). However, whereas the literature considering CBBE and grocery products already is relatively scarce (Anselmsson, Johansson and Persson 2007), there are no academic articles referring to pet (dog) food and brand equity or brand image (except a few conference proceedings dealing with pet food recalls and case studies: Lancendorfer 2009; Annual Advances in Business Cases 2007).

Because the relationship between product brand image and various facets of CBBE have been established by the literature (see above), it can logically be expected that product brand image is also associated with brand preference expressed by OBE. Hence, the subsequent hypothesis is put forth:

4. Hypothesis 1

Product brand image is positively associated with CBBE.

a. Retailer Brand Knowledge

i. Retailer Brand Awareness

Retailer brand awareness concerns brand recall and brand recognition of retailer brands, i.e. the name of the retail outlet (e.g. Petsmart, Dollar General). For further details, see the elaborations in the product brand awareness section. Both product and retailer brand awareness

will be considered during the data collection process (see methods section). But like product brand awareness, retailer brand awareness is not included in the operationalization.

ii. Retailer Brand Image

A comprehensive review of the marketing literature of the past decades shows the usage of both the terms ‘store image’ as well as ‘retailer image’. This observation warrants some clarification regarding the meaning and potential difference of both.

Traditionally, the literature spoke of store image rather than retailer brand image. Early marketing research tended to focus upon local or individual stores, especially in downtown areas (Bearden 1977; Rich and Portis 1964). With the dawn of shopping centers, retail chains and mass merchandisers in the 1950s and 1960s the research focus shifted toward to a more holistic view of the store image construct (Doyle and Fenwick 1974). A marketing literature emerged that sought to describe retailer image (Kunkel and Berry 1968; Samli 1998). The more recent, and contemporary marketing literature has employed the term store image but it is now clearly associated with a different connotation (Mazursky and Jacoby 1986; Nijssen and Douglas 2008; Wheatley and Chiu 1977). This research applies the expressions store image and retailer image interchangeably.

It should be noted that, when perceived in isolation, the expression ‘retailer brand image’ could be misunderstood. The potential for misunderstanding is enhanced by the fact that significant parts of the literature prefer the expression ‘retail brand’ to ‘private brand’ (Alexander and Colgate 2005; Burt 2000). With the proliferation of store or private brands, the term ‘retailer brand image’ might be interpreted as referring to the image of a private brand. Interestingly, a special issue by the Journal of Retailing on “Retail Brand and Customer Loyalty” contains

articles dealing with private brands as well as retailer as brand (Ailawadi and Keller 2004; Grewal, Dhruv and Lehmann 2004; Sayman and Raju, 2004).

Whenever this research employs the phrase retailer brand image, it refers to the 'retailer as brand' – a term being accentuated in recent reviews of the retail branding literature (Ailawadi and Keller 2004).

(A) Overview: The Dimensions of Retailer Image

Store image reflects the manner by which a store is perceived by customers. It is a relational, dynamic construct appertaining to other retailer images (Enis and Roering 1981). It is a multidimensional construct that is not absolute but emerges by comparing different stores. As straightforward as this definition seems, the conceptualization and operationalization of the construct are not uniform as a review of the literature reveals (Kasulis and Lusch 1981; Ward, Bittner and Barnes 1992). On the one, hand the importance of this construct is undisputed; on the other hand, the question of how to define the relevant facets in order to allow for a suitable empirical measurement has been subject to controversy (Chowdhury, Reardon, and Srivastava 1998). This is why some researchers describe store image as a subject with a significant noise level (Amirani and Gates 1993). The "noise" is rooted in the dispute about the elements of store image, even though a common denominator for a definition of store image can be detected. Many researchers have discussed the facets of store image with the operationalization in mind. The question of measurement usually is a matter of the methods section. Due to the significant dispute in the literature and the interplay between construct and its measurement, matters of operationalization have to be discussed subsequently.

A uniform definition of store image does not exist. The store image construct can be traced back to early literature from the 1950s (Boulding 1956; Martineau 1958). Martineau's (1958) definition of store image encompasses functional and psychological dimensions. The functional dimension is composed of price range, store design, merchandise quality and selection, whereas the psychological refers to aspects like ambience. Aarons (1961) spoke of meanings and relationships as factors affecting the characterization of a store. The early literature emphasized a consumer learning process in which perceptions of a store slowly emerge. In addition, in reviewing this older literature it stands out that research approached image more from the perspective of the individual store (Kunkel and Berry 1968). This approach shines through their definition of store image as "the total conceptualized or expected reinforcement that a person associates with shopping at a particular store" (p. 22).

The more recent literature shifts from this narrow focus to image as a function of overarching perceptions stored in memory and linked to categories of retailers (discounter, specialty store etc.). Incoming information of stimuli are matched with existing categories in memory (Keaveney and Hunt 1992).

An analysis of quantitative measures in the literature unveils reoccurring dimensions of store image (see Table 3 below) (Kunkel and Berry 1968; Lindquist, 1974/1975; Hawkins, Albaum and Best 1976; Hansen and Deutscher 1978; Malhotra, 1983; Mazursky and Jacoby 1986; Rearden and Miller 1995). As key dimensions of store image one can identify: service, product (merchandise) quality, atmosphere, convenience and prices / value. It should be noted that the dimensions suggested in the literature of the past decades reflect the paradigm shift from transactional marketing to relational marketing, the latter being subsumed under the term service-dominant logic (Lusch, Vargo and O'Brien 2007; Vargo and Lusch 2004). For instance,

in the 1970s mostly tangible aspects such as product, price, assortment, styling, location and parking facilities were suggested as key dimensions of store image (Bearden 1977; Doyle and Fenwick (1974). An essential component of relationship marketing like customer service was neglected in these early research streams.

Table 3: Recurring Store Image Dimensions – A Selective Synopsis

Mazursky and Jacoby (1986) - Department Stores Image Facets (cues are ranked by importance based on empirical findings)				Malhotra (1983) - Record Stores	Herstein and Vilnai-Yavetz (2007) - Fashion Discounters	Hawkins et al (1976) - Department Store	Rearden and Miller (1995) - Grocery Stores	
							Dimensions	Items
Cues	**Quality of Service**	**Quality of Merchan-dise**	**Plea-sant-ness**		Internal Promotion: Internal Store Design, Browsing Convenience, Customer Service		Clientele	Where my friends shop
								Where my peers shop
Number of Salespersons Per Department	1			Store Personnel and Service	Salespeople: Courtesy, Professionalism	Honest; Friendly; Slow Service; Dependable; Helpful Employee;	Service	Fast Check-out
Number of Cashiers Per Department	2				Sales: Terms of Payment + Sales Promotions and Special Sales			Many Extra Services
Merchandise Return Policy	3				Sales: Terms of Payment + Sales Promotions and Special Sales			
Number of Fitting Rooms	4							
Credit Cards Accepted	5							
Location			2	Convenience and Location	Convenience: Location + Opening Hours	Convenient Location	Convenient	Good Parking Availability
								Not Crowded
Number of Floors			3	Physical Facilities	Internal Promotion: Internal Store Design, Browsing Convenience, Customer Service	Unpleasant	Atmosphere	Pleasant Atmosphere
Pictures of Stores' Interior Design			1					Comfortable to Shop There
Brand Names		1			Merchandise: Quality, Selection and Assortment, Fashionability	Low Quality	Merchandise	High Quality Products
Price Ranges		2		Acceptable Price	Price	High Priced		Never Out of Stock
Assortment		3		Variety and Selection	Merchandise: Quality, Selection and Assortment, Fashionability	Limited Selection	Value	Good Value for the Money
Percentage of Stock Currently in Sale		4			Price			Affordable
Merchandise Material		2			Merchandise: Quality, Selection and Assortment, Fashionability	Low Quality		
Discount on Sale Merchandise		5		Acceptable Price	Sales: Terms of Payment + Sales Promotions and Special Sales	High Priced		
Merchandise Colors		4			Merchandise: Quality, Selection and Assortment, Fashionability			
					External Promotion: Customer Club, Chain Advertising, Display Window			

(B) The Retailer Brand Image Construct - Gestalt or Not Gestalt?

The literature is divided whether retailer brand image is a "gestalt" construct. The proponents of a gestalt approach denounce the compartementalization of the construct for measurement purposes. They argue this would deprive the construct of the effect being larger than the individual elements of which it is compounded. Consequently, only unstructured operationalizations are regarded as appropriate.

The other, traditional view in the literature does not necessarily deny the gestalt character but allows attribute–based, structured investigations of store image (Mazursky and Jacoby 1986; Keaveney and Hunt 1992). Interestingly, a comparison of unstructured and structured measures conducted by Chowdhury, Reardon, and Srivastava (1998) revealed comparable outcomes. For efficiency reasons (cost, time) they recommend structured measures. Hence, the controversy about the gestalt profile of store image may be left undecided.

(C) Retailer Brand and Product Brand – Are They Distinct?

Whether 'product brand' and 'retailer as brand' are distinct is disputed in parts of the literature. Researchers like Burt and Sparks (2002) voiced that it is "erroneous to continue to refer to retailers' 'own-labels' or 'private labels'" (p. 199). Their reasoning follows the idea that private brands have developed through various generations from inferior generic or no-name forms to private brands closely imitating national brands in terms of quality and appearance (Sinapuelas 2007) to the stage of private brands that may actually exceed the quality of national brands (Burt and Sparks 2002). Burt and Sparks (2002, p. 198, 199) refer to private brands in the grocery industry and claim they have now reached the so-called 4th generation of private brands. The justification behind this claim is the value-added quality of private brands based on

innovative features such as innovative technology and processes as well as special activities and services surrounding the private brand purchase. The reason for offering 4th generation private brands is founded in improving one's corporate image.

In an article published earlier by Burt (2000), the author provides further details regarding the claimed value adding components: the brand development is analyzed in conjunction with Marks & Spencer and in context of a substantial reorganization of British retailers. They initiated the addition of their names (e.g. "Marks & Spencer") on their private brands to trigger a positive image transfer effect from retailer brand to private brand.

Furthermore, the packaging of private brands changed significantly. Rather than focusing upon a design, labeling and color that clearly linked them to the store they are sold in, 4th generation private labels are characterized by a distinct packaging spotlighting the product by imitating the national brand design and avoiding or attenuating cues that could give the impression that the product is a private brand. One would move away from a design that would make private brands easily distinguishable across product categories and rather attach a unique set of features to communicate high price and value (Burt 2000).

It appears appropriate to criticize the previous position for several reasons. The statement regarding the erroneous use of private brands next to retailers as brands communicates itself too strong as an apodictic verdict. As valuable as the idea of different stages of private brands appears, it may be questioned if the postulated dynamic follows with the implied inevitableness and whether the 4th stage has really been reached across geographic boundaries, retail types and product categories. Indeed, the literature perceives the development of fourth generation private brands as a phenomenon centered in the UK (Fernie and Pierrel 1996; Laaksonen and Reynolds 1994; Traill and Grunert 1997).

Burt and Sparks' approach (compatible with authors like Dawson 2000 and Laaksonen and Reynolds 1994) is harbored in the European retail context. The illustrated retail development reviewed by Burt and Spark (2002) provides limited generalizability beyond its realm. Even Burt (2000) concedes that the developments of branding in the rest of Europe are different. It should be briefly mentioned that Marks and Spencer's brand strategy is comparable with the one of the US fashion dealer, Gap. Like Marks and Spencer Gap also solely offers fashion store brands (Newman and Cullen 2001). But this appears to be an exceptional example in US retailing so far. In addition, fourth generation private brands cannot be found in the realm of pet food retailing yet. Furthermore, the two retailers under investigation in this research – Petsmart and Dollar General – do not attach their corporate names to their private brands.

Based upon company statements, public news sources and personal interviews of the author with sales associates, both Petsmart and Dollar General offer private brands for reasons that match the 3rd generation profiling of private brands: "value for the money", "comparable with brand leaders", "building retailer's image among consumers". The benchmark criteria for the 4th generation such as ""equal or higher quality than known brand", "better and unique products", and "same or better image and quality than the brand leader" do not apply (Burt and Sparks 2002).

The underlying train of thought of the research at hand is in alignment with Ailawadi and Keller (2004) who recognize the growing competition through discounters and private brands but express the distinctness of product brands and retailer as brand.

iii. Construct Definition of Retailer Brand Image

Keller's (1993) general definition of brand image (see above) is applicable in this context as well. But naturally, brand image is now associated with the retailer. One of the key definitions for retailer image emphasizes the constant, dynamic process of image formation as well as the cognitive and/or affective facets of retailer image: retailer (store) image is a set of cognitions and / or affect which are inferred from a set of ongoing perceptions and / or memory inputs linked to a store and which represents what the store signifies to an individual (Mazursky and Jacoby 1986, p. 147). The operationalization will be implemented based on this definition (Chowdhury, Reardon, and Srivastava 1998).

iv. Retailer Brand Dimensions and Their Link to Quality Perceptions

According to Ailawadi and Keller (2004) retailer brand image is composed of four facets of brand associations: access, store atmosphere, price and promotion and brand assortment. The conceptualization corresponds to store image dimensions that can be found throughout the literature (see Table 3 above).

(A) Access

Access represents the location of the retail store and e.g. the related distance consumers must drive to go to the store (Ailawadi and Keller 2004). The underlying logic for including access as a retailer brand dimension is rooted in the insight that consumer inclination to go to a store is inversely related to the distance s/he must travel to this store (retail location theory; Huff 1962).

Even though consumers will still include location in their benefit / cost calculation when deciding where to shop but the literature observes a diminishing importance of this image dimension. A decade ago Bell, Ho and Tang (1998) unveiled the discrepancy between their empirical findings and the pivotal relevance of location and travel costs for consumer decision making traditionally stated by the retail location literature stream (Brown 1989; Huff 1964). A factor contributing to the diminishing importance of location is the popularity of online shopping (Ailawadi and Keller 2004). According to Ailawadi and Keller (2004) access still forms a certain portion of the total shopping expenditures in consumers' retail decision making. Furthermore, it plays a strategic role for retailers trying to increase "share of wallet from fill-in trips and small basket shoppers."

Access in the sense of geographical distance and store location will be included as a control variable but will not be included in operational model.

(B) Store Atmosphere

Store atmosphere refers to powerful physical (e.g. design), ambient (e.g. scent) and social (e.g. employee conduct) stimuli in the retail store environment which influence retailer image based upon cognitive (e.g. overall assessment of the store appearance) and affective (e.g. mood, pleasantness) consumer perceptions (Ailawadi and Keller 2004; Spies, Hesse and Loesch 1997). From a brand strategic perspective store atmospherics expresses the endeavor to create a retail environment suitable to impact consumer decision making in a favorable manner (Vida, Obadia and Kunz 2007; Greenland and McGoldrick 1994). The literature has determined the following to be some of the relevant individual elements of store atmosphere: tidiness, colors, lighting, scents, music, temperature (Vida, Obadia and Kunz 2007; Chowdhury, Reardon and Srivastava

1998), the degree of crowding and employee friendliness (Akhter, Andrews, and Durvasula 1994).

Store atmosphere influences consumers' value perceptions regarding the offered merchandise (Baker et al. 2002). The characteristics of the store atmosphere signal service quality and thus influence consumers in their product quality associations (Sirohi, McLaughlin and Wittink 1998). The tangible and intangible cues in the retail store express the culture of the firm providing criteria for an overall quality judgment (Ezeh and Harris 2007; Berry and Clark 1986; Koernig 2003).

Resorting to cue utilization theory, Richardson, Dick and Jain (1994) found that consumers responded favorably to private brand grocery items because of a pleasant store atmosphere. Similar results may be expected in pet food retailing.

(C) Brand Assortment

Another component affecting brand associations regarding the retailer brand image is brand assortment. Brand assortment refers to the breadth (cross-category) and depth (within category) of various brands offered by a retailer. The manner in which brand types are offered within and across product categories represents the brand architecture applied by the respective retailer (Juhl et al. 2006; Grunert et al. 2006). There usually is a connection between the pricing format and the assortment structure. Similar to the grocery sector, the pet food retailing area comprises a significant variety of pricing formats and assortment structures. Pet specialty stores like Petsmart offer HILO, service and a wide assortment, whereas discount stores (Walmart, Dollar General) are characterized by EDLP, a narrow assortment and limited service (Solgaard and Hansen 2003).

Based on insights provided by the brand extension literature, a successful brand extension is dependent upon a fit between extension and parent brand (Keller and Lehmann 2006). One of the benchmarks of fit is image (Batra, Lehmann and Singh 1993). Translated into the brand assortment context, the retailer image is related to certain product brand image quality levels that may conflict with product brands of a dissimilar image level. After all, consumers enter a particular store with a certain set of expectations associated with the retailer image. Consumers shop at a retailer with an image that matches their shopping motive. For example, a high quality assortment does not automatically translate into perceived quality performance when the other cues such as store atmosphere and employee service are not considered (Morschett, Swoboda and Foscht 2005). The store cues representing the store image have to be coherent in order to warrant a clear image (Lee and Hyman 2008).

Any change in a core facet of retailer image like merchandise or brand assortment has significant impacts upon consumer perceptions (Mazursky and Jacoby 1986). An "unexpected" brand that conflicts with the other store cues embodying the retailer image may have negative consequences. Plainly speaking, a "retailer has to make sure that he/she offers those products to his/her customers that they expect him/her to offer" (Bloemer and de Ruyter 1998, p. 502).

Support for this reasoning is supplied by research of Inman, Shankar and Ferraro (2004). They revealed that certain retail outlets evoke associations with specific product categories they call "signature product categories" (Inman, Shankar and Ferraro 2004, p. 52). Similarly, retailers are known for a certain brand assortment, i.e. a signature brand assortment comprising brands of an expected quality level.

v. The Relationship between Retailer Brand Image and CBBE

The literature has investigated the impact of retailer image upon consumer behavior. Research investigated the interplay between retailer image and store patronage and retailer loyalty.

Store patronage is founded on retailer image. The decision process of what store in which to shop is guided by evaluative criteria influenced by store image (Solgaard and Hansen 2003). The more favorable the store image, the higher the appeal for consumers and the resulting propensity to shop at a particular retailer (Doyle and Fenwick 1974; Mazursky and Jacoby 1986; Osman 1993). The academic as well as managerial literature accentuates the critical importance of store image for consumers preferring one store to another (Grewal, Monroe and Krishnan 1998; Hansen and Solgaard 2004; Hartman and Spiro 2005). The details of the relationship between retailer image and store loyalty have been discussed controversially. In summary of the research one can state that store image influences loyalty directly or at least indirectly via consumer satisfaction (Bloemer and de Ruyter 1998; Houston and Nevin 1981; Stanley and Sewall 1976). Based on these considerations the subsequent hypothesis is put forth:

5. Hypothesis 2

Retailer brand image is positively associated with CBBE.

a. Incongruity

A review of the literature unveils the significant challenge to conceptualize incongruity and to incorporate it into the proposed model in a theoretically sound way. Across different research domains such as advertising, branding and celebrity endorsement the concept is labeled,

defined and operationalized differently. Furthermore, authors refer to various theories to explicate incongruity. The following section provides an overview over the key theoretical approaches dealing with (in)congruity.

i. Definitions and Theoretical Foundations

A review of the term incongruity turns out to be quite intricate because the various literature streams lack a lucid, coherent terminology. Authors relate to similar or identical (in)congruity concepts by employing different expressions such as fit, perceived fit, similarity, consistency / consistency effect, coherence, congruence, typicality, matching and match-up (Fleck and Quester 2007).

The congruity literature is mostly based on the psychological concept of congruity or the principle of congruity. Other theories combine psychological and sociological elements or are mainly sociological in nature. Different theories exist to explain the mechanism of (in)congruity perceptions.

(A) Balance Theory

One of the earliest theories on incongruity, the so-called balance theory, was founded in the 1940s. Balance theory evolved analyzing interpersonal communication. According to Heider (1946; 1958), “a person feels uncomfortable if he disagrees on a topic with someone he likes.” The resulting feeling of discomfort facilitates an adjustment process entailing change of opinions to reach a balance state. The theory was tested and could be supported in various social settings.

(B) Cognitive Dissonance Theory

Similar to balance theory, dissonance theory posits that individuals face a state of distress in case of discrepant cognitions (Carlsmith and Aronson 1963). The dissonance may be based upon a gap between experience and expectation, and individuals will then seek to reconcile the conflict to achieve consonance (Cooper 2007).

Originally devised by Festinger (1957), this theory is based upon the notion that individuals store pieces of information as cognitive elements, i.e. perception and knowledge about the environment and oneself. Cognitions that are related and implied are consonant (e.g. A- I am eating this steak and B – I enjoy it; example adapted from Wicklund and Brehm 1976, p. 2). Contradictory cognitions lead to dissonant relationships (e.g., I bought this food and it is not tasty). Not all cognitions held by an individual are linked. They are neither consonant nor dissonant – they are irrelevant (Wicklund and Brehm 1976).

Even though often cited as classic theories of congruity, the previous three theories have a strong sociological focus and appear to have limited application for the interplay between product and retailer image. But it should be mentioned that dissonance theory is often employed in the brand extension literature (Kim 2003) (it will discussed later further why this theory does not appear to ideal for this research).

(C) Congruity Theory

Congruity theory extends both balance and dissonance theories and explains the existence of internal discomfort in case of discrepant cognitions. This theory provided an important basis for advertising research because it is not simply based upon the dichotomy of balanced and imbalanced states. Rather, it suggests various stages of disliking within a state of imbalance.

Interestingly, certain stages of imbalance may actually serve well to persuade individuals of promotional messages (Osgood and Tannenbaum 1955). The phenomenon of incongruity as a positive aspect will be briefly discussed later. For this context, it is to be noted that this theory has been applied to dissect incongruity effects between store and product image: provided a consumer evaluates a source (e.g. store) and an object (e.g. product) equally, a positive association is established creating consistency (Jacoby and Mazursky 1984).

(D) Associative Network Models

Associative network models were predominantly developed in the 1970s and 1980s (Wyer and Albarracin 2005). Although different models exist, they are characterized by two key elements: in the first place, they postulate assumptions regarding the manner knowledge is structured and stored in memory. And in the second place, they theorize on the processes guiding the usage, evaluation and interpretation of knowledge.

Consumers discern information through their senses. The information is transformed and then stored in the neurophysical system. Information storage results in the forming of associative networks (Sorrentino and Higgins 1990). These models are called “associative” because any stored item of knowledge is presumed to form associations with other items (notion of “associationism”). The network of links (the associative relations) and knowledge items called nodes represents semantic relationships. The relations between the nodes are activated along the associations.

Knowledge units stored in memory are associated with meaning. This meaningful knowledge interrelates in contexts. In other words, the term “semantic” implies the meaning

ascribed to the units of the network (e.g. link between “Coke” and “sparkling”). The element conferring meaning to the knowledge unit is associations, e.g. brand associations.

New cognitive structures are established by adding new knowledge items and the development of associations between them. Recurring activation of associations strengthens the links and facilitates retrieval of knowledge (Strube and Wender 1993).

The processes underlying the formation of the knowledge network support the alignment of congruous associations. An individual’s memory is a network that will group images and information that are perceived to be similar in nature in order to make cognitive processing more readily available (Souza, Owen and Lings 2005).

Within the associative network model, one has to distinguish between two effects in case of incongruity: on the one hand, incongruous elements of communication lead to “confusion” and potential negative responses. On the other hand, incongruity tends to enhance recall (Sjoedin and Toern 2006).

(E) Schema Theory

According to schema theory, consumers are guided by schemas when making assessments and judgments about products. Consumers develop specific schemas to evaluate pieces of marketing communication (Souza, Owen and Lings 2005). Schemata are psychological constructs or data clusters that are a form of mental representation for complex knowledge (Morschett 2002; Fiske 1982). Schemata serve to organize existing knowledge as well as newly acquired knowledge. A schema is a cognitive structure that represents a domain that includes a person, event, or place (Rifon et al. 2004; Taylor and Crocker 1981).

Incoming new information is brought in alignment with existing schemata. A dynamic process of adjustment unfolds to reconcile discrepancies between the new information and the present schemata. In case new information can be reconciled with the existing schema, the schema stays the same (assimilation of new information), otherwise accommodation leads to a modified schema.

Hence, schema theory is a learning theory (Lynch and Schuler 1994; Homer and Kahle 1986). Congruity between new information and schema facilitates the learning process and the ability to retrieve knowledge (Keller 1993; Myers-Levy and Tybout 1989).

ii. The Consequences of Incongruity

A review of the literature indicates that congruity is to be preferred to incongruity in most cases. The subsequent section exemplifies the positive consequences of congruity.

(A) Celebrity Endorsement Literature

This literature stream analyzes the match between a celebrity (spokesperson etc) and the endorsed event (or product). The studies in this domain specifically test the congruity between the characteristics of the celebrity and the attributes of the event or product. Research findings positive consumer perceptions when the product image and spokesperson image are congruous (Lynch and Schuler 1994).

(B) Event Sponsorship Literature

Successful sponsorship e.g. of a sports event is predicated upon the congruence between the sponsor image (e.g. bank – 'performance-oriented') and the image of the event (e.g. football)

(Kahle and Riley 2004). An event is similar, i.e. congruent, to a sponsored product if it either could be used (direct, functional similarity; e.g. NIKE and football) or if the sponsor's image matches the event image (indirect, image similarity) (Gwinner and Eaton 1999; Gwinner 1997).

(C) Brand Extension Literature

Brand extensions are bound by perceptions of congruity. A brand extension that does not appear typical or is unfitting with the profile of the mother brand leads to negative consumer evaluations (Ladwein 1994; Park, Milberg and Lawson 1991). Inconsistency between the attributes of the original brand and extended brand's attributes causes dissonance and unfavorable consumer attitudes (Kim 2003). A key criterion for brand extension success is similarity (Boush and Loken 1991).

(D) Integrated Marketing Communication

The brand management literature points to the general necessity of a consistent and cohesive brand image facilitated by an adequate congruent brand communication (Sjoedin and Toern 2006). Congruence is thus part of integrated marketing communication. The AMA (2010) defines integrated marketing communication as "a planning process designed to assure that all brand contacts received by a customer or prospect for a product, service, or organization are relevant to that person and consistent over time." Integrated marketing communication has three facets, concept, synergy and process. The process requires a system of coordinated efforts to plan and execute messages. The concept of integrated marketing communication is the understanding that messages are sent to stakeholders (including customers) in case of a contact and interaction (e.g., consumer visiting a store). Synergy expresses that consistent and carefully coordinated

messages have a stronger effect upon stakeholders. Complementary messages create a consistent and clear image for stakeholders (Kimmel 2006; Duncan and Moriarty 1997).

(E) Congruence of Brand Associations in CBBE and Retailer Brand Equity

Even though Keller (1993) does not expressly mention the term schema, he cites the literature on schema theory to elaborate on congruence of brand associations. Congruence affects strength and favorability of brand associations. Keller (1993) emphasizes the necessity for congruence to communicate a cohesive brand image that otherwise risks to be diffused.

The marketing communication of a company is the initial driver of the Brand Value Chain. Consistency is a multiplier indicating quality in the Brand Value Chain (Keller 2008). The term value chain alludes to the value adding functions of a brand for consumers. The functions are based on the brand associations reducing consumer search costs and perceived risk (Aaker and Keller 1990).

Consistency is not only a matter of the CBBE but also Retailer Brand Equity. Inman, Shankar and Ferraro (2004) adapt Keller's CBBE to investigate channel associations. They show that consumer's associate signature products with specific channel types. The more an offered product category deviates from the signature the more the strength of associations will be undermined.

iii. Construct Definition of Congruity

Based on the aforementioned theories congruity can be described as concord of between pieces of information. This research seeks to implement a holistic measure for congruity by comparing different types of retailer image and product brand image.

Based upon who developed such a holistic congruity measure in the event-sponsorship context, congruity is defined as the consumer perception that retailer brand and product brand have a similar image Gwinner (1997). According to Speed and Thompson (2000, p. 229, 230) congruity is the abstract notion of fit conceptualized in one construct. Congruity is the degree of similarity expressing a logical connection, and making sense. It is not linked to a particular dimension of fit (Speed and Thompson 2000, p. 229, 230). In order to account for the location of incongruity within the CBBE model, the following construct definition is presented: congruity" is the degree of perceived concord between RBI and PBI within the CBBE framework.

iv. Retailer Brand Type, Product Brand Type and Incongruity Effects

This section provides the essential building blocks and rationale for the hypotheses.

(A) Retailer Brand Type: Low Versus High Image Retailers

In retailing, one can differentiate between low and high image stores. Within the US market for pet food one can distinguish between the following key retail outlets: discount mass merchandisers (Walmart, Kmart, and Target), general merchandise (variety) discounters (Dollar General), traditional supermarkets (e.g. Kroger) and national specialty stores (e.g. Petsmart, Petco) (Veterinary Practice News (2011); Government of Canada 2005). This market structure reflects the continuum between "every day low price" (EDLP) and "high-low promotional pricing" (HILO). Following the basic low-high store image dichotomy, one can observe discounters on the one end and national specialty stores on the other end of the continuum (Bell and Lattin 1998; Ailawadi and Keller 2004).

For this research, one has to keep in mind that attributes of retail outlets impact retailer image, consumer store choice and purchase decisions (Hansen and Deutscher 1978; Leszczyc and Timmermans 2001; Paulins and Geistfeld 2003).

(B) Product Brand Type: Low Versus High Image Brands

A key argument for buying private brands is their lower price. Price sensitive shoppers are inclined to compromise the name brand for a lower price tag, possibly accepting a quality standard that could be, but is not necessarily, on the same level as the national brand (Garretson, Fisher and Burton 2002).

In spite of the efforts made by some retailers to position private labels as being equivalent in quality compared to their national brand counterparts, a significant amount of low-quality private brands clearly still exist and undermine the overall image of store brands compared to national brands (Kumar and Steenkamp 2007). Dog food store brands are generally considered inferior to national brands due to the amount of fillers and by-products in them (Consumersearch.com 2010a, Dahlgaard 2005).

(C) Interplay between Product and Retailer Brand Images

(1) Overview

The image of a product brand sold by a retailer and the image of the selling retailer influence one another. This mutual influence is predicated upon the following factors: retailer image is not a static factor but is subject to changes in consumer perception (Myers 1960). Furthermore, retailer image influences store patronage (Hansen and Deutscher 1978). The fact that product brand image and retailer brand image influence each other can be illustrated by the

following introductory example: in case the consumer is challenged in the ability to assess the quality of a new product brand, the image of the corporation – here the retailer – conveys a quality cue regarding the product (Brown and Dacin 1997).

(2) Key Studies

The positive notion of congruity is supported by research dissecting the interplay between retailer image and product image. The following studies serve as key examples:

In an empirical study referring to clothes Pettijohn, Mellott and Pettijohn (1992) unveiled that in case of a very high product brand image confronted with a weaker store image, the retailer image was not as negatively impacted as hypothesized. But a very high store image connected to a weaker product brand image led to low brand image perceptions. In other words, a low image retailer might be able to improve the store image by offering high image products, whereas a high image store will be harmed when offering low image product brands.

Grewal et al (1998) state the fictitious example of K-mart selling Tiffany jewelry. This is not a far–fetched example considering that K-mart has made efforts to boost its image by offering Martha Stewart products. (Interestingly, the reviews of many customers of Kmart found on the internet indicate some disappointment with these products and point to the better quality of the Martha Steward brand at Macy's – one brand "Martha Stewart" communicates different quality perceptions associated with two stores with a disparate retailer image). Referring to incongruity theory Grewal et al. (1998) suggest that the image of the product brand – Tiffany's – would decrease, while the store image of K-mart would increase. This evaluation matches the findings of Jacoby and Mazursky (1986). In their seminal piece on linking brand and retailer images diagnose this mechanism: "the party with the more favorable image will be adversely

affected, while the less favorable image may have that image enhanced." (p. 105). Based on this consideration one can distinguish between the following four constellations:

First of all, a low image retailer selling low image private brands leads to perceived congruity (situation 1). In the second constellation a high image retailer selling high image national brands – leads to perceived congruity (situation 2). Thirdly, a situation in which a low image retailer sells high image product brands – national brands – causes high perceived incongruity (situation 3). Finally, when a high image retailer sells low image product brands – private brands – prompts at least moderate perceived incongruity. Moderate incongruity is anticipated because the incongruity effect is expected to be compensated partially by the overlap between product brand image and retailer brand image in case of store brands. Table 4 below provides an overview over the effects of store image and product brand image. The subsequent table illustrates the basic logic of incongruity effects:

Table 4: The Effects of Store Image and Product Image

	Retailer Brand Image	**Product Brand Image**	**Consequence**
Situation 1	Low	Low (Private)	Congruity
Situation 2	High	High (National)	Congruity
Situation 3	Low	High (National)	***High In***congruity
Situation 4	High	Low (Private)	***Moderate In***congruity

Table 5: Basic Logic: PBI and RBI in Terms of Congruity

PBI	RBI	
	Low	High
Private (Low Image)	High	Moderate (= Incongruity)
National (High Image)	Low (= Incongruity)	High

Transferring these findings to the dog food setting would mean, Dollar General could (at least to some degree) improve its image by offering high image products, whereas Petsmart might harm its image by offering low image product brands.

To be considered in the development of this research was the impact of low versus high product involvement upon the aforementioned constellations.

Product involvement represents the degree of effort consumers are inclined to exert in interpreting a message related to a product and / or brand (Peter and Olson 2009). For example, the literature generally relates the habitual purchase of grocery products to low involvement decision-making (Beharrell and Denison 1995). During routine purchase decision-making consumers are less invested in interpreting brand signals that depart from fit or typicality.

Pet food purchases are generally considered high involvement product decisions. As the consumer's interest in the product / brand increases, s/he is more motivated to process relevant information, i.e. there is higher elaboration likelihood (elaboration likelihood model; MacInnis and Jaworski 1989). It can be concluded that misaligned brand quality signals received in this mental state are perceived as stronger interferences. Hence, incongruity is expected to be particularly prominent in high involvement situations.

For the sake of parsimony, this research focuses only upon high involvement products in anticipation of stronger incongruity effects. The subsequent hypotheses employ the suggested

term congruity in substitution of perceived congruity. Hypotheses can be phrased in terms of incongruity or congruity. In order to enhance clarity all hypotheses are formulated in relation to congruity.

6. Hypothesis 3

- A low image retailer selling private brands of a high involvement product category will result in high levels of congruity. (H3a)
- A low image retailer selling national brands of a high involvement product category leads to low levels of congruity. (H3b)
- A high image retailer selling private brands of a high involvement product category will result in moderately low levels of congruity. (H3c)
- A high image retailer selling national brands of a high involvement product category will result in high levels of congruity. (H3d)

a. Incongruity – Mediator or Moderator?

The question to be answered is whether (in)congruity is to be conceptualized as a mediator or moderator.

i. Incongruity as Mediator? The Cognitive Dissonance Literature

An older research stream in psychology rates inconsistent cognitions as a mediator. Within their discussion on cognitive dissonance Wicklund and Brehm state “there is indeed evidence consistent with the view of inconsistent cognitions as the mediator” (Wicklund and Brehm 1976, p. 286; Pallak, Sogin and Cook 1974). The abstract phrase by itself would speak for

the meditational role of the incongruity construct. But this would mean to overlook the specific theoretical context.

It is important to point out that all of these articles (Wicklund and Brehm 1976; Himmelfarb and Arazi 1975; Pallak, Sogin and Cook 1974) apply dissonance theory as their reference of analysis. The articles cited by Wicklund and Brehm (1976) are experimental in nature and do not expressly mention the meditational character of inconsistent cognitions. But these articles, indeed, imply a meditational relevance of inconsistent cognitions in the context of so-called "forced compliance" effects (forced compliance deals with persons pronouncing opinions being contradictory to their attitudes (Manstead and Hewstone 1996)). The authors of these articles deal with the interplay between messages and the contradicting personal opinions of the receiver. This psychological literature is referred to in branding research dealing with product brand and consumer's self as well as store and consumer's self. In fact, these research streams focusing upon consumer's self are two of the three key streams dealing with image congruence (Lee 2004; O'Cass and Grace 2008).

But only the third stream, namely the interplay between channel (i.e. retailer) and product (category) perceptions is relevant for the research at hand. This is why it was earlier indicated that dissonance theory is not ideal for this research context. Even though frequently mentioned as a classic theory of incongruity, dissonance primarily relates to individual-message consistency and not to perceived consistency between two messages, here retailer brand and product brand image. Hence, dissonance theory can be misleading.

ii. Incongruity as Mediator? The Brand Extension Literature

In certain constellations perceived fit is ascribed a meditational role in the brand extension literature (Lau and Phau 2007). For example, Keller and Aaker (1992, p. 42) discuss the mediating role of perceived fit and credibility in evaluations for multiple extensions. It is the questionable, though, whether the conceptualizations of the brand extension literature are applicable in this research in the first place.

The brand extension literature deals with the addition of a new product brand employing the well-established name and image of the parent brand. Brand extensions can emerge within the same or different product categories (same: Coke cherry – extension, coke – parent brand, product category – soda; different: Davidoff cigars – parent brand, Davidoff perfume – extension). When a retailer introduces private brands bearing a quality label in its stores one might think of speaking of a brand extensions. The following rationale could support this notion: in absence of a national brand name, private product brands are primarily associated with the retailer that sells them. When a retailer incorporates private products bearing a quality label into its assortment it, in effect, extends its retailer name to a new product category. Products bearing a special quality label may be considered a distinct product category. A product category is the grouping of competitive products to which a product belongs. For instance, products labeled with the "USDA organic" logo can be described as products belonging to the category of groceries meeting with certain production standards.

The analog application of brand extension principles has been discussed in the literature (Lee and Hyman 2008). But there are significant caveats. First, the analog approach has only been tested between an existing brand and new private brand (Sayman and Raju 2004, testing cross-category effects). Due to the analog character this type of brand extension between retailer

brand and product (category) brand may not be strong (Lee and Hyman 2008). Furthermore, this research does not only deal with private brand but also with national brands making the conceptualization based upon the aforementioned rational challenging (how can national brand bearing a quality label be associated with the retailer as “parent brand”?). Finally, there inherently is a sequential aspect to brand extension. A parent brand exists first, and then an extension is introduced (Keller and Aaker 1992). The current study does not intend to account for any temporal effects (“the consumer did not see products bearing a quality label last year. But this year these types of products were introduced”). The study rather seeks to measure an overall, holistic perception of fit between store and product image. Hence, the mechanics of brand extension appear not be quite adequate for this research.

iii. Incongruity as Moderator? Key Literature

Incongruity and related constructs have successfully been conceptualized and empirically tested as moderators across various research domains:

In the context of internet marketing Mueller et al. (2008) shows the significant moderating role of consistency between product brand image and website image. She employs measures adapted from Keller and Aaker (1992) to test perceived consistency between the channel (virtual store / website) and the product brand within a structural model.

Henseler et al. (2007) unveils the moderating role of fit in the field of sports sponsorship. He analyzes the impact of fit upon the relationship between sport sponsorship and brand equity employing SEM. A good fit between sponsor and sponsee shows a strong effect. The sports sponsorship literature in general acknowledges the facilitating effect of matches between

sponsors and events that appear logical from a consumer point of view (Gwinner 1997; Gwinner and Eaton 1999; Speed and Thompson 2000).

Within the celebrity endorsement literature it could be shown that perceived congruity is contingent upon the concord of celebrity image and product image (Kahle and Riley 2004, p. 120; Kamins 1990; Kamins and Gupta 1994). The integrated marketing communication literature underscores consistency as a prerequisite for effective communication (Keller 2001). Within the brand value chain consistency is rated as dimension of marketing program quality. Program quality is considered a multiplier between marketing program investment and the customer mindset stage. The term “multiplier” is purposefully used to indicate that the brand value chain is a framework and not a testable model. But this does not undermine the notion of consistency as a moderator (Keller 2008; Keller and Lehmann 2003).

iv. Conclusion

One could argue either way. Due to the manner in which incongruity will be measured in this research, the construct will be treated as a mediator. Based upon these considerations it may be stated that higher levels of perceived incongruity lead to lower levels of CBBE. However, it should be considered whether perceived value comes into question as a mediator between these variables.

b. Perceived Value

The literature offers neither a uniform definition of perceived value nor is there a consensus on the operationalization (Rockefeller 1986; Zeithaml 1988). Authors suggest one or more dimensions for the perceived value construct. Dodds, Monroe, and Grewal (1991) support a

unidimensinal construct. Babin, Darden, and Griffin (1994) propose two dimensions, a hedonic and a utilitarian component. Other authors plead for four dimensions (Sweeney and Soutar 2001) or even seven components (Mathwick, Malhotra and Rigdon 2001).

The most common definition is the unidimensional one. Supporters of this notion have posited that value is an evaluation that balances what consumers receive in exchange for what they give up (e.g., Dodds, Monroe, and Grewal 1991; Zeithaml, 1988). According to Grewal, Monroe, and Krishnan (1998, p. 48) perceived value is perceived acquisition value, i.e. the "buyers' net gain (or tradeoff) from acquiring the product or service." As such perceived value is defined "in terms of monetary exchange, not desirability, importance, or intrinsic worth." Consequently, "when brand and/or store information is given in the absence of price, subjects are asked to evaluate only the quality of the product" (Dodds, Monroe, and Grewal 1991, p. 312). This parsimonious definition is to be preferred in this research because it focuses upon the quality perception of products. Furthermore, their conceptualization of perceived value has proven itself in empirical studies based upon insights on incongruity (Dodds, Monroe, and Grewal 1991). Hence, the construct definition of Dodds, Monroe, and Grewal (1991) will be employed.

Perceived value is generally defined as a mediator between perceived quality and e.g. consumer satisfaction (Dodds, Monroe, and Grewal 1991, Wang 2009). As such it is justifiable to categorize perceived value here as a mediator between incongruity and CBBE. In view of these findings, the following hypothesis is put forth:

7. Hypothesis 4

Higher (lower) levels of congruity lead to higher (lower) levels of CBBE, mediated by product perceived value.

a. Purchase Intent

The construct definition of purchase intent is the following: purchase intent is a person's anticipated or planned future purchase behavior (Churchill and Iacobucci 2005, p. 209; Putrevu and Lord (1994), p. 82, 83).

Research has established a connection between CBBE and purchase intention (Agarwal and Rao 1996; Allen 2001; Keller 2008; O'Cass and Lim 2001; Park, JaworskI and Maclnnis 1986; Park and Srinivasan 1994) and actual purchase decision (Kamakura and Russell 1993). Hence, the subsequent hypothesis is employed:

8. Hypothesis 5

CBBE is positively associated with purchase intent.

