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# **Brand Personality Complementarity: Its Effects on Evaluations of Extremely Incongruent Extensions**

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Doctor of Philosophy

ASTON UNIVERSITY

AUGUST 2015

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# DEDICATION

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This PhD thesis is dedicated to:

My soulmate – Dr. Azni Taha

My beloved children – Adrieana and Zafier

My parents – Mohtar Ab Latiff and Maimun Mat Zin

My parents-in-law – Taha Ismail and Puteh Saadiah Saidun

ASTON UNIVERSITY

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Prior research on brand extension has provided little evidence on enhancing the evaluation of extremely incongruent extension. Adopting the theoretical framework of schema congruity theory, the author posits that evaluations can be improved if brand personality impressions of both parent brand and extension are complementary. The author coins this as the brand personality complementarity (BPC) principle. Prior to examining BPC effect, cultural-specific brand personality scale was developed to identify universal and indigenous brand personality dimensions. The reason is BPC requires a reliable and valid brand personality scale in order to detect its effect. Following successful identification of the cultural-specific brand personality scale, a total of three experimental studies were done to investigate BPC effect. Specifically, one experimental study identified complementary levels amongst brand personality dimensions, whereas two experimental studies investigated the moderating effect of BPC. Findings from the scale development study reveal that Malaysian brand personality (MBP) scale is a second higher-order factor reflected by first higher-order factors of sophistication, youth, competence, and sincerity. Most importantly, findings from the experimental studies revealed; 1) different BPC levels amongst all possible pairs of MBP dimensions, 2) significant interaction effect of brand extension congruity  $\times$  BPC, and 3) significant mediation effect of complementarity resolution. Specific findings indicated that when

text-based stimuli were used to form brand personality impression, even low BPC level improves the evaluations of extremely incongruent extension. However, when visual-based stimuli were used, low BPC level worsen the extension evaluation compared those of the control condition (i.e. without brand personality impression). Implications for both academician and practitioner are discussed.

**Keywords:** Brand personality complementarity, schema congruity theory, brand extension, brand personality, scale development, and Malaysia.

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# CHAPTER 1: Introduction

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## 1.1 Introduction

Brand extension is the most widely used branding strategy to introduce a new product into a different product category (Monga & John, 2010; Völckner & Sattler, 2006). Each year almost 82% of new products are brand extensions (Simms, 2005). Studies find that extendibility of a parent brand depends heavily on the perception of fit with the extension (e.g. Völckner & Sattler, 2006). Brand extension faces higher probability of failure as it moves away from the parent brand product category (Alexander *et al.*, 2008). It is estimated that brand extension failure ranges from 40% to 90% (Gourville, 2006), thus providing *raison d'être* for researchers to extensively investigate following Aaker and Keller (1990) seminal article on brand extension. Although perceived fit has been proven to be an important success factor (Völckner & Sattler, 2006), it does not explain why extremely incongruent extension such as tide pen (Business Times, 2012). One possible explanation is rather than depending on perceived fit, complementarity fit between two brand personalities is the factor.

Notwithstanding the magnitude of studies done in brand extensions literature since 1990s, this thesis proposes that the brand personality complementarity (hereafter, called BPC) principle, can mitigate low evaluations generated when a brand extends itself to an extremely incongruous new product category. An influential theoretical lens that is used to understand individuals' acceptance of newly incongruent product is Mandler's (1982) schema congruity theory, which proposes that affective evaluations are the outcome of schematic matching process between existing category and new item generates affects (Jhang *et al.*, 2012; Mandler, 1982; Meyers-Levy & Tybout, 1989) (cf. Fiske, 1982). Depending on the level of schema incongruity, most favourable evaluations are produced

when new item is moderately incongruent, hence depicting a nonmonotonic (i.e. an inverted-U) evaluation relationship for congruent, moderately incongruent and extremely incongruent brand extensions (e.g. Meyers-Levy & Tybout, 1989; Noseworthy & Trudel, 2011).