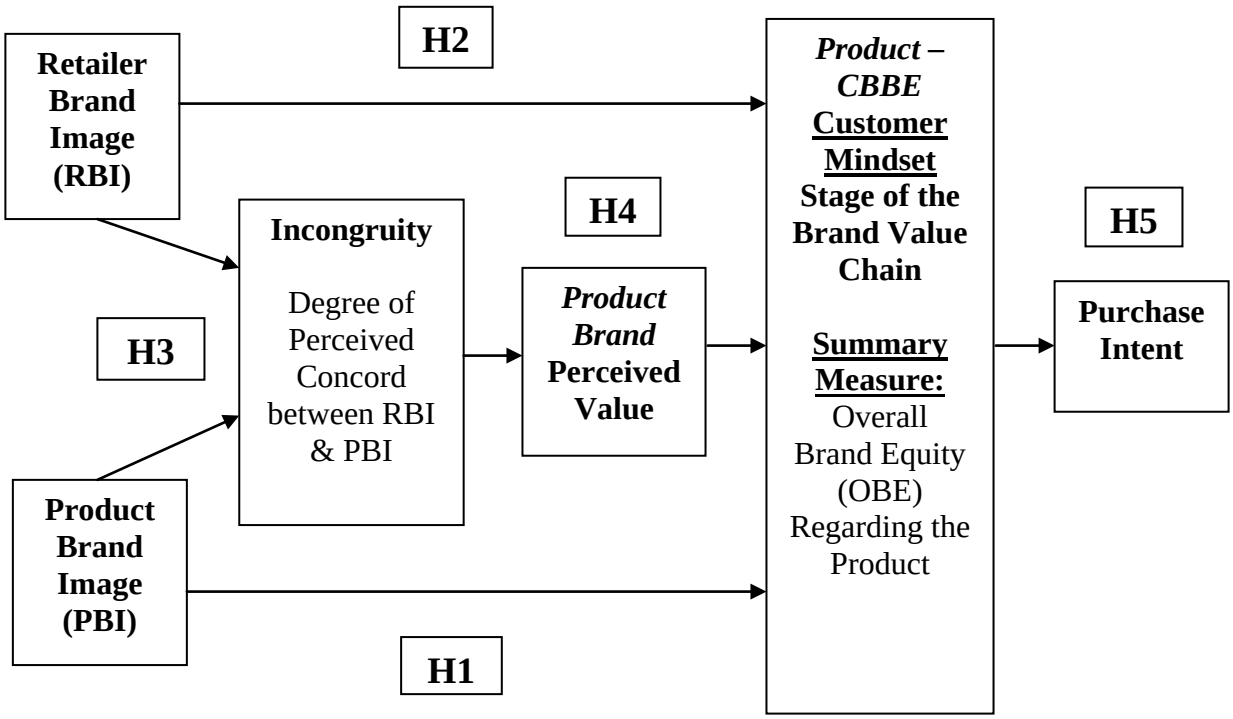
III. METHODOLOGY

This section supplies information about the operational model, a compendium of the hypotheses, research design, measures and indicates the analyses to be applied to test the hypotheses.

A. Hypotheses and Operational Model

The figure below illustrates the location of all hypotheses within the operational model.

Figure 5: Operational Model



Retailer and brand awareness are not immediate elements of the operational model. As has been pointed out before, brand awareness is a necessary but insufficient condition of brand knowledge. Hence, retailer brand image and product brand image are the key determinants of CBBE. Brand awareness will be accounted for in the process of establishing a panel in preparation for data collection (see below). A compendium of all hypotheses is presented below.

Table 6: List of all Hypotheses

Hypothesis 1	Higher product brand image is positively associated with CBBE.
Hypothesis 2	Higher retailer brand image is positively associated with CBBE.
Hypothesis 3	a) A low image retailer selling private brands of a high involvement product category will result in high levels of congruity.
	b) A low image retailer selling national brands of a high involvement product category leads to low levels of congruity.
	c) A high image retailer selling private brands of a high involvement product category will result in moderately low levels of congruity.
	d) A high image retailer selling national brands of a high involvement product category will result in high levels of congruity.
Hypothesis 4	Higher (lower) levels of congruity lead to higher (lower) levels of CBBE, mediated by product perceived value.
Hypothesis 5	CBBE is positively associated with purchase intent.

B. Construct Definitions and Operationalizations

1. Construct Definitions and Original Measures

The following tables provide the construct definitions and the original measures for operationalization. The modifications of these measures will be shown subsequently.

Table 7: Measures – Overview

Overall Brand Equity (OBE)	**Yoo and Donthu (2001), p. 11, 14;** Likert-type scale
(In)Congruity	**Speed and Thompson (2000), p. 230, 231;** Sponsorship Literature.; Fit between Sponsor and Event Likert Scale
	Keller and Aaker (1992), p. 42; Brand Extension Literature; Fit between Company and Product Semantic Scale
Product Brand Image	**Lybeck, Holmlund-Rytkönen, and Sääksjärvi (2006), p. 484;** Price and Quality as 2 Dimensions; Likert Scale
Retailer Brand Image	**Chowdhury, Reardon, and Srivastava (1998), p. 74, 75;** Measures Based on Comprehensive Literature Review: Dimensions: Employee Service; Product Quality; Atmosphere; Convenience; Price / Value Likert Scale
Perceived Value	**Dodds, Monroe, and Grewal (1991), p. 312, 318;** In Terms of Monetary Exchange, Not Desirability, Importance, or Intrinsic Worth Likert Scale
Purchase Intent	**Putrevu and Lord (1994), p. 82, 83;** 3 Items Likert-type Scale

Table 8: Construct Definitions and Original Measures

	Construct Definitions	Original Measures (To Be Modified for this Study)
Consumer Based Brand Equity (CBBE)	**Purchase Intent** = is a person's anticipated or planned future purchase behavior (Churchill and Iacobucci 2005, p. 209)	Putrevu and Lord (1994), p. 82, 83: **Purchase Intent** 1. It is very likely that I will buy (brand). 2. I will purchase (brand) the next time I need a (product). 3. I will definitely try (brand).
		Seven-Point Likert-type Scales Anchored at "Strongly Agree" to "Strongly Disagree"
	Overall Brand Equity (OBE) = is based upon Yoo's and Donthu's definition of brand equity (2001, p. 11) Brand equity = "consumers' different response between a focal brand and an unbranded product when both have the same level of marke-ting stimuli and product attributes" (Yoo and Donthu (2001), p. 1)	Yoo and Donthu (2001), p. 11, 14: X = brand **Four-item Overall Brand Equity (OBE)** 1. It makes sense to buy X instead of any other brand, even if they are the same. 2. Even if another brand has the same features as X, I would prefer to buy X. 3. If there is another brand as good as X, I prefer to buy X. 4. If another brand is not different from X in any way, it seems smarter to purchase X
		Five-Point Likert-type Scales Anchored at "Strongly Disagree" and "Strongly Agree"

(In)Congruity = **is the degree of concord or perceived logical connection between product brand image and retailer brand image**; derived from the following definitions in the literature: = is the abstract notion of fit; conceptualized in one construct; similarity expressing a logical connection, it is not linked to a particular dimension of fit (Speed and Thompson 2000, p. 229, 230) = similarity or "fit" or typicality between the core brand [here retailer as brand] and the proposed extension [here: branded products bearing a distinct quality label as a new product category in the store] (Keller and Aaker 1992, p. 35,38)	**Speed & Thompson (2000), p. 230, 231**; Sponsorship Lit. 1. There is a logical connection between the event and the sponsor; 2. The image of the event and the image of the sponsor are similar; 3. The sponsor and the event fit together well; 4. The company and the event stand for similar things; 5. It makes sense to me that this company sponsors this event (further items will be added) ***Seven-Point Likert Scale*** **Keller and Aaker (1992), p. 42**; Brand Extension Lit. 1. Bad or good fit between company and product; 2. Not at all logical / very logical for company; 3. Not at all appropriate / very appropriate for company (further items will be added) ***Seven-Point Semantic Scales***
Product Brand Image = Product brand image is the perception of a product brand in the minds of consumers (AMA 2009; Keller 1993). Price and quality are key dimensions of product brand image (Lybeck, Holmlund-Rytkönen, and Sääksjärvi (2006), p. 476; Steiner 2004).	**Lybeck, Holmlund-Rytkönen, and Sääksjärvi (2006)**, p. 484: Price and Quality as the 2 Key Dimensions; Based on Comprehensive Lit. Review ***Price*** 1. The price of a chocolate bar is usually a good 2. indicator of its quality 3. The lower price of the store-branded chocolate bar 4. is usually a good indicator of poor quality 5. When I buy a store-branded chocolate bar I think 6. that I get the most for my money (reversibly coded in analysis) ***Quality*** 7. There is a great difference in reliability of ingredients between manufacturers' and retailers' chocolate bars 8. There is a great difference in taste between manufacturers' and retailers' chocolate bars 9. There is a great risk in buying a store-branded chocolate bar because of the inferior quality 10. If I buy a chocolate bar for someone else I would not buy a store brand ***Five-Point Likert-type Scale Anchored at "Strongly Disagree" and `"Strongly Agree"***

Retailer Brand Image = is a set of cognitions and / or affect which are inferred from a set of ongoing perceptions and / or memory inputs linked to a store and which represents what the store signifies to an individual (Mazursky and Jacoby 1986, p. 147). It is a function of employee service, product quality, atmosphere, convenience and price/ value (Chowdhury, Reardon, and Srivastava 1998)	**Chowdhury, Reardon, and Srivastava (1998), p. 74, 75**; Measures Based on Comprehensive Lit. Review; Dimensions: ***Employee Service*** <Store name> employees are friendly The service at <Store name> is excellent I am pleased with the service I received at <Store name> ***Product Quality*** <Store name> sells only high quality products I like <Store name> brand products I can count on the products I buy at <Store name> being excellent <Store name> has a large variety of products Everything I need is at <Store name> <Store name> carries many national brands ***Atmosphere*** The appearance of <Store name> is appealing <Store name> is always dirty (reverse coding) <Store name> is old-fashioned ***Convenience*** <Store name> is easily accessible <Store name> is convenient It is easy to get into the store ***Price / Value*** The prices at <Store name> are fair I obtain value for my money at <Store name> I can buy products for less at <Store name>
	Seven-Point Likert-type Scales Anchored at "Strongly Agree" to "Strongly Disagree"

Product Perceived Value = is perceived acquisition value, i.e. the "buyers' net gain (or tradeoff) from acquiring the product or service" (Grewal, Monroe and Krishnan 1998, p. 48); = as such perceived value is defined "in terms of monetary exchange, not desirability, importance, or intrinsic worth." Consequently, when brand and/or store information is given in the absence of price, subjects are asked to evaluate only the quality of the product. Dodds, Monroe, and Grewal 1991, p. 312)	**Dodds, Monroe, and Grewal (1991), p. 312, 318** 1. This product is a: (very good value for the money to very poor value for the money) 2. At the price shown the product is: (very economical lo very uneconomical) 3. The product is considered to be a good buy {strongly agree to strongly disagree) 4. The price shown for the product is: (very acceptable to very unacceptable) 5. This product appears to be a bargain (strongly agree to strongly disagree)
	Seven-Point Likert-type Scales Anchored at "Strongly Agree" to "Strongly Disagree" ***(Itesm 3 &5),*** ***"Very Good Value for the Money" to "Very Poor Value for the Money" (Item 1),*** ***"Very Economical" to "Very Uneconomical"*** ***(Item 2),*** ***"Very Acceptable" to "Very Unacceptable"*** ***(Item 4)***

2. Modified Measures

The adaptation of published scales has the advantage that reliability and validity of them are already known (Edwards et al. 1996). Even a slight modification of an existing scale (different product, population etc) always affects its reliability and validity to some degree (Bradley 1994). But modifying scales is a common manner to allow testing in specific research contexts (Bourque and Clark 1992; van Ruler and Verčič 2008). The modifications made are shown in detail via synopses between the original and the modified scales. Most of the scales were easy to adapt. In one case (product brand image) the product category had to be changed (to

dog food). In another case (perceived value) items had to be omitted. When items of a scale do not fit into a research context, it is recommended to omit them to preserve face validity (Bradley 1994).

a. Retailer Brand Image

Store image will be operationalized employing 7-point Likert-type scales developed by Chowdhury, Reardon, and Srivastava (1998, p. 74, 75). Some of the items are modified to adapt better to the pet food retail context. The subsequent synopsis juxtaposes the original measures and the modified measures.

Table 9: Original and Modified Measures for Retailer Brand Image – A Synopsis

	Original Measures	Modified Measures[1]
Employee Service	1. <Store name> employees are very friendly	**[Petsmart/ Dollar General]** employees are very friendly.
	2. The service at <Store name> is excellent	The service at [**Petsmart/ Dollar General]** is excellent
	3. I am pleased with the service I received at <Store name>	I am pleased with the service I receive at [**Petsmart/ Dollar General]**
Product Quality	1. <Store name> sells only high quality products	[**Petsmart/ Dollar General**] sells only high quality products
	2. I like <Store name> brand products	I like [**Petsmart/ Dollar General**] ~~**brand**~~ products
	3. I can count on the products I buy at <Store name> being excellent	I can count on the products I buy at [**Petsmart/ Dollar General]** being excellent
	4. <Store name> has a large variety of products	[**Petsmart/ Dollar General**] has a large variety of products
	5. Everything I need is at <Store name>	Everything I need is at [**Petsmart/ Dollar General]**
	6. <Store name> carries many national brands	[**Petsmart/ Dollar General**] carries many national brands.
Atmosphere	1. The appearance of <Store name> is appealing	The appearance of [**Petsmart/ Dollar General]** is appealing
	2. <Store name> is always dirty (reverse coding)	[**Petsmart/ Dollar General**] is **not always clean**
	3. <Store name> is old-fashioned	[**Petsmart/ Dollar General**] is **sophisticated**
Convenience	1. <Store name> is easily accessible	[**Petsmart/ Dollar General]** Is easily accessible
	2. <Store name> is convenient	[**Petsmart/ Dollar General**] Is convenient
	3. It is easy to get into the store	It is easy to get into the store
Price / Value	1. The prices at <Store name> are fair	The prices at [**Petsmart/ Dollar General]** are fair
	2. I obtain value for my money at <Store name>	I obtain value for my money at [**Petsmart/ Dollar General]**
	3. I can buy products for less at <Store name>	I can buy products for less at [**Petsmart/ Dollar General**]
Scale	***Seven-Point Likert-type Scales Anchored at "Strongly Agree" to "Strongly Disagree"***	***<u>Five</u>-Point Likert-type Scales Anchored at "<u>Strongly Disagree" to "Strongly Agree"</u>***

[1] Changes to the original measures and adaptations are formatted in bold.

b. Product Brand Image

In the literature review, the discussion on the challenges to measure store image was discussed. Similarly, one can differentiate between two measurement approaches for brand image. Some approaches support holistic measures of the construct, others argue in favor of measuring different image dimensions. Keller (2008) follows the holistic, traditional approach and advocates brand image to be measured via differential scales or Likert scales.

Considering the pivotal importance of price and quality in this research, Likert-type scales are to be adapted from Lybeck, Holmlund-Rytkönen, and Sääksjärvi (2006). Items are modified slightly to fit into the private brand / national brand type context.

Table 10: Original and Modified Measures for Product Brand Image – A Synopsis

	Original Measures	**Modified Measures**[2]
Price	1. The price of a chocolate bar is usually a good indicator of its quality	The price of **dog food** is usually a good indicator of its quality
	2. The lower price of the store-branded chocolate bar is usually a good indicator of poor quality	The lower price of the **store-brand dog food** is usually a good indicator of poor quality
	3. When I buy a store-branded chocolate bar I think hat I get the most for my money (reversibly coded in analysis)	When I buy a **store-branded dog food** I think that I get the most for my money (reversibly coded in analysis)
Quality	1. There is a great difference in reliability of ingredients between manufacturers' and retailers' chocolate bars	There is a great difference in reliability of ingredients between **well-known** manufacturers' **brands** and retailers' **store brands**
	2. There is a great difference in taste between manufacturers' and retailers' chocolate bars	There is a great difference in taste between manufacturers' and retailers' **dog food**
	3. There is a great risk in buying a store-branded chocolate bar because of the inferior quality	There is a great risk in buying a store-branded **dog food** because of the inferior quality
	4. If I buy a chocolate bar for someone else I would not buy a store brand	If I **bought dog food** for someone else I would not buy a store brand
Scale	***Five-Point Likert-type Scales Anchored at "Strongly Disagree" to "Strongly Agree"***	***Five-Point Likert-type Scales Anchored at "Strongly Disagree" to "Strongly Agree"***

[2] Changes to the original measures and adaptations are formatted in bold.

c. Incongruity

The incongruity measures of Speed and Thompson (2000) as well as Keller and Aaker (1992) will be adapted:

Table 11: Original and Modified Measures for Incongruity – A Synopsis

	Original measures	Modified measures
Speed and Thompson (2000)	1. There is a logical connection between the event and the sponsor	There is a logical connection between [**Science Diet/ Everpet**] and [**Petsmart/ Dollar General**]
	2. The image of the event and the image of the sponsor are similar.	The image of [**organic store brand manufacturer organic brand]** and the image of [**Petsmart/ Dollar General]** are similar
	3. The sponsor and the event fit together well	**[Petsmart/ Dollar General**] and **[Science Diet/ Everpet]** fit together well
	4. The company and the event stand for similar things;	**[Petsmart/ Dollar General]** and [**Science Diet/ Everpet]** stand for similar things;
	5. It makes sense to me that this company sponsors this event	It makes sense to me that [**Petsmart/ Dollar General**] sells [**Science Diet/ Everpet**]
Scale	***Seven-Point Likert-type Scales Anchored at "Strongly Disagree" to "Strongly Agree"***	***Five-Point Likert-type Scales Anchored at "Strongly Disagree" to "Strongly Agree"***
Keller and Aaker (1992)	1. Bad or good fit between company and product	Bad or good fit between [**Petsmart/ Dollar General]** and [**Science Diet/ Everpet]**
	2. Not at all logical / very logical for company	Not at all logical / very logical for [**Petsmart/ Dollar General**]
	3. Not at all appropriate / very appropriate for company	Not at all appropriate / very appropriate for [**Petsmart/ Dollar General]**
Scale	***Seven-Point Semantic Differential Scales***	***Five-Point Semantic Differential Scales***

d. Perceived Value

For perceived value, the measures will be adopted from Dodds, Monroe, and Grewal (1991). Two items referring to pricing have been truncated. In all conditions, participants are asked to assume that all dog food products have the same price.

Table 12: Original and Modified Measures for Perceived Value – A Synopsis

	Original measures	**Modified measures**
Dodds, Monroe, and Grewal (1991)	1. This product is a: (very good value for the money to very poor value for the money)	1. [**Science Diet/ Everpet] at [Petsmart/ Dollar General]** is a (very good value for the money to very poor value for the money)
	2. At the price shown the product is: (very economical to very uneconomical)	2. Omitted
	3. The product is considered to be a good buy (strongly agree to strongly disagree)	3. [**Science Diet/ Everpet] at [Petsmart/ Dollar General]** is considered to be a good buy (strongly agree to strongly disagree)
	4. The price shown for the product is: (very acceptable to very unacceptable)	4. Omitted
	5. This product appears to be a bargain (strongly agree to strongly disagree)	5. [**Science Diet/ Everpet] at [Petsmart/ Dollar General]** is considered to be a bargain (strongly agree to strongly disagree)
Scale	***Seven-Point Likert-type Scales and semantic differential scales***	***Five-Point Likert-type Scales and semantic differential scales***

e. Purchase Intent

The purchase intent scale has been subject to criticism because there is no immediate link between purchase intent and actual purchase behavior. However, this criticism does not concern the reliability but the validity of the scale (Moskowitz, Muñoz, and Gacula 2004). The purchase intent scale remains a very prominent tool also because most people stating high purchase intent will indeed buy the product if the brand is available (Baldinger and Cook 2006).

The literature provides variations of the essential five-point one item purchase intent scale (Churchill and Iacobucci 2005). The three-item scale by Putrevu and Lord (1994) offers the advantage of integrating both brand and product purchase intent into the scale. In addition, this short multi-item scale allows testing for internal consistencies as reliability indicators (Whitley 1996, Stemmler 2003).

Table 13: Original and Modified Measures for Purchase Intent – A Synopsis

	Original measures	**Modified measures**
Putrevu and Lord (1994)	1. It is very likely that I will buy (brand).	1. It is very likely that I will buy **("Science Diet"/ "Everpet")**
	2. I will purchase (brand) the next time I need a (product).	2. I will purchase **("Science Diet"/ "Everpet")** the next time I need **dog food.**
	3. I will definitely try (brand).	3. I will definitely try **("Science Diet"/ "Everpet")**.
Scale	***Seven-Point Likert-type Scale Anchored at "Strongly Agree" to "Strongly Disagree"***	***<u>Five</u>-point Likert-type Scale Anchored at "Strongly <u>Dis</u>agree" to "Strongly <u>Agree</u>"***

C. Research Design and Data Collection

It is inter- and intradisciplinarily clear that there is no perfect research method. Every method has its advantages and disadvantages (Churchill and Iacobucci 2005). The pros and cons of the selected methodology will be discussed subsequently.

1. Data Collection Instrument

A survey was used as a data collection instrument. Surveys are a relatively fast, easy, inexpensive, and accurate instrument to gather data (Alreck and Settle 2004). The utilized survey incorporated the aforementioned measures. Every effort was made to make the survey clear and succinct (Alreck and Settle 2004). The complete data collection instrument can be found in Appendix 2.

2. Qualifying Criteria for Survey Participation

The objective of this research was to obtain data from a sample representing the average US consumer. Qualifying criteria were developed to determine if a person was eligible for participation. Target survey participants were to meet the following criteria:

- Persons who
  - ✓ own a dog or
  - ✓ owned a dog.
- Persons who
  - ✓ are aware that both Petsmart and Dollar General sell dog food,
  - ✓ and have been inside a Petsmart store at least once in 2010

    and have been inside a Dollar General store at least once on 2010

- Persons who
  - ✓ prefer dry dog food to canned dog food. This research focuses upon dry dog food. Nutritionists and veterinarians as well as consumers perceive significant differences between canned and dry pet foods (Consumersearch.com 2010b). In addition, research on dog food has identified two key market segmentation criteria: consumer preference for canned versus dry dog food and preference for maintenance versus gourmet dog food (Dubin 1998).
- Persons who
  - ✓ live in metropolitan areas of 50,000 or more. From a historical perspective, urban and rural populations and their consumer behavior are not as dichotomous as in previous decades (Kline 2000). Nevertheless, urban and rural populations differ significantly on a variety of variables (e.g. demographics) making it necessary to treat them as distinct markets (Balram and Ghuman 2007). Furthermore, retail stores for pet foods are not as proliferated in rural areas.

    This definition refers to the one employed by US Census Bureau and is rooted in the definitions and continually updated lists of the Office of Management and Budget (OBM 2009; US Census Bureau 2010). According to the US Census Bureau a “metro area contains a core urban area of 50,000 or more population, and a micro area contains an urban core of at least 10,000 (but less than 50,000) population. Each metro or micro area consists of one or more counties and includes the counties containing the core urban area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core.

- Persons who
  - ✓ are between age 25 and 60. The age range is to increase the probability that participants are not financially dependent or have not retired yet; the fact that people usually face a reduction of their available income after retirement could skew the data; 60 because a significant number of people retire early or has 60 as a regular retirement age.
- Persons who
  - ✓ are employed.

Additionally, there were to be an equal number of male and female participants. Finally, because Dollar General has stores in only 35 states, panel members were only selected from these states.

3. Survey Sample

A survey is a "method of collecting primary data based on communication with a representative sample of individuals" (Zikmund and Babin 2010, p.189). Because the sample was to reflect the average US consumer, it was carefully considered whether undergraduate students could be used as a viable survey sample. In marketing research, it is quite common survey undergraduate students when collecting data. But college undergraduates usually are still financially dependent and thus are not fully responsible for the allocation of resources to the grocery or pet shopping budget. Considering that one of the measures for CBBE will be purchase intent, it seemed inadequate to resort to a sample of financially dependent participants. Hence, the survey was not administered to undergraduate students, and an online survey panel was utilized.

4. Online Survey Panel

Recruiting random customers with specific features can be an expensive undertaking. Hence, the services of a professional research firm were employed to compile an online consumer panel and subsequently collect the data.

Online survey panels have become accepted and are now quite common in marketing research (Lohse, Bellman, and Johnson 2000). This type of panel can easily provide a cross-sectional analysis of the typical US consumer. Online consumer panels also allow a time – effective collection of data (Grossnickle and Raskin 2000). Nevertheless, the following section presents the pros and cons of this data collection method. The discussions in the literature can be categorized into two parts: online surveys and online panels.

a. Online Surveys

When the technical opportunities for online surveys surfaced, some parts of the literature doubted the benefits of this new tool. These articles refer to email surveys.

In a review of this literature on this subject-matter, Fricker and Schonlau (2002) found that online surveys

- were only faster in terms of delivery and not in terms of collection of data
- were not better because overall the execution methods of internet surveys were fairly poor
- were not cheaper because email survey results still had to be entered into spreadsheets
- were not easier because of “technical control of Web surveys” (p. 17).

The emergence of online survey platforms like Qualtrics, SurveyMonkey, and Zoomerang etc. has rendered most of this criticism obsolete. Compared to “paper and pencil

surveys" online surveys have the advantage that confounding sources and the occurrence of missing data can more easily be limited. For instance, electronic safeguards are in places that e.g. make participants via an electronic message aware they forgot to answer a question. They can only continue if they have completed all questions. Online surveys are especially effective when they are used in combination with online panels.

b. Online Panels

i. Advantages and Disadvantages of Online Panels

Panels are samples of the population whose members have consented to answer questions from time to time (Burns and Bush 2010). Research panels are usually a component of syndicated research, meaning that they are established and maintained by research companies (Baker 2002). The table below provides a list of general advantages and disadvantages of panels.

Table 14: Advantages and Disadvantages of Panels

Advantages	Disadvantages
Additional measurement precision by matching responses from one lime period to another (longitudinal analysis).[1]	Panel "conditioning" may bias responses (also called "testing effect") in that panel members become atypical as a result of being on the panel.[1] Panel members may even change their e.g. purchase patterns as a result of being panelists.[3]
Observe changes in *individual* behavior over time as well as monitor behavior of particular cohorts over time.[1]	Difficulty to recruit panel members.[1] Panel attrition may cause response bias.[1] Continuous maintenance of the panel is necessary to warrant its representativeness of the general public.[3]
Panel data is generally more accurate than cross-sectional data.[1]	Panel selection bias—respondents are not representative of the underlying population (e.g., exclude very rich or very poor or transitory).[1]
Although expensive to establish initially the costs of panels can be lower over the long term.[1]	Panels can be expensive.[2]
More information can be collected since existing background information need not be repeated each time period.[1]	
Based upon long-term experience with panel research, data collection has become standardized, facilitating data analysis and interpretation. [2]	
Panel research usually produces results faster than one-time (ad-hoc) surveys. [3]	

Adapted from:	
1	Lohse, Bellman, and Johnson 2000, p. 16
2	ter Hofte-Fankhauser and Wälty 2009, p. 92
3	Baker 2002, p. 179

The disadvantages of panels do not necessarily occur and can be minimized. Syndicated firms usually pay a great deal of attention to panel maintenance in order to lessen panel selection bias. Research firms commonly facilitate recruitment by offering monetary incentives for participation (Blankenship, Breen and Dutka 1998).

Both panel selection bias and attrition are more virulent in longitudinal studies than in short-term ad hoc studies (Lohse, Bellman, and Johnson 2000).

Furthermore, online panels are less susceptible to some of the mentioned disadvantages. Whereas "classic", i.e. offline panel research traditionally has a strong longitudinal focus, online panels are geared toward ad-hoc (one-time) research as in the research at hand. In contrast to traditional panels whose members are often approached frequently within short intervals, members of online panels are usually limited in the number of times they may participate per month or year, thus reducing the level of attrition (ter Hofte-Fankhauser and Wälty 2009). More considerations are covered in the subsequent sections.

ii. General Panel Procedures

Independent from the specific online provider, some of the essential procedures are the same (C & T Marketing Group 2011, Qualtrics 2011, Churchill, and Iacobucci 2005). For example, a panel is created via a multi-stage procedure. A large number of consumers are categorized based upon various categories (e.g. age, income, educational level etc). The number is narrowed down by selecting consumer groups and later individual consumers randomly. Panels are challenging because they require motivated participants. This is why panel members are compensated financially (per survey C & T charges 6.50. An unspecified part of this amount is credited to the panelist).

Research companies like C & T Marketing Group guarantee quality control and a certain response rate (in this case: 300 participants). As representative as the initial panel group may be, non-responses and the selection of substitute panel members can slightly distort the distribution of panel members with certain traits. Panel surveys are costly. But one of the pivotal advantages of a panel is that the data collection can take place within a short period of time (Theis 2008). Estimates range from 2 – 3 weeks (Qualitrics 2011) to 1-4 days (C & T Marketing Group 2011).

5. Online Survey Platform and Survey Administration

a. Qualtrics

The data collection instrument was programmed in Qualtrics. The survey was programmed in such a way that the participants would be randomly assigned to one of the following conditions:

Table 15: Survey Conditions

Brand Type / Store Type	National Brand	Private Brand
Dollar General	1 Science Diet **CONDITION 1**	2 Everpet **CONDITION 2**
Petsmart	3 Science Diet **CONDITION 3**	4 Everpet **CONDITION 4**

With regard to condition 4, it is to be noted that Everpet is the store brand of Dollar General, not Petsmart. The store brand of Petsmart is actually “Authority”. Considering the

differences between the two store brands in terms of name and package design, condition 2 and 4 are rendered equivalent to remove the risk of confound. A control question will be provided in condition 4 to account for the possibility that participants may be confused because they know that Everpet is not Petsmart's store brand.

Visual stimuli were included in the conditions: a picture of the logo and typical exterior of Petsmart or Dollar general, a photo of a typical dog food display (Science Diet visible or display without identifiable brands) as well as an image of the product (Science Diet "puppy original" or Everpet "basics – puppy"). The pictures precede the survey questions dealing with incongruity, perceived value, OBE and purchase intent.

b. Survey Administration by C & T Marketing Group

i. Panel Mechanics

After programming in Qualtrics was completed, the survey was supplied to a research supervisor of C & T Marketing Group. This firm has access to a total pool of more than 10 million consumers worldwide who are profiled on more than 500 different attributes (http://www.ctmarketinggroup.com/). C & T Marketing Group mediates between the client needs and various firms that have the actual contact information on panelists. The company subcontracted by C & T Marketing Group for this research was Esomar 26 (Esomar 2011). C & T Marketing Group, represented by a supervisor, remained in charge of the whole data collection process, frequently supplying updates via email and phone during the four-day data collection process.

Panel companies are reluctant to reveal the detailed insights into their procedures because some of them are proprietary. However, C & T (2011) did provide me some information on Esomar 26.

Serving national and international clients on a diverse array of projects since 1999, Esomar 26 has significant experience as a panel provider. The sources for online samples are mostly actively managed panels (applied in this research). A small number of respondents are generated via Web intercepts. Special programs are in place to access hard-to-reach populations.

Esomar 26 has strict standards to ensure the quality of the samples. Panelists are scrutinized by regular quality and security screenings. The panels are exclusively employed for marketing research. As such, the company has facilitated research for a great number of academic institutions.

Recruits are informed that they will be members of a market research panel and will be granted financial compensation for their participation. The attrition rate for the domestic U.S. panel is quite low with only about 10% a year. The rate is calculated based on bounced email invitations and lack of response to emails. Panel recruits undergo a double-opt in process. They have to register with an opt-in link delivered via email to activate the account. In order to confirm the identity of the panelists and to exclude fraudulent activities panelists are to provide both an email addresses and physical mailing addresses that are then validated against a third party database. When panel members sign up to receive financial rewards through PayPal they are required to provide their name, address and bank account information, which are also verified against the member information. Other measures also exist to detect inattentive and fraudulent respondents.

Panelists are profiled across more than 200 data points, and the information on panel members is continuously updated. The total number of active members in the US panel comprises 1.5 million.

An integral part of the sampling process is, unless otherwise specified, the random sampling within the targeted group. Panel members may be excluded from invitations based on need or project requirements. Esomar 26 has a proprietary system in place that allows contacting members based on certain criteria. Generic email invitations are sent to panel members informing them about the survey and the incentive for completion. Samples of incentives include cash through PayPal, gift certificates and products.

Panel members are only invited to a limited number of surveys. Panelists are allowed to complete a maximum of four surveys per month. The number of invitations sent out to the individual panelist as well as the amount of participations is carefully monitored. The firm holds a participation record on each panel member. This helps to manage panel attrition. Privacy policies are in place to protect panelists (Testspin 2011). A screening mechanism is implemented to screen for so-called “professional survey takers.” Information on survey takers is regularly exchanged between syndicated panel companies, and members suspected of such are eliminated from the panel.

Among other security measures for data protection, special proprietary software safeguards against duplicate survey submissions and helps to makes sure respondents are paying attention to the survey. A whole array of measures is incorporated into the panel system to warrant quality standards.

ii. Data Collection

On February 23rd, the day before the launch, the data collection instrument was prescreened by a team of the C & T Marketing Group under the supervision of the project manager with whom I had been consulting. They tested for formal and logical errors as well as checking for possible improvements. In addition, the screening questions were inserted at the beginning of the survey. The preliminary professional review of C & T Marketing Group was applied in substitution of a pretest.

Furthermore, the email link that would be given to the panelists had to be modified in such a way that panelists were led to the C & T webpage on conclusion of the survey. Additional modifications would allow C & T to monitor constantly responses during the data collection process. Data collection took place between February 24th and 27th resulting in 299 completed surveys with gender ratio of 51% females and 49% males.

The biographical parameters are very similar across conditions warranting comparability: the overall age mean age is 38.8 years (C1: 35%-male, 42%-female; C2: 51%-male, 49%-female; C3: 52%-male, 48%-female; C4:55%-male, 45%-female). Respondents of all conditions indicated a household income between $70,000-79,000. A synopsis of essential frequencies can be found in Table 16 below.

Table 16: Essential Frequencies

Condition		1: Science Diet -Dollar General		2: Everpet - Dollar General		3: Science Diet - Petsmart		4: Everpet - Petsmart		Totals	
	Total Responses	77		76		72		74		299	
Gender	Male	35	45%	39	51%	38	52%	41	55%	153	51%
	Female	42	55%	37	49%	34	48%	34	45%	147	49%
Age Mean		38		39		38		40		38.8	
Employ-ment Status	Self-employed	9	12%	12	16%	5	7%	4	5%	30	10%
	Employed (full-time)	65	84%	58	76%	63	88%	67	91%	255	85%
	Employed (part-time)	3	4%	6	6%	4	5%	3	4%	16	5%
Income Mean	Mean	70-79K		70-79K		Betw. 70-79K & 80-89K		70-79K		70-79K	

D. Data Analysis

1. Data Management

Data was exported in SPSS. There was no missing data. Reverse coding was applied to two items in each condition: affected were one item from product brand image (item #3 “When I buy a store-branded dog food I think that I get the most for my money”) and one item of retailer brand image (item #11 “[store name]” is not always clean).

2. Descriptive Statistics

Table 17: Descriptive Statistics (see Appendix) displays the SPSS output of the descriptive statistics for the survey results and the mean and standard deviation for each variable. Kurtosis and skewness are measures of deviation from normality (George and Mallery 2011).

a. Kurtosis

Kurtosis is a test of normality indicating the shape of distribution (derived from Greek it literally means “humped”; Bajpai 2009). A perfectly symmetrical (so-called mesokurtic) distribution of a random variable has a skewness of zero and a kurtosis of zero as well. For kurtosis, the following benchmark values are mentioned in the literature:

Table 18: Kurtosis Benchmarks
(Bajpai 2009; George and Mallery 2011; Norusis 2010)

Kurtosis Value	Interpretation: Shape of Distribution Curve
0; close to 0	Shape is normal; close to normal
Positive Value	Distribution is more peaked (and narrower in width) than normal
Negative Value	Distribution is flatter (and greater in width) than normal
Between +/- 1.00	Excellent Value
Between +/- 2.00	Acceptable Value
> +/ < -- 5.0	Inacceptable; is an extreme positive / negative kurtosis; extreme negative: more values are in the tails of the distribution than around the mean (platykurtic); extreme positive: more values are around the mean than in the tails of the distribution (leptokurtic)

In the data set at hand most kurtosis values of the 42 measures in each condition are not greater than +/ - 1.00 implying an excellent kurtosis, i.e. normal distribution across all conditions. In condition 1 ten values are between +/- 2.00, and five values are between 2.1 to 3.7. In condition 2 most kurtosis values are not greater than +/ - 1.00 indicating an excellent kurtosis. Eight values are between +/- 2.00 and three values are between 2.3 to 3.6. Regarding condition 3 eight values are between +/- 2.00 and six values are between 2.2 to 3.8. Finally, in condition 4, eight values are between +/- 2.00 and five values are between 2.5 to 3.6. Because none of the values exceeds +/--5.0, the distribution of the values is overall acceptable.

b. Skewness

Skewness illustrates to what degree a value distribution deviates from the symmetry around the mean (Field 2009). Skewness is interpreted based on the following benchmarks:

Table 19: Skewness Benchmarks
(Field 2009; George and Mallery 2011; Norusis 2010)

Skewness Value	Interpretation
0; close to 0	(almost) evenly balanced distribution
Positive Value	A greater number of smaller values
Negative Value	A greater number of larger values
Between +/- 1.00	Excellent Value
Between +/- 2.00	Acceptable Value

The results of all conditions show most values are close to one or smaller than +/- 1.00, some are +/- 2.00. The highest value for condition 1 is 1.5, for condition 2 is 1.3, for condition 3 is 1.8, and for condition 4, the highest value is 1.4.

3. Correlation Matrix

a. Analysis of the Population Correlation Matrices

In essence, a correlation matrix is devised in order to detect both correlations that are not high enough as well as correlations that are too high (Field 2009). There are two ways to create and inspect a population correlation matrix (being the correlation matrix with all items), via either Pearson correlation or factor analysis. Initially, a Pearson correlation for each condition comprising all items was conducted. Afterwards, a factor analysis was executed incorporating the Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity. If our items measure the same underlying dimensions then they should correlate with each other because they are measuring the same factor.

i. Review of Item Correlations

After creating correlation matrices for each condition containing all items, each item was then analyzed separately. In course of a visual scan, the correlation matrix was examined for possible correlations below 0.3 that would be low and would thus be considered for elimination. In addition, the matrices were reviewed for correlations > 8, which might indicate multicollinearity. Items with correlations exceeding 8 have to be considered for elimination and / or further testing because multicollinearity can decrease reliability and lead to misleading results (Field 2009).

None of the correlations surpassed 8 (indicating a lack of multicollinearity). But the analysis of the population correlation matrix made it necessary to omit items that showed correlations of below 0.3 across the 4 conditions: PBI: item #3 (6 items remaining); RBI: items #11, 14, 18 (15 items remaining); incongruity: items #7 and 8 (8 items remaining). Due to adequate correlation coefficients, perceived value, OBE and purchase intent were not affected by item elimination.

ii. KMO Test and Bartlett's Test of Sphericity

Kaiser-Meyer-Olkin is a measure of whether the distribution of values is adequate for conducting factor analysis (George and Mallery 2011). The following benchmarks apply:

Table 20: KMO Benchmarks

> 0.9	Marvelous
>0.8	Meritorious
>0.7	Middling
>0.6	Mediocre
>0.5	Miserable
<0.5	Unacceptable

Adapted from: George and Mallery 2011

Bartlett's Test of Sphericity is a measure of normality. It tests whether the correlation matrix is an identity matrix (Field 2009). A significance value of <0.05 indicates that data do not produce an identity matrix (i.e. differ significantly from an identity matrix) and are thus multivariate normal and acceptable for factor analysis (George 2011). If it were not significant, it would mean that all variables are perfectly independent from each other. In this case, all correlation coefficients would be zero. Considering that one looks for variables measuring the same thing (i.e. constructs / latent variables), this would be problematic (Field 2009).

All conditions show KMO values rated "middling" or close to "meritorious". Condition 1 shows a KMO of 0.775, condition 2 of 0.733, condition 3 of 0.684, and condition 4 of 0.756. Furthermore, Bartlett Test of Sphericity is significant in each condition (see **Table 21: KMO and Bartlett's Test of Sphericity** in Appendix).

b. Analysis of the Summated Correlation Matrices

The correlation matrix displays the intercorrelations among all variables (factors). As such, it does not allow for making inferences about the impact of one variable on the other. But the correlation matrix supplies a general impression about the relationships between predictor and outcome variables. Correlation measures the strength and the direction of the relationship between two or more variables. A correlation has two components: the strength of the coefficient and the direction of the relationship. The strength of the coefficient is indicated by the absolute value of the coefficient. The closer the value is to 1.0, either positive or negative, the stronger or more linear the relationship. The closer the value is to 0, the weaker or nonlinear the relationship (Field 2009).

Summated scales for all factors were created in SPSS (by summating across items per factor per subject and then dividing the sum by the number of items) in preparation for the correlation matrices displayed in the table below.

Table 22: Correlation Matrices (Summated Scales)

Condition 1 (INCONGRUITY, Dollar General x Science Diet)	C1_Product_ Brand_Image	C1_RBI	C1_ Incongruity	C1_Perceived_ Value	C1_OBE	C1_Purchase Intent
C1_Product_Brand_Image	1					
C1_Retailer_Brand_Image	-.149	1				
C1_Incongruity	.512**	-.449**	1			
C1_Perceived_Value	-.119	.372**	-.287*	1		
C1_OBE	.423**	-.367**	.492**	-.424**	1	
C1_Purchase_Intent	.326**	-.344**	.616**	-.374**	.867**	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Condition 2 (CONGRUITY, Dollar General x Everpet)	C2_Product_ Brand_Image	C2_RBI	C2_ Incongruity	C2_Perceived_ Value	C2_OBE	C2_Purchase Intent
C2_Product_Brand_Image	1					
C2_Retailer_Brand_Image	-.312**	1				
C2_Incongruity	.207	-.443**	1			
C2_Perceived_Value	-.025	.633**	-.422**	1		
C2_OBE	.278*	-.714**	.527**	-.648**	1	
C2_Purchase_Intent	.132	-.721**	.534**	-.752**	.806**	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Condition 3 (CONGRUITY, Petsmart x Science Diet)	C3_Product_Brand_Image	C3_RBI	C3_ Incongruity	C3_Perceived_ Value	C3_OBE	C3_Purchase Intent
C3_Product_Brand_Image	1					
C3_Retailer_Brand_Image	-.122	1				
C3_Incongruity	.354**	-.486**	1			
C3_Perceived_Value	-.292*	.443**	-.459**	1		
C3_OBE	.315**	-.232	.385**	-.447**	1	
C3_Purchase_Intent	.375**	-.293*	.556**	-.512**	.687**	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Condition 4 (INCONGRUITY, Petsmart x Everpet)	C4_Product_Brand_Image	C4_RBI	C4_ Incongruity	C4_Perceived_ Value	C4_OBE	C4_Purchase Intent
C4_Product_Brand_Image	1					
C4_RBI	-.209	1				
C4_Incongruity	.147	-.341**	1			
C4_Perceived_Value	-.159	.549**	-.638**	1		
C4_OBE	.207	-.584**	.625**	-.611**	1	
C4_Purchase_Intent	.214	-.502**	.676**	-.668**	.780**	1

**. Correlation is significant at the 0.01 level (2-tailed).

i. Significance of Relevant Correlations

Here most correlations are significant, particularly between the factors that were hypothesized to have an impact on each other. All hypothesized correlations in condition 1 (incongruity: Dollar General x Science Diet) are significant. Contrary to the hypothesized relationships, the following correlation is insignificant in condition 2 (congruity: Dollar General x Everpet): PBI – Incongruity. In terms of condition 3 (congruity: Petsmart x Science Diet), the following relevant correlation is insignificant: RBI-OBE. Finally, in condition 4 (incongruity, Petsmart x Everpet) the subsequent correlations turned out to be insignificant: PBI-Incongruity and PBI-OBE. Although correlation does not imply causation, high correlations between factors with a hypothesized causal relationship are a good and necessary result (Field 2009).

ii. Testing for Multicollinearity Via Correlations

The summated correlation matrices are also to be examined for possible multicollinearity. Multicollinearity implies high correlations between variables. Even though high correlations are a common research objective, correlations that exceed a certain level can enhance standard errors and undermine significance tests (Berry and Feldman 1985).

The correlation matrix can be used as a part of collinearity diagnostics to detect multicollinearity. The benchmark value is 0.90 (Tabachnick and Fidell 2007). The highest correlations exist between OBE and purchase intent: condition 1-0.867, condition 2-0.806, condition 3-0.687 and in condition 4-0.780. None of these values reaches the benchmark. But in view of the detrimental effects multicollinearity can cause, additional diagnostics were employed.

ii. Testing for Multicollinearity Via Regression

SPSS offers diagnostics via variance inflation factor (VIF) and tolerance (Meyers, Gamst and Guarino 2006). The VIF statistic unveils if a predictor variable shows strong linear relationships with the other predictors (Field 2009). In course of iterative regressions, the predictor is treated as a criterion variable that is predicted by the other independent factors (Tabachnik and Fidell 2007). Multicollinearity is possible for VIF figures ≥3, is problematic for values ≥5 and certain for numbers ≥10 (Field 2009; Tabachnik and Fidell 2007).

The VIF is complemented by a tolerance statistics being the reciprocal of VIF (1/VIF); tolerance values range from 0 to 1. Tolerance levels of ≤0.1 are strongly indicative for multicollinearity, whereas some consider conservative values of ≤0.2 as reason for concern (Field 2009). The results show that there are no indications for multicollinearity.

Table 23: VIF and Tolerance

Con-dition	Factor	Tolerance	≤0.2: Possible Multicollinearity	VIF	≥3: Possible Multicollinearity
C1	C1_Retailer_Brand_Image	.739	No	1.353	No
	C1_Incongruity	.634	No	1.578	No
	C1_Perceived_Value	.694	No	1.440	No
	C1_OBE	.694	No	1.441	No
	C1_Product_Brand_Image	.729	No	1.371	No
C2	C2_Retailer_Brand_Image	.429	No	2.333	No
	C2_Incongruity	.733	No	1.364	No
	C2_Perceived_Value	.492	No	2.033	No
	C2_OBE	.444	No	2.254	No
	C2_Product_Brand_Image	.849	No	1.178	No
C3	C3_Retailer_Brand_Image	.694	No	1.441	No
	C3_Incongruity	.699	No	1.431	No
	C3_Perceived_Value	.626	No	1.597	No
	C3_OBE	.770	No	1.298	No
	C3_Product_Brand_Image	.836	No	1.196	No
C4	C4_RBI	.549	No	1.822	No
	C4_Incongruity	.438	No	2.285	No
	C4_Perceived_Value	.546	No	1.830	No
	C4_OBE	.474	No	2.112	No
	C4_Product_Brand_Image	.940	No	1.064	No

4. Common Method Bias

a. Relevance and Diagnostics

All data for this research project were gathered applying the same survey. Consequently, there potentially exists the problem of common method bias (Alwin 2007; Doty and Glick 1998; Podsakoff et al. 2003). Common method bias (CMB) is **"**variance that is attributable to the measurement method rather than to the constructs the measures represent" (Podsakoff et al. 2003, p. 879).

The influence of common method variance has been the subject of vivid debate. Researchers like Podsakoff et al (2003) emphasize that common method bias is a systematic source of measurement error that may induce the inflation or deflation of observed relationships. Other authors contest the relevance of common variance (Buchanan and Bryman 2009; Salkind 2010). They accentuate common method variance does not necessarily lead to common method bias and invalidate all research findings *per se* (Doty and Glick 1998). Other authors argue that even when data are generated from different sources to counter CMB, there can still be item context effects (Harrison and McLaughlin 1993). Nevertheless, there does appear to be consensus that common method variance to be reason for serious concern if it reaches a level causing common method bias (Doty and Glick 1998).

The literature suggests different tests accounting for common method bias. The most sophisticated method is the Multitrait-Multimethod Matrix (MTMM) (Campbell and Fiske 1959). The highly acclaimed MTMM requires measurement of each of the traits using at least two methods (traditional approach) or to measure variance as a function of "true" score variance, the variance due to method effect and random error (CFA-based MTMM). The MTMM procedures are rather resource-intensive and cumbersome. Consequently, they have found rather

limited resonance in the literature (Malhotra, Kim and Patil 2006). MTMM methods were not used in this project.

The two other main areas of common method diagnostics are Harman's One Factor Test and partial correlation procedures. Harman's One Factor Test can be conducted via Exploratory Factor Analysis or Confirmatory Factor Analysis. Harman's One Factor Test is one of the most widely known approaches, even though it is susceptible to underestimating smaller and moderate levels of common method bias. Both Harman's One Factor Test via EFA and CFA were applied in this research.

Among partial correlation procedures, the Common Latent Factor Method is suggested by Podsakoff et al. (2003) which was also employed here. Finally, Podsakoff et al. (2003) also supported the Marker-Variable Test. This method is still fairly unexplored and under-researched. The lack of experience with this technique is one of its key limitations (Malhotra, Kim and Patil 2006). Nevertheless, the Marker-Variable Test was employed here to complement the other tests. The Table 24 below provides an overview of the aforementioned CMB tests.

Table 24: Diagnostics for Common Method Bias

	CMB test	Evaluation	Applied in this Project	Basic Mechanics	Sign. CMB?
MTMM	Traditional	Elaborate; theoretically a viable approach; **Limitation:** impractical rarely used in the lit. because it requires measurement of each of the traits using at least two methods; too cumbersome (Malhotra, Kim and Patil 2006)	No	Measure each of the research variables using multiple methods and use the data collected to create an MTMM matrix	n/a
	CFA-Based		No	Model explicitly the variance in a measure as a function of three components, namely, the "true" score variance, the variance due to method effect, and random error	n/a
Harman's Single-Factor Test	via EFA	The most prominent method to account for CMB (Podsakoff et al. 2003, Podsakoff and Organ 1986); **Limitation:** lack of sensitivity to detect moderate or small levels of CMB effects (Kemery and Dunlap 1986, Podsakoff et al. 2003)	**Yes** (SPSS)	Constrain the number of factors extracted in your EFA to be just one; If CMB is an issue, a single factor will account for the majority of the variance in the model (Gaskin 2011)	**No**
	Via CFA	Instead of EFA CFA can be used when implementing Harmon's single-factor test (Malhotra, Kim and Patil 2006) **Limitation:** lack of sensitivity to detect moderate or small levels of CMB effects (Kemery and Dunlap 1986, Podsakoff et al. 2003)	**Yes** (Amos)	All of the manifested items are modeled as the indicators of a single factor that represents method effects. Method biases are assumed to be substantial if the hypothesized model fits the data (e.g., Mossholder, Bennett and Martin 1998).	**No**

Table 24: Diagnostics for Common Method Bias (continued)

	CMB Test	Evaluation	Applied in this Project	Basic Mechanics	Sign. CMB?
Partial Correlation Procedure	Common Latent Factor Method	Suggested by Podsakoff et al. (2003); captures the common (shared) variance among all observed variables in the model	**Yes** (AMOS)	Add a latent factor to your AMOS CFA model and then connect it to all observed items in the model, then constrain the paths from this common latent factor to all be equal. Squaring the unstandardized regression coefficients from this common factor will then give the common shared variance (Gaskin 2011)	**No**
	Marker-Variable Test - *a priori*	**Extension of common latent factor method;** suggested by Podsakoff et al. (2003) and Lindell and Whitney (2001); marker variable is theoretically unrelated to at least one variable (ideally all other variables) in the study; **Limitation:** Lack of experience with this relatively new technique; questions about sufficient validity and efficacy (Malhotra, Kim and Patil 2006; Podsakoff et al. 2003)	No	Marker variable should be carefully identified before the start of data collection	n/a
	Marker-Variable Test - *post hoc*	Post hoc fashion without the marker variable identified a priori is possible (Lindell and Brandt 2000). Lindell and Whitney 2001: "the smallest correlation among the manifest variables provides a reasonable proxy for CMV" (p. 115). **Limitation:** post hoc approach has the potential to capitalize on chance factors (Lindell and Brandt 2000). This method distils common variance better than the basic common latent factor method because it is finding the common variance between unrelated latent factors. Thus, any common variance is likely due to a CMB, rather than natural correlations (Gaskin 2011).	**Yes** (AMOS)	Add another latent factor to the model; make sure it is something that you would not expect to correlate with the other latent factors in the model (i.e., the observed variables for this new factor should have low, or no, correlation with the observed variables from the other factors). Then add the common latent factor (Gaskin 2011)	**No**

b. Harman's One Factor Test Via EFA

In order to examine common method bias, Harman's One Factor Test was conducted. The underlying assumption of Harman's test is if a single factor surfaces from the factor analysis that explains a significant amount of the variance in the data there is strong indication for common method bias (Podsakoff et al. 2003). First, the test was run via EFA in SPSS. Separately for each condition, all variables were entered and extracted. In contrast to a "normal" factor analysis a fixed number of factors were extracted, i.e. one. In addition, no rotation method was applied. In the results of each condition one factor emerged, but the variance explained by these factors was not higher than 50% in any of the conditions (see **Table 25: Harman's One Factor Test Via EFA and CFA** in Appendix). Hence, the Harman's One Factor Test via EFA did not indicate common method bias.

c. Harman's One Factor Test Via CFA

In AMOS 18, a factor was created and connected to all measurement items. The resulting model was compared to the hypothesized model via factor analysis. The chi-square and other fit indices were compared. If a model with the common method factor (CMF) shows better values for fit indices, then the existence of common method bias can be assumed. It is noteworthy that the overall model fit is not relevant in context with CMB; detection of CMB focuses merely on the comparison of structural model parameters (see **Table 25: Harman's One Factor Test Via EFA and CFA** in Appendix).

In condition 1 (incongruity, Dollar General x Science Diet), the chi-square of the CMF model is only minimally lower than the hypothesized model (1100.103 compared to 1115.818), and the fit indices are practically equal (CFI = 0.779, RMSEA = 0.051 versus CFI = 0.786,

RMSEA = 0.050). A comparison of the parameter coefficients and t-coefficients unveils a very marginal or small difference between the models. Overall, one may state a very low level of common method bias for condition 1.

In condition 2 (congruity, Dollar General x Everpet), the chi-square of the CMF model is slightly lower than the hypothesized model (1217.179 compared to 1329.888), and the fit indices show high similarities (hypothesized model: CFI = 0.657, RMSEA = 0.061 versus CMF model: CFI = 0.658, RMSEA = 0.061). A comparison of the parameter coefficients and t-coefficients showed minimal or almost no differences. Overall, one may diagnose a negligible level of common method bias for condition 3.

In condition 4 (incongruity, Petsmart x Everpet), the chi-square of the CMF model is equivalent with the one of the hypothesized model (both 1315.026), and the fit indices are practically equal (hypothesized model: CFI = 0.682, RMSEA = 0.061 versus CMF model: CFI = 0.683, RMSEA = 0.061). A comparison of the parameter coefficients and t-coefficients indicates marginal or no differences between the models. Overall, one may point to a negligible level of common method bias for condition 4.

d. Common Latent Factor Method

Another procedure to detect CMB is the common Latent Factor Method (Podsakoff et al. 2003). In AMOS, a latent factor was included in the CFA model and then connected to all observed items. The paths from this common latent factor were then constrained to be equal. Squaring the unstandardized regression coefficients from this common factor will then show common shared variance. The literature considers a common method variance of 15% as low and acceptable (Nakata, Zhu and Kraimer 2008). This benchmark complements research conducted

by Cote and Buckley (1987). They reviewed 70 studies and demonstrated that method variance in the measured items differed significantly across disciplines. The examined marketing studies showed an overall common method variance level of 15.8% whereas other business areas (mainly management) reached even 23.8%. It is noteworthy that these authors found very high common method variance in attitude measures (in the study at hand: brand image, for example). They report an average of 40.7% for the studies they scrutinized.

The following table displays the common variance for each of the conditions. Based on this test common variance is low or negligible and does not reach common method bias levels.

Table 26: CMV Based on the Common Latent Factor Method

	Condition1	**Condition 2**	**Condition 3**	**Condition 4**
Regression Weights	-0.31	-0.28	0	0
Common Method Variance	$(-0.31)^2$=0.0961 9.61% Low	$(-0.28)^2$= 0.078 7.8% Low	$(0.00)^2$= 0 0% / <1% Negligible	$(0.00)^2$= 0 0% / <1% Negligible
Common Method Bias; >15% (Cote and Buckley 1987; Nakata, Zhu and Kraimer 2008)	No	No	No	No

e. Marker-Variable Test – Post Hoc

The Marker-Variable Test is an extension and refinement of the Common Latent Factor Method suggested by Podsakoff et al. (2003) and Lindell and Whitney (2001). A marker variable is one being theoretically unrelated to at least one variable (ideally all other variables) in the study. Such a variable can be included a priori in the initial set up of the study. But some researchers are proponents of a post hoc approach (Lindell and Brandt 2000; Lindell and

Whitney 2001). According to Lindell and Whitney (2001) "the smallest correlation among the manifest variables provides a reasonable proxy for CMV" (p. 115).

This method distills common variance better than the basic Common Latent Factor Method because it is finding the common variance between unrelated latent factors. Thus, any common variance is likely due to a CMB, rather than natural correlations (Lindell and Brandt 2000). In practical terms one adds another latent factor to the model and makes sure it is something that one would not expect to correlate with the other latent factors in the model (i.e., the observed variables for this new factor should have low, or no, correlation with the observed variables from the other factors).

In this study a latent factor called “marker variable” was created in AMOS. An error term was added and constrained to 1. Then common factor and marker variables were connected via regression lines (constrained to “a”). It was made sure to link the marker to measures of low correlation. Chosen were measures (analyzed via all items including correlation matrix) that were eliminated from further analysis due to their low correlation coefficients: out of the original 8 items, 2 incongruity measures (# 7 & 8) were dropped (and are not included in the summated correlation matrix to improve the values). These 2 measures were used to find the common variance between unrelated or weakly related latent factors. The following table offers a synopsis between the common method variance results based upon the Common Latent Factor Method and the Marker Variable Test – Post Hoc. The variance values of the Marker Variable Test – Post Hoc are lower - as anticipated. The values are corroborative of the absence of common method bias in this research.

Table 27: Result Synopsis
(Common Latent Factor / Method Marker-Variable Test - Post Hoc)

	Condition1	Condition 2	Condition 3	Condition 4
Common Latent Factor Method	9.61%	7.8%	0% (<1%)	0% (<1%)
Marker Variable Test – Post Hoc	-0.28	-0.11	0	0
	$(-0.28)^2$=0.0784	$(-0.11)^2$=0.0121	0	0
	7.84%	1.2%	0% (<1%)	0% (<1%)
	Improved Value	Improved Value	No Further Improvement Possible	No Further Improvement Possible
CMB	No	No	No	No

5. Discriminant Validity

a. Relevance and Diagnostics

Discriminant validity among the factors was tested next. Discriminant validity refers to the principle that the indicators for different constructs should not be too highly correlated, otherwise one might conclude they measure the same thing. This would happen if there is definitional overlap between constructs (Singleton and Straits 2005). Discriminant validity analysis refers to testing statistically whether two constructs differ (as opposed to testing convergent validity by measuring the internal consistency within one construct, as Cronbach's alpha does) (Hair et al. 2006).

Three key techniques were employed to support the existence of discriminant validity (see **Table 28: Results of the Tests: Is There Discriminant Validity?** in the Appendix).

b. Factor Method – PCA of All Measures (in SPSS)

In order to verify the discriminant validity, a factor analysis was conducted via Principal Component Analysis (PCA) in SPSS. Proponents of this method conclude that constructs are different if their respective indicators load most heavily on different factors in PCA. This method was developed and advocated by older research literature (Straub 1989) and is straight-forward but has its limitations. The literature has determined that this approach lacks nuance and precision (Rousson and Gasser 2004).

Before running a factor analysis, it is important to perform a test for sampling adequacy test. The Kaiser-Meyer-Olkin (KMO) measure detects whether a factor analysis is adequate (Hinton et al. 2004). Across all conditions, the values exceeded the benchmark (see **Table 29a: Discriminant Validity Test Via PCA in SPSS** in the Appendix). The results were supported by the outcome of the Measure of sampling adequacy (MSA). Furthermore, only those factors with eigenvalues greater than 1 should be considered relevant (Hinton et al. 2004, Straub, Boudreau and Gefen 2004). All factors in all conditions have eigenvalues greater than 1, thus meeting the requirement.

Total variance explained showed more extracted factors (7) than are in the hypothesized model (6). This is unproblematic and quite common because PCA “builds” factors based upon the measured responses (Field 2009). The variance levels were satisfying in condition 1 (6 factors: 72.533; 7 factors: 75.563), condition 2 (6 factors: 70.560; 7 factors: 73.330), condition 3 (6 factors: 69.291; 7 factors: 72.705) and condition 4 (6 factors: 70.080; 7 factors: 72.947). The results are complemented by Cattell's scree test, which advises to visually “eyeball” the scree plot. The (subjective) test says to drop all further components after the one starting the elbow (Garson 2011).

The communalities all exceeded the 0.5 cut-off point. The output of the Rotated Component Matrix (with Varimax rotation) showed overall satisfying results for the 2 incongruity conditions (C1 and C4). The results for 2 congruity conditions (C2 and C3) were satisfying with the reservation that some cross-loadings of a few RBI (in C2 and C3) and PV items (C2) were unveiled. In addition, a few RBI items did not load above the recommended 0.40 benchmark. PBI values were problematic in all conditions due to a confounding error that will be explained in a later section in detail.

But that all factors in all conditions (with the limitations mentioned above) showed distinct patterns in the Rotated Component Matrix speaks for discriminant validity. Further details can be obtained from **Table 29a: Discriminant Validity Test Via PCA in SPSS** and **Table 29b: Disciminant Validity Via PCA as SPSS Output** in the Appendix. Due the lack of nuance and precision of this test for discriminant validity, results are regarded with caution and ask for further tests.

c. SEM – Goodness of Fit

In order to determine discriminant validity, one can analyze the measurement model via CFA (Campbell and Fiske 1959). CFA was applied in AMOS. If goodness of fit measures for the measurement model in SEM are adequate, one may conclude the constructs in the model are different. One has to consider the rather simplistic character of this approach, though (Byrne 2001). **Table 30: Discriminant Validity Test Via Goodness-of-Fit Measures** (see Appendix) provides an overview over the test results.

In terms of discriminant validity the measurement model is evaluated as overall acceptable across all conditions. The occurrence that not all indices converge or reach the same sufficient level is not untypical (Van de Vijer and Leung 1997).

d. SEM – Nested Models

A more rigorous (and more widely accepted) SEM-based alternative approach to discriminant validity is to run the model unconstrained and also constraining the correlation between constructs to 1.0. If the two models do not differ significantly on a chi-square difference test, the researcher fails to conclude that the constructs differ (Bagozzi et al. 1991). In this procedure, if there are more than two constructs, one must employ a similar analysis on each pair of constructs, constraining the constructs to be perfectly correlated and then freeing the constraints. This method is considered more rigorous than either the SEM measurement model approach or the AVE method (Garson 2011).

The difference between the base model (also called “null model”) and the constrained models must be >3.5 to indicate discriminant validity (Loehlin 2004). As the results show discriminant validity could be confirmed among the factors (see **Table 31: SEM – Nested Models and Discriminant Validity** in the Appendix).

The results confirm discriminant validity in condition 3 (congruity) and condition 4 (incongruity). Condition 1 (incongruity) shows suboptimal results for PI and OBE, and condition 2 (congruity) for OBE – PI, OBE-RBI and RBI-PI.

6. Convergent and Construct Validity

Internal consistency was measured using Cronbach alpha having an acceptable value range of 0.6 and 0.7 (Hair et al. 2006). Furthermore, convergent validity was examined by calculating the AVE as advocated by Fornell and Larcker (1981), by examining the coefficients and by testing the t-values of the measures that have to exceed 1.96 in order to indicate convergent validity. The table below provides an overview over convergent validity tests.

Table 32: Convergent Validity Tests

Convergent Validity		Is measured by the correlation among items which make up the scale or instrument measuring a construct (internal consistency validity) (Hair et al. 2006)	
Test	**Key Citation**	**Definition**	**Cut-off point**
Cronbach's Alpha	Cronbach (1951)	Is the weighted average of all correlations between indicators; used to establish internal consistency;	≥0.7 required
AVE (=Average Variance Extracted)	Fornell and Larcker (1981)	(+), if variance explained by the construct is greater than measurement error;	≥ 0.50 required
Factor Loadings	Hair et al. (2006)	High loadings on a latent variable (factor) indicate convergent validity	≥ 0.50 required
Construct Reliability (CR)	Hair et al. (2006)	CR = (sum of standardized loading) 2 / (sum of standardized loading) 2 + sum of indicator measurement errors	≥ 0.60 required

All benchmarks were met (see **Table 33: Convergent Validity** in Appendix). Hence, convergent validity could be confirmed across all conditions.

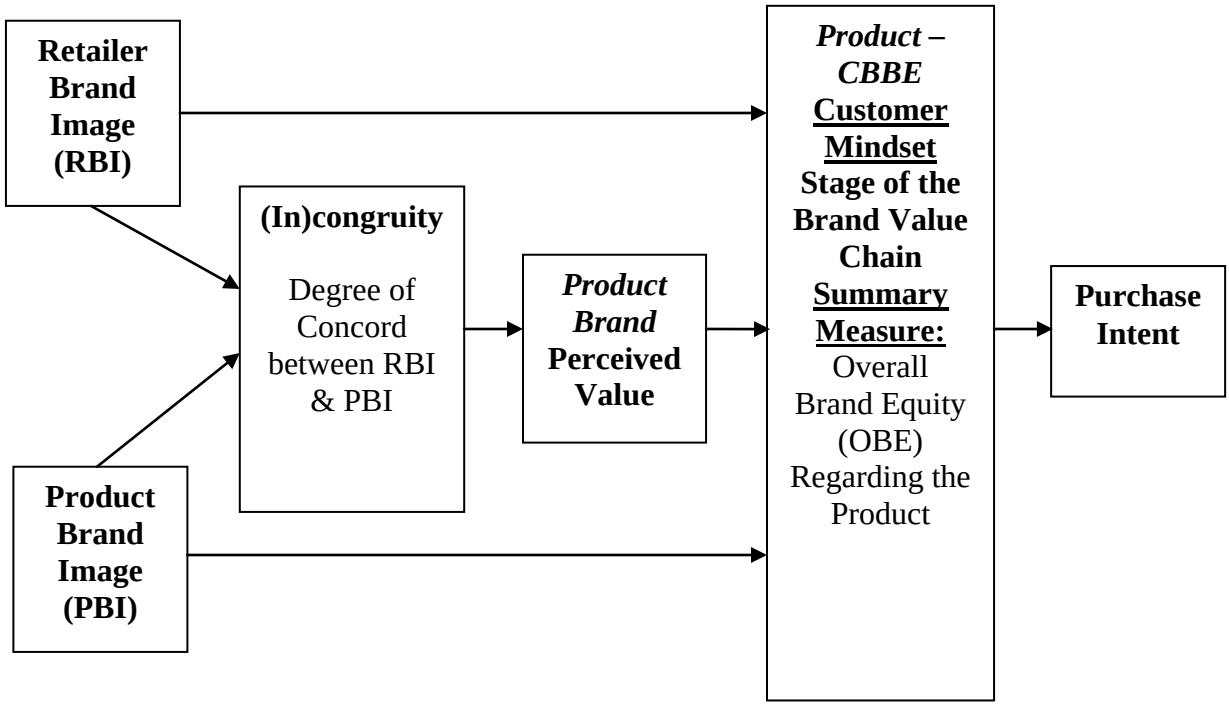
7. Analysis of the Structural Model

Having examined the measurement part of the hypothesized model, a path analysis and nested model comparisons were conducted investigating the direct and indirect structural relationships between exogeneous and endogeneous variables.

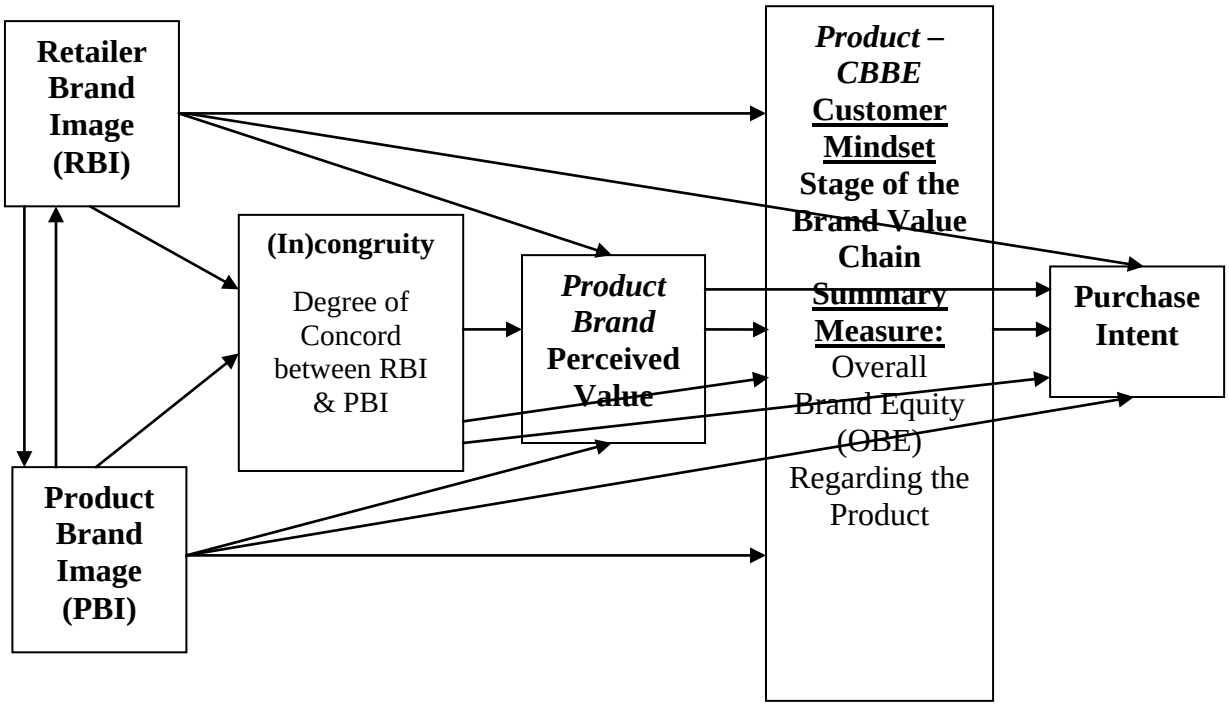
In the process of the path analysis, a full path model was generated (see below). This model was run a model with all paths specified between the endogenous and exogenous latent variables.

Figure 6: Indirect, Full and Direct Path Model

Model Based Upon Theory (= Indirect Model)

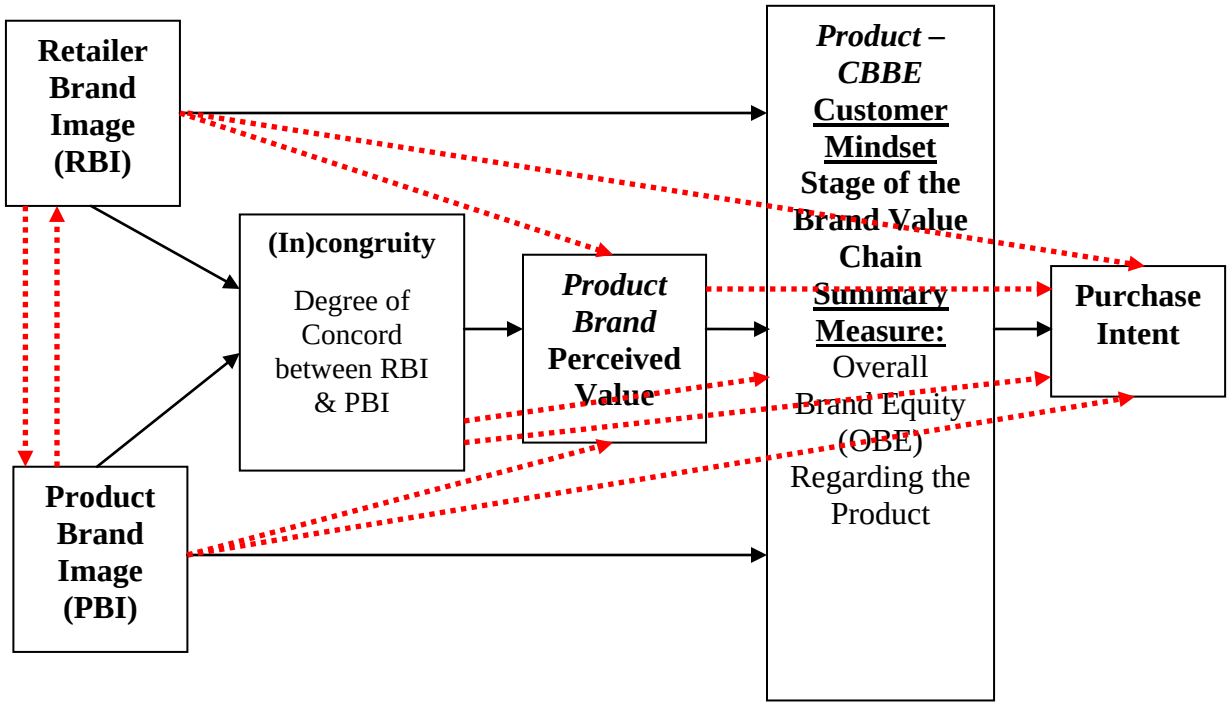


Full Path Model



Direct Path Model (See Dotted Arrows)

(Direct Path Model = Full Path Model – Indirect Path Model; Ho 2006, p. 312)



a. Nested Model Comparison

Table 34 below provides detailed data used to compare the models.

i. Condition 1 (Dollar General x Science Diet)

Regarding condition 1 (incongruity), the hypothesized model is characterized by a chi-square value of 1115.818 (628 df). The chi-square is lower than the one of the direct model but higher relative to the full path model. The CFI is 0.779 being higher and thus better than the CFI of the direct model. The CFI of this model is marginally lower than the one of the full path model. Finally the RMSEA is 0.051. The value is identical with the one of the full path model and slightly better than the direct path model.

It is not surprising that the full path model is the relatively best fitting model because it addresses all possible relationships. The indirect model offers a slightly better fit than the direct path model based on the fit indices.

Looking at the nested model comparisons, a subtraction of the indirect model's chi-square from the direct model's chi-square yields a difference of 47.362 (direct paths model: 1163.180; indirect paths model: 1115.818). This value with 2 degrees of freedom (direct paths model: 626; indirect paths model: 628) is significant at the 0.05 level. Hence, the indirect model is to be preferred to the direct path one.

This conclusion is also supported by the lower AIC (Akaike Criterion Information) comparison statistics of the indirect model. "The AIC measure indicates a better fit when it is smaller. The measure is not standardized and is not interpreted for a given model. For two models estimated from the same data set, the model with the smaller AIC is to be preferred." (Motulsky and Christopoulos 2004). A lower AIC also implies that a model is more

parsimonious (Ho 2006, 317). The indirect path model has an AIC of 1339.818 being lower than that of the direct model (1391.180).

ii. Condition 2 (Dollar General x Everpet)

In terms of condition 2 (congruity) the hypothesized model is characterized by a chi-square value of 1271.690 (627 df). The chi-square is minimally higher than the one of the direct model, and higher relative to the full path model. The CFI is 0.694 being equivalent to the CFI of the direct model. Finally the RMSEA is 0.059. The value is identical with the one of the direct path model and almost identical with the full path model.

Once again, it is not surprising the full path model is the relatively best fitting model because it addresses all possible relationships. The indirect model offers a slightly better fit than the direct path model based on the fit indices.

Looking at the nested model comparisons a subtraction of the indirect model's chi-square from the direct model's chi-square yields a difference of 0.711 (direct paths model: 1270.979; indirect paths model: 1271.690). This value with 2 degrees of freedom (direct paths model: 625; indirect paths model: 627) is not significant at the 0.05 level. Hence, the fit between direct and indirect model is not significantly different.

But the indirect model has a relatively lower AIC comparison statistics of the direct model. A lower AIC also implies that a model is more parsimonious (Ho 2006, 317). The indirect path model has an AIC of 1497.590 being lower than that of the direct model (1500.979).

iii. Condition 3 (Petsmart x Science Diet)

The hypothesized model in condition 3 (congruity) is characterized by a chi-square value of 1315.120 (628 df). The chi-square is marginally higher than the one of the direct model but higher relative to the full path model. The CFI is 0.658 being equivalent to the CFI of the direct model. The CFI of the full path model (0.673) is higher than the one of the indirect path model. Finally the RMSEA is 0.061. The value is identical with the one of the direct path model and almost identical with the RMSEA of the full path model.

Looking at the nested model comparisons, a subtraction of the indirect model's chi-square from the direct model's chi-square yields a difference of 3.636 (direct paths model: 1311.484; indirect paths model: 1315.120). This value with 2 degrees of freedom (direct paths model: 626; indirect paths model: 628) is not significant at the 0.05 level. But because the AIC of the indirect model (1539.120) is marginally different from the direct path model (1311.484), the indirect model may be preferred.

iv. Condition 4 (Petsmart x Everpet)

The hypothesized model is characterized by a chi-square value of 1315.026 (628 df). The chi-square is higher than the one of the direct model (1287.361) and higher relative to the full path model. The CFI is 0.683 being slightly lower and thus worse than the CFI of the direct model (0.694). The CFI of this model is also lower than the one of the full path model (0.707). Finally, the RMSEA of the indirect model is 0.061. The value is almost identical with the one of the full path model (0.059) and with the one of the direct path model (0.060).

Looking at the nested model comparisons a subtraction of the indirect model's chi-square from the direct model's chi-square yields a difference of 27.665 (direct paths model: 1287.361;

indirect paths model: 1315.026). This value with 2 degrees of freedom (direct paths model: 626; indirect paths model: 628) is significant at the 0.05 level.

A comparison of the AIC yields better results for the direct path model (1515.361) compared to the indirect model (1539.026).

b. Path Analysis

Based on the critical ratio test (coefficient divided by its standard error ≥ +/- 1.96, $p < 0.05$; see t-values) all paths in condition 1 (incongruity) turned out to be significant. The t-values in condition 3 (congruity) all pass the critical ratio test but the following: RBI => OBE. In condition 2 (congruity) all paths turned out to be significant but the following: PBI-Incongruity and PBI-OBE. The same situation exists in condition 4 (incongruity). The results for condition 2 and 4 can be explained with a confound in the measurement of PBI discussed in the next section.

Table 34: Path Analysis and Nested Model Comparisons

Paths for Condition 1			Full Path model		Direct Paths Model		Indirect Paths Model	
			Parameter Coefficient	T-Value	Parameter Coefficient	T-Value	Parameter Coefficient	T-Value
RBI	⇨	PBI	-.980	-4.544	-.978	-4.543		
	⇨	Incongruity	-.546	-3.062			-.490	-3.917
	⇨	PV	.288	1.507	.361	2.025		
	⇨	OBE	-.162	-.839			-.264	-2.106
	⇨	Purchase Intent	.096	.485	-.022	-.122		
PBI	⇨	RBI	.647	4.025	.649	4.018		
	⇨	Incongruity	.623	3.968			.590	4.576
	⇨	PV	.007	.041	-.074	-.482		
	⇨	OBE	.287	1.627			.407	3.133
	⇨	Purchase Intent	-.208	-1.130	-.001	-.008		
Incongruity	⇨	PV	-.131	-1.029			-.222	-2.242
	⇨	OBE	.233	1.814	.537	4.203		
	⇨	Purchase Intent	.362	2.675	.597	4.634		
PV	⇨	OBE	-.363	-2.774			-.400	-3.132
	⇨	Purchase Intent	-.013	-.095	-.268	-2.064		
OBE	⇨	Purchase Intent	.762	5.579			.857	7.508
Chi-Square			Chi-Square = 1094.298 Degrees of Freedom = 619 Probability Level = .000		Chi-Square = 1163.180 Degrees of Freedom = 626 Probability Level = .000		Chi-Square = 1115.818 Degrees of Freedom = 628 Probability Level = .000	
AIC Comparison Statistics					1391.180		1339.818	
CFI	>0.90	Common Benchmark[3]	0.785; Suboptimal Fit		0.757; Suboptimal Fit		0.779; Suboptimal Fit	
	>0.95	Strict Benchmark[4]						
RMSEA	<0.05	Small Discrepancy[5]	0.051 Excellent (Rounded)		0.054 Excellent (Rounded)		0.051 Excellent (Rounded)	
	≤ 0.08	Medium Discrepancy						
	>0.08	Great Discrepancy						
Goodness-of-Fit Comparison			Relatively Best Fit		Relatively Worst Fit		Better Fit Than Direct Path Model	

Path Analysis:

Critical Ratio Test (≥ +/- 1.96, p< 0.05; See T-Values): **All Paths Are Significant**

Better Fit of *Indirect Model* Due to Lower AIC

[3] Grover and Vriens (2006, 343); >0.9 may be too restrictive (Marsh, Hau and Wen 2004); fit benchmarks to be seen with caution (Markland 2006)

[4] Hu and Bentler (1999)

[5] Browne and Cudeck (1993, 144); Reinecke (2005)

Paths for Condition 2			Full Path Model		Direct Paths Model		Indirect Paths Model	
			Parameter Coefficient	T-Value	Parameter Coefficient	T-Value	Parameter Coefficient	T-Value
RBI	⇨	PBI	-2.891	-1.717	-2.888	-1.718		
	⇨	Incongruity	-.986	-1.557			-.346	-2.692
	⇨	PV	1.502	1.710	1.651	1.765		
	⇨	OBE	-1.172	-1.563			-.458	-3.464
	⇨	Purchase Intent	-.423	-.806	-.940	-1.432		
PBI	⇨	RBI	1.529	3.973	1.529	3.970		
	⇨	Incongruity	.113	.470			.091	.720
	⇨	PV	.243	.980	.224	.910		
	⇨	OBE	.226	.912			.180	1.403
	⇨	Purchase Intent	-.165	-.670	-.068	-.280		
Incongruity	⇨	PV	-.162	-1.267			-.411	-3.367
	⇨	OBE	.239	1.851	.657	4.985		
	⇨	Purchase Intent	.096	.737	.251	2.007		
PV	⇨	OBE	-.412	-3.146			-.508	-4.207
	⇨	Purchase Intent	-.470	-3.331	-.664	-5.048		
OBE	⇨	Purchase Intent	.468	3.668			.860	8.525
Chi-square			Chi-Square = 1230.403 Degrees of Freedom = 618 Probability Level = .000		Chi-Square = 1270.979 Degrees of Freedom = 625 Probability Level = .000		Chi-Square = 1271.690 Degrees of Freedom = 627 Probability Level = .000	
AIC Comparison Statistics (Fit & Parsimony)					1500.979		1497.690	
CFI	>0.90	Common Benchmark	0.710; Suboptimal Fit		0.694; Suboptimal Fit		0.694; Suboptimal Fit	
	>0.95	Strict Benchmark						
RMSEA	<0.05	Small Discrepancy	0.058 Good		0.059 Good		0.059 Good	
	≤ 0.08	Medium Discrepancy						
	>0.08	Great Discrepancy						
Goodness-of-Fit-Comparison			Relatively Best Fit		Marginally Worse Fit Than Indirect Path Model		Marginally Better Fit Than Direct Path Model	

Path Analysis:

Critical Ratio Test (≥ +/- 1.96, p< 0.05; See T-Values): <u>All Paths B***ut PBI*** => ***Incongruity & PBI=> OBE*** Are Significant</u>

<u>Better Fit of ***Indirect* Model</u> Due to Lower AIC**

Critical Value at df=2 & P-Value:0.05 is **<u>5.991</u>** (See Chi-Square Table)
Chi-Square of (1271.690- 1270.979) **0.711 is NOT Significant = Fit of Models is Not Significantly different**

Paths for Condition 3			Full Path Model		Direct Paths Model		Indirect Paths Model	
			Parameter Coefficient	T-Value	Parameter Coefficient	T-Value	Parameter Coefficient	T-Value
RBI	⇨	PBI	-1.379	-5.326	-1.377	-5.332		
	⇨	Incongruity	-.583	-2.588			-.465	-3.605
	⇨	PV	.629	2.567	.850	3.551		
	⇨	OBE	.251	.998			.097	.744
	⇨	Purchase Intent	.014	.055	.150	.608		
PBI	⇨	RBI	1.106	5.141	1.110	5.130		
	⇨	Incongruity	.410	2.027			.356	2.715
	⇨	PV	-.161	-.761	-.253	-1.235		
	⇨	OBE	.275	1.296			.284	2.118
	⇨	Purchase intent	.108	.509	.231	1.138		
Incongruity	⇨	PV	-.299	-2.244			-.503	-4.340
	⇨	OBE	.215	1.555	.458	3.459		
	⇨	Purchase Intent	.252	1.815	.395	3.053		
PV	⇨	OBE	-.436	-3.192			-.520	-4.298
	⇨	Purchase Intent	-.115	-.787	-.322	-2.416		
OBE	⇨	Purchase Intent	.465	3.493			.638	5.831
Chi-Square			Chi-Square = 1275.047 Degrees of Freedom = 619 Probability Level = .000		Chi-Square = 1311.484 Degrees of Freedom = 626 Probability Level = .000		Chi-Square = 1315.120 Degrees of Freedom = 628 Probability Level = .000	
AIC Comparison Statistics					1539.484		1539.120	
CFI	>0.90	Common Benchmark	0.673; Suboptimal Fit		0.658; Suboptimal Fit		0.658; Suboptimal Fit	
	>0.95	Strict Benchmark						
RMSEA	<0.05	Small Discrepancy	0.60 Good		0.061 Good		0.061 Good	
	≤ 0.08	Medium Discrepancy						
	>0.08	Great Discrepancy						
Goodness-of-Fit-Comparison			Relatively Best Fit		Marginally Worse Fit Than Indirect Path Model		Marginally Better Fit Than Direct Path Model	

Path Analysis:

Critical Ratio Test (≥ +/- 1.96, p< 0.05; See T-Values):
All Paths ***But RBI*** => ***OBE*** Are Significant

Marginal Better Fit of *Indirect Model* Due to Lower AIC

Critical Value at df=2 & P-Value: 0.05 is **5.991** (See Chi-Square Table)
Chi-Square of (1315.026 - 1287.361) **3.636 is NOT Significant = Fit of Models is Not Significantly Different**

Paths for Condition 4			Full Path Model		Direct Paths Model		Indirect Paths Model	
			Parameter Coefficient	T-Value	Parameter Coefficient	T-Value	Parameter Coefficient	T-Value
RBI	⇨	PBI	-1.909	-5.815	-1.910	-5.811		
	⇨	Incongruity	-.592	-2.154			-.427	-3.434
	⇨	PV	.694	2.362	.949	3.250		
	⇨	OBE	-.563	-1.844			-.387	-2.997
	⇨	Purchase Intent	.072	.231	-.244	-.806		
PBI	⇨	RBI	1.397	5.031	1.399	5.027		
	⇨	Incongruity	.233	1.048			.174	1.387
	⇨	PV	.004	.016	-.083	-.369		
	⇨	OBE	.034	.150			.094	.737
	⇨	Purchase Intent	.036	.158	.057	.253		
Incongruity	⇨	PV	-.438	-3.421			-.569	-4.815
	⇨	OBE	.427	3.029	.662	4.929		
	⇨	Purchase Intent	.258	1.719	.564	4.353		
PV	⇨	OBE	-.223	-1.728			-.523	-4.559
	⇨	Purchase Intent	-.282	-2.112	-.425	-3.272		
OBE	⇨	Purchase Intent	.611	4.589			.922	8.292
Chi-Square			Chi-Square = 1252.331 Degrees of Freedom = 619 Probability Level = .000		Chi-Square = 1287.361 Degrees of Freedom = 626 Probability Level = .000		Chi-Square = 1315.026 Degrees of Freedom = 628 Probability Level = .000	
AIC Comparison Statistics					1515.361		1539.026	
CFI	>0.90	Common Benchmark	0.707; Suboptimal Fit		0.694; Suboptimal Fit		0.683; Suboptimal Fit	
	>0.95	Strict Benchmark						
RMSEA	<0.05	Small Discrepancy	0.059 Good		0.060 Good		0.061 Good	
	≤ 0.08	Medium Discrepancy						
	>0.08	Great Discrepancy						
Goodness-of-Fit-Comparison			Relatively Best Fit		Better Fit Than Indirect Path Model		Worse Fit Than Direct Path Model	

Path Analysis:

Critical Ratio Test (≥ +/- 1.96, p< 0.05; See T-Values): All Paths ***But PBI => Incongruity & PBI=> OBE*** Are Significant

Better Fit of *Direct* Model

8. Comparison of the Four Conditions

The model conditions can be compared using the data accumulated so far. However, one might also consider whether a simultaneous multiple group analysis would be helpful (Byrne 2001). The applicability of this technique depends on the nature of the four conditions and the character of their mutual relationships (Loehlin 2004).

a. Character of the Four Condition Models

Within the SEM framework this means that it should be decided whether the models are nested or non-nested (Loehlin 2004). Only if the four models at hand were nested could one employ a multi-group analysis (Ho 2006).