To date, most researchers who adopt schema congruity theory focus on contextual factors that accentuate or limit this congruity-based affect, particularly emphasizing on moderately incongruent brand extension and its effect on brand extension evaluations (e.g. Campbell & Goodstein, 2001; Meyers-Levy & Tybout, 1989; Noseworthy & Trudel, 2011; Peracchio & Tybout, 1996). Contextual factors such as thematic processing (Noseworthy *et al.*, 2010), perceived risk (Campbell & Goodstein, 2001), prior knowledge (Peracchio and Tybout, 1996), and dogmatism (Meyers-Levy & Tybout, 1989) have shown to mitigate the nonmonotonic evaluation relationship causing the evaluations to follow a linear decreasing function (e.g. Maoz & Tybout, 2002). In other words, congruous extension receives the most favourable evaluations. However, a recent study by Jhang and colleagues (2012) shift the focus to examining contextual factors that enhance extremely incongruent extension. They find that cognitive flexibility operationalised through positive affects elicits better evaluations as compared to moderately incongruent extension. Following the lead from Jhang and colleagues (2012), the author introduces the BPC principle as a moderating factor that generate more favourable evaluations for extremely incongruent extension

The BPC principle borrows much of its conceptualisation from the *complementarity principle* of interpersonal studies in personality and social psychology literature which states that differences sometimes opposites in needs and personality traits drive mating and relationship satisfaction (Zentner, 2005; Hinde, 1997; Winch, 1958). To

conceptualise BPC principle, one concept that the author relies heavily on is brand personality (e.g. Aaker 1997; Geuens *et al.*, 2009). Brand personality proposes that brands, like humans, can be imbued with personality characteristics or traits. These traits can be represented by several orthogonal universal higher-order traits or dimensions (usually five) for example sophistication, excitement, competence, sincerity, and ruggedness (Aaker, 1997). However, development in the brand personality literature details evidence of cultural- and context-specific dimensions and traits (e.g. Aaker *et al.*, 2001; Valette-Florence and De Barnier, 2013). Within the cultural context, empirical evidence suggests that eastern cultures (e.g. Japanese and Korean) possess unique indigenous dimensions together with several universal ones (e.g. Aaker *et al.*, 2001; Sung & Tinkham, 2005). Thus, depending on culture and research context, a reliable and valid culture-specific brand personality is a vital component of BPC principle.

Other than examining culture-specific brand personality dimensions, conceptualisation of BPC also entails the decomposition of trait complementarity levels amongst all possible brand personality dimension pairs. Earlier study by Monga and Lau-Gesk (2007) presumes dissimilar brand personality dimensions are complementary. It is however a valid reasoning since most interpersonal and personality studies follow similar assumptions (e.g. Luo & Klohnen, 2005; Zentner, 2005). The author on the other hand feels that it is seemingly premature to come to such early conclusion. Studies by Hampson and colleagues (1998; 1990) provide a compelling perspective why incongruent traits can be readily accepted and ascribed to form an impression about a person. They argue that trait descriptive and evaluative meanings are important determinants that influence reconciliation of incongruous traits. Parallel with Hampson's arguments, BPC requires the examination of both trait meaning components in resolving trait complementarity.

In order to establish the BPC principle, this thesis focuses only on forming brand personality impressions following previous established methodologies in the brand personality literature (e.g. Aaker *et al.*, 2004; Monga & Lau-Gesk, 2007; Swaminathan *et al.*, 2009). Specifically, accessibility to other diagnostic information on the brand such as functional attributes is not given. Next, brand personality impression formation is cued using both text- and visual-based stimuli. This is to investigate BPC effect using both types of stimuli. Within the author's knowledge, no study has investigated both stimuli together in one study. Lastly, the author also controls for 'singularity' of brand personality impression – a brand that is salient on all of its brand personality dimensions is multifaceted and complex, thus having low singularity (see Malär *et al.*, 2012). When a brand is salient only in one brand personality dimension, BPC investigation will be more precise and not confounded by other dimensions. These detailed considerations need to be followed to establish BPC principle.

The established BPC principle will then be examined under the schema congruity theoretical framework. Of which, focus of the study will be on enhancing extremely incongruent extension through BPC principle. With the exception of the study by Jhang and colleagues (2012), extremely incongruent extension has never received favourable evaluations (e.g. Noseworthy and Trudel, 2011). BPC principle postulates that complementary brand personality impression between parent brand and extensions will elicit more favourable evaluations, assuming that only brand personality information are available. This moderating effect is expected to be observed even for moderately incongruent extension when a pair of brand personality dimensions is highly complementary.

## **1.2 Justification / Importance of Research**

The author divides the contributions of this thesis into three parts – theoretical, methodological, and practical. Below are the discussions on the contributions.