Models are nested if one model is a derivative of the other (Marsh 1994). In other words, two models are nested when one model is a "subset of the other" (Kline 2010, p. 214). This relationship exists in case certain restrictions (constraints) are applied compared to the more (or completely) unconstrained model (Byrne 2001; Schumacker and Lomax 2004). "Nesting refers to situations where the models are different versions of each other strictly in terms of parameters and/or latent variables, not in terms of measured variables." (Garson 2011) Models that share the same measures (items) but did not undergo the same measurement are not nested because they do not refer to the same data set (Bentler and Bonett 1980). Here the four conditions are linked to different product brand and retailer brand combinations; they are not merely subsets of each other because each model condition refers to its unique set of data. Constraining parameters in condition 1 does not make it a subset of condition 2 etc. Hence, the four conditions represent non-nested models.

b. Comparison of Non-Nested Models

ii. Non-Nested Model Comparison Techniques

The comparison of non-nested models is a rather under-researched area in SEM (Levy and Hancock 2007, Millsap and Maydeu-Olivares 2009, p. 138). One of the key challenges is the absence of a clear methodological approach and technological support for comparing non-nested models.

Multi-group procedures within e.g. AMOS or similar software are inapplicable (Arbuckle 2010; UTA 2011). “When competing models are non-nested (i.e. not hierarchically related), using hypothesis testing to determine their relative value is not possible in SEM software.” (Hoijtink, Klugkist, and Boelen 2008, p. 301).

One can differentiate between two types of non-nested model comparisons. Firstly, the same model is employed across differently measured conditions (using different manipulations and different samples as in this case). The other constellation refers to competing models having different structures (variables and relationships). For example, Lin and Dayton (1997) examined six different models of varying complexity to explore which model showed the best fit. For this incident the literature has envisaged methods such as the 2SLS latent variable estimator (Bollen 1996). But these methods expressly refer only to non-nested models with different variables, e.g. varying numbers of independent variables (Oczkowski and Farrell 1998; Oczkowski 2003; 2002a; 2002b). They cannot be used here because the models and their components are identical across all four conditions.

Outside the SEM literature, research has been conducted to use econometric techniques to compare non-nested models (Hendry 1984). But a review of the econometric literature did not unveil a suitable technique. For instance, Mizon and Richard (1986) suggest the following

modus operandi: Two non-nested models can be compared only if they each are nested within a third model. The models at hand are not nested in any way with each other excluding the aforementioned technique.

The key challenge posed by the non-nested models in this project is that one is not literally comparing models (there is only one hypothetical model) but rather survey participant attitudinal responses and behavioral intents under different congruity constellations.

In order to clarify the unique structure of this research one should consider other research constellations: The “classic” research case of SEM entails one hypothetical model linked to a measurement model tested by one sample of respondents. Testing one model with different samples would make limited sense because one would test which sample fits the model best. Exposing one sample of respondents to varying conditions (i.e. manipulations) to test one SEM model is conceivable but questionable because of the bias-causing carryover effects going along with it (Shadish, Cook and Campbell 2002).

In this research one hypothetical model is tested under varying conditions, employing separate samples that create a non-nested model situation. The literature usually tests non-nested models using different hypothetical models that are based on the same set of responses, i.e. responses generated by one group of respondents. The following table summarizes the unique case of the research at hand (also including the 2 unlikely constellations mentioned above for clarification purposes):

Table 35: The Unique Character of this Research

	SEM Model(s)	Measurement	Sample(s)
"Classic" SEM	One Hypothetical Model	Measurement Model	One
Test of Which Sample Fits the Model Best ⇨ *Makes Limited Sense*	One	Measurement Model	Different
The Case Here: May Unveil Differences of Behavioral / Attitudinal Response	One	Different (i.e. Different Conditions)	Different
E.g. Exposing the Same Ss to Different Conditions; Causes Carryover Bias ⇨ *Makes Limited Sense*	One	Different (i.e. Different Conditions)	One
"Classic" Non-Nested Comparison 2SLS Latent Variable Estimator and Other Approaches	Different Hypothetical Models	Different (Varying Complexity of Models; Different Factors & Their Measurements)	One

The literature commonly recommends that non-nested models be compared descriptively in terms of model fit statistics such as ECVI, BIC, AIC and – to a lesser extent – via RMSEA. (Loehlin 2004, Millsap and Maydeu-Olivares 2009, UTA 2011).

RMSEA provides an estimate per degree of freedom. It is a fit index that can be used without juxtaposing models (Millsap and Maydeu-Olivares 2009; Wegener and Fabrigar 2000). Condition 1 shows an excellent, condition 2, 3 and 4 good fits.

The literature appears to favor the subsequent indices to RMSEA. The underlying rationale for this preference may be rooted in the inherently comparative nature of these indices, i.e. they only make sense when comparing models.

Both ECVI (Expected cross-validation index) and AIC statistics are comparative indices that must not be seen in isolation. ECVI allows rank ordering models. Lower values imply better fit and different values indicate model dissimilarity (Browne and Cudeck 1989). The ECVI

values here unveil differences between all conditions but high similarity between condition 3 and 4 referring to Petsmart – brand type constellations. Due to its lowest value condition 1 can be ranked highest.

Table 36: ECVI Model Condition Comparison

		C1 INcongruity Dollar General x Science Diet	C2 Congruity; Dollar General x Everpet	C3 Congruity; Petsmart x Science Diet	C4 INcongruity; Petsmart x Everpet
		4.496	5.026	5.165	5.165
C1	4.496				
C2	5.026	Different			
C3	5.165	Different	Different		
C4	5.165	Different	Different	Similar	

The AIC index reveals differences between all conditions but close similarity in values for condition 3 and 4. Condition 1 shows the lowest value and thus the relatively best fit.

Table 37: AIC Model Condition Comparison

		C1 INcongruity Dollar General x Science Diet	C2 Congruity; Dollar General x Everpet	C3 Congruity; Petsmart x Science Diet	C4 INcongruity; Petsmart x Everpet
		1339.818	1497.690	1539.120	1539.026
C1	1339.818				
C2	1497.690	Different			
C3	1539.120	Different	Different		
C4	1539.026	Different	Different	Similar	

It is to be noted that the conclusiveness of comparing AIC index values for non-nested models has limitations. The underlying logic of the AIC is to compare models in search of a “true” model, i.e. the model that best approximates the “true model”. Because the “true model” is an unobtainable ideal, the “true” model in the statistical sense is the one that shows the relatively

best fit (Del Giudice 2009). As such it is naturally meant to link different models to the responses from the same sample of respondents (Levy and Hancock 2007, p. 36).

A modification of AIC is the Bayesian information criterion (BIC). It is essentially a parsimony indicator with a stronger tendency to penalize model complexity than AIC. BIC is favored as a benchmark for model difference analysis (Raftery 1995). The BIC index shows differences between all conditions but close similarity in values for condition 3 and 4. The low figure of condition 1 implies the relatively best fit. The caveat mentioned above for AIC applies here, too.

Table 38: BIC Model Condition Comparison

		C1 INcongruity Dollar General x Science Diet	C2 Congruity; Dollar General x Everpet	C3 Congruity; Petsmart x Science Diet	C4 INcongruity; Petsmart x Everpet
		1411.958	1543.634	1615.752	1616.101
C1	1411.958				
C2	1543.634	Different			
C3	1615.752	Different	Different		
C4	1616.101	Different	Different	Similar	

Table 39 below offers a comprehensive synopsis of the model difference diagnosis previously presented.

Table 39: Analysis of Non-Nested Models: Model Difference Diagnosis

Comparative Index	Description	Suitability for Non-Nested Comparison[6]	Citation	**Condition 1** Dollar General X Science Diet	**Condition 2** Dollar General X Everpet	**Condition 3** Petsmart X Science Diet	**Condition 4** Petsmart X Everpet
				Incongruity	Congruity	Congruity	Incongruity
RMSEA[7]	**Estimate of Discrepancy** Per Degree of Freedom; Fit Index; "Stand Alone Index" = Can Be Used Without Comparing Several Models	Medium[8]	Reis and Judd (2000), Millsap and Maydeu-Olivares (2009)	0.051 Excellent Fit	0.059 Good Fit	0.061 Good Fit	0.061 Good Fit
ECVI[9]	**Allows Rank Ordering;** Lower Values = Better Fit; Different Values = Model Dissimilarity	High	Browne and Cudeck. (1989)	4.496	5.026	5.165	5.165
BIC[10]	**Indicator for Model Diff.**	High	Marsden (1995)	1411.958	1543.634	1615.752	1616.101
	≥5 = Indicative of Model Difference			131.676; **≥5** Very Different			
	≥6 = Strong Evidence of Model Difference			203.794; **≥5** Very Different			
	≥10 = Near Certainty of Model Difference			204.143; **≥5** Very Different			
					72.118; **≥5** Very Different		
					72.467;**≥5** Very Different		
						0.349; **<5** Very Similar	
AIC[11]	**The Lower Value the Better**	Low[12]	Kumar and Sharma (1999)	1339.818	1497.690	1539.120	1539.026

[6] Showing model difference or similarity
[7] Values refer to the indirect models; see analysis of the structural models
[8] The literature appears to favor subsequent indices because they are inherently comparative, i.e. they do only make sense when comparing models
[9] Expected cross-validation index
[10] Bayesian information criterion
[11] Akaike's informational criteria; values refer to the indirect models; see analysis of the structural models
[12] Applicable with limitations; usually for deciding which nested model fits the data (of one condition) best

ii. Conclusions

The differences of fit indices between condition 1, 2 and 3 may indicate that the different product brand and retailer brand combinations led to different participant responses. Conditions 3 and 4 have very similar fit indices. Any further interpretation would go too far. For instance, it would be hasty to conclude that the similarity of values of condition 3 and 4 indicates same response patterns. The conclusiveness of the indices is restricted. After all, the usage of fit indices has two limitations: First of all, the literature usually compares non-nested models using the same group of respondents.

Secondly, some researchers question the meaningfulness of comparisons via fit indices (Millsap and Maydeu-Olivares 2009). By comparing fit indices one treats non-nested models as if they were nested within a larger model. According to Levy and Hancock (2007) this approach, although commonly advocated in the literature, is of little informational value: “Again, potential ambiguity arises in the case where neither model encompasses the other; it remains an open question as to whether or not one of the models fits better than the other.” (p. 37). Authors have provided frameworks and approaches for addressing the comparison of non-nested models and appeal to IT engineers to finally create a software program to calculate non-nested comparisons (Levy and Hancock 2007, p.63).

9. Hypothesis Testing

The hypotheses state a positive relationship between PBI and OBE (H1), between RBI and OBE (H2), between congruity and OBE, mediated by product PV (H4) and between OBE and PI (H5).

In the conditions matching a national brand (Science Diet) with different retailer outlets (condition 1-Dollar General; condition 3-Petsmart) a positive relationship is hypothesized between RBI and congruity (H3).

In the conditions matching a private brand (Everpet) with different retailer outlets (condition 1-Dollar General; condition 3-Petsmart) a negative relationship is hypothesized between RBI and congruity (H3).

The results of the analysis comprising the standardized path coefficients, p-values and t-values (critical ratio test) are displayed in Table 40.

Table 40: Hypotheses Testing

	C1 & C4 = Incongruity Conditions C2 & C3 = Congruity Conditions	Path			Standardized Path Coefficients	T-Values
		From	To			
H1	Product brand image is positively associated with CBBE.	PBI	OBE	C1	.407	3.133
				C2	.180	1.403
				C3	.284	2.118
				C4	.094	.735
H2	Higher retailer brand image is positively associated with CBBE.	RBI	OBE	C1	-.264	-2.106
				C2	-.458	-3.464
				C3	.097	.744
				C4	-.387	-2.997
H3	A low image retailer selling national brands of a high involvement product category leads to low levels of congruity.	RBI	Inc	C1	-.490	-3.917
		PBI	Inc		.590	4.576
	A low image retailer selling private brands of a high involvement product category, will result in high levels of congruity.	RBI	Inc	C2	-.346	-2.692
		PBI	Inc		.091	.720
	A high image retailer selling national brands of a high involvement product category, will result in high levels of congruity.	RBI	Inc	C3	-.465	-3.605
		PBI	Inc		.356	2.715
	A high image retailer selling private brands of a high involvement product category, will result in moderately low levels of congruity.	RBI	Inc	C4	-.427	-3.434
		PBI	Inc		.174	1.387
H4	Higher (lower) levels of congruity lead to higher (lower) levels of CBBE, mediated by product perceived value.	Inc	PV	C1	-.222	-2.242
		PV	OBE		-.400	-3.132
		Inc	PV	C2	-.411	-3.367
		PV	OBE		-.508	-4.207
		Inc	PV	C3	-.503	-4.340
		PV	OBE		-.520	-4.298
		Inc	PV	C4	-.569	-4.815
		PV	OBE		-.523	-4.559
H5	CBBE is positively associated with purchase intent.	OBE	PI	C1	.857	7.508
				C2	.860	8.525
				C3	.638	5.831
				C4	.922	8.292

a. Path Analysis Results Interpretation

i. Path Coefficient Signs

Before reviewing the results of the standardized path coefficients and the t-values and their effects upon the hypotheses, one has to note that the signs of some of the coefficients attract attention because they contrast the logic of some hypotheses.

A review of the data showed that the desirability of certain items was not fully appreciated by the researcher at an early stage. This would have taken all of the measurements into the same direction. Not doing so does not invalidate the results but means one has to interpret the signs (positive or negative) of the path coefficients more carefully. However, the following prudent procedure was applied that led to clarifying results.

First of all, based on logic the relationships among the variables were reviewed and the hypothesized correlations (positive or negative) were noted. In course of this process conditions were sorted by congruity and incongruity conditions. To make the interpretation easier the prefix "in" was removed from the incongruity variable. This corresponds with the scale measuring congruity from low to high.

Afterwards, the surveys were filled out for each condition based upon the hypothetical response patterns ("how they should have been filled out"). The measures and their directions were analyzed. Subsequently, it was analyzed how the measure would be scaled for each variable (low / high) and how the resulting correlations would turn out. Finally, the path analysis results and the hypothesized model were viewed in light of the measures and their directions. Models for each condition were devised (see the figures below) and the findings were marked in the models for each condition. Then it was decided whether the coefficients had the correct signs and if the t-values were high enough to indicate support for the hypotheses. The significance of the

path coefficient is given by its critical ratio (CR), where a CR > 1.96 means the path is significant at the 0.05 level.

ii. Measurement Limitation

Results for H1 are fully viable for condition 1. The results for H1 in the other conditions are to be seen with some reservation. In retrospect the following measurement limitation was revealed: PBI measures were phrased identically across all conditions. The phrasing suits condition 1 but not fully condition 2, 3 and 4. Item 3 and 7 of PBI should have been adjusted for each condition (high image: national brand; low image: private brand).[13] Thus this variable was in effect turned into a constant. Hence, H1 can only be subject to the discussion section in terms of in condition 1.

b. Hypotheses Summary

The five hypotheses were tested across four conditions. Out of the resulting total of twenty hypotheses fourteen found support, whereas six could not be substantiated.

i. Incongruity Conditions

In condition 1 (Dollar General x Science Diet) support was found for all hypotheses. The critical ratio test benchmark of 1.96 was met by all t-values, and the path coefficients show the correct sign based on the measurement.

[13] Item 3: When I buy a (store-branded / manufacturer-branded) dog food I think that I get the most for my money
Item 7: If I bought dog food for someone else I would not buy a (store brand / manufacturer brand)

In condition 4 (Petsmart x Everpet) H2, H4 and H5 found support, whereas H1, and H3 could not be supported. The t-values are too low and their path coefficients do not display the correct sign.

ii. Congruity Conditions

With regard to condition 2 (Dollar general x Everpet) H2, H4 and H5 are supported. H1 and H3 could not be supported due to low t-values and incorrect coefficient signs.

Referring to condition 3 (Petsmart x Science Diet) H3, H4 and H5 found support whereas H1 and H2 could not be substantiated.

The summary results are supplied in the following Table 41. Structural model results are offered in the figures afterwards.

Table 41: Hypotheses Results Summary

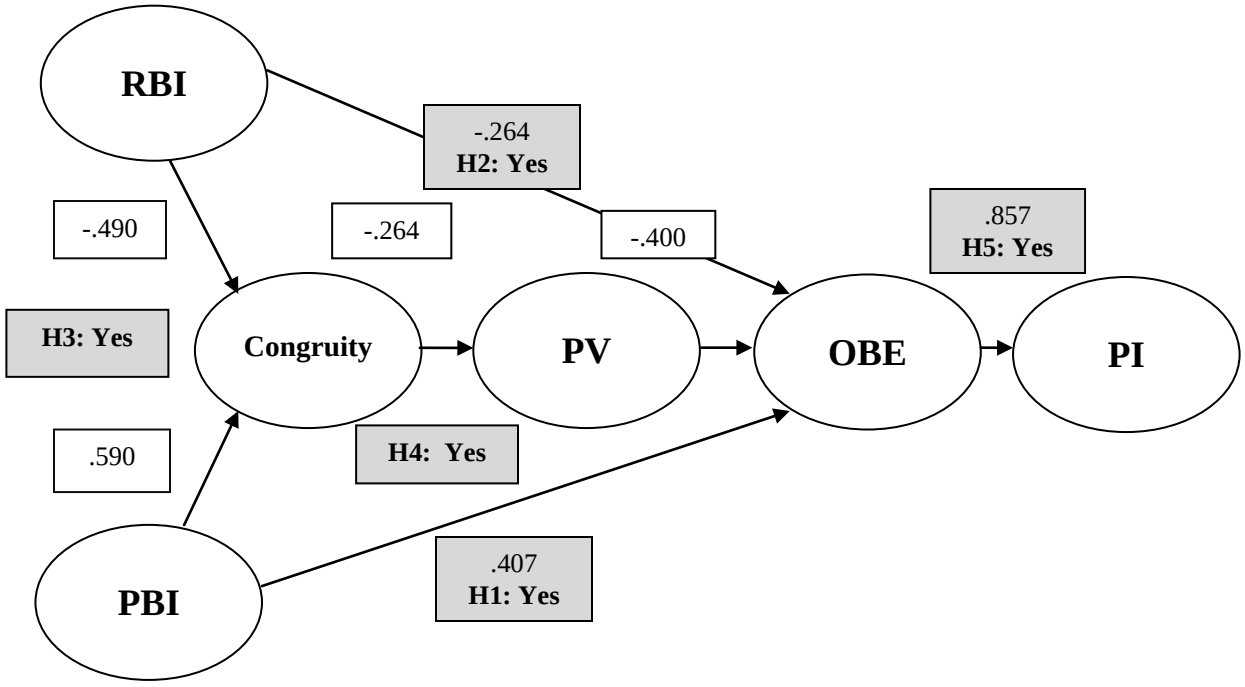
	C1 & C4 = Incongruity Conditions C2 & C3 = Congruity Conditions	Path			Standardized Path Coefficients	Critical Ratio	CR Sign: > +/- 1.96	Correct Sign	H Support
		From	To						
H1	Higher product brand image is positively associated with CBBE.	PBI	OBE	C1	.407	3.133	Yes	Yes	Yes
				C2	.180	1.403	No	No	No[14]
				C3	.284	2.118	Yes	No	**No[14]**
				C4	.094	.735	No	Yes	**No[14]**
H2	Retailer brand image is positively associated with CBBE.	RBI	OBE	C1	-.264	-2.106	Yes	Yes	Yes
				C2	-.458	-3.464	Yes	Yes	Yes
				C3	.097	.744	No	No	No
				C4	-.387	-2.997	Yes	Yes	Yes
H3	A low image retailer selling national brands of a high involvement product category leads to low levels of congruity.	RBI	Inc	C1	-.490	-3.917	Yes	Yes	Yes
		PBI	Inc		.590	4.576	Yes	Yes	
	A low image retailer selling private brands of a high involvement product category, will result in high levels of congruity.	RBI	Inc	C2	-.346	-2.692	Yes	No	No
		PBI	Inc		.091	.720	No	Yes	
	A high image retailer selling national brands of a high involvement product category, will result in high levels of congruity.	RBI	Inc	C3	-.465	-3.605	Yes	Yes	Yes
		PBI	Inc		.356	2.715	Yes	Yes	
	A high image retailer selling private brands of a high involvement product category, will result in moderately low levels of congruity.	RBI	Inc	C4	-.427	-3.434	Yes	No	No
		PBI	Inc		.174	1.387	No	No	

[14] Reservation: PBI measurement error:: 2 out of 7 items were not adjusted to C2, C3 and C4

		Path			Standardized Path Coefficients	Critical Ratio	CR Sign: > +/- 1.96	Correct Sign	H Support
H4	Higher (lower) levels of congruity lead to higher (lower) levels of CBBE, mediated by product perceived value.	Inc	PV	C1	-.222	-2.242	Yes	Yes	YES
		PV	OBE		-.400	-3.132	Yes	Yes	
		Inc	PV	C2	-.411	-3.367	Yes	Yes	YES
		PV	OBE		-.508	-4.207	Yes	Yes	
		Inc	PV	C3	-.503	-4.340	Yes	Yes	YES
		PV	OBE		-.520	-4.298	Yes	Yes	
		Inc	PV	C4	-.569	-4.815	Yes	Yes	YES
		PV	OBE		-.523	-4.559	Yes	Yes	
H5	CBBE is positively associated with purchase intent.	OBE	PI	C1	.857	7.508	Yes	Yes	YES
				C2	.860	8.525	Yes	Yes	YES
				C3	.638	5.831	Yes	Yes	YES
				C4	.922	8.292	Yes	Yes	YES

Figure 7: Structural Model Results - Incongruity Conditions (C1 and C4)

Condition 1 (Dollar General x Science Diet)



Condition 4 (Petsmart x Everpet)

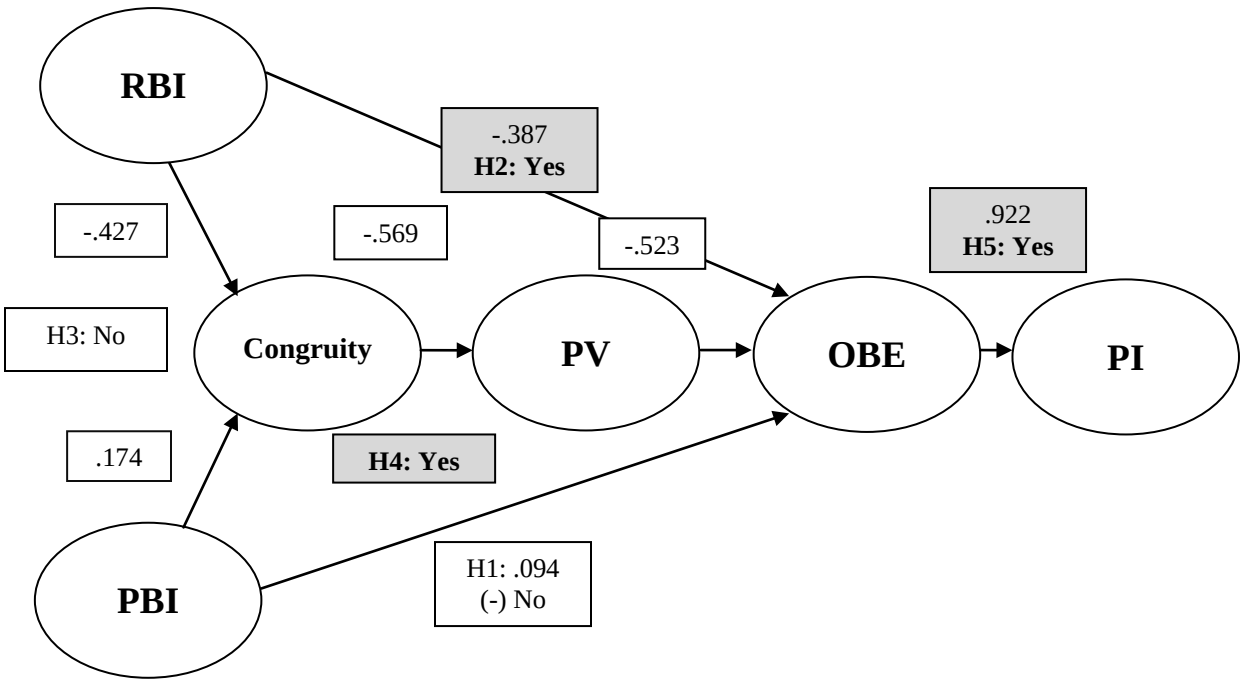
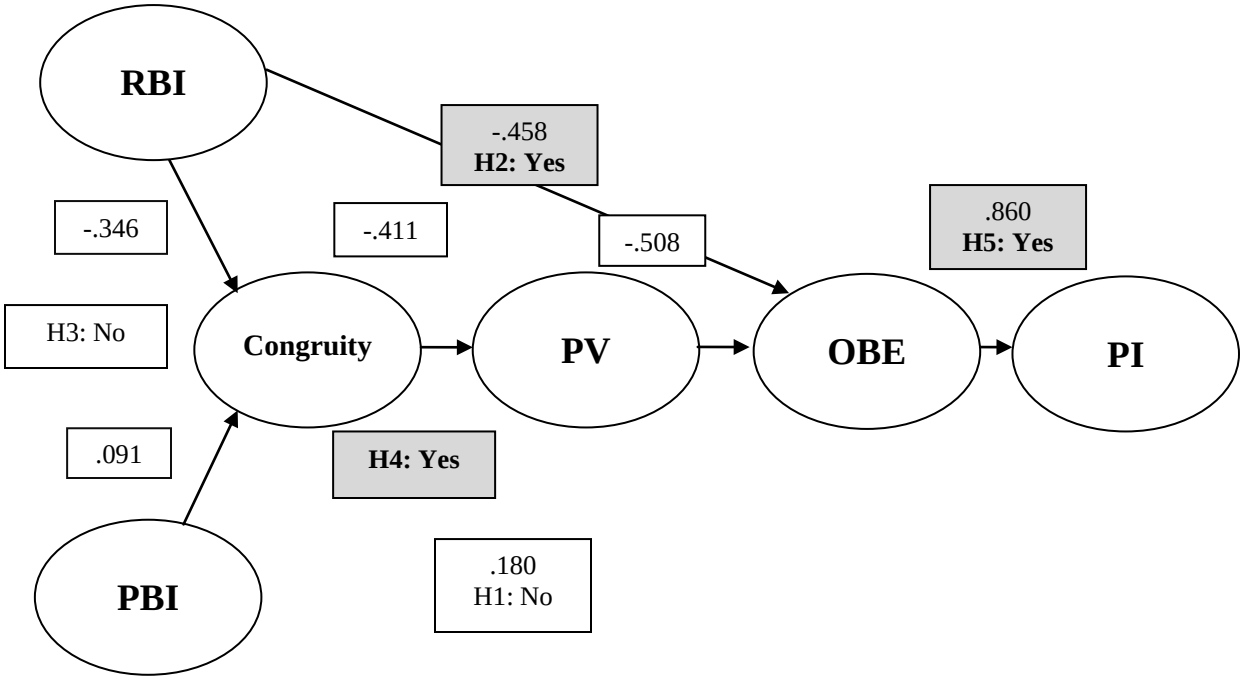
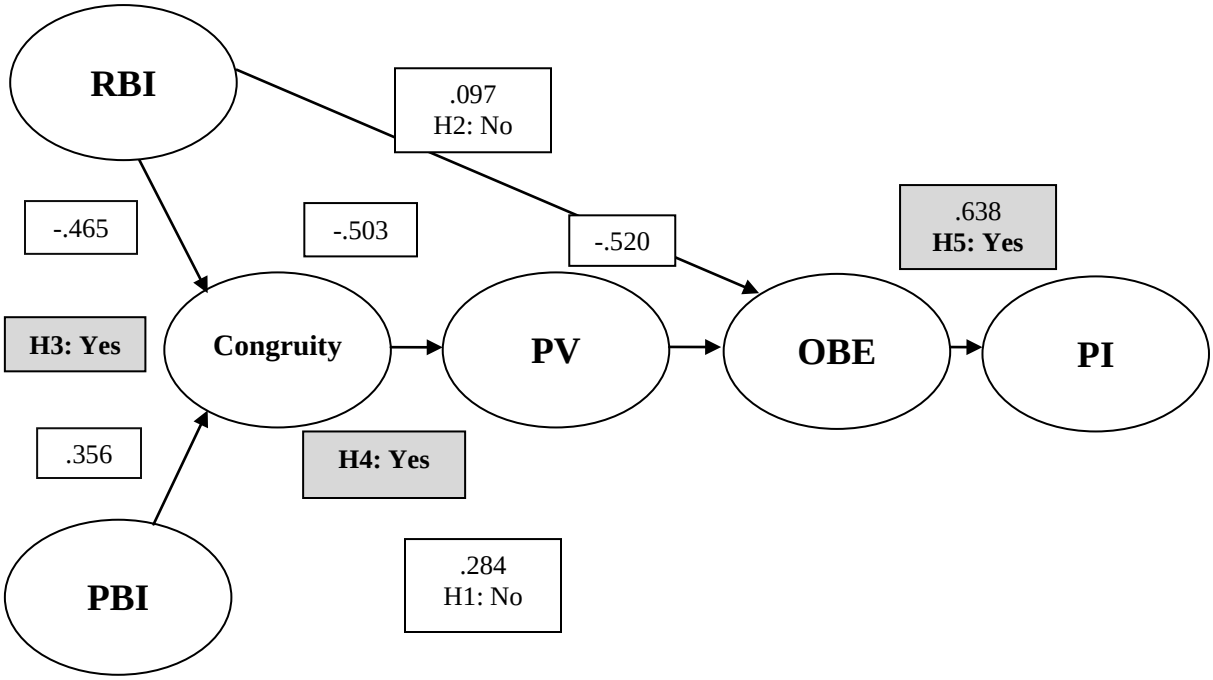


Figure 8: Structural Model Results - Congruity Conditions (C2 and C3)

Condition 2 (Dollar General x Everpet)



Condition 3 (Petsmart x Science Diet)



10. Mediation Analysis

Mediation analysis was employed to increase the amount of information extracted from this manifold study. The analysis adds further explanatory power to path analysis because it "…elucidate[s] the causal process by which an independent variable affects a dependent variable,…" (MacKinnon, Krull and Lockwood 2000, p. 173). In particular, mediation analysis facilitates a better understanding of more complex models and also paves the way to identify future research directions (MacKinnon 2008). The model at hand merits further examination via mediation analysis because it represents a complex multiple mediator model.

Simple mediation is a common element of models in marketing and related behavioral research (Preacher and Hayes 2004). In contrast, multiple mediation is a fairly under-researched topic in both the academic and applied literature due to its inherent intricacy and difficulty to calculate the effects within such a model (Preacher and Hayes 2008; Rose et al. 2000, p. 141, 158). It is only a recent development that research has paid greater attention to multiple mediation and its analysis (Hayes 2009; MacKinnon 2008; MacKinnon et al. 2002; Rose et al. 2000).

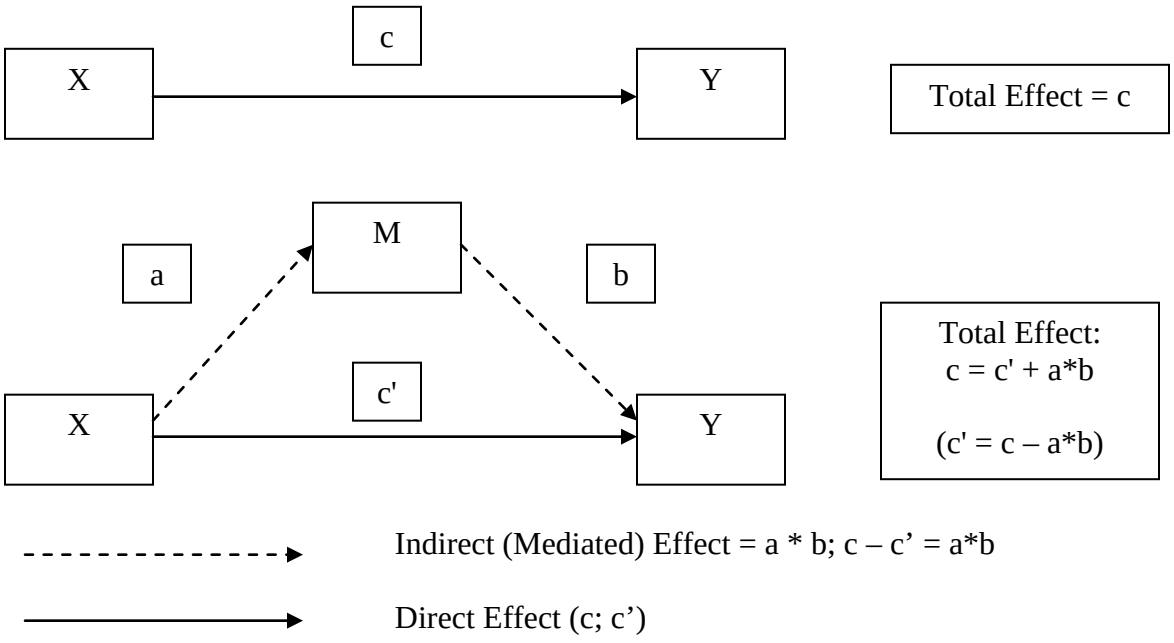
In the effort to decide what mode is most appropriate to analyze multiple mediation a succinct overview over the two essential modi operandi for analyzing mediation is supplied: the traditional causal steps approach devised by Baron and Kenny (1986) and more contemporary procedures (Preacher and Hayes 2008).

a. Methods of Mediation Analysis

i. Causal Steps Approach

In their seminal paper Baron and Kenny (1986) describe a three-step procedure to determine mediation: First of all, a relationship between the independent (X) and the dependent variable (Y) must exist. Second, the independent variable is to influence the mediator (M). Finally, the mediator has to impact the dependent variable. The relationships are commonly connoted in the following way:

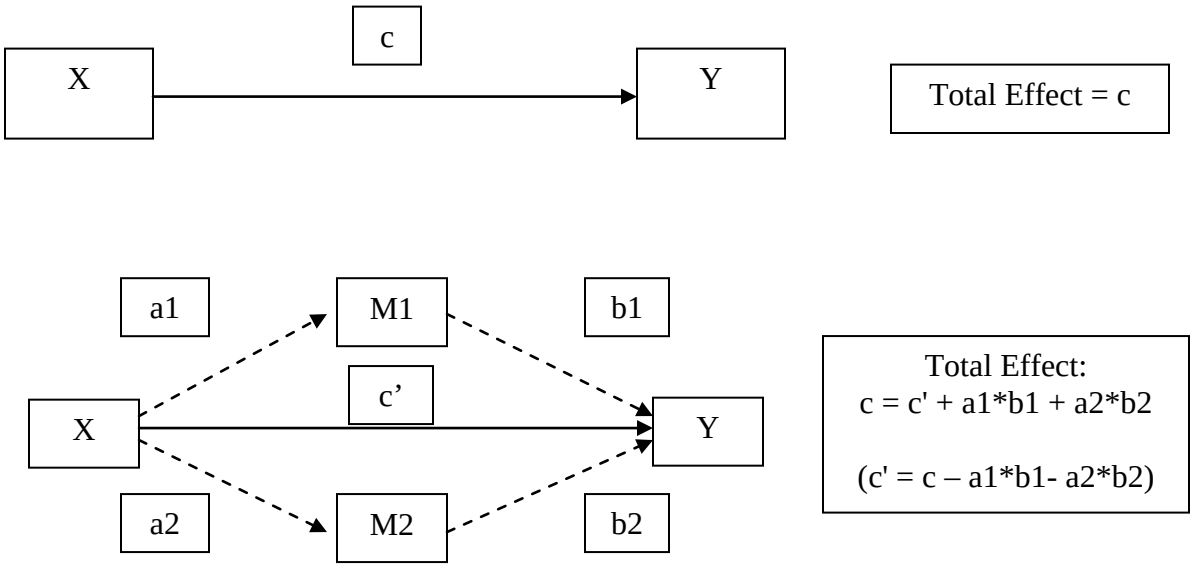
Figure 9: Simple Mediation
(Preacher and Hayes 2008)



If the relationship c between X and Y drops to insignificance (now c') once a mediator is added, full mediation can be established. If the relationship c' is still significant but is reduced, partial mediation may be diagnosed (Hair et al. 2006).

The application of this method has its limitations in case of multiple mediator models. The subsequent figures illustrate the two essential forms of multiple mediation models (variations do exist and are discussed in the literature; Bucy and Holbert 2010; MacKinnon 2008): The Single-Step Multiple Mediator Model is characterized by two indirect effects and one direct effect.

Figure 10: Single-Step Multiple Mediator Model
Based upon MacKinnon 2008, p. 106-108 and Hayes, Preacher and Myers in: Bucy and Holbert (2010, p. 435, 436)



2 Indirect Effects; 1 Direct Effect

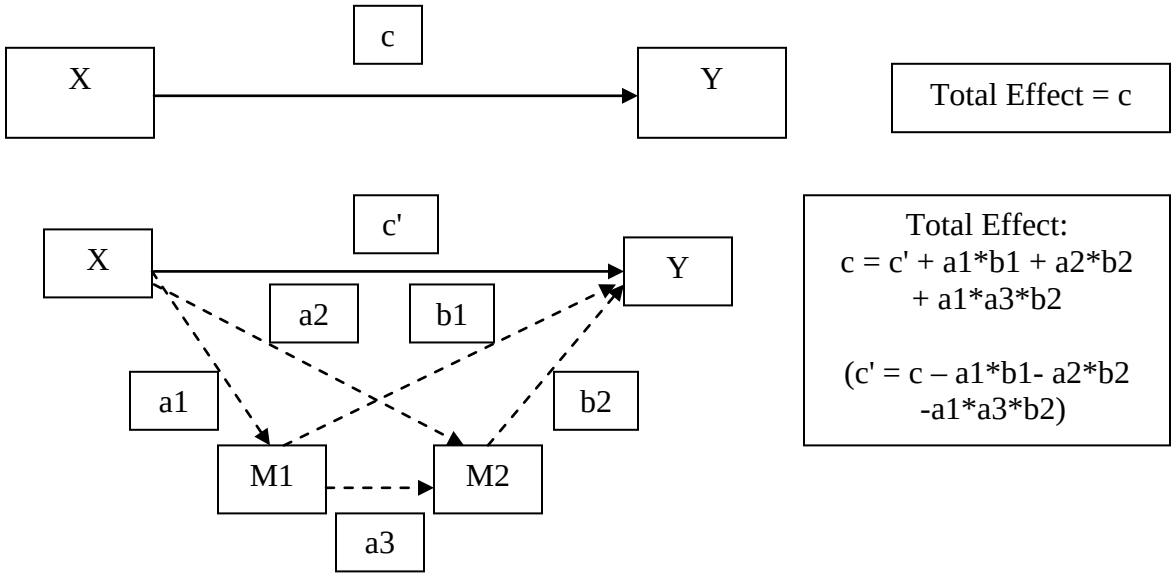
- - - - - - - - - - - - - - →	Total Indirect (Mediated) Effect:
	c – c' = a1*b1 + a2*b2
a1*b1; a2*b2	Individual Mediated Effects (estimates)
——————→	Direct Effect (c; c')

A special case of the Multiple-Step Multiple Mediation Model is displayed below. It is a sequential Multiple-Step Multiple Mediation Model with one direct effect from X to Y and three indirect effects associated with the two consecutive mediators.

The Causal Steps Approach can be applied to Multiple-Step Multiple Mediation Models by "conducting a hypothesis test for each step in the path. If all paths are significant and the pattern of the total and direct effects of X on Y is consistent with a reduction in the effect of X after accounting for the proposed (…) mediators, this suggests mediation (…)" (Bucy and Holbert 2010, p. 446).

Figure 11: Multiple-Step Multiple Mediation Model

MacKinnon 2008, p. 106-108 and Hayes, Preacher and Myers in: Bucy and Holbert (2010, p. 435, 436)



3 Indirect Effects; 1 Direct Effect

- - - - - - - - - - - - - →	Total Indirect (Mediated) Effect:
	c – c' = a1*b1 + a2*b2 + a1*a3*b2
a1*b1; a2*b2; a1*a3*b2	Individual Mediated Effects (Estimates)
——————→	Direct Effect (c; c')

The Causal Steps Approach is the gold standard of the literature when analyzing mediation. Nevertheless, in recent years several authors have voiced reservations about this method and have suggested different techniques (Bucy and Holbert 2010; Preacher and Hayes 2008; Hayes 2009; MacKinnon 2008; Fritz and MacKinnon 2007; MacKinnon et al. 2002; Rose et al. 2000).

One of the issues with the Casual Steps Approach is that the procedure represents an inferential method via a sequence of hypotheses that does not account for the meditational (indirect) effect directly (Bucy and Holbert 2010, p. 446). The necessity to test the model path by path can be rather cumbersome in models with several mediators (MacKinnon 2008). This research includes three mediators in the model, meaning that here are actually four indirect effects and one direct effect.

Furthermore, various researchers conducted extensive research benchmarking different meditational tests. The comparison repeatedly led to the conclusion that the Causal Steps Approach tends to be the one with the relatively lowest power (MacKinnon, Lockwood and Williams 2004; MacKinnon et al. 2002).

Finally, the Causal Approach is predicated upon finding a significant total effect (c - c'). It is a prerequisite for the analysis of indirect effects. This can lead to misleading results, namely in case of a total effect of zero. Even in case of such an outcome, indirect effects can still exist if indirect effects function in opposite directions (Hayes 2009; Bucy and Holbert 2010, p. 446). This special type of model is called inconsistent model (Davis 1985).

The more mediators a model encompasses, the higher is the chance of inconsistent effects (MacKinnon 2008). As a matter of fact, in this research the results of the path analysis show meditational relations with opposing signs (see above) implying the mediators working in contrasting ways. In order to avoid a potentially misleading outcome, different methods were considered.

ii. Contemporary Methods

A more recent technique was developed by Sobel (Sobel 1982, 1986). The Sobel tests the meditational relationship in terms of the null hypothesis that there is no indirect effect. The hypothesis is tested via p-value. The p-value relates to a normal distribution. The Sobel test exceeds the Baron and Kenny approach in power but is still relatively low. Furthermore, its assumption of normality has been subject of critique because the sampling distribution associated with the indirect effect often violates this assumption (Bollen and Stine 1990).

Another means of analysis is the M-test or Distribution of Product Approach (Holbert and Stephenson 2003; Meeker, Cornwell and Aroian 1981). The M-test is characterized by enhanced statistical power and less probability of Type I errors than other methods (MacKinnon, Fairchild and Fritz 2007; Mackinnon, Lockwood and Williams 2004; MacKinnon et al. 2002). However, the Distribution of Product Approach is viewed as rather cumbersome by parts of the literature (Hayes 2009). For this reason when comparing M-test and bootstrapping, "bootstrapping is the method of choice" (MacKinnon, Lockwood and Williams 2004, p.123) if raw data are available (Preacher and Leonardelli 2007).

Bootstrapping is a widespread procedure (Efron and Tibshirani 1993). The essential process is the following: "In effect the sample data are treated as a population from which

smaller samples (called bootstrap samples) are taken (putting the data back before a new sample is drawn." (Field 2009, p. 163). Preacher and Hayes (2008) summarize the technique in the following manner: "Bootstrapping is a computationally intensive method that involves repeatedly sampling from the data set and estimating the indirect effect in each resampled data set. By repeating this process thousands of times, an empirical approximation of the sampling distribution of ab is built and used to construct confidence intervals for the indirect effect." (p. 880).

The sampling distribution of indirect effect a*b tends to be non-normal which can influence the results negatively. In order to counter this challenge, total and indirect effects are estimated many times based upon thousands of samples from the data (1000 minimum; recommended are 5000+). In doing so, thousands of estimates are generated (MacKinnon 2008).

In addition, bootstrapping is considered more powerful than other tests such as the Sobel approach (Hayes 2009). Power is influenced by sample size. Power can be generated by using very large samples. But bootstrapping can detect effects even with very small samples (less than 10; Chernick 2007).

Bootstrapping elegantly circumvents issues potentially arising from the shape of the sampling distribution. Finally, contrary to the causal step approach, bootstrapping estimates are directly linked to the meditational effect (Hayes 2009; Mackinnon, Lockwood and Williams 2004; Williams and MacKinnon 2008).

iii. Method for Testing Multiple Mediation

Although authors often devise models with several mediators, the simultaneous test of multiple mediators is one of the most under-researched areas. The advantage of testing mediators simultaneously is that one learns whether mediation is independent of the effect of the other mediators (Kenny 2009).

The requirements for this approach are not as straight-forward as in simple mediation (Hayes 2009). No coherent approach has emerged among the few authors that have discussed the best technique for analyzing multiple mediation (MacKinnon 2008; Cheong, MacKinnon and Khoo 2003; Brown 1997). Only a few authors have tested the statistical performance of bootstrapping for multiple mediation. But these studies advocate it for multiple mediation models (Williams and MacKinnon 2008; Briggs 2006; Williams 2004). Other authors who currently focus upon multiple mediation methods in their research strongly advocate bootstrapping (Hayes 2009; Preacher and Hayes 2004).

Testing multiple mediation in available software packages like AMOS can be intricate. In response to this challenge Hayes (2011) and Preacher and Hayes (2008) have developed a macro for SPSS (and SAS) called INDIRECT that allows the simultaneous test of multiple mediation providing outputs for both bootstrapping and the Sobel test. The macro can be downloaded from Hayes' homepage (Hayes 2011).

Notably, among published academic business articles, only the aforementioned authors Hayes and Preacher as well as authors of one recent article have used this macro so far (Homburg, Wieseke and Bornemann 2009). Nevertheless, this research uses this method as well, because these authors advocate the proven usefulness of this tool and its ease of use.

b. Simultaneous Multiple Mediation Analysis Results

Indirect effects of RBI (independent variable) via (in)congruity, perceived value and OBE upon purchase intent (dependent variable) were measured. (Due to the aforementioned issues associated with PBI, only the results with RBI as an independent variable will be reported).

Although Hayes 2009; Preacher and Hayes 2004 clearly favor bootstrapping, they consider the reporting and review of both the bootstrapping and the Sobel test as acceptable. Hence the results for both tests will be reported. The subsequent results are deliberately not organized by (in)congruity and congruity conditions but rather by brand type (national brand: C1, C3; private brand: C2, C4). The mediation analysis was especially conducted to find further explanations as to why H3 could only be supported in C1 and C3 and not in C2 and C4.

i. Condition 1 (Dollar General x Science Diet)

In condition 1 the Sobel test indicates there is a significant initial relationship between the independent variable RBI and dependent variable OBE that was non-significant after controlling for 2 of the 3 mediators which indicates that (in)congruity (z: 2.8549, p=0.0001) and OBE (z: -3.3361, p=0.0008) but not PV (z:-0.3166; p=0.7515) mediate the relationship between the independent variable and dependent variable.

Bootstrapping provides corresponding outcomes. The test does not indicate significance via p-values but with the help of confidence intervals. If the range between the upper and lower bound does not comprise zero, a significant indirect effect can be assumed, meaning the true indirect effect is estimated to lie between lower and upper bound (Hayes 2009; Preacher and

Hayes 2004). The numbers suggest that the indirect effect is significantly different from zero at $p < .05$ (two tailed) for (in)congruity (lower: -.4101, upper: -.0174) and OBE (lower: -.8076; upper: -.1106) but not for perceived value (lower: -.1339; upper: .0810). In terms of (in)congruity and OBE, there is 95% confidence that, because zero is not within their interval, zero is not likely a value for the indirect effect of RBI via (in)congruity and OBE on PI.

In course of the path analysis, perceived value was shown to be a mediator, whereas the mediation analysis test appears to contradict this result. The outcome can be reconciled by considering partial mediation: The significant direct effect between (in)congruity and OBE (implied in mediation analysis) in combination with the significant mediator effect between (in)congruity, perceived value and OBE (shown in path analysis) indicates partial mediation.

These results are further supported by the ratios of indirect to direct effect and the proportional total effect: The ratio of indirect to direct effect (.5873/.0242) is 24.27. Furthermore, the proportion of the total effect due to the indirect effect (.5873/(-.5873+.0242) is 0.71. These figures denote the very strong meditational character of the model in this condition and lend credibility to the hypotheses results above.

ii. Condition 3 (Petsmart x Science Diet)

In condition 3 the Sobel test shows there is a significant initial relationship between the independent variable RBI and dependent variable OBE that was non-significant after controlling for 2 of the 3 mediators which indicates that (in)congruity (z: -2.5188, p=0.0118) and OBE (z: -1.9998, p=0.0455) but not PV (z:-1.3282, p=0.1841) mediate the relationship between the independent variable and dependent variable.

Bootstrapping provides equivalent results. The numbers suggest that the indirect effect is significantly different from zero at $p < .05$ (two tailed) for (in)congruity (lower: -.8189, upper: -.1441) and OBE (lower: -.6887; upper: -.1106) but not for perceived value (lower: -.1339; upper: .0810). In terms of (in)congruity and OBE, there is 95% confidence that, because zero is not within their interval, zero is not likely a value for the indirect effect of RBI via (in)congruity and OBE on PI.

The significant direct effect between (in)congruity and OBE (implied in mediation analysis) in conjunction with the significant mediator effect between (in)congruity, perceived value and OBE (shown in path analysis) indicates partial mediation.

Further support is offered by the ratios of indirect to direct effect and the proportional total effect: The ratio of indirect to direct effect (-.5873/.0242) is 1.19. Furthermore, the proportion of the total effect due to the indirect effect (-.5873/(-.5873+.0242) is 0.54. These figures convey the meditational character of the model in this condition and lend support to the hypotheses results above.

iii. Condition 2 (Dollar General x Everpet)

In condition 2 the Sobel test signals there is a significant initial relationship between the independent variable RBI and dependent variable OBE that was non-significant after controlling for 2 of the 3 mediators which indicates that perceived value (z;-3.5611, p=.0004) and OBE (z: -4.0586, p=0.000) but not (in)congruity (z:-1.3780, p=0.1682) mediate the relationship between the independent variable and dependent variable.

Bootstrapping provides equivalent results. The numbers suggest that the indirect effect is significantly different from zero at $p < .05$ (two tailed) for perceived value (lower: -.6705, upper:

-.1876) and OBE (lower: -.8355; upper: -.1722) but not for (in)congruity (lower: -.2800; upper: .0413). In terms of (in)congruity and OBE, there is 95% confidence that, because zero is not within their interval, zero is not likely a value for the indirect effect of RBI via perceived value and OBE on PI.

The overall meditational structure of the models further backed up by the ratios of indirect to direct effect and the proportional total effect: The ratio of indirect to direct effect (-.9520/-.2790) is 3.41. Finally, the proportion of the total effect due to the indirect effect (-.9520/(-.9520+.2790) is 0.77.

Interestingly, the result of mediation analysis – (in)congruity is not a mediator – corresponds with the insignificant path in H3. Condition 2 is a congruous one. The result can be logically explained in view of the incongruity literature. On the one hand, dissonance causes a "disturbance" on behalf of the consumers. This leads to higher level of awareness of the situation influencing subsequent perceptions (PV etc). On the other hand, "if everything is perceived as normal", i.e. the consumer may not even consciously think about the fact that there is a private brand at a discounter, because of their image equivalence, congruity does not have mediating (but possibly a moderating) effect.

The results underscore the meditational character of the model in this condition and explain the hypotheses results above, including the lack of support for H3.

iv. Condition 4 (Petsmart x Everpet)

In condition 4 the Sobel test imparts that there is a significant initial relationship between the independent variable RBI and dependent variable OBE that was non-significant after controlling for 2 of the 3 mediators which indicates that perceived value (z:-2.3105, p=.0209)

and OBE (z:-4.0877, p=0.000) but not (in)congruity (z:-1.5908, p=0.1117) mediate the relationship between the independent variable and dependent variable.

Bootstrapping provides equivalent results. The numbers suggest that the indirect effect is significantly different from zero at $p < .05$ (two tailed) for perceived value (lower: -.7408, upper: -.0707) and OBE (lower: -1.0223; upper: -.2389) but not for (in)congruity (lower: -.4144; upper: .0499). In terms of incongruity and OBE, there is 95% confidence that, because zero is not within their interval, zero is not likely a value for the indirect effect of RBI via incongruity and OBE on PI.

Similar to condition 2, the result of mediation analysis – (in)congruity is not a mediator – corresponds with the insignificant path in H3. Condition 2 is an incongruous one. The result can be logically explained in view of the exploratory research that was done by the author in preparation for this study. In course of interviews conducted in November and December 2010 with Petsmart personnel about their brand assortment, the employees emphasized that they offer private brands but “hide them” in the back aisles. One of the employees stated “customers expect name brands when they come to us”. Hence, in spite of the fact that at least a certain degree of incongruity exists between private brand and retailer brand image, it does not reach significant levels. Simply speaking, most customers are not concerned with a private brand at such a retailer because they shop at a place like Petsmart to look for national brands anyway.

The results underscore the overall meditational character of the model in this condition and explain the hypotheses results above, including the lack of support for H3.

IV. DISCUSSION

This research investigated how the combinatory mechanism of different PBI and RBI results in varying degrees of perceived concord on behalf of the consumer in a high involvement product category (high involvement: pet food). The examination of the consequences of perceived (in)congruity within a brand equity model is the foundation of this study. An online survey study was issued to test the hypotheses.

This chapter will first discuss the results, and then provide theoretical as well as managerial implications, directions for future research and finally the conclusions.

A. Discussion of the Results

This research clearly extends the understanding about the interplay of two prior concepts, brand equity and incongruity.

Brand equity has been one of the focal points of marketing research. Both the seminal CBBE framework devised by Keller (Keller 1993, 2003) as well as the complementary Retailer Brand Equity Model (Ailawadi and Keller 2004) have served as anchors for various research streams in the branding literature (Christodoulides and de Chernatony 2010; Keller 2009a, 2009b; Lehmann, Keller and Farley 2008; Keller and Lehmann 2006).

The causes and processes of incongruity perceptions have been subjected to different psychological theories and frameworks. The consumer behavior literature regularly adopts them to explain consumer decision-making (Souza, Owen and Lings 2005). The consequences of incongruity have also been analyzed in the areas of celebrity endorsement (Lynch and Schuler

1994), event sponsorship (Gwinner and Eaton 1999), brand extension (Boush and Loken 1991) and integrated marketing communication (Sjoedin and Toern 2006). In the realm of brand equity Keller (1993) elaborated upon the congruence of brand associations and alluded to consistency effects as value adding functions of a brand for consumers (Aaker and Keller 1990).

The question at hand is why the literature has not yet devised a model that unifies brand equity and incongruity (or related fit concepts). The literature has come up with various models and methods to capture brand equity from different angles. On the one hand the comprehensiveness of the literature can be credited to the high relevance of the brand equity concept. On the other hand, the numerous brand equity articles bear testimony for the challenge to define empirical approaches toward brand equity. For instance, this can be illustrated by the multitude of measures and their modifications in the literature showing there is no "silver bullet" to measuring brand equity (Christodoulides and de Chernatony 2010; Netemeyer et al. 2004; Washburn and Plank 2002; Yoo and Donthu 2001; Yoo, Donthu and Lee 2000; Lassar, Mittal and Sharma 1995; Aaker 1996).

The CBBE framework itself is detailed, lucid and catchy, but it does not prescribe a specific operationalizable model. This might be the reason the literature has not specified incongruity within the framework before. This research takes the unprecedented step to incorporate an incongruity variable in a testable brand equity model integrating facets of CBBE as well as Retailer Brand Equity. This integrative approach is backed up by the framework character of the CBBE "model" that is open to creating varying models with additional components like incongruity (Keller and Lehmann 2006).

Next to this major insight, other contributions of this study do exist and will be discussed subsequently.

1. OBE and Purchase Intent (C1 – C4)

Hypothesis 5 tested whether CBBE is positively associated with purchase intent.

In doing so, this research intended to respond to the request of the branding literature to further investigate the different impacts of store versus national brand, the combined effect of store reputation and other information cues on perceptions of quality and behavioral intentions (Grewal, Levy and Lehmann 2004). This is the rationale for incorporating a key aspect of CBBE - OBE – as well as purchase intent in the model. Previous literature found support for the positive relationship between CBBE and purchase intent (Agarwal and Rao 1996; Allen 2001; Keller 2008; O'Cass and Lim 2001; Park, JaworskI and Maclnnis 1986; Park and Srinivasan 1994) and between CBBE and purchase decision (Kamakura and Russell 1993).

Across all four conditions OBE showed a strong influence upon purchase intent indicated by the high t-values. The results contribute to the literature by underscoring this relationship between OBE and purchase intent under congruity as well as incongruity settings in the retail environment.

2. Incongruity Conditions (C1 and C4)

The cardinal aspect of this research is the analysis of incongruity effects within the CBBE framework. In terms of the contributions of this research, the first incongruity condition (condition 1) dealing with the selling of Science Diet at Dollar General is the most far-reaching.

Higher incongruity effects were expected in condition 1 (Dollar General x Science Diet) than in condition 4 (Petsmart x Everpet). This assumption was predicated upon the following rationale: Because the store brand is unique to the respective retailer, consumers hold the retailer accountable for the quality of the product (consciously or subconsciously). In other words,

quality perceptions of retailer image and product brand image overlap. In condition 1 the low image of the retailing outlet negatively overshadows the high image of the national brand. Hence, due to the negative effects of high incongruity, selling national brands at a low image retailer was forecast to be quite detrimental to the brand.

a. Condition 1 (Dollar General x Science Diet)

The findings show support for all hypotheses relating to condition 1. Higher PBI and RBI are positively associated with CBBE in the form of OBE (H1 and H2). As predicted, a low image retailer like Dollar General selling a national brand such as Science Diet led to low levels of congruity (H3). Lower levels of congruity led to lower levels of CBBE, mediated by lower product perceived value (H4).

The strong relationships between PBI and OBE as well as RBI and OBE (H1 and H2) underscore the critical role of both brand image types upon consumer-based brand equity.

The results of H1 (PBI and OBE) complement the previous literature stating positive relationships between PBI and other facets of CBBE: satisfaction (Glynn 2009; Glynn and Brodie 2004), loyalty (Jacoby and Chestnut 1978) and brand preference (Agarwal and Rao 1996; Allen 2001; Keller 2008; O'Cass and Lim 2001; Park, JaworskI and Maclnnis 1986; Park and Srinivasan 1994). Furthermore, in view of the extensive review of the literature this is the first academic study (outside conference proceedings) referring to pet (dog) food and brand equity or brand image (Lancendorfer 2009; Annual Advances in Business Cases 2007). Furthermore, the positive association between RBI and OBE (H2) corresponds to research on the reciprocity between store image and store patronage (Hartman and Spiro 2005; Hansen and Solgaard 2004; Solgaard and Hansen 2003; Mazursky and Jacoby 1986).

H3 indicates perceived incongruity in case of a low retail image and high product brand image combination for a high involvement product category. As such this study lends credibility to the notion that negative consequences can occur when national brands are placed in an unfitting retail outlet. At first sight this consequence appears to be obvious. Nevertheless, it is a reoccurring phenomenon that lower image retailers seek to include high image national brands in their assortment, and this may be a risky endeavor for the national brand. In order to illustrate the practical relevance of this study, several detailed examples will be supplied in the section on managerial implications.

With its empirical results in the brand equity context, this study complements prior empirical incongruity research, previous conceptual reasoning as well as anecdotal evidence (Grewal, Monroe and Krishnan 1998).

Prior literature already addressed product and store brand image incongruity in the retailing environment but approached the subject from a completely different angle. They explored the impact of different combinations of retail outlets and product brands of varying image levels upon the store image. In essence, it was explored whether adding certain product brand types affected the store image favorably or unfavorably (Pettijohn, Mellott and Pettijohn 1992; Jacoby and Mazursky 1986). In contrast, this study aimed to clarify the effect of varying retail brand and product brand constellations upon the product brand. In addition, it extends the existing literature by testing the effects within a brand equity model unifying aspects of both CBBE and Retailer Brand Equity.

The results of H3 are in alignment with previous studies that sought to describe the psychological mechanisms accompanied by conflicting cues. Balance theory diagnoses feelings of discomfort (Heider 1946; 1958), cognitive dissonance theory a state of distress (Carlsmith and

Aronson 1963), congruity theory internal discomfort (Osgood and Tannenbaum 1955), associative network models ascertain confusion (Wyer and Albarracin 2005), whereas schema theory analyzes the reconciling interplay between incoming information and existing mental schemata (Souza, Owen and Lings 2005).

Marketing research generally (but not always) anticipates negative consequences in case of mismatching signals. Research has investigated the interplay between celebrity and product in celebrity endorsement studies (Lynch and Schuler 1994), between sponsor and event in the event sponsorship literature (Gwinner and Eaton 1999), between original and extended brand in brand extension research (Park, Milberg and Lawson 1991) and between differing messages in the integrated marketing communication area (Sjoedin and Toern 2006). Furthermore, consistency was identified as an important facilitator of brand equity (Keller 2008; Keller and Lehmann 2003). This research confirms this understanding, examining inconsistent retailer brand and product brand cues.

Prior research often analyzed branding types jointly with price perceptions (Grewal, Monroe and Krishnan 1998). In this research the price was purposefully held constant to distill congruity effects beyond price effects. Nevertheless, the results of this research are in alignment with findings that price is not always the only decisive factor in consumer brand perceptions. With regards to national brands, consumers rank quality higher than price (Sethuraman and Cole 1999; Hoch and Banerji 1993; Steenkamp 1989). This research accentuates the perceived dissociation between national brand and discount retail environment without the price factor. This means even if high image products carry the same price at a low and high image retail store consumers may still be reluctant to buy the product at the low image retailer because the perceived unfit diminishes product brand equity (OBE).

b. Condition 4 (Petsmart x Everpet)

In condition 4 (Petsmart x Everpet) no sufficient support could be found for H3 (A high image retailer like Petsmart selling private brands of dog food did not result in moderately low levels of congruity.) Nevertheless, the results conform to the rationale of the proposed congruity mechanism. The results of H3 can be explained by contrasting its constellation to that of condition 1:

In contrast to condition 1, only moderately low incongruity effects were even anticipated for condition 4. It is quite common for high image retailers to also offer store brands (example in a different product category: Wholefoods stock a store brand called “365”). Due to the overlapping effect described previously, a store brand actually benefits from placement in a high image retailer setting compensating to a certain degree of incongruity. In case of store brands only moderate incongruity is anticipated because the incongruity effect is expected to be partially compensated by the overlap between product brand image and retailer brand image.

The relatively lower image of a store brand compared to a national brand was hypothesized to only slightly affect the overall consumer perception. The result does not discredit the essential congruity process but rather shows that at least buyers of dog food accept the existence of private brands in a high image retail setting. The question whether the effect would reach significant levels in case of other product categories is a matter of generalizability and presents an opportunity for future research.

3. Congruity Conditions (C2 and C3)

a. Condition 2 (Dollar General x Everpet)

In condition 2 (Dollar Store x Everpet) support was found for H2 (Retailer brand image is positively associated with CBBE) and H4 (Higher (lower) levels of congruity lead to higher (lower) levels of CBBE.

The result for H2 was anticipated in view of research emphasizing the association between store image and retailer patronage (Hartman and Spiro 2005; Hansen and Solgaard 2004; Solgaard and Hansen 2003; Mazursky and Jacoby 1986). As awaited higher levels of congruity led to higher levels of CBBE (OBE) mediated by product perceived value (H4). The result underlines the important role played by congruity within the brand equity framework (Keller 2008; Ailawadi and Keller 2004).

In contrast, H3 (a low image retailer selling private brands of a high involvement product category will result in high levels of congruity) could not be substantiated. This outcome is related to the fact that (in)congruity did not turn out to have significant meditational effects. The result can be explained by the enhanced mental processes in case of incongruous versus congruous situations.

This can be illustrated using schema theory and information processing theory. According to schema theory incoming cues that do match stored information do not entail any special processes (Myers-Levy and Tybout 1989). Based upon limited information processing capacities, consumers are inclined to refer to certain simple heuristics (Bettmann 1979). Hence, congruity is a facilitating factor in congruous situations but not an intervening variable.

Furthermore, it is to be pointed out that the information processes related to brand choice decisions operate on a lower level in case of a private brand compared to a national brand. When

a consumer goes to a store to buy a specific national brand, an effort is made to pick the right national brand among the variety of competing labels. In contrast, a consumer looking for a store brand appears not to have to undergo the same effort. After all, the consumer primarily looks for a product category (dog food) and not for a specific national brand (e.g. Science Diet). It is rather considerations of getting a bargain and a "good buy" that drive the consumer – decision making in terms of private brands (Haugtvedt, Herr and Kardes 2008).

Consequently, when a low image retailer sells private brands, it is not congruity but rather the perceived value variable that plays the role of the initial mediator influencing the subsequent factors (OBE and purchase intent) in the presented model.

b. Condition 3 (Petsmart x Science Diet)

In condition 3 (Petsmart x Science Diet) support was found for H3 (A high image retailer selling national brands of a high involvement product category, will result in high levels of congruity.), H4 (Higher (lower) levels of congruity lead to higher (lower) levels of CBBE, mediated by product perceived value) and H5 CBBE (OBE) is positively associated with purchase intent.

The result of H3 was expected in light of the literature on (in)congruity. Matching cues are perceived as congruous. The support of H4 also in this condition shows once again the strong link between store image and store patronage (Hartman and Spiro 2005).

Regarding H2, Petsmart's hypothesized high retailer image did not result in higher levels of CBBE (OBE). Petsmart is associated with a higher image (Pride and Ferrell 2008). The store image ratings were, indeed, quite high. But this did not translate into a significant effect upon OBE. The result may be due to the following reason: At the beginning of this research it was

pointed to the significant growth of the pet food and dog food market. The increased attractiveness of the market has led to the introduction of more and more premium brands such as Iams Natural and Blue Buffalo. Whereas Science Diet used to occupy quite a unique spot in the premium brand section of the dog food market, a number of viable competitors have emerged. It appears plausible that this has contributed to the insignificant effect.

B. Theoretical and Managerial Implications

This research contributes to the literature in various ways. In this study, a comprehensive multiple mediator model was devised and empirically tested tapping into three literature streams, literature on incongruity as well as literature on brand equity with a consumer and retailer focus. This integrative approach addresses the contemporary discussion about the relevance of 'retailer as brand' (Ailawadi and Keller 2004).

For the first time an (in)congruity variable was embedded in a model unifying facets of the CBBE and Retailer Brand Equity framework, closing a gap in the brand equity literature. Based on the various theories and approaches referring to fit, consistency and related concepts, an incongruity construct was carved out, operationalized and empirically validated. In terms of (in)congruity, the model is validated in two important ways. On the one hand, its cardinal position is underpinned by showing that variant degrees of congruity affect CBBE. On the other hand, the influence of (in)congruity presents itself especially in situations in which national brands and low and high image retail outlets are combined.

This study advances insight into the combinatory mechanism of different image levels of PBI and RBI. Divergent match-ups result in varying degrees of perceived concord on behalf of the consumer in a high involvement product category. The findings support the notion that

certain tipping points exist that switch congruity to incongruity perceptions with potentially detrimental consequences. (Lee and Thorson 2008).

Furthermore, the study contributes by not only incorporating (in)congruity but also perceived value in the unified model. Perceived value was shown to be of particular relevance in conditions in which a private brand is matched with retailers of different image standards. In doing so, the study took a first step in testing the reciprocity between (in)congruity and perceived value within the integrated model. Having examined perceived value, this study accounts for the communication of value as one of the key trends in the 21st century (Krafft and Mantrala 2008; Parasuraman and Grewal 2000).

In addition, the empirical results further the insights for the quality concept in marketing by testing product brand and retailer brand types associated with divergent quality cues.

This study also holds relevant implications in methodological terms. Comprehensive reviews in the literature indicate that multiple mediator models are quite rare due to their inherent complexity. This is remarkable because they are considered to be especially suitable for integrating different theoretical approaches (Osborne 2007; MacKinnon, Fairchild and Fritz 2007; Rose et al. 2000). This research contributes to this still small and evolving research stream.

The reviewed literature indicates that this study is among the first to apply a macro for SPSS specifically designed to test multiple mediation models (next to their creators Preacher and Hayes (2008) and Homburg, Wieseke and Bornemann (2009)). This research illustrates the usefulness and ease of use of this macro.

Finally, this study employed the commonly recommended procedures for comparing non-nested models. The findings exemplify the urgent need to broaden the under-researched realm of

non-nested model comparison. Better tools including software have to be developed because the descriptive methods clearly fell short in providing lucid and accurate results.

The research at hand also delivers valuable information for marketing managers. Before offering general managerial advice, some prominent examples from the practice will be briefly reported in order to illustrate the highly practical importance of the findings. In a recent CNBC documentary titled "Target: Inside the Bullseye" aired in January 2011 and posted online on May 11th (CNBC 2011) two early cases of incongruity in retailing were discussed without labeling them as such.

The first example involves Target (then regarded as a low image discounter) and high image designer jeans. On the occasion of their Billion Dollar Sale in 1979, Target offered authentic designer jeans made by Calvin Kline, Gloria Vanderbilt and Sasson. In response, the designers were strongly concerned about the potential destruction of their product brands and contacted the authorities. A large-scale investigation was conducted to verify that Target had actually obtained the "real" brand and had done so through verifiable channels.

In addition, there is the case of Halston and JCPenney. Highly acclaimed Roy Halston Frowick, better known as Halston, was named "the premier fashion designer of America" by public news sources in the 1970s (Rowley 2004). In an effort to commoditize his brand, he signed a deal with JCPenney in 1982 (Kellogg et al. 2002). Halston saw the short- term involvement with JCPenney as an opportunity to boost his designer clothing line, usually sold only at high image outlets.

The consequences of this (mis)match were devastating for the designer brand. Even though JCPenney was appreciated by many as more upscale than discounters, it clearly was not a high image outlet in the textile product category. Many consumers were estranged by seeing

their appreciated brand offered in a lower image setting. It deeply alienated consumers thinking "Why would I wear Halston, if it is in JCPenny?" (interview with Laura Rowley in CNBC 2011). Though the collaboration with JCPenny soon came to an end, customers came to view Halston and his designer brand with great suspicion. The whole affair only intensified existing turmoil involving his business and helped lead to the demise of the Halston brand, which only recovered many years later after Halston's passing (Kellogg et al. 2002).

The Halston case bears some similarities to Apple's current endeavor to increase demand by allowing Walmart to retail its product. Apple products are high image premium brand products now offered at a discounter that has been frequently rated one of the lowest customer satisfaction and whose image has been affected by its declining sales numbers for the past two years (D'Innocenzio 2011). The degree of success in this collaboration is yet to be fully seen.

In view of the research findings and the aforementioned anecdotal evidence, marketing managers are well-advised to become fully informed about the image level of the retailer for which they are responsible. National and private brands considered for inclusion into the brand assortment should be carefully assessed by their consumer perceived image level. In addition, producers and distributors are encouraged to cautiously consider the fit between their products and the desired retail environment.

The managerial literature emphasizes that corporate decision-makers often mistakenly believe that they know exactly what and how consumers are thinking (Zaltman 2003). A measured decision for the appropriate match between brand and retailer outlet is crucial as a mismatch can negatively affect the product brand perception and lead to diminished purchase intent. On the other hand, positioning a product brand in the right, congruent place can also be a

strong facilitator for consumer product brand evaluation and proclivity to buy. A careful decision is particularly advisable for the placement of national brands in a lower image store.

There is a final, more indirect recommendation for marketing managers that can be derived from the research results. In case of an anticipated mismatch between national product brands and the store image, the retailer may have to reposition itself. This is exactly what Target has done. Target was interested in including more designer ware in its assortment to differentiate itself from other discounters. After the aforementioned negative experiences, designers were understandably reluctant to collaborate with Target. Now that Target has repositioned itself as an "upscale discounter", several highly-regarded designers regularly collaborate with Target (CNBC 2011). A similar approach could be an option for retail managers who are eager to incorporate national brands ranked above the retailer image.

C. Limitations

This study supplies valuable insights on consumer perceptions regarding incongruity within the proposed brand equity model. Nevertheless, several limitations should be addressed.

As a first consideration, it should be noted that this study employed an online panel. The characteristic pros and cons of this method were discussed at an earlier point in the text (ter Hofte-Fankhauser und Hans F Wälty 2009; Baker 2002; Lohse, Bellman, and Johnson 2000). Although the panel company has a system in place to limit panel conditioning (not calling upon panel members too often) a certain degree of testing effect cannot be fully excluded.

Following the previous point, there is a certain risk that the panel profile is not fully representative of the population of interest (panel bias). One aspect that attracts attention is that across all conditions the household income of the participants was $70,000 to $79,000 which is

significantly higher than the national US average (US Census Bureau 2011: $52,029). One explanation may be that that persons with a higher incomes have more knowledge of the opportunity to participate in panels and more access to the technology required.

Additionally, even though in this study price was deliberately held constant to distil specific brand effects and to warrant equivalence across the conditions, elevated income levels may have influenced panel responses in favor of the national brand and the high image retail outlet. It has been shown that the amount of disposable household income influences consumer behavior (Blythe 2007).

Another limitation is the suboptimal measurement of PBI. As has been illustrated in detail before, this limits the conclusiveness of the PBI results to the first condition.

The non-nested model design has inherent limitations as well, and was one of the noteworthy challenges of this research. Comparing non-nested models is only possible in a basic descriptive manner. The literature is still in the early stages of developing a viable comparative approach that can also be conducted through a software package.

In other respects, this research is limited due to its product category, dog food. It cannot be said with certainty whether the outcomes of this study can be generalized across other high involvement product categories. Having said this, it appears questionable if the results could be reproduced for low involvement products since the psychological processes operate on a different level. In low involvement situations, in which consumers dedicate fewer resources like time, thought and energy, diminished effects might have to be anticipated (Haugtvedt, Herr and Kardes 2008).

Another important point is the dichotomous design of the four conditions. In order to facilitate the finding of incongruity effects, two types of stores were selected that are at rather

opposite ends of the retailer brand image spectrum. The same applies to the dualism between national and private brand. Although this is a viable parsimonious approach, the effects may be different when comparing retailers with a less pronounced difference in image as well as comparing national brands with premium private brands.

Furthermore, there are inherent limitations regarding the purchase intent variable. The literature has widely discussed whether behavioral intention measures are a sufficient proxy for actual behavior. Some findings show that purchase intent does not necessarily translate into actual purchase behavior (Cannière, Pelsmacker and Geuens 2010; Zeithaml 2000; Dick and Basu 1994).

D. Directions for Future Research

1. Conceptual Avenues for Future Research

The findings of the tested extended CBBE / Retailer Brand Equity model might serve as a prelude to further studies in which the viability of the (in)congruity construct under alternating conditions would be tested. The comprehensive unified framework displayed in the appendix was the backdrop of this study and can serve as starting point for further studies. Naturally, not all aspects of this multi-faceted CBBE and Retailer Brand Equity conceptual model could be incorporated in this study.

Considering the limited conclusiveness regarding PBI, future research should further investigate the interplay between PBI and RBI. Moreover, the findings should be cross-validated with other product categories of differing involvement grades, other panel profiles and non-panel participants (e.g. students).

The diverging consumer perceptions on private and national brands between the US and the EU may merit cross-cultural studies to detect international differences in (in)congruity brand effects (Czinkota and Ronkainen 2006).

The producers of private label products have made great strides to advocate the expansion of store brands in retailing. Some premium private brands are intended to even compete with national brands at eye-level. Neither all national brands nor all private brands operate on the same (promoted or perceived) quality level (Kumar and Steenkamp 2007). Analyzing the interplay between different types of national and private product brands associated with dissimilar quality levels (e.g. low image private brand, premium private brand, low image national brand and high image national brand) in contrasting retail settings could add further nuance to the findings of this research. In a similar vein, one could incrementally investigate at what degree of divergence between product brand and retailer brand that incongruity results in detrimental brand equity effects (analogue to the brand extension fit literature dealing with the question "how far can a brand be extended before it is over-stretched"; Weitz and Wensley 2006). In other words, how much product brand / retailer brand incongruity are consumers willing to tolerate before negative perceptions emerge?

Finally, there exists the chance of further developing the incongruity construct to what is tentatively labeled as perceived concordance (or discordance). In this research the terms perceived concord and congruity were employed synonymously. According to the Online Etymology Dictionary 2010, concord is derived from the Latin word concordia meaning literally "hearts together" and thus "of one mind" and "harmony". A perceived concordance construct could be refined along the line of the following reasoning: congruity is a cognitive process that when disturbed by mismatching cues results in an elevated state of mind, i.e. a high involvement

condition. This rationale would make the incongruity aspect interesting even for low involvement products. For example - a consumer is shopping for a low involvement product habitually or "on autopilot" when mismatching cues lead to a high involvement state of mind for a low involvement product (discordance).

2. Methodological Perspectives for Future Research

The presented research design is methodologically challenging for two reasons. The model is tested in four conditions leading to four non-nested data sets. Another level of intricacy is added to the model by incorporating three mediators. This makes it challenging to fully capture the interplay of the variables in the model.

The analysis of non-nested models is a rather ambiguous area of research. None of the approaches presented by the literature so far can fully avoid the danger of ambivalent results (Levy and Hancock 2007; Raykov 2001; Engle and McFadden 1994, 2583–2637; Mizon and Richard 1986; Cox 1962). The noteworthy research of Levy and Hancock (2011; 2007) on non-nested model strives to find viable solutions. In their most recent paper (Levy and Hancock 2011) they discuss a bootstrapping procedure to counter the challenge. However, there is still no software available to assay non-nested models. With technological innovation an even more conclusive comparative analysis of the data might finally be feasible.

Future research could revisit the devised model and scrutinize the already identified, as well as additional, factors. A starting point could be the result of the mediation analysis that (in)congruity and PV did not assume meditational features in certain conditions (incongruity: C2 and C4; PV: C1 and C3). However, the path analysis was positive and supported mediation for these variables. In response one can diagnose partial mediation, but does this really convey the

full picture? It could be asked what other role (in)congruity and PV might possibly play from the perspective of moderated mediation and mediated moderation. It was beyond the scope of the hypothesized relationships to account for moderated mediation and mediated moderation.

Revisiting this study in the future for such an analysis appears an interesting undertaking. After all, a preliminary analysis conducted by the author has already unveiled that there exists mediated moderation between (in)congruity and PV as well as OBE in condition 2 and condition 4 - those conditions in which the mediation analysis spoke against incongruity as a mediator between RBI and PV (the INDIRECT macro for SPSS allows to test for mediated moderation but not for moderated mediation; see appendix). Finally, it would also be of interest to see whether the mediations found in this research would hold across different groups, e.g. consumers of different income levels (moderated mediation).

Testing moderated mediation and mediated moderation in a multiple mediator model is a highly intricate undertaking.[15] These methods add to the already enhanced challenge of analyzing multiple mediator models (Hayes 2009; Preacher and Hayes 2008; Preacher, Rucker and Hayes 2007). There is currently no software available that can account for both moderated mediation and mediated moderation simultaneously. On his webpage Hayes (2011) has announced he would publish a highly anticipated macro for SPSS in 2012 that would allow the simultaneous analysis of moderated mediation and mediated moderation – even in multiple mediator models.

[15] Within a three-path model, the test of the equality of the a-parameter is mediated moderation, whereas the examination of the equality of the b- parameter is a test of moderated mediation (MacKinnon 2008).

E. Conclusions

In conclusion, this study provides a unified model combining key elements of the CBBE and Retailer Brand Equity model with an innovative (in)congruity variable. The research tests this model under four varying retailer brand / product brand type constellations. Overall, the study was able to validate the proposed model, particularly in its focal incongruity condition (national brand – low image retailer). Eventually, the (in)congruity variable was the cardinal point of this study and represents one of its key contributions.

The findings across all conditions suggest that (in)congruity perceptions exert a decisive effect upon CBBE (OBE), mediated by PV. In addition, it could be shown that CBBE (OBE) has a strong impact on purchase intent independent from the product brand / retailer brand constellation. RBI was positively associated with CBBE (OBE) in most constellations. RBI showed a strong effect upon incongruity in the key incongruity condition (national brand – low image retailer), whereas in other situations the effect was not as strong.

Mediation analysis found support for (in)congruity as a mediator in two conditions in which PV did not function as a moderator. In contrast, in the conditions associated with the private brand, PV assumed the position of mediator whereas (in)congruity fell short of the meditational requirements.

The findings support anecdotal evidence that a mismatch between higher image product brand and lower image retailer can evoke incongruous consumer perceptions eliciting negative ramifications for brand equity and purchased intent.

Depending on the constellation of product brand type and retailer brand category, marketing managers are urged to carefully evaluate the potential advantageous as well as disadvantageous consequences of congruous or incongruous brand image cues.

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APPENDIX

Data Collection Instrument

Consent to Participate in a Survey *ANNOTATED VERSION*
Title: Dog Food Retailing

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Description
This survey deals with your preferences and understanding of different brands of pet products. It will take about 15-20 minutes to complete.

Risks and Benefits
As part of the survey you will be asked questions dealing with pet products and where they are sold. This survey might be interesting and enjoyable to you since the topic is a current issue. There are no known risks or benefits (other than extra credit) of participation.

Cost and Payments
There are no other costs for helping us with this study. You will receive extra credit points depending on the course and the instructor.

Confidentiality
Each participant's data will be assigned a code number that will not allow us to trace it back to any individual participant. Further, all data will be reported in groups and not by individuals, so we do not believe that you can be identified from any of your surveys.