### **1.2.1 Theoretical Contributions**

This thesis has three theoretical contributions. The main theoretical contribution of this thesis is to identify the effects of BPC on the relationship between brand extension congruity and brand extension evaluations. However, in order to address this main theoretical contribution the author will have to first investigate the generalizability of the brand personality scale to the research context and operationalize the brand personality complementarity scale. Due to the importance of these two steps before the investigation of the conceptual framework, the author will address the theoretical contributions based on the sequence that this thesis has to employ to address the main theoretical contribution.

The first contribution is the development of the Malaysian Brand Personality (MPB) scale. Literature on brand personality has long argued the issue of generalizability versus cultural-specific brand personality dimensions and traits (Aaker *et al.*, 2001; Geuens *et al.*, 2009). The brand personality dimensions and traits may demonstrate some variations amongst cultures (e.g. Aaker *et al.*, 2001). Geuens and colleagues (2009) provide few reasons. First, the development of the scale is predominantly based on Aaker's (1997) loose definition of the term, thus leading to a much broader inclusion of traits that are not limited to personality traits. Second, there are issues of non-generalizability of the factor structure for the analyses at the respondent level (i.e. for a specific brand or within product category (e.g. Austin *et al.*, 2003; Batra *et al.*, 2010). Third, the scale development process contained within the literature are not rigorous enough, thus, again contribute to the lack of generalizability across various cultures. Insofar, the study by

Geuens and colleagues (2009) is the only one that addresses these issues. Due to the importance of a highly relevant and reliable brand personality scale in operationalising the BPC principle, the author decides to employ the scale development process recommended by Hinkin (1998; 1995), with some adoptions from several other researchers (e.g. by Aaker *et al.*, 2001; Geuens *et al.*, 2009; Slaughter *et al.*, 2004).

The second theoretical contribution is the operationalization of BPC. Monga and Lau-Gesk (2007) propose that two dissimilar brand personalities have the potential of eliciting favourable brand extension evaluations. They presume that it is possible that the two brand personality used in their study (i.e. excitement and sophistication) are complementary to each other. Furthermore, they limit the investigation to 2 brand personality dimensions. This thesis will investigate complementary levels amongst all possible brand personality dimension pairs.

The final and main theoretical contribution of this thesis is to uncover the moderating effect of BPC brand extension congruity. The author will examine high BPC and low BPC levels within the theoretical framework of schema congruity theory. This theory postulates that congruity-based affect causes extremely incongruent extension to be evaluated less favourably since its novelty activates greater cognitive elaboration but usually ends in frustration (Jhang *et al.*, 2012; Meyer-Levy & Tybout, 1989). The author posits that BPC will mitigate the low evaluations of extreme incongruity. Specifically, high BPC level is hypothesized to moderate the evaluations of extremely incongruent brand extension which then result in a more favourable brand extension evaluations. Additionally, parallel to Jhang and colleagues (2012) theoretical reasoning, BPC is hypothesized to be mediated by the ease of individuals to resolve trait complementarity (i.e. the author labels this mediator as complementarity resolution) between a pair of

brand personality dimensions. Thus overall, investigation of BPC principle requires investigation of brand personality scale indigenous to the research context. In other words, half of the study is dedicated to scale development of cultural-specific brand personality scale.

### **1.2.2 Methodological Contributions**

BPC is investigated within the framework of experimental methodology. According to Sternthal and colleagues (1987), experimental approach requires three procedures; 1) manipulation checks ensure the independent variables are consistent with those specified in the theory, 2) required tasks ensure the specific intervening event happens, and 3) repeated operationalization ensures findings are robust across different context. The author will follow these procedures to ensure the results obtain high internal validity.

In contrast, the author introduces an additional step in the scale development process, specifically during the scale construction phase (see Hinkin 1998; 1995). A review of brand personality scale development studies reveals that the dimension or factor determinacy is arbitrary. In other words, the number of brand dimensions determined is dependent on the authors' own judgments. Recent development in factor analytic methodology has reintroduced Horn's (1965) parallel analysis (PA) to determine the exact number of factors to be retained using exploratory factor analysis' (EFA) principal axis factoring (PAF) extraction method (e.g. Schmitt 2011).

Overall, the author will adhere strictly to the methodological procedures in both experimental and factor analytics methodologies. This will ensure that findings are robust and generalizable.



### **1.2.3 Practical Contributions**

There are two managerial implications from this thesis. First, the acceptance of an extremely incongruent brand extensions can be improved using BPC principle operationalized using brand personality impressions. Consumers exposed to marketing communications tend to form an impression about a brand based on human traits and characteristics. Since consumers are bombarded with countless brand exposure every day, brand personality impression provides a heuristic tool to immediately categorise and position a brand based on abstract attributes. Personality impression of a brand is usually stable and enduring for example, being sophisticated and luxurious like Chanel, and rugged and western like Marlboro. Thus, it seems logical for any brand which intends to expand into a new product category to leverage on the parent brand's abstract attributes, such the brand personality impression. Brand extendibility based on functionality has its limits and has been proven empirically (e.g. Noseworthy *et al.*, 2010). In contrast, abstract attributes such as brand image, concepts, beliefs, specific associations, and especially personality make it possible for parent brand to expand into incongruent product category (e.g. Broniarczyk & Alba, 1994; John *et al.*, 1998; Monga & John, 2010; Monga & Lau-Gesk, 2007, Sonnier & Ainslie, 2011). Yet, leveraging on the same parent brand abstract attributes could cause dilution to the parent brand beliefs when the extension is extremely incongruent (e.g. John *et al.*, 1998). By adopting the BPC principle, the author expects that personality impressions that are complementary will improve the acceptance of new extremely incongruent extension.

Lastly, the author also advocates the need for cultural- and context-specific brand personality scale. Cultural and personality psychologists have long debated the stability of human personality scale such as the Five Factor Model (FFM) across multiple cultures (e.g. Cheung *et al.*, 2011). Although recent studies show evidence of FFM stability in

many cultures (e.g. De Rand *et al.*, 2010; McCrae *et al.*, 2005), only three of the five factors are replicable across a limited set of languages (Cheung *et al.*, 2011). Similarly in the brand personality literature, evidence of universal and indigenous is supported by various scale development studies done (e.g. Aaker *et al.*, 2001). In this thesis, the development cultural-specific brand personality scale will enable practitioners to use reliable and robust brand personality scale to; 1) identify the brand personality dimension(s) core to the parent brand; and, 2) position brand extensions with complementary brand personality dimensions. This should enable parent brand extendibility far beyond its original product category.

### **1.3 Research Objectives**

The theoretical contribution creates the frame for the refinement of the research objectives. The main objective of this thesis is to identify the effects of BPC on brand extension congruity and brand extension evaluations. The research endeavours are then broken down into three main objectives;

- 1) to development of the Malaysia brand personality (MBP) scale,
- 2) to operationalize the brand personality complementarity (BPC) between the MBP dimensions, and
- 3) to investigate if the BPC can generate favourable brand extension evaluations even for an extremely incongruent brand extension.

The next section will outline how the author achieves the research objectives.

## **1.4 Outline of the Thesis**

This thesis is divided into several chapters. The following chapter 2 will review the related literature on schema congruity theory and brand personality concept. By the end of chapter 2, the author will introduce the hypotheses and illustrate the conceptual framework of this thesis.

In chapter 3, the author will discuss the methodological considerations involved. This chapter consists of 2 parts. First part discusses the scale development process and steps that will be taken to ensure robust and generalizable brand personality scale. Majority of these discussions involve statistical requirements. The other half of chapter 2 is dedicated to the discussions on experimental methodologies. It will follow with the discussion of the scales used in the experimental studies.

Chapter 4 discusses the analyses of all 3 phases of scale development. Phase 1 is the item generation. In this phase, the author reports steps taken to create the pool of traits items. In phase 2, the trait items will be analysed using factor analytic methodology. Remaining trait items are evaluated for validities in phase 3, which is the scale evaluation phase. At the end of the chapter is the cultural-specific brand personality scale to be used in the next experimental study analyses chapter

Chapter 5 involves the analyses of experimental studies which investigate the influence of BPC on brand extension congruity. In this chapter, the author reports the results from 3 experimental studies – study 1 to 3. In Study 1, the author reports the findings from the operationalization of BPC. In Study 2, the author reports the moderating effect of BPC and the mediating effect of complementarity resolution. Study 3, which is a replication of study 2, is done using different stimuli. Findings will be discussed at the end of every result.

Chapter 6 presents all the findings in greater detail and relate the findings to existing literature. The objective of this chapter is to identify how the findings of this thesis fit into the literature and address the gaps that have been highlighted in the literature.