Right to Withdraw
As much as your participation is appreciated, it is voluntary. If you start the study and decide that you do not want to finish, you may do so at any time. Your decision will not affect your standing with the Department of Marketing or with the University.

IRB Approval *(to be included in online version)*
This study has been reviewed by The University of Mississippi's Institutional Review Board (IRB). The IRB has determined that this study fulfills the human research subject protections obligations required by state and federal law and University policies. If you have any questions, concerns, or reports regarding your rights as a participant of research, please contact the IRB at (662) 915-6534.

Statement of Consent
I have read the above information. I have been given a copy of this form. I have had an opportunity to ask questions, and I have received answers. I consent to participate in the study.

Signature of Participant Date

NOTE TO PARTICIPANTS: DO NOT SIGN THIS FORM IF THE IRB APPROVAL STAMP ON THE FIRST PAGE HAS EXPIRED. *(to be included in online version)*

Condition 1

Brand type / Store type	National brand	Private brand
Dollar General	1 Science Diet **CONDITION 1**	2 Everpet **CONDITION 2**
Petsmart	3 Science Diet **CONDITION 3**	4 Everpet **CONDITION 4**

Introduction: When it comes to dog food, retailers either sell a manufacturer brand (e.g. Science Diet) or a store brand. A store brand (e.g. Everpet) is owned by the retailer, is exclusively sold at that retailer and is not linked to a specific manufacturer.

I. Circle the number of the response that most closely corresponds with your reaction to the statement.

1-Strongly disagree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly agree

Product Brand Image

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	The price of dog food is usually a good indicator of its quality	1	2	3	4	5
2	The lower price of the store-branded dog food is usually a good indicator of poor quality	1	2	3	4	5
3	When I buy a store-branded dog food I think that I get the most for my money (*reversibly coded in analysis*)	1	2	3	4	5
4	There is a great difference in reliability of ingredients in dog food between well-known manufacturer brands and retailer store brands	1	2	3	4	5
5	I think, there is a difference in taste between manufacturers' and retailers' dog food	1	2	3	4	5
6	There is a great risk in buying a store-branded dog food because of the inferior quality	1	2	3	4	5
7	If I bought dog food for someone else I would not buy a store brand	1	2	3	4	5

II. Circle the number of the response that most closely corresponds with your reaction to the statement.

1-Strongly | 2- Disagree | 3-Neutral, Neither | 4-Agree | 5-Strongly

agree agree nor disagree disagree

Retailer Brand Image: employee service, product quality, atmosphere

	Statement	Strongly Agree	Disagree	Neutral	Agree	Strongly Disagree
8	Dollar General employees are friendly	1	2	3	4	5
9	The service at Dollar General is excellent	1	2	3	4	5
10	I am pleased with the service I received at Dollar General	1	2	3	4	5
11	Dollar General sells only high quality products	1	2	3	4	5
12	I like Dollar General products	1	2	3	4	5
13	I can count on the products I buy at Dollar General being excellent	1	2	3	4	5
14	Dollar General has a large variety of products	1	2	3	4	5
15	Everything I need is at Dollar General	1	2	3	4	5
16	Dollar General carries many national brands	1	2	3	4	5
17	The appearance of Dollar General is appealing	1	2	3	4	5
18	Dollar General is not always clean (reverse coding)	1	2	3	4	5
19	Dollar General is sophisticated	1	2	3	4	5

1-Strongly agree 2- Disagree 3-Neutral, Neither agree nor disagree 4-Agree 5-Strongly Disagree

Retailer Brand Image – continued: convenience, price/value

	Statement	Strongly Agree	Disagree	Neutral	Agree	Strongly Disgree
20	Dollar General is easily accessible	1	2	3	4	5
21	Dollar General is convenient	1	2	3	4	5
22	It is easy to get into the Dollar General store	1	2	3	4	5
23	The prices at Dollar General are fair	1	2	3	4	5
24	I obtain value for my money at Dollar General	1	2	3	4	5
25	I can buy products for less at Dollar General	1	2	3	4	5

For the following questions, please consider carefully the following situation:

Imagine you have a puppy dog and you go shopping for dog food at Dollar General.

ASSUME THAT ALL DOG FOOD PRODUCTS HAVE THE SAME PRICE.

Imagine that you see the manufacturer brand "**Veterinarian's Recommended Science Diet" in the Dollar General pet aisle**. Look at the following pictures, please, to help you picture the situation. Then answer the questions, please.

LOGO

Typical exterior

Typical dog food display with Science Diet

Product picture

III. Circle the number of the response that most closely corresponds with your reaction to the statement.

1-Strongly Disagree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly Agree

Incongruity

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
25	There is a logical connection between "Science Diet" and Dollar General	1	2	3	4	5
26	The image of Dollar General and the image of "Science Diet" are similar	1	2	3	4	5
27	Dollar General and ; "Science Diet" fit together well	1	2	3	4	5
28	Dollar General and "Science Diet" stand for similar things	1	2	3	4	5
29	It makes sense to me that Dollar General sells "Science Diet"	1	2	3	4	5

IV. Please circle the number of the response that most closely corresponds with your reaction to the statement

30. How do you rate the combination of Dollar General and "Science Diet"?						
Bad fit between Dollar General and "Science Diet"	1	2	3	4	5	Bad or good fit between Dollar General and "Science Diet"

31. How logical is it for Dollar General to sell "Science Diet"?						
Not at all logical for Dollar General	1	2	3	4	5	Very logical for Dollar General

32. How appropriate it for Dollar General to sell "Science Diet"?						
Not at all appropriate for Dollar General	1	2	3	4	5	Very appropriate for Dollar General

V. Circle the number of the response that most closely corresponds with your reaction to the statement

Perceived Value

33. "Science Diet" at Dollar General is a _____

Very good value for the money	Good value for the money	Neither good nor bad value for the money	Poor value for the money	Very poor value for the money
1	2	3	4	5

34. "Science Diet" at Dollar General is considered to be a good buy

Strongly Agree	Disagree	Neutral	Agree	Strongly Disagree
1	2	3	4	5

35. "Science Diet" at Dollar General is considered to be a bargain

Strongly Agree	Disagree	Neutral	Agree	Strongly Disagree
1	2	3	4	5

Omitted: At the price shown the product is: (very economical lo very uneconomical)
Omitted: The price shown for the product is: (very acceptable to very unacceptable)

VI. Circle the number of the response that most closely corresponds with your reaction to the statement.

1-Strongly Disagree 2- Disagree 3-Neutral, Neither agree nor disagree 4-Agree 5-Strongly Agree

OBE - CBBE

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
36	It makes sense to buy "Science Diet" instead of any other brand, even if they are the same	1	2	3	4	5
37	Even if another brand has the same features as "Science Diet", I would prefer to buy "Science Diet".	1	2	3	4	5
38	If there is another brand as good as "Science Diet", I prefer to buy "Science Diet" .	1	2	3	4	5
39	If another brand is not different from "Science Diet" in any way, it seems smarter to purchase "Science Diet"	1	2	3	4	5

VII. Circle the number that most closely corresponds with your reaction to the statement.

PURCHASE INTENT

1-Strongly Disagree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly Agree

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
40. It is very likely that I will buy "Science Diet"	1	2	3	4	5
41. I will purchase "Science Diet" the next time I need dog food	1	2	3	4	5
42. I will definitely try "Science Diet"	1	2	3	4	5

VIII. Do you own a dog? Yes No

Have you ever owned a dog? Yes No

IF you said "NO" to both,
Have you ever been responsible for taking care of a dog including feeding it for an extended period of time?

Yes No

IX. Have you ever purchased dog food? (please circle) Yes No

IF YES, please answer the following questions:

(1) How often do you buy dog food?

Every week__ Once a month__ Other (please specify)___

(2) When you buy dog food, what kind of food products do you buy?

(Please mark one or more categories)

Dry food	
Canned food	

Organic dog food	

(3) What brand of dog food do you buy?

Science Diet	
Blue Buffalo	
Orijen	
Natural Balance	
Purina	
IAms	
Beneful	
Pedigree	
Newman's Own	
Retailer's Store Brand (such as Everpet)	
Other	

If other, please specify_____

(4) Where do you usually buy dog food? (***used to own a dog:*** Where did you usually buy dog food?)

Petsmart	
Petco	
Walmart	
Kroger	
Kmart	
Dollar General	
Veterinarian	
Other	

If other, please specify_____

X. Biographical data

1) Finally, please answer the following background questions. Your responses will be kept strictly confidential and will not be traceable to you:

1)What is your gender?	Male	
	Female	
2)What is your age?		
3)What is your marital status?	Single	
	Married	

2) What is your employment status?

Self-Employed	
Employed (full time)	
Employed (part-time)	
Unemployed	
Other	

Other, please specify_____

2) What is your estimated household income? Please include the income of all earners in your household (if you are supported by your parents include your parents' income).

Less than $10,000	
$10,000-19,999	
$20,000-29,999	
$30,000-39,999	
$40,000-49,999	
$50,000-59,999	

$60,000-69,999	
$70,000-79,000	
$80,000-89,999	
$90,000-99,999	
$100,000 or greater	

Thank you for your participation

Condition 2

Brand type / Store type	National brand	Private brand
Dollar General	1 Science Diet **CONDITION 1**	2 Everpet **CONDITION 2**
Petsmart	3 Science Diet **CONDITION 3**	4 Everpet **CONDITION 4**

Introduction: When it comes to dog food, retailers either sell a manufacturer brand (e.g. Science Diet) or a store brand. A store brand (e.g. Everpet) is owned by the retailer, is exclusively sold at that retailer and is not linked to a specific manufacturer.

I. Circle the number of the response that most closely corresponds with your reaction to the statement.

1-Strongly disagree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly agree

Product Brand Image

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	The price of dog food is usually a good indicator of its quality	1	2	3	4	5
2	The lower price of the store-branded dog food is usually a good indicator of poor quality	1	2	3	4	5
3	When I buy a store-branded dog food I think that I get the most for my money ***reversibly coded in analysis***	1	2	3	4	5
4	There is a great difference in reliability of ingredients in dog food between well-known manufacturer brands and retailers' store brands	1	2	3	4	5
5	I think, there is a difference in taste between manufacturers' and retailers' dog food	1	2	3	4	5
6	There is a great risk in buying a store-branded dog food because of the inferior quality	1	2	3	4	5
7	If I bought dog food for someone else I would not buy a store brand	1	2	3	4	5

II. Circle the number of the response that most closely corresponds with your reaction to the statement.

1-Strongly agree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly disagree

Retailer Brand Image: Employee service, product quality, atmosphere

	Statement	Strongly Agree	Disagree	Neutral	Agree	Strongly Disagree
8	Dollar General employees are friendly	1	2	3	4	5
9	The service at Dollar General is excellent	1	2	3	4	5
10	I am pleased with the service I received at Dollar General	1	2	3	4	5
11	Dollar General sells only high quality products	1	2	3	4	5
12	I like Dollar General products	1	2	3	4	5
13	I can count on the products I buy at Dollar General being excellent	1	2	3	4	5
14	Dollar General has a large variety of products	1	2	3	4	5
15	Everything I need is at Dollar General	1	2	3	4	5
16	Dollar General carries many national brands	1	2	3	4	5
17	The appearance of Dollar General is appealing	1	2	3	4	5
18	Dollar General is not always clean (reverse coding)	1	2	3	4	5
19	Dollar General is sophisticated	1	2	3	4	5

1-Strongly agree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly Disagree

Retailer Brand Image – continued: Convenience, price/ value

	Statement	Strongly Agree	Disagree	Neutral	Agree	Strongly Disgree
20	Dollar General is easily accessible	1	2	3	4	5
21	Dollar General is convenient	1	2	3	4	5
22	It is easy to get into the Dollar General store	1	2	3	4	5
23	The prices at Dollar General are fair	1	2	3	4	5
24	I obtain value for my money at Dollar General	1	2	3	4	5
25	I can buy products for less at Dollar General	1	2	3	4	5

For the following questions, please consider carefully the following situation:
Imagine you have a puppy dog and you go shopping for dog food at Dollar General.
ASSUME THAT ALL DOG FOOD PRODUCTS HAVE THE SAME PRICE.
Imagine that you see the store brand "**Everpet" in the Dollar General pet aisle**. Look at the following pictures, please, to help you picture the situation. Then answer the questions, please.

LOGO

Typical exterior

Typical dog food display

Product picture

III. Circle the number of the response that most closely corresponds with your reaction to the statement.

1-Strongly Disagree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly Agree

Incongruity

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
25	There is a logical connection between "Everpet" and Dollar General	1	2	3	4	5
26	The image of Dollar General and the image of "Everpet" are similar	1	2	3	4	5
27	Dollar General and "Everpet" fit together well	1	2	3	4	5
28	Dollar General and "Everpet" stand for similar things	1	2	3	4	5
29	It makes sense to me that Dollar General sells "Everpet"	1	2	3	4	5

IV. Please circle the number of the response that most closely corresponds with your reaction to the statement

36. How do you rate the combination of Dollar General and "Everpet"?						
Bad fit between Dollar General and "Everpet"	1	2	3	4	5	Bad or good fit between Dollar General and "Everpet"

37. How logical is it for Dollar General to sell "Everpet"?						
Not at all logical for Dollar General	1	2	3	4	5	Very logical for Dollar General

38. How appropriate it for Dollar General to sell "Everpet"?						
Not at all appropriate for Dollar General	1	2	3	4	5	Very appropriate for Dollar General

V. Circle the number of the response that most closely corresponds with your reaction to the statement

Perceived Value

39. "Everpet" at Dollar General is a _____

Very good value for the money	Good value for the money	Neither good nor bad value for the money	Poor value for the money	Very poor value for the money
1	2	3	4	5

40. "Everpet" at Dollar General is considered to be a good buy

Strongly Agree	Disagree	Neutral	Agree	Strongly Disagree
1	2	3	4	5

41. "Everpet" at Dollar General is considered to be a bargain

Strongly Agree	Disagree	Neutral	Agree	Strongly Disagree
1	2	3	4	5

Omitted: At the price shown the product is: (very economical lo very uneconomical)
Omitted: The price shown for the product is: (very acceptable to very unacceptable)

VI. Circle the number of the response that most closely corresponds with your reaction to the statement.

1-Strongly Disagree 2- Disagree 3-Neutral, Neither agree nor disagree 4-Agree 5-Strongly Agree

OBE - CBBE

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
36	It makes sense to buy "Everpet" instead of any other brand, even if they are the same	1	2	3	4	5
37	Even if another brand has the same features as "Everpet", I would prefer to buy "Everpet".	1	2	3	4	5
38	If there is another brand as good as "Everpet", I prefer to buy "Everpet" .	1	2	3	4	5
39	If another brand is not different from "Everpet" in any way, it seems smarter to purchase "Everpet"	1	2	3	4	5

VII. Circle the number that most closely corresponds with your reaction to the statement.

PURCHASE INTENT

1-Strongly Disagree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly Agree

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
40. It is very likely that I will buy "Everpet"	1	2	3	4	5
41. I will purchase "Everpet" the next time I need dog food	1	2	3	4	5
42. I will definitely try "Everpet"	1	2	3	4	5

VIII. Do you own a dog? Yes No

Have you ever owned a dog? Yes No

IF you said "NO" to both,
Have you ever been responsible for taking care of a dog including feeding it for an extended period of time?

Yes No

IX. Have you ever purchased dog food? (please circle) Yes No

IF YES, please answer the following questions:

(1) How often do you buy dog food?

Every week__ Once a month__ Other (please specify)___

(2) When you buy dog food, what kind of food products do you buy?

(Please mark one or more categories)

Dry food	
Canned food	

Organic dog food	

(3) What brand of dog food do you buy?

Science Diet	
Blue Buffalo	
Orijen	
Natural Balance	
Purina	
IAms	
Beneful	
Pedigree	
Newman's Own	
Retailer's Store Brand (such as Everpet)	
Other	

If other, please specify_____

(4) Where do you usually buy dog food? (***used to own a dog:*** Where did you usually buy dog food?)

Petsmart	
Petco	
Walmart	
Kroger	
Kmart	
Dollar General	
Veterinarian	
Other	

If other, please specify_____

X. Biographical data

1) Finally, please answer the following background questions. Your responses will be kept strictly confidential and will not be traceable to you:

1)What is your gender?	Male	
	Female	
2)What is your age?		
3)What is your marital status?	Single	
	Married	

2) What is your employment status?

Self-Employed	
Employed (full time)	
Employed (part-time)	
Unemployed	
Other	

3) What is your estimated household income? Please include the income of all earners in your household (if you are supported by your parents include your parents' income).

Less than $10,000	
$10,000-19,999	
$20,000-29,999	
$30,000-39,999	
$40,000-49,999	
$50,000-59,999	

$60,000-69,999	
$70,000-79,000	
$80,000-89,999	
$90,000-99,999	
$100,000 or greater	

Thank you for your participation

Condition 3

Brand type / Store type	National brand	Private brand
Dollar General	1 Science Diet **CONDITION 1**	2 Everpet **CONDITION 2**
Petsmart	3 Science Diet **CONDITION 3**	4 Everpet **CONDITION 4**

Introduction: When it comes to dog food, retailers either sell a manufacturer brand (e.g. Science Diet) or a store brand. A store brand (e.g. Everpet) is owned by the retailer, is exclusively sold at that retailer and is not linked to a specific manufacturer.

I. Circle the number of the response that most closely corresponds with your reaction to the statement.

1-Strongly disagree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly agree

Product Brand Image

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	The price of dog food is usually a good indicator of its quality	1	2	3	4	5
2	The lower price of the store-branded dog food is usually a good indicator of poor quality	1	2	3	4	5
3	When I buy a store-branded dog food I think that I get the most for my money ***reversibly coded in analysis***	1	2	3	4	5
4	There is a great difference in reliability of ingredients in dog food between well-known manufacturer brands and retailers' store brands	1	2	3	4	5
5	I think, there is a difference in taste between manufacturers' and retailers' dog food	1	2	3	4	5
6	There is a great risk in buying a store-branded dog food because of the inferior quality	1	2	3	4	5
7	If I bought dog food for someone else I would not buy a store brand	1	2	3	4	5

II. Circle the number of the response that most closely corresponds with your reaction to the statement.

1-Strongly agree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly disagree

Retailer Brand Image: employee service, product quality, atmosphere

	Statement	Strongly Agree	Disagree	Neutral	Agree	Strongly Disagree
8	Petsmart employees are friendly	1	2	3	4	5
9	The service at Petsmart is excellent	1	2	3	4	5
10	I am pleased with the service I received at Petsmart	1	2	3	4	5
11	Petsmart sells only high quality products	1	2	3	4	5
11	I like Petsmart products	1	2	3	4	5
12	I can count on the products I buy at Petsmart being excellent	1	2	3	4	5
13	Petsmart has a large variety of products	1	2	3	4	5
14	Everything I need is at Petsmart	1	2	3	4	5
15	Petsmart carries many national brands	1	2	3	4	5
16	The appearance of Petsmart is appealing	1	2	3	4	5
17	Petsmart is not always clean (reverse coding)	1	2	3	4	5
18	Petsmart is sophisticated	1	2	3	4	5

1-Strongly agree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly Disagree

Retailer Brand Image – continued: convenience, price/value

	Statement	Strongly Agree	Disagree	Neutral	Agree	Strongly Disgree
19	Petsmart is easily accessible	1	2	3	4	5
20	Petsmart is convenient	1	2	3	4	5
21	It is easy to get into the Petsmart store	1	2	3	4	5
22	The prices at Petsmart are fair	1	2	3	4	5
23	I obtain value for my money at Petsmart	1	2	3	4	5
24	I can buy products for less at Petsmart	1	2	3	4	5

For the following questions, please consider carefully the following situation:

Condition: Low RBI – High PBI => should lead to perceived incongruity

Imagine you have a puppy dog and you go shopping for dog food at Petsmart.

ASSUME THAT ALL DOG FOOD PRODUCTS HAVE THE SAME PRICE.

Imagine that you see "**Veterinarian's Recommended Science Diet" in the Petsmart pet aisle**. Look at the following pictures, please, to help you picture the situation. Then answer the questions, please.

LOGO:

Typical exterior

Typical dog food display with Science Diet

Product picture

III. Circle the number of the response that most closely corresponds with your reaction to the statement.

1-Strongly Disagree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly Agree

Incongruity

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
25	There is a logical connection between "Science Diet" and Petsmart	1	2	3	4	5
26	The image of Petsmart and the image of "Science Diet" are similar	1	2	3	4	5
27	Petsmart and "Science Diet" fit together well	1	2	3	4	5
28	Petsmart "Science Diet" stand for similar things	1	2	3	4	5
29	It makes sense to me that Petsmart sells "Science Diet"	1	2	3	4	5

IV. Please circle the number of the response that most closely corresponds with your reaction to the statement

42. How do you rate the combination of Petsmart and "Science Diet"?						
Bad fit between Petsmart and "Science Diet"	1	2	3	4	5	Bad or good fit between Petsmart and "Science Diet"

43. How logical is it for Petsmart to sell "Science Diet"?						
Not at all logical for Petsmart	1	2	3	4	5	Very logical for Petsmart

44. How appropriate it for Petsmart to sell "Science Diet"?						
Not at all appropriate for Petsmart	1	2	3	4	5	Very appropriate for Petsmart

V. Circle the number of the response that most closely corresponds with your reaction to the statement

Perceived Value

45. "Science Diet" at Petsmart is a _____

Very good value for the money	Good value for the money	Neither good nor bad value for the money	Poor value for the money	Very poor value for the money
1	2	3	4	5

46. "Science Diet" at Petsmart is considered to be a good buy

Strongly Agree	Disagree	Neutral	Agree	Strongly Disagree
1	2	3	4	5

47. "Science Diet" at Petsmart is considered to be a bargain

Strongly Agree	Disagree	Neutral	Agree	Strongly Disagree
1	2	3	4	5

Omitted: At the price shown the product is: (very economical lo very uneconomical)
Omitted: The price shown for the product is: (very acceptable to very unacceptable)

VI. Circle the number of the response that most closely corresponds with your reaction to the statement.

1-Strongly Disagree 2- Disagree 3-Neutral, Neither agree nor disagree 4-Agree 5-Strongly Agree

OBE - CBBE

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
36	It makes sense to buy "Science Diet" instead of any other brand, even if they are the same	1	2	3	4	5
37	Even if another brand has the same features as "Science Diet", I would prefer to buy "Science Diet".	1	2	3	4	5
38	If there is another brand as good as "Science Diet", I prefer to buy "Science Diet" .	1	2	3	4	5
39	If another brand is not different from "Science Diet" in any way, it seems smarter to purchase "Science Diet"	1	2	3	4	5

VII. Circle the number that most closely corresponds with your reaction to the statement.

PURCHASE INTENT

1-Strongly Disagree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly Agree

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
40. It is very likely that I will buy "Science Diet"	1	2	3	4	5
41. I would purchase "Science Diet" the next time I need dog food	1	2	3	4	5
42. I would definitely try "Science Diet"	1	2	3	4	5

VIII. Do you own a dog? Yes No

Have you ever owned a dog? Yes No

IF you said "NO" to both,
Have you ever been responsible for taking care of a dog including feeding it for an extended period of time?

Yes No

IX. Have you ever purchased dog food? (please circle) Yes No

IF YES, please answer the following questions:

(1) How often do you buy dog food?

Every week__ Once a month__ Other (please specify)___

(2) When you buy dog food, what kind of food products do you / would you buy?

(Please mark one or more categories)

Dry food	
Canned food	

Organic dog food	

(3) What brand of dog food do you buy?

Science Diet	
Blue Buffalo	
Orijen	
Natural Balance	
Purina	
IAms	
Beneful	
Pedigree	
Newman's Own	
Retailer's Store Brand (such as Everpet)	
Other	

If other, please specify_____

(4) Where do you usually buy dog food? (***used to own a dog:*** Where did you usually buy dog food?)

Petsmart	
Petco	
Walmart	
Kroger	
Kmart	
Dollar General	
Veterinarian	
Other	

If other, please specify_____

X. Biographical data

Finally, please answer the following background questions. Your responses will be kept strictly confidential and will not be traceable to you:

1)What is your gender?	Male	
	Female	
2)What is your age?		
3)What is your marital status?	Single	
	Married	

2) What is your employment status?

Self-Employed	
Employed (full time)	
Employed (part-time)	
Unemployed	
Other	

3) What is your estimated household income? Please include the income of all earners in your household (if you are supported by your parents include your parents' income).

Less than $10,000	
$10,000-19,999	
$20,000-29,999	
$30,000-39,999	
$40,000-49,999	
$50,000-59,999	

$60,000-69,999	
$70,000-79,000	
$80,000-89,999	
$90,000-99,999	
$100,000 or greater	

Thank you for your participation

Condition 4

Brand type / Store type	National brand	Private brand
Dollar General	1 Science Diet **CONDITION 1**	2 Everpet **CONDITION 2**
Petsmart	3 Science Diet **CONDITION 3**	4 Everpet **CONDITION 4**

Introduction: When it comes to dog food, retailers either sell a manufacturer brand (e.g. Science Diet) or a store brand. A store brand (e.g. Everpet) is owned by the retailer, is exclusively sold at that retailer and is not linked to a specific manufacturer.

I. Circle the number of the response that most closely corresponds with your reaction to the statement.

1-Strongly disagree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly agree

Product Brand Image

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	The price of dog food is usually a good indicator of its quality	1	2	3	4	5
2	The lower price of the store-branded dog food is usually a good indicator of poor quality	1	2	3	4	5
3	When I buy a store-branded dog food I think that I get the most for my money ***reversibly coded in analysis***	1	2	3	4	5
4	There is a great difference in reliability of ingredients in dog food between well-known manufacturer brands and retailers' store brands	1	2	3	4	5
5	I think, there is a difference in taste between manufacturers' and retailers' dog food	1	2	3	4	5
6	There is a great risk in buying a store-branded dog food because of the inferior quality	1	2	3	4	5
7	If I bought dog food for someone else I would not buy a store brand	1	2	3	4	5

II. Circle the number of the response that most closely corresponds with your reaction to the statement.

1-Strongly agree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly disagree

Retailer Brand Image: employee service, product quality, atmosphere

	Statement	Strongly Agree	Disagree	Neutral	Agree	Strongly Disagree
8	Petsmart employees are friendly	1	2	3	4	5
9	The service at Petsmart is excellent	1	2	3	4	5
10	I am pleased with the service I received at Petsmart	1	2	3	4	5
11	Petsmart sells only high quality products	1	2	3	4	5
12	I like Petsmart products	1	2	3	4	5
13	I can count on the products I buy at Petsmart being excellent	1	2	3	4	5
14	Petsmart has a large variety of products	1	2	3	4	5
15	Everything I need is at Petsmart	1	2	3	4	5
16	Petsmart carries many national brands	1	2	3	4	5
17	The appearance of Petsmart is appealing	1	2	3	4	5
18	Petsmart is not always clean (reverse coding)	1	2	3	4	5
19	Petsmart is sophisticated	1	2	3	4	5

1-Strongly agree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly Disagree

Retailer Brand Image – continued: convenience, price/value

	Statement	Strongly Agree	Disagree	Neutral	Agree	Strongly Disgree
19	Petsmart is easily accessible	1	2	3	4	5
20	Petsmart is convenient	1	2	3	4	5
21	It is easy to get into the Petsmart store	1	2	3	4	5
22	The prices at Petsmart are fair	1	2	3	4	5
23	I obtain value for my money at Petsmart	1	2	3	4	5
24	I can buy products for less at Petsmart	1	2	3	4	5

For the following questions, please consider carefully the following situation:

Condition: Low RBI – High PBI => should lead to perceived incongruity
Imagine you have a puppy dog and you go shopping for dog food at Petsmart.
ASSUME THAT ALL DOG FOOD PRODUCTS HAVE THE SAME PRICE.
Imagine that you see the store brand "**Everpet" in the Petsmart pet aisle**. Look at the following pictures, please, to help you picture the situation. Then answer the questions, please.

LOGO:

Typical exterior

Typical dog food display

Product picure

III. Circle the number of the response that most closely corresponds with your reaction to the statement.

1-Strongly Disagree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly Agree

Incongruity

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
25	There is a logical connection between "Everpet" and "Petsmart"	1	2	3	4	5
26	The image of "Petsmart" and the image of "Everpet" are similar	1	2	3	4	5
27	"Petsmart" and "Everpet" fit together well	1	2	3	4	5
28	"Petsmart" and "Everpet" stand for similar things	1	2	3	4	5
29	It makes sense to me that "Petsmart" sells "Everpet"	1	2	3	4	5

IV. Please circle the number of the response that most closely corresponds with your reaction to the statement

48. How do you rate the combination of "Petsmart" and "Everpet"?						
Bad fit between "Petsmart" and "Everpet"	1	2	3	4	5	Bad or good fit between "Petsmart" and "Everpet"

49. How logical is it for "Petsmart" to sell "Everpet"?						
Not at all logical for "Petsmart"	1	2	3	4	5	Very logical for "Petsmart"

50. How appropriate it for "Petsmart" to sell "Everpet"?						
Not at all appropriate for "Petsmart"	1	2	3	4	5	Very appropriate for "Petsmart"

V. Circle the number of the response that most closely corresponds with your reaction to the statement

Perceived Value

51. "Everpet" at "Petsmart" is a _____

Very good value for the money	Good value for the money	Neither good nor bad value for the money	Poor value for the money	Very poor value for the money
1	2	3	4	5

52. "Everpet" at "Petsmart" is considered to be a good buy

Strongly Agree	Disagree	Neutral	Agree	Strongly Disagree
1	2	3	4	5

53. "Everpet" at "Petsmart" is considered to be a bargain

Strongly Agree	Disagree	Neutral	Agree	Strongly Disagree
1	2	3	4	5

Omitted: At the price shown the product is: (very economical lo very uneconomical)
Omitted: The price shown for the product is: (very acceptable to very unacceptable)

VI. Circle the number of the response that most closely corresponds with your reaction to the statement.

1-Strongly Disagree 2- Disagree 3-Neutral, Neither agree nor disagree 4-Agree 5-Strongly Agree

OBE - CBBE

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
36	It makes sense to buy "Everpet" instead of any other brand, even if they are the same	1	2	3	4	5
37	Even if another brand has the same features as "Everpet", I would prefer to buy "Everpet".	1	2	3	4	5
38	If there is another brand as good as "Everpet", I prefer to buy "Everpet" .	1	2	3	4	5
39	If another brand is not different from "Everpet" in any way, it seems smarter to purchase "Everpet"	1	2	3	4	5

II. Circle the number that most closely corresponds with your reaction to the statement.

PURCHASE INTENT

1-Strongly Disagree | 2- Disagree | 3-Neutral, Neither agree nor disagree | 4-Agree | 5-Strongly Agree

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
40. It is very likely that I will buy "Everpet"	1	2	3	4	5
41. I will purchase "Everpet" the next time I need dog food	1	2	3	4	5
42. I will definitely try "Everpet"	1	2	3	4	5

VIIb. ***Control questions***

Have you heard of the store brand "Authority" before?	Yes	No
Are you aware that "Everpet" is actually not the store brand of Petsmart?	Yes	No

VIII. Do you own a dog? Yes No

Have you ever owned a dog? Yes No

IF you said "NO" to both,
Have you ever been responsible for taking care of a dog including feeding it for an extended period of time?

Yes No

IX. Have you ever purchased dog food? (please circle) Yes No

IF YES, please answer the following questions:

(1) How often do you buy dog food?

Every week__ Once a month__ Other (please specify)___

(2) When you buy dog food, what kind of food products do you buy?

(Please mark one or more categories)

Dry food	
Canned food	

Organic dog food	

(3) What brand of dog food do you buy?

Science Diet	
Blue Buffalo	
Orijen	
Natural Balance	
Purina	
IAms	
Beneful	
Pedigree	
Newman's Own	
Retailer's Store Brand (such as Everpet)	
Other	

If other, please specify_____

(4) Where do you usually buy dog food? (***used to own a dog:*** Where did you usually buy dog food?)

Petsmart	
Petco	
Walmart	
Kroger	
Kmart	
Dollar General	
Veterinarian	
Other	

If other, please specify_____

X. Biographical data

1) Finally, please answer the following background questions. Your responses will be kept strictly confidential and will not be traceable to you:

1)What is your gender?	Male	
	Female	
2)What is your age?		
3)What is your marital status?	Single	
	Married	

2) What is your employment status?

Self-Employed	
Employed (full time)	
Employed (part-time)	
Unemployed	
Other	

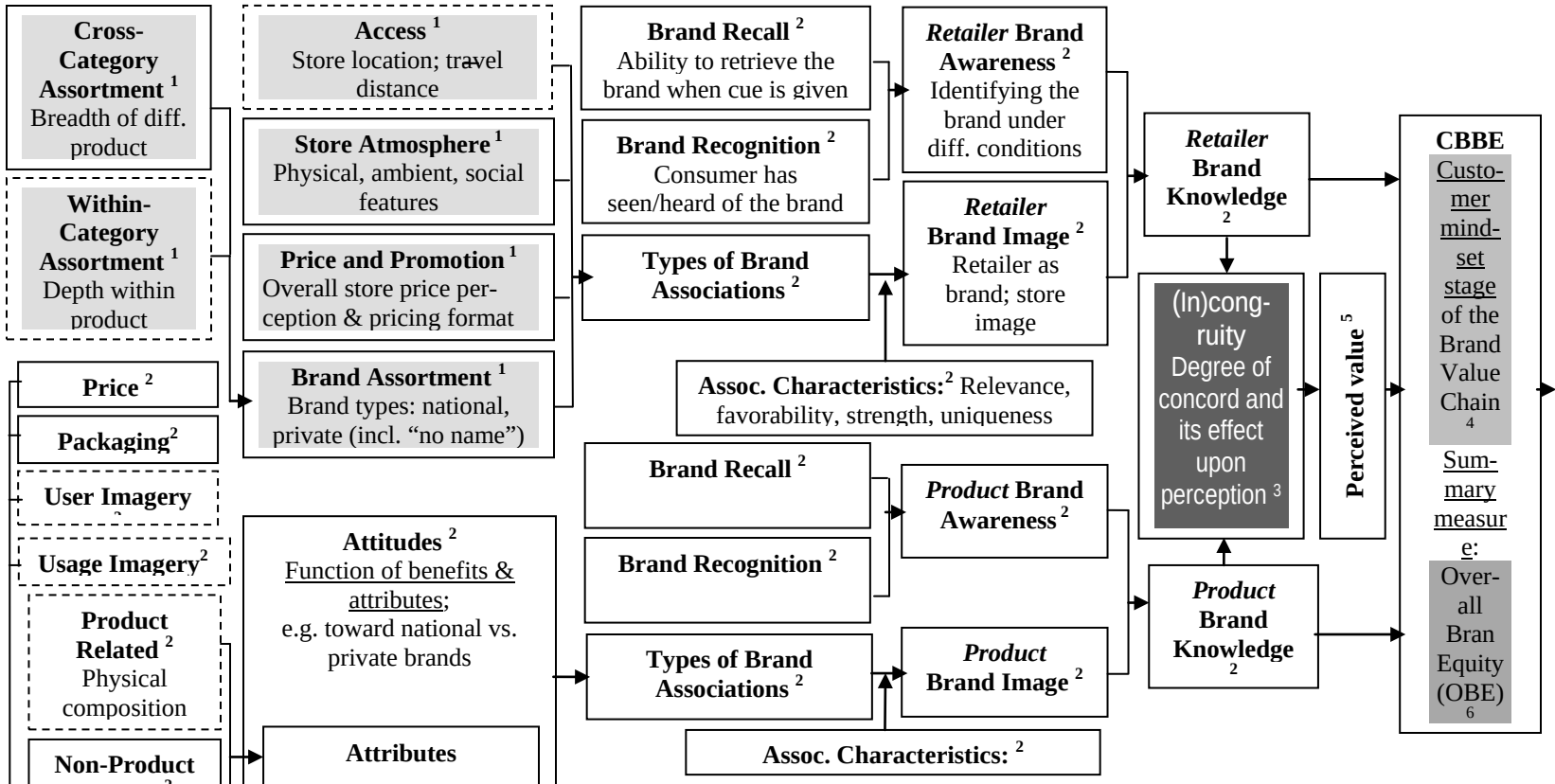
3) What is your estimated household income? Please include the income of all earners in your household (if you are supported by your parents include your parents' income).

Less than $10,000	
$10,000-19,999	
$20,000-29,999	
$30,000-39,999	
$40,000-49,999	
$50,000-59,999	

$60,000-69,999	
$70,000-79,000	
$80,000-89,999	
$90,000-99,999	
$100,000 or greater	

Thank you for your participation

Appendix: Extended Conceptual Framework – (In)Congruity and its Effects upon CBBE



Footnotes	
1	Ailawadi and Keller (2004, p. 332-335)
2	Keller (1993), p. 7, figure 1
3	Speed and Thompson (2002), p. 299, 230
4	Keller and Lehmann (2003), Keller (1993)
5	Dodds, Monroe, and Grewal (1991), p. 31; Grewal, Monroe, and Krishnan 1998, p. 48
6	Yoo and Donthu (2001), p. 11, 14
7	Churchill and Iacobucci (2005), p. 209
– – – – – –	Concepts / constructs not considered in detail & not included in the operationalization

Table 17: Descriptive statistics – Skewness and kurtosis

Condition 1

	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Q5_1_PBI_C1	3.65	1.036	-.850	.274	.189	.541
Q5_2_PBI_C1	3.30	1.089	.002	.274	-.936	.541
Q5_3_PBI_C1_rev	2.46	1.137	.464	.276	-.504	.545
Q5_4_PBI_C1	3.87	.978	-.946	.274	.746	.541
Q5_5_PBI_C1	3.77	.887	-.795	.274	1.151	.541
Q5_6_PBI_C1	3.51	1.166	-.374	.274	-.716	.541
Q5_7_PBI_C1	3.48	1.108	-.755	.274	-.021	.541
Q6_1_RBI_C1	1.96	.895	1.208	.274	2.168	.541
Q6_2_RBI_C1	2.09	1.002	1.021	.274	1.074	.541
Q6_3_RBI_C1	1.96	.880	1.503	.274	3.669	.541
Q6_4_RBI_C1	2.34	1.008	.222	.274	-1.006	.541
Q6_5_RBI_C1	1.81	.726	.529	.274	-.181	.541
Q6_6_RBI_C1	2.16	.904	.670	.274	.373	.541
Q6_7_RBI_C1	1.86	.702	.909	.274	1.791	.541
Q6_8_RBI_C1	2.43	1.181	.386	.276	-.890	.545
Q6_9_RBI_C1	1.87	.848	.918	.274	.506	.541
Q6_10_RBI_C1	2.05	.972	.865	.274	.303	.541
Q6_11_RBI_C1_rev	3.16	1.247	-.052	.274	-1.216	.541
Q6_12_RBI_C1	2.69	1.173	.386	.274	-.775	.541
Q7_1_RBI_C1	1.67	.737	1.228	.276	2.004	.545
Q7_2_RBI_C1	1.65	.684	1.086	.274	1.937	.541
Q7_3_RBI_C1	1.71	.780	1.427	.276	3.502	.545
Q7_4_RBI_C1	1.62	.653	1.172	.276	2.755	.545
Q7_5_RBI_C1	1.69	.674	.733	.274	.595	.541
Q7_6_RBI_C1	1.77	.705	.828	.274	1.109	.541
Q9_1_INCONGRUITY_C1_logical_conn	3.51	1.131	-.716	.274	-.115	.541
Q9_2_INCONGRUITY_C1_similar_image	3.48	1.231	-.518	.274	-.750	.541
Q9_3_INCONGRUITY_C1_fit	3.77	1.146	-.817	.274	-.067	.541
Q9_4_INCONGRUITY_C1_similar	3.58	1.074	-.741	.276	.009	.545
Q9_5_INCONGRUITY_C1_makes_sense	3.71	1.099	-.994	.274	.525	.541
Q10_1_INCONGRUITY_C1_combi	3.95	1.169	-.963	.274	.135	.541
Q_12_1_INCONGRUITY_C1_logical	3.62	1.193	-.755	.274	-.230	.541
Q14_1_INCONGRUITY_C1_appropriate	3.82	1.167	-.860	.274	.104	.541
Q18_1_PV_C1_value	2.03	.986	.876	.274	.235	.541
Q19_1_PV_C1_good_buy	1.79	.879	1.499	.274	3.214	.541
Q20_1_PV_C1_bargain	2.09	.989	.819	.274	.477	.541
Q21_1_OBE_C1_makes_sense_buy	3.78	1.096	-1.147	.274	.843	.541
Q21_2_OBE_C1_features	3.87	1.005	-1.012	.274	.999	.541
Q21_3_OBE_C1_as_good_as	3.83	.965	-.913	.274	1.140	.541
Q21_4_OBE_C1_not_different	3.80	.994	-1.181	.276	1.572	.545
Q22_1_PI_C1_likely	3.79	1.043	-1.212	.274	1.400	.541
Q22_2_PI_C1_will	3.82	1.048	-.892	.274	.445	.541
Q22_3_PI_C1_definitely	4.01	.966	-1.283	.274	2.025	.541