Finally, chapter 7 is the concluding chapter. In here, the author reiterate all the contributions made by this thesis to the body of knowledge; both theoretical and methodological. This chapter also highlights the practical contributions made by the author. Then, the author discusses the limitations of this thesis and provides recommendations for future research.

# CHAPTER 2: Literature Review

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## 2.1 Introduction

Brand is generally accepted as the most important assets of a firm (Keller, 1993), and appears to be widely used as an expansion strategy to enter potentially new markets or product categories (Milberg *et al.*, 2010). Brand extension mainly leverages on brand attributes and attitudes attached to the parent brand with the purpose to implant similar associations to the extended brands. However, brand extension success is not always 100 percent certain. It is estimated that brand extension failure ranges from 40% to 90% (Gourville, 2006), thus providing *raison d'être* for researchers to extensively investigate the success determinants of brand extension (see Völckner & Sattler, 2006). One theory that has been adopted to explain brand extension is schema congruity theory which proposes that only moderately incongruent extension elicit most favourable evaluations since it provides interest for individuals to match the extension with existing parent brand schema (i.e. an organised prior knowledge of brand beliefs). In other words, it is reasonable to presume that the development of dissimilar extensions should not be pursuit. This is however a false generalization since many extremely incongruous extensions are successful products, for examples Oprah magazine, and Tide pen (Business Times, 2012).

However, a recent study by Jhang and colleagues (2012) reveal that low evaluations of extreme incongruity can be mitigated by cognitive flexibility which they operationalize through positive affect. By priming positive affect, Jhang and colleagues (2012) observe favourable evaluations for extremely incongruent brand extensions. Their findings openly suggest that there might be other contextual factors that moderate extreme congruity evaluations. One possible factor is brand personality concept. Brand personality in sum,

adopts human trait adjectives to characterise or personify a brand (Aaker, 1997; Batra *et al.*, 1993; Geuens *et al.*, 2009; Plummer, 1984). It has been known to predict trusts, affects, attachments, differentiation, ideal self-concept connection, satisfaction, relationship strength, purchase likelihood, and choice (Aaker *et al.*, 2004; Ang & Lim, 2006; Chun & Davies, 2006; Sung & Kim, 2010; Swaminathan *et al.*, 2009; Valette-Florence *et al.*, 2011).

In this thesis, the author proposes to extend both schema congruity and brand personality literature by introducing brand personality complementarity (hereafter called BPC) principle which refer to being attracted to a brand personality which confirms one's views on the self in relation to other brand personalities. The foundation of BPC principle comes from social psychology literature in the areas of assortative mating and interpersonal theories. BPC principle proposes that rather than having similar brand personality between parent brand and extension, complementary brand personalities will elicit greater evaluations especially for extremely incongruent extensions. Thus, the author argues that low evaluations of extremely incongruent extension will be mitigated and improved with the adoption of BPC principle.

Investigation of BPC principle can find supports from prior research. Monga and Lau-Gesk (2007) have addressed issue relating to complementarity of two brand personality dimensions (i.e. sophistication and excitement), however they fall short of delving deeper into the conceptualisation of complementarity. Thus, in this thesis, the author intends to address this gap. However, strong evidence from brand personality scale studies has suggested that brand personality construct is cultural-specific. Thus, the literature discussions that follow in the coming sections in sequence will discuss;

- 1) theoretical frameworks that have been adopted to explain brand extension congruity and its evaluations (i.e. schema theory, categorisation theory, and schema congruity theory),
- 2) human personality trait theory,
- 3) brand personality concept,
- 4) assortative mating,
- 5) interpersonal theory, and
- 6) brand personality complementarity (BPC) principle

Overall, the author intends to investigate how low and high BPC levels affect evaluation of different degrees of brand extension (in)congruity. Specifically, high BPC level will mitigate low evaluations of extremely incongruent extensions. The final section in this chapter will discuss the conceptual framework and the development of specific hypotheses. To further enlighten the readers, the taxonomy of all theories and concepts used in this chapter are consolidated in the appendix section.

## **2.2 Brand Extension Research**

A brand is ‘a name, term, sign, symbol, or design or a combination of these, that identifies the maker or seller of a product of service’ (Kotler & Armstrong, 2011). It is conceptualised as a network of abstract and concrete associations hard-wired in memory nodes which are linked together (Batra *et al.*, 2010; Keller, 1993). The abstract associations or attributes have been referred as brand image beliefs (Batra & Homer, 2004), brand-image associations (Sonnier & Ainslie, 2011), brand-specific association (Broniarczyk & Alba, 1994), brand concept (Monga & John, 2010; Park *et al.*, 1991; 1986), and brand symbolic value (Reddy *et al.*, 1994). Whereas, the concrete attributes

focus more on product physical attributes or functions (Noseworthy & Trudel, 2011; Wanke *et al.*, 1998).