Condition 2

	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Q150_1_PBI_C2	3.71	.897	-.648	.277	.295	.548
Q150_2_PBI_C2	3.32	1.022	-.220	.279	-.716	.552
Q150_3_PBI_C2_rev	2.55	1.094	.482	.277	-.405	.548
Q150_4_PBI_C2	3.91	.873	-.442	.277	-.443	.548
Q150_5_PBI_C2	3.85	.748	-.151	.277	-.364	.548
Q150_6_PBI_C2	3.32	1.055	-.183	.277	-.586	.548
Q150_7_PBI_C2	3.41	1.015	-.435	.277	-.597	.548
Q151_1_RBI_C2	2.05	.837	1.321	.277	3.076	.548
Q151_2_RBI_C2	2.08	.955	.601	.277	-.075	.548
Q151_3_RBI_C2	1.96	.907	1.308	.277	2.324	.548
Q151_4_RBI_C2	2.45	1.211	.229	.277	-1.045	.548
Q151_5_RBI_C2	2.03	.735	.588	.277	.598	.548
Q151_6_RBI_C2	2.29	.955	.138	.277	-.515	.548
Q151_7_RBI_C2	1.88	.854	.905	.277	.457	.548
Q151_8_RBI_C2	2.52	1.190	.273	.277	-1.188	.548
Q151_9_RBI_C2	1.99	.744	.628	.277	.598	.548
Q151_10_RBI_C2	2.12	.915	.736	.277	.436	.548
Q151_11_RBI_C2_rev	3.52	1.131	-.339	.277	-.932	.548
Q151_12_RBI_C2	2.67	1.166	.214	.277	-.928	.548
Q152_1_RBI_C2	1.77	.781	1.124	.277	1.515	.548
Q152_2_RBI_C2	1.71	.785	1.264	.277	1.808	.548
Q152_3_RBI_C2	1.64	.769	1.110	.279	.853	.552
Q152_4_RBI_C2	1.71	.693	.716	.277	.383	.548
Q152_5_RBI_C2	1.77	.764	.973	.277	1.090	.548
Q152_6_RBI_C2	1.83	.705	.734	.277	.983	.548
Q154_1_INCONGRUITY_C2_logical_con	3.68	.888	-.745	.277	.964	.548
Q154_2_INCONGRUITY_C2_similar_image	3.69	.958	-.573	.277	.272	.548
Q154_3_INCONGRUITY_C2_fit	3.87	.811	-.686	.277	1.168	.548
Q154_4_INCONGRUITY_C2_similar	3.80	.854	-.535	.277	.527	.548
Q154_5_INCONGRUITY_C2_makes_sense	3.96	.796	-1.249	.277	3.567	.548
Q155_1_INCONGRUITY_C2_combi	4.04	.907	-.527	.277	-.680	.548
Q156_1_INCONGRUITY_C2_logical	4.09	.878	-.936	.279	1.043	.552
Q157_1_INCONGRUITY_C2_appropriate	4.12	.821	-.980	.277	1.687	.548
Q158_1_PV_C2_value	1.95	.826	.552	.279	-.252	.552
Q159_1_PV_C2_good_buy	1.93	.794	.620	.277	.107	.548
Q160_1_PV_C2_bargain	2.05	.757	.300	.279	-.255	.552
Q161_1_OBE_C2_makes_sense	3.59	1.001	-.328	.277	-.595	.548
Q161_2_OBE_C2_features	3.63	.983	-.146	.277	-.589	.548
Q161_3_OBE_C2_as_good_as	3.53	.963	-.050	.277	-.510	.548
Q161_4_OBE_C2_not_different	3.71	.955	-.329	.277	-.341	.548
Q162_1_PI_C2_likely	3.61	1.089	-.976	.277	.603	.548
Q162_2_PI_C2_will	3.49	1.223	-.439	.277	-.658	.548
Q162_3_PI_C2_definitely	3.68	1.141	-.851	.277	.295	.548

Condition 3

	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Q187_1_PBI_C3	3.82	.877	-.664	.283	.590	.559
Q187_2_PBI_C3	3.50	1.126	-.183	.283	-.913	.559
Q187_3_PBI_C3_rev	2.22	1.129	.755	.283	-.180	.559
Q187_4_PBI_C3	3.82	.939	-.466	.283	-.584	.559
Q187_5_PBI_C3	3.90	.906	-.504	.283	-.460	.559
Q187_6_PBI_C3	3.72	1.038	-.580	.283	-.481	.559
Q187_7_PBI_C3	3.69	1.016	-.425	.283	-.531	.559
Q188_1_RBI_C3	1.93	.811	.945	.283	.962	.559
Q188_2_RBI_C3	1.86	.850	1.138	.285	1.895	.563
Q188_3_RBI_C3	1.80	.995	1.845	.285	3.885	.563
Q188_4_RBI_C3	1.89	.949	1.158	.285	1.111	.563
Q188_5_RBI_C3	1.78	.736	.597	.283	-.150	.559
Q188_6_RBI_C3	1.88	.903	1.316	.283	2.474	.559
Q188_7_RBI_C3	1.68	.841	1.717	.285	3.799	.563
Q188_8_RBI_C3	1.85	.936	1.610	.285	3.479	.563
Q188_9_RBI_C3	1.75	.835	1.400	.283	2.778	.559
Q188_10_RBI_C3	1.75	.857	1.080	.285	.637	.563
Q188_11_RBI_C3_rev	3.25	1.351	-.119	.283	-1.319	.559
Q188_12_RBI_C3	2.33	1.233	.535	.283	-.755	.559
Q189_1_RBI_C3	1.61	1.015	1.435	.283	.642	.559
Q189_2_RBI_C3	1.67	1.075	1.478	.283	.998	.559
Q189_3_RBI_C3	1.74	1.199	1.591	.283	1.590	.559
Q189_4_RBI_C3	1.85	1.159	1.257	.283	.628	.559
Q189_5_RBI_C3	1.82	1.066	1.306	.283	1.311	.559
Q189_6_RBI_C3	1.97	1.138	.822	.283	-.564	.559
Q191_1_INCONGRUITY_logical_con_3	3.83	1.007	-1.017	.283	.657	.559
Q191_2_INCONGRUITY_similar_image_C3	3.87	1.087	-.828	.283	-.051	.559
Q191_3_INCONGRUITY_fit_C3	4.11	.987	-1.224	.283	1.413	.559
Q191_4_INCONGRUITY_similar_C3	4.08	.890	-1.044	.285	1.289	.563
Q191_5_INCONGRUITY_makes_sense_C3	3.96	.895	-1.250	.283	2.269	.559
Q191_1_INCONGRUITY_combi_C3	4.26	.919	-1.228	.283	1.272	.559
Q193_3_INCONGRUITY_logical_C3	3.99	1.165	-1.144	.285	.552	.563
Q194_1_INCONGRUITY_appropriate_C3	4.15	.974	-1.069	.283	.639	.559
Q195_1_PV_value_C3	2.08	.975	.673	.283	-.031	.559
Q196_1_PV_good_buy_C3	2.00	.949	.711	.283	.113	.559
Q197_1_PV_bargain_C3	2.28	.967	.465	.283	-.252	.559
Q198_1_OBE_makes_sense_C3	3.56	1.112	-.681	.283	-.241	.559
Q198_2_OBE_features_C3	3.75	1.135	-.557	.283	-.647	.559
Q198_3_OBE_as_good_as_C3	3.81	1.070	-.734	.283	-.123	.559
Q198_4_OBE_not_different_C3	3.86	.961	-.904	.285	.881	.563
Q199_1_PI_likely_C3	3.90	.952	-.809	.283	.354	.559
Q199_2_PI_will_C3	3.81	1.146	-.761	.283	-.243	.559
Q199_3_PI_definitely_C3	4.00	1.048	-.981	.283	.450	.559

Condition 4

	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Q224_1_PBI_C4	3.77	.953	-1.068	.277	.965	.548
Q224_2_PBI_C4	3.45	1.062	-.631	.279	-.229	.552
Q224_3_PBI_C4_rev	2.67	1.223	.261	.277	-.726	.548
Q224_4_PBI_C4	3.85	.968	-.615	.277	-.085	.548
Q224_5_PBI_C4	3.80	.973	-.489	.277	-.273	.548
Q224_6_PBI_C4	3.44	1.068	-.352	.277	-.512	.548
Q224_7_PBI_C4	3.68	1.141	-.683	.277	-.232	.548
Q225_1_RBI_C4	1.87	.664	.722	.277	1.584	.548
Q225_2_RBI_C4	2.01	.836	.553	.279	-.149	.552
Q225_3_RBI_C4	1.79	.759	1.335	.277	3.691	.548
Q225_4_RBI_C4	1.88	.915	1.114	.277	1.210	.548
Q225_5_RBI_C4	1.69	.592	.203	.277	-.573	.548
Q225_6_RBI_C4	1.81	.748	.918	.277	1.181	.548
Q225_7_RBI_C4	1.57	.681	1.308	.277	2.510	.548
Q225_8_RBI_C4	1.88	.770	1.122	.277	2.820	.548
Q225_9_RBI_C4	1.69	.822	1.380	.277	2.657	.548
Q225_10_RBI_C4	1.64	.713	1.135	.279	1.623	.552
Q225_11_RBI_C4_rev	3.17	1.379	-.067	.277	-1.350	.548
Q225_12_RBI_C4	2.27	.949	.215	.277	-.434	.548
Q226_1_RBI_C4	1.72	.648	.651	.277	.870	.548
Q226_2_RBI_C4	1.75	.824	1.401	.277	2.880	.548
Q226_3_RBI_C4	1.67	.723	1.046	.277	1.288	.548
Q226_4_RBI_C4	2.11	.938	.690	.277	.203	.548
Q226_5_RBI_C4	1.97	.870	.432	.277	-.717	.548
Q226_6_RBI_C4	2.44	1.142	.403	.277	-.712	.548
Q228_1_INCONGRUITY_logical_con_C4	3.57	.961	-.730	.277	.537	.548
Q228_2_INCONGRUITY_similar_image_C4	3.63	.969	-.826	.277	.648	.548
Q228_3_INCONGRUITY_fit_C4	3.81	1.016	-.896	.279	.714	.552
Q228_4_INCONGRUITY_similar_C4	3.69	1.052	-.851	.277	.489	.548
Q228_5_INCONGRUITY_makes_sense_C4	3.73	1.044	-.903	.277	.676	.548
Q229_1_INCONGRUITY_combi_C4	3.99	1.046	-1.210	.277	1.470	.548
Q230_1_INCONGRUITY_logical_C4	3.80	1.040	-.845	.277	.448	.548
Q231_1_INCONGRUITY_appropriate_C4	4.05	1.045	-1.293	.279	1.720	.552
Q232_1_PV_value_C4	2.11	.831	.376	.277	-.369	.548
Q233_1_PV_good_buy_C4	2.11	.798	.295	.277	-.376	.548
Q234_1_PV_bargain_C4	2.13	.935	.543	.277	-.016	.548
Q235_1_OBE_makes_sense_C4	3.47	.949	-.292	.277	-.492	.548
Q235_2_OBE_features_C4	3.61	.985	-.195	.277	-.568	.548
Q235_3_OBE_as_good_as_C4	3.70	1.056	-.447	.279	-.407	.552
Q235_4_OBE_not_different_C4	3.68	.923	.055	.279	-.959	.552
Q236_1_PI_likely_C4	3.50	1.101	-.728	.279	-.095	.552
Q236_2_PI_will_C4	3.56	1.068	-.331	.277	-.620	.548
Q236_3_PI_definitely_C4	3.72	1.169	-.577	.277	-.421	.548

Table 21: KMO and Bartlett's Test of Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.775
Bartlett's Test of Sphericity	Approx. Chi-Square	2601.309
	df	903
	Sig.	.000

Middling

Significant.

Condition 2

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.733
Bartlett's Test of Sphericity	Approx. Chi-Square	2556.775
	df	903
	Sig.	.000

Middling

Significant

Condition 3

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.684
Bartlett's Test of Sphericity	Approx. Chi-Square	2434.126
	df	903
	Sig.	.000

Middling

Significant

Condition 4

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.756
Bartlett's Test of Sphericity	Approx. Chi-Square	2566.311
	df	903
	Sig.	.000

Middling

Significant

Table 25: Harman's One Factor Test Via EFA and CFA

Results for EFA: Total Variance Extracted (Excerpt)

Condition 1

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.071	35.326	35.326	13.071	35.326	35.326
2	5.437	14.695	50.021			
3	3.252	8.789	58.810			
4	2.204	5.957	64.767			
5	1.543	4.169	68.936			
6	1.386	3.747	72.682			
7	1.090	2.945	75.627			
8	.832	2.249	77.876			
9	.817	2.209	80.084			

1 factor emerges.
There is NO problem, as long as the variance explained by this one factor is NOT more than 50%
⇨ "good news"

Condition2

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	14.416	38.963	38.963	14.416	38.963	38.963
2	3.599	9.726	48.689			
3	3.071	8.299	56.988			
4	1.978	5.346	62.334			
5	1.825	4.933	67.267			
6	1.248	3.372	70.639			
7	1.051	2.842	73.481			

Variance explained by this one factor is NOT more than 50%
⇨ "good news"

Condition 3

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.676	31.556	31.556	11.676	31.556	31.556
2	5.318	14.373	45.930			
3	2.883	7.793	53.723			
4	2.154	5.823	59.545			
5	1.532	4.141	63.687			
6	1.497	4.046	67.733			
7	1.336	3.610	71.343			

Variance explained by this one factor is NOT more than 50%
⇨ "good news"

Condition 4

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.856	37.448	37.448	13.856	37.448	37.448
2	3.554	9.606	47.054			
3	3.411	9.218	56.272			
4	2.177	5.883	62.155			
5	1.459	3.943	66.098			
6	1.230	3.324	69.422			

Variance explained by this one factor is NOT more than 50%
⇨ "good news"

Table 25: Harman's One Factor Test Via EFA and CFA (continued)

Results for CFA

Condition 1:

	Benchmark (Hair 2006, p. 753)	**Hypo path model**	Good model fit?	**CMF model**	Good model fit?	Similarity fit stats between models
CFI	>0.92	0.779	No	0.786	No	**High**
RMSEA	<0.08	0.051	Yes	0.050	Yes	**High**

⇨ **Model fit indices are NOT better for the CMB model than for the full path model.**

Minimal difference between chi-squares

	Hypo path model	**CMF model**
Chi-square	**Notes for Model (Default model)** **Result (Default model)** Minimum was achieved Chi-square = 1115.818 Degrees of freedom = 628 Probability level = .000	**Notes for Model (Default model)** **Result (Default model)** Minimum was achieved Chi-square = 1100.103 Degrees of freedom = 627 Probability level = .000

Comparing the parameter coefficients and t-coefficients:

Condition 1 – full path model
Estimates (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	
Incongruity	<---	RBI	-.490	.125	-3.917	***	
Incongruity	<---	PBI	.590	.129	4.576	***	
Perceived Value	<---	Incongruity	-.222	.099	-2.242	.025	
OBE	<---	PBI	.407	.130	3.133	.002	
OBE	<---	Perceived Value	-.400	.128	-3.132	.002	
OBE	<---	RBI	-.264	.125	-2.106	.035	
Purchase Intent	<---	OBE	.857	.114	7.508	***	

CMF model

Estimates (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Incongruity	<---	RBI	-.641	.136	-4.708	***	
Incongruity	<---	PBI	.488	.138	3.541	***	
Perceived Value	<---	Incongruity	-.280	.104	-2.700	.007	
OBE	<---	PBI	.425	.141	3.010	.003	
OBE	<---	Perceived Value	-.388	.132	-2.932	.003	
OBE	<---	RBI	-.248	.137	-1.806	.071	
Purchase Intent	<---	OBE	.847	.115	7.347	***	

hypo path estimates	CMF	hypo path t-coeff	CMF
-0.49	-0.641	-3.917	-4.708
0.59	0.488	4.576	3.541
-0.222	-0.28	-2.242	-2.7
0.407	0.425	3.133	3.01
-0.4	-0.388	-3.132	-2.932
-0.264	-0.248	-2.106	-1.806
0.857	0.847	7.508	7.347

small differences

Marginal differences

Condition 2:

	Benchmark (Hair 2006, p. 753)	**Hypo path model**	Good model fit?	**CMF model**	Good model fit?	Similarity of fit stats between models
CFI	>0.92	0.637	No	0.692	No	**High**
RMSEA	<0.08	0.065	Yes	0.060	Yes	**High**

⇨ **Model fit indices are <u>NOT</u> better for the CMB model than for the full path model.**

Small difference between chi-squares

	Hypo path model	**CMF model**
Chi-square	**Notes for Model (Default model)** **Result (Default model)** Minimum was achieved Chi-square = 1329.888 Degrees of freedom = 592 Probability level = .000	**Notes for Model (Default model)** **Result (Default model)** Minimum was achieved Chi-square = 1217.179 Degrees of freedom = 591 Probability level = .000

Comparing the parameter coefficients and t-coefficients:

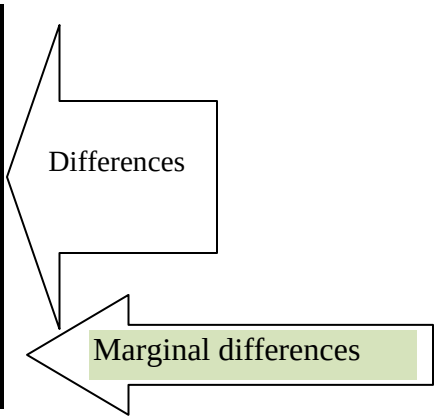
Condition 1 – full path model
Estimates (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
Incongruity	<---	RBI	-.615	.148	-4.149	***
Incongruity	<---	PBI	.144	.133	1.090	.276
Perceived Value	<---	Incongruity	-.279	.112	-2.495	.013
OBE	<---	PBI	.171	.129	1.328	.184
OBE	<---	Perceived Value	-.498	.126	-3.954	***
OBE	<---	RBI	-.630	.135	-4.672	***
Purchase Intent	<---	OBE	.859	.095	9.020	***

CMF model
Estimates (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Incongruity	<---	RBI	3.463	1.491	2.323	.020	
Incongruity	<---	PBI	-.368	.326	-1.128	.259	
Perceived Value	<---	Incongruity	-.170	.077	-2.200	.028	
OBE	<---	PBI	.316	.135	2.341	.019	
OBE	<---	Perceived Value	-.371	.131	-2.825	.005	
OBE	<---	RBI	.652	.153	4.263	***	
Purchase Intent	<---	OBE	.913	.092	9.940	***	

full path estimates	CMB	full path t-coeff	CMB
-0.615	3.463	-4.149	2.323
0.144	-0.368	1.09	-1.128
-0.279	-0.17	-2.495	-2.2
0.171	0.316	1.328	2.341
-0.498	-0.371	-3.954	-2.825
-0.63	0.652	-4.672	4.263
0.859	0.913	9.02	9.94



Condition 3:
Fit statistics: compared

	Benchmark (Hair 2006, p. 753)	**Hypo path model**	Good model fit?	**CMF model**	Good model fit?	Similarity of fit stats between models
CFI	>0.92	0.657	No	0.658	No	**Very High**
RMSEA	<0.08	0.061	Yes	0.061	Yes	**Very High**

⇨ **Model fit indices are NOT better for the CMB model than for the full path model.**

Equal chi-squares

	Hypo path model	**CMF model**
Chi-square	**Notes for Model (Default model)** **Result (Default model)** Minimum was achieved Chi-square = 1315.120 Degrees of freedom = 627 Probability level = .000	**Notes for Model (Default model)** Result (Default model) Minimum was achieved Chi-square = 1315.120 Degrees of freedom = 628 Probability level = .000

Comparing the parameter coefficients and t-coefficients:

Condition 1 – full path model
Estimates (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	
Incongruity	<---	RBI	-.465	.129	-3.605	***	
Incongruity	<---	PBI	.356	.131	2.715	.007	
Perceived Value	<---	Incongruity	-.503	.116	-4.340	***	
OBE	<---	PBI	.284	.134	2.118	.034	
OBE	<---	Perceived Value	-.520	.121	-4.298	***	
OBE	<---	RBI	.097	.130	.744	.457	
Purchase Intent	<---	OBE	.638	.110	5.831	***	

CMF model
Estimates (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Incongruity	<---	RBI	-.465	.132	-3.515	***	
Incongruity	<---	PBI	.356	.135	2.638	.008	
Perceived Value	<---	Incongruity	-.503	.120	-4.211	***	
OBE	<---	PBI	.284	.138	2.053	.040	
OBE	<---	Perceived Value	-.520	.122	-4.256	***	
OBE	<---	RBI	.097	.132	.732	.464	
Purchase Intent	<---	OBE	.638	.110	5.813	***	

full path estimates	CMB	full path t-coeff	CMB
-0.465	-0.465	-3.605	-3.515
0.356	0.356	2.715	2.638
-0.503	-0.503	-4.34	-4.211
0.284	0.284	2.118	2.053
-0.52	-0.52	-4.298	-4.256
0.097	0.097	0.744	0.732
0.638	0.638	5.831	5.813

Minimal (t-coeff) or
no differences (path est.)

Condition 4:
Fit statistics: compared

	Benchmark (Hair 2006, p. 753)	**Full path model**	Good model fit?	**CMF model**	Good model fit?	Similarity of fit stats between models
CFI	>0.92	0.682	No	0.683	No	**Very High**
RMSEA	<0.08	0.061	Yes	0.061	Yes	**Very High**

⇨ **Model fit indices are <u>NOT</u> better for the CMB model than for the full path model.**

Equal chi-squares

	Full path model	**CMF model**
Chi-square	**Notes for Model (Default model)** **Result (Default model)** Minimum was achieved Chi-square = 1315.026 Degrees of freedom = 627 Probability level = .000	**Notes for Model (Default model)** Result (Default model) Minimum was achieved Chi-square = 1315.026 Degrees of freedom = 628 Probability level = .000

Comparing the parameter coefficients and t-coefficients:

Condition 1 – full path model
Estimates (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Incongruity	<---	RBI	-.427	.124	-3.434	***	
Incongruity	<---	PBI	.174	.125	1.387	.165	
Perceived Value	<---	Incongruity	-.569	.118	-4.815	***	
OBE	<---	PBI	.094	.129	.735	.463	
OBE	<---	Perceived Value	-.523	.115	-4.559	***	
OBE	<---	RBI	-.387	.129	-2.997	.003	
Purchase Intent	<---	OBE	.922	.111	8.292	***	

CMF model
Estimates (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Incongruity	<---	RBI	-.427	.127	-3.365	***	
Incongruity	<---	PBI	.174	.127	1.363	.173	
Perceived Value	<---	Incongruity	-.569	.119	-4.761	***	
OBE	<---	PBI	.094	.134	.706	.480	
OBE	<---	Perceived Value	-.523	.117	-4.478	***	
OBE	<---	RBI	-.387	.134	-2.896	.004	
Purchase Intent	<---	OBE	.922	.112	8.249	***	

full path estimates	CMB	full path t-coeff	CMB
-0.427	-0.427	-3.434	-3.365
0.174	0.174	1.387	1.363
-0.569	-0.569	-4.815	-4.761
0.094	0.094	0.735	0.706
-0.523	-0.523	-4.559	-4.478
-0.387	-0.387	-2.997	-2.896
0.922	0.922	8.292	8.249

Minimal (t-coeff) or
no differences (path est.)

Table 28: Results of the Tests: Is there Discriminant Validity?

Discriminant validity test	Evaluation	Condition 1	Condition 2	Condition 3	Condition 4
Factor method –PCA of all measures (in SPSS)	Strength: Straight-forward (Straub 1989) Limitation: Limited sensitivity and precision (Rousson and Gasser 2004)	Yes	Overall yes (a few items may be suboptimal)	Overall yes (a few items may be suboptimal)	Overall yes (a few items may be suboptimal)
SEM – goodness of fit (in AMOS)	Strength: Straight-forward and easy to use Limitation: Very simplistic	Yes	Yes	Yes	Yes
SEM – nested models (in AMOS)	Due to its rigor the preferred method of the literature (*Schumacker, and Lomax 2004)*	Overall yes; Weak Results for: OBE=> PI	Overall yes; Weak Results for: OBE=> PI	Overall yes; Weak Results for: OBE=> PI	Overall yes; Weak Results for: OBE=> PI

Table 29a: Discriminant validity test via PCA in SPSS

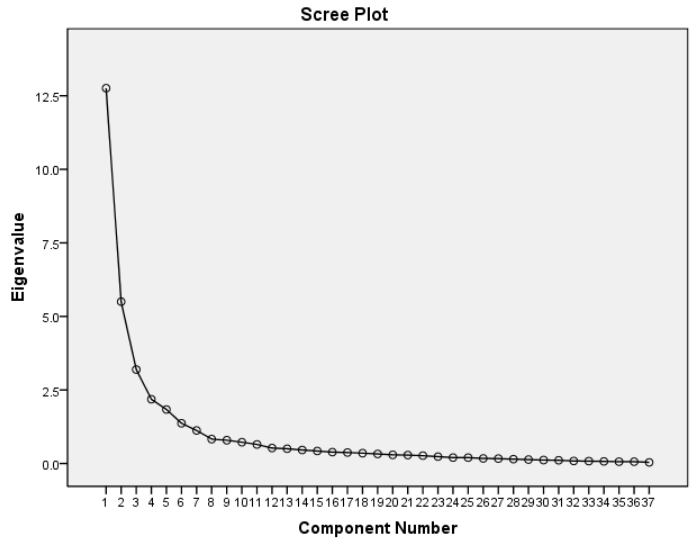
	Benchmarks / remarks	Condition 1	Condition 2	Condition 3	Condition 4
		INcongruity	Congruity	Congruity	INcongruity
Descriptive statistics	Rule of thumb: valid cases > no. of variables * 10 (Field 2009)	77 > 6*10 = 60 => OK	76 > 6*10 = 60 => OK	72 > 6*10 = 60 => OK	74 > 6*10 = 60 => OK
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Has to be > 0.5 (fair) or > 0.6 (acceptable); Indicates that the variables are sufficiently correlated (Hinton et al 2004)	.830 => OK	.849 => OK	.727 => OK	.799 => OK
MSA	Measure of sampling adequacy; interpreted like the KMO statistic; Values have to be > 0.5 (Mooi and Sarstedt 2011)	All MSA are > 0.5 => OK	All MSA are > 0.5 => OK	All MSA are > 0.5 => OK	All MSA are > 0.5 => OK
Total Variance Explained	It is not uncommon that PCA shows more factors than were included in the hypothesized model; reason: PCA "builds" factors based upon the measured responses (Field 2009)	7 (compare: model has 6) factors are extracted explaining 75.563 of the variance => OK	7 (compare: model has 6) factors are extracted explaining 73.330 of the variance => OK	7 (compare: model has 6) factors are extracted explaining 72.705 of the variance => OK	7 (compare: model has 6) factors are extracted explaining 72.977 of the variance => OK
Cattell's scree test	says to drop all further components after the one starting the elbow (Garson 2011); always extract 1 factor less than indicated by the curve "elbow"; can be quite difficult to "eyeball"; only problematic if also eigenvalues (see below) are <1	OK	OK	OK	OK

Eigenvalues	Factor eigenvalues have to be > 1 (Hinton et al 2004, Straub et al 2004)	All items have eigenvalues > 1 => OK	All items have eigenvalues > 1 => OK	All items have eigenvalues > 1 => OK	All items have eigenvalues > 1 => OK
Communalities	should be above 0.5 (Field 2009)	They all are => OK	They all are => OK	They all are => OK	They all are => OK
Rotated Component Matrix (with Varimax rotation)	shows the factor loadings for all constructs and their items;minimum loading commonly recommended: 0.4 (Straub et al 2004)	All the items loaded above 0.40 but RBI item #4: .311	All the items loaded above 0.40 but one RBI item #4 (.324) and PV item #3 (0.288)	All the items loaded above 0.40 but RBI items #14-16 (.304, .222,.212)	All the items loaded above 0.40 but RBI item #4 (.305), #6 (.365), #12 (0.156)
	Matrix should show loading patterns associated with the items each construct; There should not be cross-loadings (= an item shows high loadings across several components)	OK	Cross-loadings of 3 RBI items (#4,8,12) and 2 PV items (#1 and 3)	Cross-loadings of 4 RBI items (#13-16)	OK
	Further aspects to be considered: If variables of 2 constructs load on the same component: This is not a cross-loading and is no problem: "If a group of variables has high loadings on the same component, this indicates that the component at hand mainly pertains to what this group of variables has in common." (Kiers and Mechelen 2001, p. 7)	variables of 2 constructs – PI and OBE - load on the same component = no problem => OK (see remark on left)	variables of 3 constructs – PI, PV and OBE - load on the same component = no problem => OK (see remark on left)	OK	variables of 2 constructs – PI and OBE - load on the same component = no problem => OK (see remark on left)
Discr. validity?		Yes	Overall yes	Overall yes	Overall yes

Table 29b: Disciminant Validity via SPSS Output

Condition 1

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.757	34.478	34.478	12.757	34.478	34.478	5.568	15.050	15.050
2	5.500	14.866	49.343	5.500	14.866	49.343	5.457	14.749	29.798
3	3.194	8.631	57.975	3.194	8.631	57.975	4.719	12.755	42.553
4	2.185	5.905	63.880	2.185	5.905	63.880	4.285	11.581	54.133
5	1.835	4.961	68.840	1.835	4.961	68.840	3.357	9.073	63.206
6	1.366	3.692	72.533	1.366	3.692	72.533	2.488	6.725	69.931
7	1.121	3.030	75.563	1.121	3.030	75.563	2.084	5.632	75.563



Basic visual analysis:
always extract 1 factor less than indicated by the **elbow;**
always difficult to "eyeball"
BUT:
Eigenvalue check is OK
we are interested in keeping only those principal components whose eigenvalues are greater than 1.
All 6 factors in the model have an eigenvalue > 1
= NO PROBLEM

Communalities

	Initial	Extraction
Q5_1_PBI_C1	1.000	.756
Q5_2_PBI_C1	1.000	.669
Q5_4_PBI_C1	1.000	.781
Q5_5_PBI_C1	1.000	.660
Q5_6_PBI_C1	1.000	.784
Q5_7_PBI_C1	1.000	.615
Q6_1_RBI_C1	1.000	.879
Q6_2_RBI_C1	1.000	.819
Q6_3_RBI_C1	1.000	.693
Q6_4_RBI_C1	1.000	.737
Q6_5_RBI_C1	1.000	.602
Q6_6_RBI_C1	1.000	.728
Q6_7_RBI_C1	1.000	.570
Q6_8_RBI_C1	1.000	.711
Q6_9_RBI_C1	1.000	.740
Q6_10_RBI_C1	1.000	.780
Q6_12_RBI_C1	1.000	.756
Q7_1_RBI_C1	1.000	.753
Q7_3_RBI_C1	1.000	.760
Q7_4_RBI_C1	1.000	.629
Q7_5_RBI_C1	1.000	.752
Q9_1_INCONGRUITY_C1_logical_conn	1.000	.850
Q9_2_INCONGRUITY_C1_similar_image	1.000	.788
Q9_3_INCONGRUITY_C1_fit	1.000	.862
Q9_4_INCONGRUITY_C1_similar	1.000	.858
Q9_5_INCONGRUITY_C1_makes_sense	1.000	.814
Q10_1_INCONGRUITY_C1_combi	1.000	.755
Q18_1_PV_C1_value	1.000	.764
Q19_1_PV_C1_good_buy	1.000	.796
Q20_1_PV_C1_bargain	1.000	.744
Q21_1_OBE_C1_makes_sense_buy	1.000	.799
Q21_2_OBE_C1_features	1.000	.813
Q21_3_OBE_C1_as_good_as	1.000	.800
Q21_4_OBE_C1_not_different	1.000	.735
Q22_1_PI_C1_likely	1.000	.774
Q22_2_PI_C1_will	1.000	.821
Q22_3_PI_C1_definitely	1.000	.811

Extraction Method: Principal Component Analysis.

Communalities should be above 0.5 (Field 2009)
They all are which is a **very satisfactory result.**

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
Q5_1_PBI_C1	.202	-.004	.212	.814	-.084	.007	-.019
Q5_2_PBI_C1	.096	.100	.132	.767	-.136	.086	.138
Q5_4_PBI_C1	.103	-.045	.211	.718	.115	-.187	-.401
Q5_5_PBI_C1	.193	-.145	.178	.730	-.057	-.181	.024
Q5_6_PBI_C1	.054	.068	.208	.836	-.136	.008	-.125
Q5_7_PBI_C1	.205	.044	.087	.745	.009	.064	.067
Q6_1_RBI_C1	-.079	.473	-.139	-.047	.335	.110	.710
Q6_2_RBI_C1	-.177	.359	-.104	-.032	.352	.130	.711
Q6_3_RBI_C1	-.109	.412	-.067	.038	.492	.072	.508
Q6_4_RBI_C1	-.126	.311	-.339	-.164	.674	-.037	.166
Q6_5_RBI_C1	-.058	.711	-.089	-.061	.255	.044	.123
Q6_6_RBI_C1	-.039	.592	-.339	-.011	.435	.036	.266
Q6_7_RBI_C1	.109	.651	-.061	.046	.251	.158	.201
Q6_8_RBI_C1	-.236	.180	-.219	-.137	.734	.056	.119
Q6_9_RBI_C1	-.005	.651	-.161	.056	.485	.219	-.055
Q6_10_RBI_C1	-.107	.622	-.245	.041	.507	.045	.248
Q6_12_RBI_C1	-.164	.248	-.302	-.180	.719	.000	.162
Q7_1_RBI_C1	-.139	.803	-.049	-.064	.050	-.105	.262
Q7_3_RBI_C1	-.111	.797	.001	.016	-.199	-.025	.267
Q7_4_RBI_C1	-.157	.754	.007	.025	.049	.172	-.054
Q7_5_RBI_C1	-.266	.742	.080	.043	.185	.138	-.261
Q9_1_INCONGRUITY_C1_logical_conn	.244	-.108	.751	.360	-.276	-.017	-.098
Q9_2_INCONGRUITY_C1_similar_image	.362	-.092	.694	.280	-.293	-.057	-.005
Q9_3_INCONGRUITY_C1_fit	.316	-.035	.801	.247	-.229	-.008	.074
Q9_4_INCONGRUITY_C1_similar	.302	-.075	.776	.303	-.228	-.038	-.115
Q9_5_INCONGRUITY_C1_makes_sense	.123	-.106	.862	.194	-.038	-.062	-.031
Q10_1_INCONGRUITY_C1_combi	.183	-.012	.765	.059	-.109	-.304	-.164
Q18_1_PV_C1_value	-.161	.283	-.145	.021	-.173	.769	.121
Q19_1_PV_C1_good_buy	-.275	.106	-.111	-.009	.075	.831	.007
Q20_1_PV_C1_bargain	-.182	.014	-.052	-.067	.142	.825	.055
Q21_1_OBE_C1_makes_sense_buy	.769	-.140	.040	.168	-.158	-.282	-.231
Q21_2_OBE_C1_features	.835	-.113	.033	.289	-.078	-.101	-.048
Q21_3_OBE_C1_as_good_as	.835	-.019	.190	.229	.011	-.069	-.100
Q21_4_OBE_C1_not_different	.774	-.164	.155	.151	-.126	-.213	-.028
Q22_1_PI_C1_likely	.807	-.080	.299	.003	-.118	-.113	.028
Q22_2_PI_C1_will	.776	-.065	.378	.188	-.145	-.115	-.048
Q22_3_PI_C1_definitely	.849	-.117	.262	.054	-.046	-.042	.038

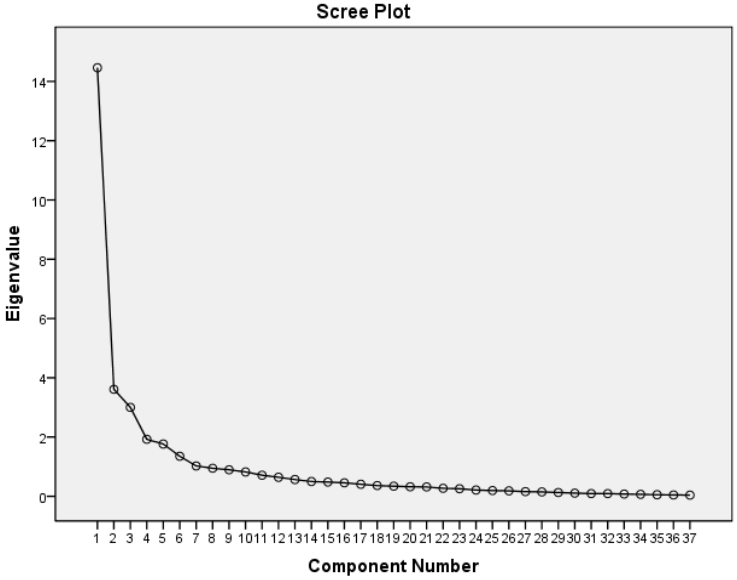
Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 10 iterations.

No problem: If variables of 2 constructs load on the same component: This is not a cross-loading and is no problem: "If a group of variables has high loadings on the same component, this indicates that the component at hand mainly pertains to what this group of variables has in common." (Kiers and Mechelen 2001, p. 7)

Condition 2

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	14.461	39.085	39.085	14.461	39.085	39.085	7.280	19.674	19.674
2	3.608	9.752	48.837	3.608	9.752	48.837	6.041	16.328	36.003
3	3.000	8.108	56.944	3.000	8.108	56.944	4.045	10.932	46.934
4	1.923	5.198	62.142	1.923	5.198	62.142	3.629	9.807	56.742
5	1.763	4.765	66.907	1.763	4.765	66.907	2.785	7.528	64.269
6	1.352	3.654	70.560	1.352	3.654	70.560	1.978	5.345	69.614
7	1.025	2.769	73.330	1.025	2.769	73.330	1.375	3.715	73.330



Basic visual analysis:
always extract 1 factor less than indicated by the **elbow;**
always difficult to "eyeball"
BUT:
Eigenvalue check is OK
we are interested in keeping only those principal components whose eigenvalues are greater than 1.
All 6 factors in the model have an eigenvalue > 1 = NO PROBLEM

Communalities

	Initial	Extraction
Q150_1_PBI_C2	1.000	.616
Q150_2_PBI_C2	1.000	.721
Q150_4_PBI_C2	1.000	.651
Q150_5_PBI_C2	1.000	.607
Q150_6_PBI_C2	1.000	.732
Q150_7_PBI_C2	1.000	.808
Q151_1_RBI_C2	1.000	.730
Q151_2_RBI_C2	1.000	.769
Q151_3_RBI_C2	1.000	.735
Q151_4_RBI_C2	1.000	.760
Q151_5_RBI_C2	1.000	.686
Q151_6_RBI_C2	1.000	.749
Q151_7_RBI_C2	1.000	.472
Q151_8_RBI_C2	1.000	.631
Q151_9_RBI_C2	1.000	.714
Q151_10_RBI_C2	1.000	.725
Q151_12_RBI_C2	1.000	.733
Q152_1_RBI_C2	1.000	.654
Q152_3_RBI_C2	1.000	.671
Q152_4_RBI_C2	1.000	.805
Q152_5_RBI_C2	1.000	.733
Q154_1_INCONGRUITY_C2_logical_con	1.000	.776
Q154_2_INCONGRUITY_C2_similar_image	1.000	.657
Q154_3_INCONGRUITY_C2_fit	1.000	.773
Q154_4_INCONGRUITY_C2_similar	1.000	.797
Q154_5_INCONGRUITY_C2_makes_sense	1.000	.776
Q155_1_INCONGRUITY_C2_combi	1.000	.734
Q158_1_PV_C2_value	1.000	.791
Q159_1_PV_C2_good_buy	1.000	.760
Q160_1_PV_C2_bargain	1.000	.647
Q161_1_OBE_C2_makes_sense	1.000	.853
Q161_2_OBE_C2_features	1.000	.830
Q161_3_OBE_C2_as_good_as	1.000	.802
Q161_4_OBE_C2_not_different	1.000	.601
Q162_1_PI_C2_likely	1.000	.889
Q162_2_PI_C2_will	1.000	.897
Q162_3_PI_C2_definitely	1.000	.846

Extraction Method: Principal Component Analysis.

Communalities should be above 0.5 (Field 2009)
They all are which is a **very satisfactory result**

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
Q150_1_PBI_C2	.214	.092	.102	.668	-.081	-.310	-.044
Q150_2_PBI_C2	-.042	-.019	.192	.816	.012	.053	.116
Q150_4_PBI_C2	.185	-.171	.011	.654	-.067	-.335	-.207
Q150_5_PBI_C2	.081	-.157	.122	.460	.203	-.072	-.551
Q150_6_PBI_C2	.063	-.092	.080	.814	.128	.131	-.131
Q150_7_PBI_C2	-.048	-.020	-.151	.834	-.241	.126	.117
Q151_1_RBI_C2	-.199	.806	-.028	.020	.120	.129	-.090
Q151_2_RBI_C2	-.323	.801	-.054	-.065	.079	.098	.012
Q151_3_RBI_C2	-.176	.809	.046	-.080	.134	.100	.117
Q151_4_RBI_C2	-.601	.505	-.234	-.228	-.057	-.008	.185
Q151_5_RBI_C2	-.383	.684	-.186	.014			
Q151_6_RBI_C2	-.471	.624	-.057	-.077			
Q151_7_RBI_C2	-.068	.483	-.121	.000			
Q151_8_RBI_C2	-.437	.483	-.352	-.202			
Q151_9_RBI_C2	-.258	.665	-.215	.033			
Q151_10_RBI_C2	-.421	.646	-.104	-.170			
Q151_12_RBI_C2	-.587	.324	-.338	-.344			
Q152_1_RBI_C2	-.141	.278	.050	-.086			
Q152_3_RBI_C2	-.191	.500	-.108	-.001			
Q152_4_RBI_C2	-.198	.446	-.056	-.036			
Q152_5_RBI_C2	-.166	.406	-.162	-.083			
Q154_1_INCONGRUITY_C2_logical_con	.310	-.132	.756	.034	-.140	-.120	.237
Q154_2_INCONGRUITY_C2_similar_image	.465	.016	.628	.185	-.081	-.067	.011
Q154_3_INCONGRUITY_C2_fit	.174	.002	.801	.135	-.123	.044	-.256
Q154_4_INCONGRUITY_C2_similar	.207	-.111	.856	.056	-.031	-.071	.003
Q154_5_INCONGRUITY_C2_makes_sense	.090	-.159	.855	-.043	-.010	-.082	.060
Q155_1_INCONGRUITY_C2_combi	.124	-.148	.362	.055	-.037	-.671	.333
Q158_1_PV_C2_value	-.608	.270	-.042	.125	.278	.503	.048
Q159_1_PV_C2_good_buy	-.671	.152	-.125	.136	.438	.241	-.052
Q160_1_PV_C2_bargain	-.288	.008	-.069	-.059	.696	.137	-.227
Q161_1_OBE_C2_makes_sense	.740	-.356	.190	.098	-.043	-.092	.350
Q161_2_OBE_C2_features	.759	-.374	.215	.207	-.140	-.054	.056
Q161_3_OBE_C2_as_good_as	.761	-.349	.196	.165	-.117	.097	.114
Q161_4_OBE_C2_not_different	.526	-.190	.173	.231	-.117	-.042	.435
Q162_1_PI_C2_likely	.839	-.248	.171	-.113	-.135	-.247	-.058
Q162_2_PI_C2_will	.847	-.295	.239	.037	-.114	-.123	-.074
Q162_3_PI_C2_definitely	.813	-.211	.202	.005	-.265	-.153	-.077

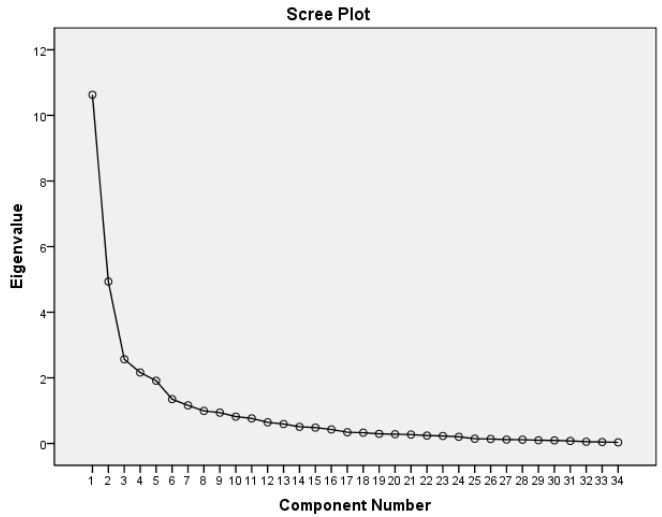
Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser N
a. Rotation converged in 11 iterations.