Brands are generally viewed as the most important asset of a firm. A widely used strategy to grow brand assets or equity is to launch new products (Alexander *et al.*, 2008; Jhang *et al.*, 2012). By doing so, the parent brand is capitalising and leveraging on its strong associations to ensure successful expansion strategy while reducing its cost (Swaminathan, 2003). There are three general approaches to extension; 1) cobranding, 2) line extension, and 3) brand extension. In cobranding, two parent brands join forces together to launch a new product. A recent example is Sports Kit, a wireless system that allows shoes to communicate to an iPod developed by Apple and Nike. On the other hand, line extension refers to offering of new product variants within (e.g. Apple's iPhone 5c multicolour offerings) or across (e.g. iPhone 5s and 5c) price/quality levels (Heath *et al.*, 2011). By far, the most common approach to extension strategy is brand extension which accounts for 82% of new products introduced in the market each year (Simms, 2005). The more unique or novel an extension is, the more incongruent the extension will be. If the parent brand gets it right, successful extensions promote repeat purchase levels equivalent to the established competitors of similar size (Singh *et al.*, 2012). With any wrong steps, the rate of failure is high as 40% to 90% of new products never survived, and usually withered out gradually by the third quarter (Gourville, 2006; Singh *et al.*, 2012). In a worst case scenario, an ill-fitted extension will dilute parent brand equity such as in the classic marketing case of Pierre Cardin (e.g. Gürhan-Canli & Maheswaran, 1998; John *et al.*, 1998; Loken & John, 1993; Ries & Trout, 1981).

Most brand extension studies focus on identifying factors that are essential to the success of an extension strategy (Carter & Curry, 2013; Torelli & Ahluwalia., 2012). The



research in this literature can be classified into various categories; 1) conceptualisation of perceived fit (similarities) between parent and extension brands, 2) effects of context variables, 3) communication strategies for brand extension success, and 4) consumer level differences that affects brand evaluations (Yorkston *et al.*, 2010). Three decades of research has revealed that similarity or perceived fit between parent brand and extension is the most important factor in determining an extension success (see Völckner & Sattler, 2006). However, the measurement of perceived fit is always arbitrary. Perceived fit can be conceptualised in terms of unique brand-specific associations that are held in the consumer's memory (e.g. Keller, 1993) which can take different forms of abstraction levels that embraces imagery, attributes, benefits and attitude (Nan, 2006).

In the effort to consolidate and categorise these measurements, few authors propose four classifications for perceived fit – 1) feature-based similarity; 2) usage-based similarity, 3) goal-based similarity, and 4) brand-concept similarity (Martin & Stewart, 2001; Martin *et al.*, 2005).

### **2.2.1 Feature-Based Similarity**

Martin and Stewart (2001) describe that feature-based similarity emphasizes on *intercategory relatedness*, i.e. the strength of the association between the parent brand category and extension category (Herr *et al.*, 1996). The relatedness of two categories depends on shared product characteristics or common features that are more tangible and concrete (Bambauer-Sachse *et al.*, 2011; Boush & Loken, 1991; Martin & Stewart, 2001). This conceptualisation is based on the foundations of feature-matching process (Tversky, 1977), and category- and attribute-based inferences (Fiske *et al.*, 1987). Individuals often rely on previously stored information and transfer categorical knowledge when there is sufficient level of commonality between the new item and existing categories (Mervis &

Rosch, 1981). Through similarity process, individuals compare the most obvious characteristics of a new item to the stored categorical knowledge, which will result in overall similarity perceptions (Park *et al.*, 1991). When feature similarity is high, it is expected that affects (i.e. evaluative components) associated with the parent brand is transferred to the extension. In other words, a positive evaluation of the parent brand will results in a positive evaluation of the extension thus, increases the chance of extension acceptance.