Several fairly high loadings are suboptimal;
These are cross-loadings = loadings of one items on more than one component

No problem: If variables of several constructs load on the same component: This is not a cross-loading and is no problem: (Kiers and Mechelen 2001, p. 7)

Condition 3

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.629	31.261	31.261	10.629	31.261	31.261	6.237	18.344	18.344
2	4.936	14.519	45.780	4.936	14.519	45.780	4.019	11.821	30.165
3	2.567	7.550	53.330	2.567	7.550	53.330	3.831	11.269	41.434
4	2.162	6.360	59.690	2.162	6.360	59.690	3.638	10.700	52.134
5	1.914	5.628	65.318	1.914	5.628	65.318	3.428	10.082	62.216
6	1.351	3.973	69.291	1.351	3.973	69.291	1.996	5.872	68.088
7	1.161	3.414	72.705	1.161	3.414	72.705	1.570	4.617	72.705



Basic visual analysis:
always extract 1 factor less than indicated by the **elbow;**
always difficult to "eyeball"
BUT:
Eigenvalue check is OK
we are interested in keeping only those principal components whose eigenvalues are greater than 1.
All 6 factors in the model have an eigenvalue > 1 = NO PROBLEM

Communalities

	Initial	Extraction
Q187_1_PBI_C3	1.000	.834
Q187_2_PBI_C3	1.000	.671
Q187_4_PBI_C3	1.000	.661
Q187_5_PBI_C3	1.000	.692
Q187_6_PBI_C3	1.000	.703
Q187_7_PBI_C3	1.000	.713
Q188_1_RBI_C3	1.000	.677
Q188_2_RBI_C3	1.000	.738
Q188_3_RBI_C3	1.000	.679
Q188_4_RBI_C3	1.000	.662
Q188_5_RBI_C3	1.000	.648
Q188_6_RBI_C3	1.000	.730
Q188_7_RBI_C3	1.000	.698
Q188_8_RBI_C3	1.000	.744
Q188_9_RBI_C3	1.000	.783
Q188_10_RBI_C3	1.000	.734
Q188_12_RBI_C3	1.000	.605
Q189_1_RBI_C3	1.000	.663
Q189_3_RBI_C3	1.000	.815
Q189_4_RBI_C3	1.000	.844
Q189_5_RBI_C3	1.000	.741
Q191_1_INCONGRUITY_logical_con_3	1.000	.828
Q191_2_INCONGRUITY_similar_image_C3	1.000	.742
Q191_3_INCONGRUITY_fit_C3	1.000	.823
Q191_4_INCONGRUITY_similar_C3	1.000	.795
Q191_5_INCONGRUITY_makes_sense_C3	1.000	.621
Q191_1_INCONGRUITY_combi_C3	1.000	.464
Q195_1_PV_value_C3	1.000	.718
Q196_1_PV_good_buy_C3	1.000	.702
Q197_1_PV_bargain_C3	1.000	.748
Q198_1_OBE_makes_sense_C3	1.000	.799
Q198_2_OBE_features_C3	1.000	.831
Q198_3_OBE_as_good_as_C3	1.000	.845
Q198_4_OBE_not_different_C3	1.000	.770

Extraction Method: Principal Component Analysis.

Communalities should be above 0.5 (Field 2009)
They all are which is a **very satisfactory result**

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
Q187_1_PBI_C3	-.059	-.226	.295	.050	.592	-.016	.582
Q187_2_PBI_C3	.047	.106	.174	.058	.764	-.199	-.015
Q187_4_PBI_C3	-.132	-.054	.093	.210	.547	.062	.534
Q187_5_PBI_C3	-.053	-.024	.142	.106	.810	-.011	.036
Q187_6_PBI_C3	.032	.011	.013	.417	.703	-.060	.171
Q187_7_PBI_C3	-.028	.036	-.001	-.041	.839	-.064	-.027
Q188_1_RBI_C3	.675	.424	-.081	-.127	.093	-.032	-.098
Q188_2_RBI_C3	.780	.093	-.127	-.134	-.097	-.137	.244
Q188_3_RBI_C3	.720	.251	-.173				27
Q188_4_RBI_C3	.688	.211	-.189				19
Q188_5_RBI_C3	.619	.344	-.106				67
Q188_6_RBI_C3	.459	.617	-.028				09
Q188_7_RBI_C3	.711	.279	.009				28
Q188_8_RBI_C3	.841	.068	-.130				63
Q188_9_RBI_C3	.829	.183	-.092				18
Q188_10_RBI_C3	.734	.327	-.118				65
Q188_12_RBI_C3	.439	.072	-.281				41
Q189_1_RBI_C3	.433	.676	-.107				24
Q189_3_RBI_C3	.304	.829	-.065				37
Q189_4_RBI_C3	.222	.859	-.156				04
Q189_5_RBI_C3	.212	.786	-.062	-.075	.041	.221	-.130
Q191_1_INCONGRUITY_logical_con_3	-.313	-.124	.810	.230	-.026	-.066	-.004
Q191_2_INCONGRUITY_similar_image_C3	-.135	-.088	.790	.233	.120	-.088	-.121
Q191_3_INCONGRUITY_fit_C3	-.181	.055	.840	.127	.180	-.128	.131
Q191_4_INCONGRUITY_similar_C3	-.045	-.175	.816	.157	.143	-.225	.039
Q191_5_INCONGRUITY_makes_sense_C3	-.088	-.133	.688	-.026	.081	.069	.332
Q191_1_INCONGRUITY_combi_C3	-.337	.048	.263	.069	.122	-.153	.486
Q195_1_PV_value_C3	.368	.465	-.171	-.296	.049	.486	-.106
Q196_1_PV_good_buy_C3	.252	.232	-.285	-.366	-.055	.581	-.172
Q197_1_PV_bargain_C3	-.064	.109	-.142	-.232	-.253	.770	.030
Q198_1_OBE_makes_sense_C3	-.133	-.223	.129	.826	.045	-.076	-.160
Q198_2_OBE_features_C3	-.079	-.076	.158	.873	.127	-.054	.117
Q198_3_OBE_as_good_as_C3	.138	.026	.220	.866	.073	-.139	.044
Q198_4_OBE_not_different_C3	-.194	.113	.094	.805	.188	-.127	.108

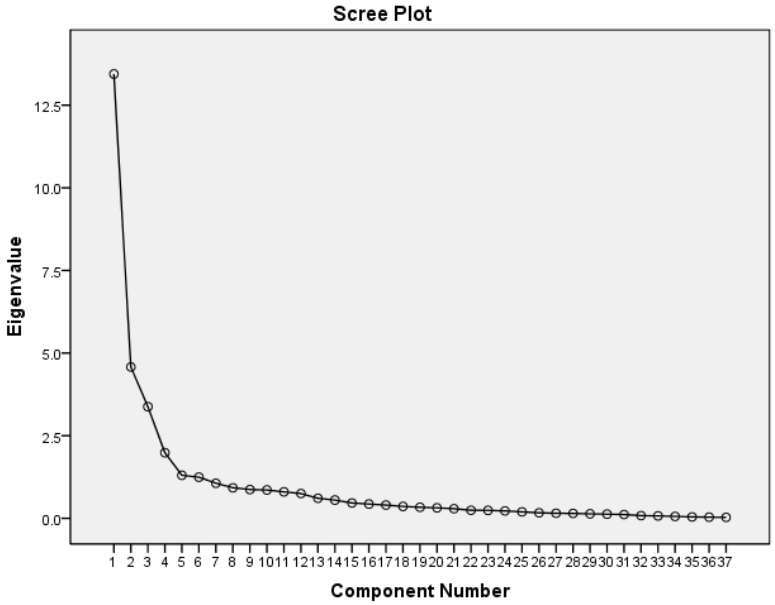
Several fairly high loadings are suboptimal;
These are cross-loadings = loadings of one items on more than one component

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 9 iterations.

Condition 4

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.445	36.337	36.337	13.445	36.337	36.337	6.535	17.662	17.662
2	4.577	12.371	48.708	4.577	12.371	48.708	5.999	16.213	33.875
3	3.377	9.126	57.834	3.377	9.126	57.834	5.944	16.066	49.941
4	1.985	5.364	63.198	1.985	5.364	63.198	3.368	9.102	59.042
5	1.302	3.519	66.717	1.302	3.519	66.717	1.938	5.238	64.281
6	1.244	3.363	70.080	1.244	3.363	70.080	1.615	4.366	68.647
7	1.061	2.867	72.947	1.061	2.867	72.947	1.591	4.301	72.947



Basic visual analysis:
always extract 1 factor less than indicated by the **elbow;**
always difficult to "eyeball"
BUT:
Eigenvalue check is OK
we are interested in keeping only those principal components whose eigenvalues are greater than 1.
All 6 factors in the model have an eigenvalue > 1 = NO PROBLEM

Communalities

	Initial	Extraction
Q224_1_PBI_C4	1.000	.780
Q224_2_PBI_C4	1.000	.715
Q224_4_PBI_C4	1.000	.745
Q224_5_PBI_C4	1.000	.685
Q224_6_PBI_C4	1.000	.798
Q224_7_PBI_C4	1.000	.711
Q225_1_RBI_C4	1.000	.821
Q225_2_RBI_C4	1.000	.802
Q225_3_RBI_C4	1.000	.715
Q225_4_RBI_C4	1.000	.647
Q225_5_RBI_C4	1.000	.708
Q225_6_RBI_C4	1.000	.738
Q225_7_RBI_C4	1.000	.601
Q225_8_RBI_C4	1.000	.718
Q225_9_RBI_C4	1.000	.804
Q225_10_RBI_C4	1.000	.726
Q225_12_RBI_C4	1.000	.578
Q226_1_RBI_C4	1.000	.584
Q226_3_RBI_C4	1.000	.654
Q226_4_RBI_C4	1.000	.584
Q226_5_RBI_C4	1.000	.603
Q228_1_INCONGRUITY_logical_con_C4	1.000	.833
Q228_2_INCONGRUITY_similar_image_C4	1.000	.824
Q228_3_INCONGRUITY_fit_C4	1.000	.880
Q228_4_INCONGRUITY_similar_C4	1.000	.793
Q228_5_INCONGRUITY_makes_sense_C4	1.000	.879
Q229_1_INCONGRUITY_combi_C4	1.000	.613
Q232_1_PV_value_C4	1.000	.754
Q233_1_PV_good_buy_C4	1.000	.715
Q234_1_PV_bargain_C4	1.000	.635
Q235_1_OBE_makes_sense_C4	1.000	.616
Q235_2_OBE_features_C4	1.000	.799
Q235_3_OBE_as_good_as_C4	1.000	.806
Q235_4_OBE_not_different_C4	1.000	.596
Q236_1_PI_likely_C4	1.000	.821
Q236_2_PI_will_C4	1.000	.891
Q236_3_PI_definitely_C4	1.000	.818

Extraction Method: Principal Component Analysis.

Communalities should be above 0.5 (Field 2009)
They all are which is a **very satisfactory result**

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
Q224_1_PBI_C4	.071	-.080	.135	.460	-.071	.024	.731
Q224_2_PBI_C4	-.078	-.110	.171	.484	.445	-.131	.466
Q224_4_PBI_C4	.107	-.069	.078	.712	-.299	-.179	.308
Q224_5_PBI_C4	.090	-.106	.101	.791	-.110	-.126	.030
Q224_6_PBI_C4	-.002	-.011	.045	.871	.132	.133	-.044
Q224_7_PBI_C4	.091	-.036	-.027	.821	.041	.144	.067
Q225_1_RBI_C4	-.093	.527	-.213	.024	.115	.690	.000
Q225_2_RBI_C4	.036	.546	-.382	.043	.037	.594	-.022
Q225_3_RBI_C4	-.080	.731	-.183	.026	.084	.348	-.110
Q225_4_RBI_C4	-.058	.305	-.623	-.259	.056	.038	.300
Q225_5_RBI_C4	-.089	.492	-.621	-.114	.104	.092	.202
Q225_6_RBI_C4	-.024	.365	-.659	-.115	.081	.254	.294
Q225_7_RBI_C4	.038	.748	-.010	-.072	-.161	.059	.075
Q225_8_RBI_C4	-.238	.758	-.177	.076	.072	.204	.061
Q225_9_RBI_C4	.037	.840	-.035	-.026	.011	.131	-.279
Q225_10_RBI_C4	-.152	.772	-.156	-.005	.278	.074	-.014
Q225_12_RBI_C4	-.312	.156	-.601	.014	-.242	.147	.122
Q226_1_RBI_C4	-.089	.699	-.225	-.107	.128	-.054	.081
Q226_3_RBI_C4	-.110	.703	-.128	-.270	.128	-.202	.022
Q226_4_RBI_C4	-.349	.508	-.425	.003	-.058	.119	-.075
Q226_5_RBI_C4	-.154	.523	-.515	-.080	-.004	.008	-.185
Q228_1_INCONGRUITY_logical_con_C4	.807	-.042	.367	.013	-.096	-.184	-.039
Q228_2_INCONGRUITY_similar_image_C4	.856	-.011	.260	.104	-.016	-.056	-.091
Q228_3_INCONGRUITY_fit_C4	.892	-.115	.163	.176	-.068	.090	.043
Q228_4_INCONGRUITY_similar_C4	.846	-.016	.222	.063	-.145	.035	.025
Q228_5_INCONGRUITY_makes_sense_C4	.898	-.193	.082	.111	-.005	.059	.111
Q229_1_INCONGRUITY_combi_C4	.741	-.055	.123	-.113	-.163	-.077	-.018
Q232_1_PV_value_C4	-.435	.291	-.310	.031	.538	.305	.011
Q233_1_PV_good_buy_C4	-.452	.203	-.288	-.093	.601	.115	-.062
Q234_1_PV_bargain_C4	-.465	.276	-.242	-.192	.487	.076	.058
Q235_1_OBE_makes_sense_C4	.190	-.122	.690	.151	-.192	-.137	.104
Q235_2_OBE_features_C4	.482	-.124	.660	.047	-.079	-.237	.226
Q235_3_OBE_as_good_as_C4	.434	-.039	.695	-.110	-.040	-.124	.324
Q235_4_OBE_not_different_C4	.391	-.236	.607	-.003	-.070	-.012	.116
Q236_1_PI_likely_C4	.439	-.076	.618	-.001	-.369	.199	.254
Q236_2_PI_will_C4	.414	-.044	.760	.001	-.284	.076	.232
Q236_3_PI_definitely_C4	.534	-.239	.505	.041	-.393	.189	.167

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

No problem:
If variables of several constructs load on the same component: This is not a cross-loading and is no problem:

Table 30: Discriminant Validity Test via Goodness-of-Fit Measures

			Condition 1		Condition 2		Condition 3		Condition 4	
Essential indices	Benchmark values		Results	Model fit	Results	Model fit	Results	Model fit	Results	Model fit
Chi-square	χ^2 / df ≤ 2 or 3 **(x)**	Schreiber et al. 2006	987.800; χ^2 / df=1.61	yes	1079.598; χ^2 / df=1.87	Yes	1212.034; χ^2 / df=1.97	Yes	1129.203; χ^2 / df=1.84	Yes
	< 2 very good < 3 good < 5 sometimes permissable	Ong and Van Dulmen 2006; Gaskin 2012		Very good		Very good		Very good		Very good
CFI	≥ 0.95 great	Schreiber et al. 2006	0.831	No	0.75	No	0.702	No	0.762	No
	> 0.90 traditional	Hu and Bentler 1999		No		No		No		No
	≥ 0.95	Hair 2006		No		No		No		No
	> 0.8 can be permissible	Gaskin 2012		Permissible		(close to) Permissible		No		(close to) Permissible
RMSEA	0 perfect fit ≤0.05 good fit ≤0.08 reasonable fit ≥0.10 poor fit	Bollen and Long 1993	0.045	Good fit	0.054	(close to) Good fit	0.057	(close to) Good fit	0.053	close to) Good fit
	< 0.08	Hair 2006		Yes		Yes		Yes		Yes
	<0.06 to 0.8	Schreiber et al. 2006		Yes		Yes		Yes		Yes
	≤ 0.06	Hu and Bentler 1999		Yes		Yes		Yes		Yes

(X) The chi-square statistic must be interpreted cautiously because it is sensitive to sample size. Therefore the ratio of the model chi-square to degrees of freedom was used also as another fit index. Hoetler (1983) suggested that a ratio of less than 2.0 indicates a fairly good fit for the hypothesized model.

Table 31: SEM – Nested Models and Discriminant Validity

Condition 1					
interfactor correlations		chi-square of base model	Chi-squares of constrained models; to be subtracted from chi-square of base model	chi-square difference	is the difference > 3.5?; Yes = discriminant validity (+) no = there is no discriminiant validity
PBI	RBI	987.8	1043.1	55.3	yes
	Incongruity	987.8	994.9	7.1	yes
	Perceived value	987.8	1034.0	46.2	yes
	OBE	987.8	1000.7	12.9	yes
	Purchase intent	987.8	1005.0	17.2	yes
RBI	PBI	987.8	1043.1	55.3	yes
	Incongruity	987.8	1067.0	79.2	yes
	Perceived value	987.8	1017.3	29.5	yes
	OBE	987.8	1058.4	70.6	yes
	Purchase intent	987.8	1058.9	71.1	yes
Incongruity	PBI	987.8	994.9	7.1	yes
	RBI	987.8	1067.0	79.2	yes
	Perceived value	987.8	1040.9	53.1	yes
	OBE	987.8	995.5	7.7	yes
	Purchase intent	987.8	992.7	4.9	yes
Perceived value	PBI	987.8	1034.0	46.2	yes
	RBI	987.8	1017.3	29.5	yes
	Incongruity	987.8	1040.9	53.1	yes
	OBE	987.8	1061.4	73.6	yes
	Purchase intent	987.8	1058.8	71	yes
OBE	PBI	987.8	1000.7	12.9	yes
	RBI	987.8	1058.4	70.6	yes
	Incongruity	987.8	995.5	7.7	yes
	Perceived value	987.8	1061.4	73.6	yes
	Purchase intent	987.8	989.6	1.8	no

Different in other conditions

Condition 1					
interfactor correlations		chi-square of base model	Chi-squares of constrained models; to be subtracted from chi-square of base model	chi-square difference	is the difference > 3.5?; Yes = discriminant validity (+) no = there is no discriminiant validity
Purchase intent	PBI	987.8	1005.0	17.2	yes
	RBI	987.8	1058.9	71.1	yes
	Incongruity	987.8	992.7	4.9	yes
	Perceived value	987.8	1058.8	71	yes
	OBE	987.8	989.6	1.8	no

Different in condition 3 & 4; But like condition 2

Condition 2					
interfactor correlations		chi-square of base model	Chi-squares of constrained models; to be subtracted from chi-square of base model	chi-square difference	is the difference > 3.5?; Yes = discriminant validity (+) no = there is no discrimiant validity
PBI	RBI	1079.194	1114.7	35.5	yes
	Incongruity	1079. 194	1137.0	57.806	yes
	Perceived value	1079.194	1134.0	54.8	yes
	OBE	1079. 194	1111.1	31.906	yes
	Purchase intent	1079.194	1115.5	36.306	yes
RBI	PBI	1079. 194	1114.7	-964.5	yes
	Incongruity	1079.194	1114.6	35.406	yes
	Perceived value	1079. 194	1159.9	80.706	yes
	OBE	1079.194	1081.7	2.506	no
	Purchase intent	1079. 194	1078.4	-0.794	no
Incongruity	PBI	1079.194	1137.0	57.806	yes
	RBI	1079. 194	1114.6	35.406	yes
	Perceived value	1079.194	1175.3	96.106	yes
	OBE	1079. 194	1110.8	31.606	yes
	Purchase intent	1079.194	1106.9	27.706	yes
Perceived value	PBI	1079. 194	1134.0	54.806	yes
	RBI	1079.194	1159.9	80.706	yes
	Incongruity	1079. 194	1175.3	96.106	yes
	OBE	1079.194	1205.9	126.706	yes
	Purchase intent	1079. 194	1219.2	140.006	yes
OBE	PBI	1079.194	1111.1	31.906	yes
	RBI	1079. 194	1081.7	2.506	no
	Incongruity	1079.194	1110.8	31.606	yes
	Perceived value	1079. 194	1205.9	126.706	yes
	Purchase intent	1079.194	1080.7	1.506	no

These issues only occur in this condition

See condition 1

Condition 2					
interfactor correlations		chi-square of base model	Chi-squares of constrained models; to be subtracted from chi-square of base model	chi-square difference	is the difference > 3.5?; Yes = discriminant validity (+) no = there is no discrimiant validity
Purchase intent	PBI	1079.598	1115.5	36.306	yes
	RBI	1079.598	1078.4	-0.794	no
	Incongruity	1079.598	1106.9	27.706	yes
	Perceived value	1079.598	1219.2	140.006	yes
	OBE	1079.598	1080.7	1.506	no

See condition 1

Condition 3					
interfactor correlations		Chi-square of base model	Chi-squares of constrained models; to be subtracted from chi-square of base model	Chi-square difference	**is the difference > 3.5?;** Yes = discriminant validity (+) no = there is no discrimiant validity
PBI	RBI	1212	1277.2	65.2	yes
	Incongruity	1212	1236.1	24.1	yes
	Perceived value	1212	1272.2	60.2	yes
	OBE	1212	1235.1	23.1	yes
	Purchase intent	1212	1235.9	23.9	yes
RBI	PBI	1212	1277.2	65.2	yes
	Incongruity	1212	1291	79	yes
	Perceived value	1212	1231.6	19.6	yes
	OBE	1212	1267.8	55.8	yes
	Purchase intent	1212	1279	67	yes
Incongruity	PBI	1212	1236.1	24.1	yes
	RBI	1212	1291	79	yes
	Perceived value	1212	1289.1	77.1	yes
	OBE	1212	1225.7	13.7	yes
	Purchase intent	1212	1222.7	10.7	yes
Perceived value	PBI	1212	1272.2	60.2	yes
	RBI	1212	1231.6	19.6	yes
	Incongruity	1212	1289.1	77.1	yes
	OBE	1212	1281.7	69.7	yes
	Purchase intent	1212	1293.7	81.7	yes
OBE	PBI	1212	1235.1	23.1	yes
	RBI	1212	1267.8	55.8	yes
	Incongruity	1212	1225.7	13.7	yes
	Perceived value	1212	1281.7	69.7	yes
	Purchase intent	1212	1217.8	5.8	yes

Condition 3					
interfactor correlations		chi-square of base model	Chi-squares of constrained models; to be subtracted from chi-square of base model	chi-square difference	is the difference > 3.5?; Yes = discriminant validity (+) no = there is no discrimiant validity
Purchase intent	PBI	1212	1235.9	23.9	yes
	RBI	1212	1279	67	yes
	Incongruity	1212	1222.7	10.7	yes
	Perceived value	1212	1293.7	81.7	yes
	OBE	1212	1217.8	5.8	yes

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Condition 4					
interfactor correlations		chi-square of base model	Chi-squares of constrained models; to be subtracted from chi-square of base model	Chi-square difference	Is the difference > 3.5?; Yes = discriminant validity (+) no = there is no discrimiant validity
PBI	RBI	987.800	1301.8	314	yes
	Incongruity	987.800	1159.7	171.9	yes
	Perceived value	987.800	1186.8	199	yes
	OBE	987.800	1162.6	174.8	yes
	Purchase intent	987.800	1150.9	163.1	yes
RBI	PBI	987.800	1301.8	314	yes
	Incongruity	987.800	1211.3	223.5	yes
	Perceived value	987.800	1158.1	170.3	yes
	OBE	987.800	1281	293.2	yes
	Purchase intent	987.800	1214.6	226.8	yes
Incongruity	PBI	987.800	1159.7	171.9	yes
	RBI	987.800	1211.3	223.5	yes
	Perceived value	987.800	1235.1	247.3	yes
	OBE	987.800	1139.4	151.6	yes
	Purchase intent	987.800	1129.8	142	yes
Perceived value	PBI	987.800	1186.8	199	yes
	RBI	987.800	1158.1	170.3	yes
	Incongruity	987.800	1235.1	247.3	yes
	OBE	987.800	1237.6	249.8	yes
	Purchase intent	987.800	1233.6	245.8	yes
OBE	PBI	987.800	1162.6	174.8	yes
	RBI	987.800	1281	293.2	yes
	Incongruity	987.800	1139.4	151.6	yes
	Perceived value	987.800	1237.6	249.8	yes
	Purchase intent	987.800	1127.9	140.1	yes

No problem here

Condition 4: Discriminant validity					
interfactor correlations		chi-square of base model	Chi-squares of constrained models; to be subtracted from chi-square of base model	chi-square difference	is the difference > 3.5?; Yes = discriminant validity (+) no = there is no discrimiant validity
Purchase intent	PBI	987.800	1150.9	163.1	yes
	RBI	987.800	1214.6	226.8	yes
	Incongruity	987.800	1129.8	142	yes
	Perceived value	987.800	1233.6	245.8	yes
	OBE	987.800	1127.9	140.1	yes

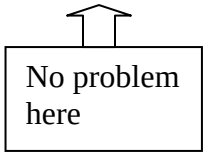

Table 33: Convergent Validity

Condition 1										
Constructs **PBI**	**Cronbach's alpha Benchmark** **≥0.9** excellent **≥0.8** good **≥0.7** adequate	Nangle, Hansen and Erdley 2009, p. 199 Garson 2011 Hair 2006, p. 137	**Construct reliability Benchmark** **≥0.9** excellent **≥0.7** good **≥0.6** acceptable	Peter 1979 ("desired value") Fornell and larcker 1981 "acceptable" Hair 2006, p. 778 "may be acceptable"	**AVE Benchmark** **≥0.5** threshold Hair 2006, p. 777		**Coeff. Benchmark** **≥0.7** excellent **≥0.6 g**ood **≥0.5** accep-table	Hair 2006, p. 777 "ideally" Hair 2006, p. 777	**t-value (CR)** **> 1.96 minimum (Hair 2006)** ***Requirement met?***	
Q5_1	0.89	excellent (rounded)	0.99	excellent	0.9	requirement met	0.847	excellent	n/a	n/a[16]
Q5_2							0.722	excellent	7.147	yes
Q5_4							0.726	excellent	7.206	yes
Q5_5							0.753	excellent	7.596	yes
Q5_6							0.841	excellent	8.934	yes
Q5_7							0.682	excellent (rounded)	6.614	yes
RBI	0.93	excellent	0.98	excellent	0.5	requirement met				
Q6_1							0.799	excellent	n/a	n/a[1]
Q6_2							0.738	excellent	7.164	yes
Q6_3							0.751	excellent	7.328	yes
Q6_4							0.699	excellent (rounded)	6.687	yes
Q6_5							0.707	excellent	6.784	yes
Q6_6							0.831	excellent	8.402	yes
Q6_7							0.648	good	6.082	yes
Q6_8							0.612	good	5.655	yes
Q6_9							0.742	excellent	7.207	yes
Q6_10							0.878	excellent	9.083	yes
Q6_12							0.689	excellent (rounded)	6.566	yes
Q7_1							0.69	excellent	6.545	yes
Q7_3							0.552	acceptable	5.011	yes
Q7_4							0.551	acceptable	5.004	yes
Q7_5							0.55	acceptable	5.017	yes

[16] [constrained to 1 = no t-value]

condition 1 (continued)

Constructs	Cronbach's alpha		Construct reliability		AVE		Coeff.		t-value (CR) *requirement met?*	
Incongruity	0.95	excellent	0.99	excellent	0.5	requirement met				
Q9_1							0.865	**excellent**	n/a	n/a[17]
Q9_2							0.899	**excellent**	11.178	yes
Q9_3							0.928	**excellent**	12.277	yes
Q9_4							0.827	**excellent**	13.285	yes
Q9_5							0.73	**excellent**	10.15	yes
Q10							0.898	**excellent**	8.083	yes
Perceived Value	0.83	excellent	0.96	excellent	0.5	requirement met				
Q18							0.717	**excellent**	6.189	yes
Q19							0.781	**excellent**	n/a	n/a[2]
Q20							0.881	**excellent**	6.955	yes
OBE	0.91	excellent	0.98	excellent	0.5	requirement met				
Q21_1							0.833	**excellent**	n/a	n/a[2]
Q21_2							0.869	**excellent**	9.646	yes
Q21_3							0.848	**excellent**	9.257	yes
Q21_4							0.825	**excellent**	8.819	yes
Purchase Intent	0.90	excellent	0.98	excellent	0.5	requirement met				
Q22_1							0.851	**excellent**	n/a	n/a[2]
Q22_2							0.888	**excellent**	10.513	yes
Q22_3							0.865	**excellent**	10.013	yes

[17] [constrained to 1 = no t-value]

Condition 2

Constructs	Cronbach's alpha		Construct reliability		AVE		Coeff.		t-value (CR) *requirement met?*	
PBI	0.89	excellent (rounded)	0.99	excellent	0.9	requirement met			*requirement met?*	
Q150_1_PBI_C2							0.62	**good**	n/a	n/a
Q150_2_PBI_C2							0.75	**acceptable**	4.75	yes
Q150_4_PBI_C2							0.62	**good**	5.47	yes
Q150_5_PBI_C2							0.48	**acceptable**	5.81	yes
Q150_6_PBI_C2							0.80	**excellent**	4.23	yes
Q150_7_PBI_C2							0.73	**excellent**	4.92	yes
RBI	0.93	excellent	0.97	excellent	0.5	requirement met				
Q152_1_RBI_C2							0.79	**excellent**	6.11	yes
Q151_2_RBI_C2							0.79	**excellent**	5.52	yes
Q151_3_RBI_C2							0.71	**excellent**	n/a	n/a
Q151_4_RBI_C2							0.75	**good(rounded)**	5.66	yes
Q151_5_RBI_C2							0.77	**excellent**	5.57	yes
Q151_6_RBI_C2							0.82	**excellent**	5.40	yes
Q151_7_RBI_C2							0.54	**acceptable**	5.64	yes
Q151_8_RBI_C2							0.76	**excelent**	5.72	yes
Q151_9_RBI_C2							0.72	**excellent**	5.55	yes
Q151_10_RBI_C2							0.78	**excellent**	5.85	yes
Q151_12_RBI_C2							0.65	**borderline**	6.02	yes

Condition 2 (continued)

Constructs	Cronbach's alpha		Construct reliability		AVE		Coeff.		t-value (CR) *requirement met?*	
Q152_1_RBI_C2							0.46	**acceptable (rounded)**	5.82	yes
Q152_3_RBI_C2							0.67	**good**	5.89	yes
Q152_4_RBI_C2							0.67	**excellent (rounded)**	5.78	yes
Q152_5_RBI_C2							0.62	**good**	5.97	yes
Incongruity	0.95	excellent	0.98	excelllent	0.5	requirement met				
Q154_1_INCONGRUITY_C2_logical_con							0.80	**excellent**	5.33	yes
Q154_2_INCONGRUITY_C2_similar_image							0.71	**excellent**	4.96	yes
Q154_3_INCONGRUITY_C2_fit							0.78	**excellent**	3.60	yes
Q154_4_INCONGRUITY_C2_similar							0.88	**excellent**	4.55	yes
Q154_5_INCONGRUITY_C2_makes_sense							0.82	**excellent**	n/a	n/a
Q155_1_INCONGRUITY_C2_combi							0.39	**excellent**	4.73	yes

Condition 2 (continued)

Constructs	Cronbach's alpha		Construct reliability		AVE		Coeff.		t-value (CR) *requirement met?*	
Perceived Value	0.83	excellent	0.96	excellent	0.5	requirement met				***requirement met?***
Q232_1_PV_value_C4							0.83	**excellent**	n/a	n/a
Q233_1_PV_good_buy_C4							0.85	**excellent**	4.11	yes
Q234_1_PV_bargain_C4							0.52	**acceptable**	5.83	yes
OBE	0.91	excellent	0.98	excellent	0.5	requirement met				***requirement met?***
Q235_1_OBE_makes_sense_C4							0.88	**excellent**	n/a	n/a
Q235_2_OBE_features_C4							0.93	**excellent**	3.81	yes
Q235_3_OBE_as_good_as_C4							0.86	**excellent**	5.10	yes
Q235_4_OBE_not_different_C4							0.66	**good (rounded)**	5.85	yes
Purchase Intent	0.90	excellent	0.99	excellent	0.5	requirement met				
Q236_1_PI_likely_C4							0.96	**excellent**	n/a	n/a
Q236_2_PI_will_C4							0.93	**excellent**	4.67	yes
Q236_3_PI_definitely_C4							0.93	**excellent**	4.65	yes

Condition 3

Constructs	Cronbach's alpha		Construct reliability		AVE		Coeff.		t-value (CR) *requirement met?*	
PBI	0.798	excellent (rounded)	0.99	excellent	0.5	requirement met				***requirement met?***
Q187_1_PBI_C3							0.745	excellent	n/a	n/a
Q187_2_PBI_C3							0.673	excellent (rounded)	7.147	yes
Q187_4_PBI_C3							0.671	excellent (rounded)	7.206	yes
Q187_5_PBI_C3							0.761	excellent	7.596	yes
Q187_6_PBI_C3							0.745	excellent	8.934	yes
Q187_7_PBI_C3							0.672	excellent (rounded)	6.614	yes
RBI	0.931	excellent	0.97	excellent	0.5	requirement met				***requirement met?***
Q188_1_RBI_C3							0.707	excellent	7.164	yes
Q188_2_RBI_C3							0.762	excellent	n/a	n/a
Q188_3_RBI_C3							0.697	excellent (rounded)	7.328	yes
Q188_4_RBI_C3							0.725	excellent	6.687	yes
Q188_5_RBI_C3							0.742	excellent	6.784	yes
Q188_6_RBI_C3							0.75	excellent	8.402	yes
Q188_7_RBI_C3							0.765	good	6.082	yes
Q188_8_RBI_C3							0.744	good	5.655	yes
Q188_9_RBI_C3							0.784	excellent	7.207	yes
Q188_10_RBI_C3							0.838	excellent	9.083	yes
Q188_12_RBI_C3							0.5	acceptable	6.566	yes
Q189_1_RBI_C3							0.694	excellent (rounded)	6.545	yes

Condition 3 (continued)

Constructs	Cronbach's alpha		Construct reliability		AVE		Coeff.		t-value (CR) *requirement met?*	
Q189_3_RBI_C3							0.643	**good**	5.011	yes
Q189_4_RBI_C3							0.663	**excellent (rounded)**	5.004	yes
Q189_5_RBI_C3							0.622	**good**	5.017	yes
Incongruity	0.87	excellent (rounded)	0.97	excellent	0.5	requirement met				***requirement met?***
Q191_2_INCONGRUITY_similar_image_C3							0.872	**excellent**	n/a	n/a
Q191_3_INCONGRUITY_fit_C3							0.811	**excellent**	11.178	yes
Q191_4_INCONGRUITY_similar_C3							0.852	**excellent**	12.277	yes
Q191_5_INCONGRUITY_makes_sense_C3							0.833	**excellent**	13.285	yes
Q191_1_INCONGRUITY_combi_C3							0.6	**excellent**	10.15	yes
Q191_1_INCONGRUITY_logical_con_3							0.4	**borderline**	8.083	yes
Perceived Value	0.784	good	0.96	excellent	0.5	requirement met				***requirement met?***
Q195_1_PV_value_C3							0.826	**excellent**	6.189	yes
Q196_1_PV_good_buy_C3							0.884	**excellent**	n/a	n/a
Q197_1_PV_bargain_C3							0.618	**good**	6.955	yes

Condition 3 (continued)

Constructs	Cronbach's alpha		Construct reliability		AVE		Coeff.		t-value (CR) *requirement met?*	
OBE	0.902	excellent	0.97	excellent	0.5	borderline				*requirement met?*
Q198_1_OBE_makes_sense_C3							0.812	**excellent**	8.819	yes
Q198_2_OBE_features_C3							0.894	**excellent**	n/a	n/a
Q198_3_OBE_as_good_as_C3							0.862	**excellent**	9.646	yes
Q198_4_OBE_not_different_C3							0.809	**excellent**	9.257	yes
Purchase Intent	0.953	excellent	0.97	excellent	0.5	requirement met				*requirement met?*
Q199_1_PI_likely_C3							0.904	**excellent**	n/a	n/a
Q199_2_PI_will_C3							0.932	**excellent**	10.513	yes
Q199_3_PI_definitely_C3							0.654	**excellent (rounded)**	10.013	yes

Condition 4

Constructs	Cronbach's alpha		Construct reliability		AVE		Coeff.		t-value (CR) *requirement met?*	
PBI	0.89	excellent (rounded)	0.99	excellent	0.0	requirement met				***requirement met?***
Q224_1_PBI_C4							0.60	good	n/a	n/a
Q224_2_PBI_C4							0.52	acceptable	3.72	yes
Q224_4_PBI_C4							0.75	excellent	4.83	yes
Q224_5_PBI_C4							0.76	excellent	4.88	yes
Q224_6_PBI_C4							0.76	excellent	4.87	yes
Q224_7_PBI_C4							0.75	excellent	4.85	yes
RBI	0.93	excellent	0.96	excellent	0.5	requirement met				***requirement met?***
Q225_1_RBI_C4							0.73	excellent	n/a	n/a
Q225_2_RBI_C4							0.76	excellent	6.56	yes
Q225_3_RBI_C4							0.79	excellent	6.77	yes
Q225_4_RBI_C4							0.56	good(rounded)	4.76	yes
Q225_5_RBI_C4							0.73	excellent	6.23	yes
Q225_6_RBI_C4							0.67	excellent	5.72	yes
Q225_7_RBI_C4							0.57	good (rounded)	4.84	yes
Q225_8_RBI_C4							0.78	excelent	6.72	yes
Q225_9_RBI_C4							0.71	excellent	6.08	yes
Q225_10_RBI_C4							0.76	excellent	6.56	yes

Condition 4 (continued)

Constructs	Cronbach's alpha		Construct reliability		AVE			Coeff.	t-value (CR) *requirement met?*	
Q225_12_RBI_C4							0.44	borderline	3.69	yes
Q226_1_RBI_C4							0.67	excellent (rounded)	5.69	yes
Q226_3_RBI_C4							0.61	good	5.18	yes
Q226_4_RBI_C4							0.68	excellent (rounded)	5.77	yes
Q226_5_RBI_C4							0.69	excellent (rounded)	5.86	yes
Incongruity	0.95	excellent	0.99	excelllent	0.5	requirement met				***requirement met?***
Q228_5_INCONGRUITY_makes_sense_C4							0.88	**excellent**	7.20	yes
Q228_4_INCONGRUITY_similar_C4							0.89	**excellent**	7.32	yes
Q228_3_INCONGRUITY_fit_C4							0.92	**excellent**	7.50	yes
Q228_2_INCONGRUITY_similar_image_C4							0.87	**excellent**	7.17	yes
Q228_1_INCONGRUITY_logical_con_C4							0.87	**excellent**	7.18	yes
Q229_1_INCONGRUITY_combi_C4							0.70	**excellent**	n/a	n/a

Condition 4 (continued)

Constructs	Cronbach's alpha		Construct reliability		AVE		Coeff.		t-value (CR) *requirement met?*	
Perceived Value	0.83	excellent	0.97	excellent	0.5	requirement met				
Q232_1_PV_value_C4							0.84	**excellent**	n/a	n/a
Q233_1_PV_good_buy_C4							0.84	**excellent**	8.30	yes
Q234_1_PV_bargain_C4							0.77	**excellent**	7.38	yes
OBE	0.91	excellent	0.98	excellent	0.5	requirement met				
Q235_1_OBE_makes_sense_C4							0.70	**excellent**		n/a
Q235_2_OBE_features_C4							0.89	**excellent**	7.13	yes
Q235_3_OBE_as_good_as_C4							0.89	**excellent**	7.18	yes
Q235_4_OBE_not_different_C4							0.76	**excellent**	6.20	yes
Purchase Intent	0.90	excellent	0.98	excellent	0.5	requirement met				
Q236_1_PI_likely_C4							0.89	**excellent**		n/a
Q236_2_PI_will_C4							0.94	**excellent**	12.76	yes
Q236_3_PI_definitely_C4							0.87	**excellent**	10.75	yes

Output Mediated Moderation

- Macro: INDIRECT by Hayes (2011)
- Mediated moderation is tested in the same way mediation is, bootstrapping.
- If bootstrapping shows significant values (no zero between upper and lower bound) = moderated mediation (+); if the values are insignificant = covariate is NOT a moderator of the mediation. **Results show that mediated moderation exists between (in)congruity and PV as well as OBE in C2 and C4.**

Excerpts of the output

Condition 2:

```
Dependent, Independent, and Proposed Mediator Variables:
DV =   C2_Purch
IV =   C2_Retai
MEDS = C2_Perce
       C2_OBE

Statistical Controls:
CONTROL= C2_Incon

BOOTSTRAP RESULTS FOR INDIRECT EFFECTS
Bias Corrected and Accelerated Confidence Intervals
             Lower     Upper
TOTAL      -1.1654    -.4765
C2_Perce    -.5912    -.1692
C2_OBE      -.7853    -.1679
```

Condition 4:

```
Dependent, Independent, and Proposed Mediator Variables:
DV =   C4_Purch
IV =   C4_RBI
MEDS = C4_Perce
       C4_OBE

Statistical Controls:
CONTROL= C4_Incon

BOOTSTRAP RESULTS FOR INDIRECT EFFECTS
Bias Corrected and Accelerated Confidence Intervals
             Lower     Upper
TOTAL      -1.0045    -.2824
C4_Perce    -.4921    -.0383
C4_OBE      -.7535    -.1526
```

VITA

Stefan Linnhoff
2011

Degrees earned, institution and year:

M.B.A.	**Berry College** / Rome, GA	2005
Assessor Iuris	Second State Exam in Law (Germany; equivalent of Bar exam)	2000
First State Exam in Law	**University of Münster, Germany** (**equivalent of J.D.**)	1997

Scholarships and Stipends:

Research Stipend	College of Business, MSU	Spring 2011
Summer Tuition Scholarship for Thesis and Dissertation	University of Mississippi	Summer 2010
Graduate Assistantship	University of Mississippi	2006 - 2010
Graduate Assistantship	Berry College, Rome, GA	2003 - 2005
Georgia Rotary Student Program	Berry College, Rome, GA	1990 - 1991

Honors:
Doctoral Fellow, 2009 AMA-Sheth Foundation Doctoral Consortium, Georgia State University

Work experience (in the US):

Assistant Professor	Since fall 2010
Research and Teaching Assistant	Fall 2006-Summer 2010
Graduate and Research Assistant	Summer 2003-Summer 2006