Furthermore, it is argued that contextual factors such as extension's complementarity, substitutability, and transferability to the parent brand are important determinants (Aaker & Keller, 1990; Mao & Krishnan, 2006). Aaker and Keller (1990) indicate that; 1) complementarity refers to the extent the products of both parent brand and extension are used in certain usage situations, 2) substitutability refers to the extent the products are substitutes in certain usage situations, and 3) transferability refers to the perceived ability of the parent brand's skills and resources to manufacture the extension (Mao *et al.*, 2012). Although feature-based similarity is easy to apply, its criticisms includes; 1) lack of theoretical basis to identify feature that are critical to determine similarity (Barsalou, 1989), and 2) difficult to apply to extensions which features are not compatible (Johnson, 1988).

### **2.2.2 Usage-Based Similarity**

Other researchers suggest that similarity based in common product usage is more robust and theoretically meaningful than feature-based similarity (Chakravarti *et al.*, 1990). The reason is two products with completely different form and features might be assumed similar when they are used in a similar usage situation (Martin & Stewart, 2001). It is further argued that products that complement each other in certain situation, such as the

abovementioned example of Sports Kit device developed by Apple and Nike, to be perceived as highly similar. Theoretical foundation of this reasoning assumes that in a particular usage context, feature-based similarity maybe less important since individuals tend to classify and differentiate on the basis of structure and prototypicality (i.e. an ideal representation of a category) (Gentner & Markman, 1997). Furthermore, usage situation may differ from one situation to another (e.g. private consumption vs. public consumption), and directly influence individuals' focus on relevant shared product features when making similarity judgments (Martin & Stewart, 2001). Thus, some researchers argue that usage-based similarity and feature-based similarity may not be alternative manifestation of the same similarity construct, but are rather distinct and orthogonal (Martin & Stewart, 2001). However, criticism on usage-based similarity state that usage-based similarity cannot explain perceived similarity of products that do not share a common usage occasion.

### **2.2.3 Goal-Based Similarity**

According to Martin and Stewart (2001), goal-based similarity emphasizes similarity organised around a common goal, 'abstract benefit sought by the consumer that are available through the (abstract or concrete) features of a product class that offer fulfilment of those goals' (Huffman & Houston, 1993). The authors argue that goal-based similarity encapsulates various similarity measures to the extent that they are made coherent by common goals. It provides an organising framework that determines which product features, and abstract benefits are shares across product categories (see Huffman & Houston, 1993). However, similarity based on common goals may require the formation of an adhoc category particular in the situation of moderately and extremely incongruent extension (e.g. Martin & Stewart (2001). It also requires that the goals to be salient to maintain the structural integrity of the adhoc category.

#### **2.2.4 Brand Concept Similarity**

Compare to the above three bases of similarity, brand concept similarity emphasizes on the abstract attributes of a brand. Its foundation mostly comes from the work of Murphy and Medin (1985) who suggest that conceptual coherence is the mechanism that individuals use to categorise objects together (Martin & Stewart, 2001). A brand may share a concept or schema, an organised knowledge which comprises both abstract and concrete attributes. Brand concept similarity however focuses on the abstract components such as brand image beliefs (e.g. Batra & Homer, 2004), brand concepts (e.g. Monga & John, 2010; Park *et al.*, 1991), brand-specific associations (e.g. Broniarczyk & Alba, 1994), and brand personality (e.g. Monga & Lau-Gesk, 2007; Swaminathan *et al.*, 2009). The main assumption is that brand extension is evaluated based on a collection of associations stored in the memory by looking at the consistency of brand concept together with the combination of similarity in product features (Keller, 1993). Most research on brand concept similarity has focused on contextual factors that influence individuals' perceptions of image and fit (Martin & Stewart., 2001). A limitation of this similarity base is that researchers need to decide which of the abstract components to be the measure of similarity (Martin & Stewart, 2001).

Overall, these bases of similarity provide clearer understanding of the measurement of perceived fit. In this thesis, the author adopts feature-based similarity to differentiate the different levels of extension congruity (i.e. congruent, moderately incongruent, and extremely incongruent). In the next section, the author discusses the three main theoretical frameworks in which perceived fit is an integral component of evaluations.

## **2.3 Theoretical Underpinnings of Perception of Fit**

There are three theoretical basis that has been used in literature to conceptualise how individuals can transfer associations from one object to another; 1) schema congruity theory (Mandler, 1982), 2) categorisation theory (Fiske, 1982; Rosch & Mervis, 1975), and 3) associative network theory (Collins & Loftus, 1975). These three different theories explain why new incongruent brand can be accepted. However, there are some key differences between each of these theories. This thesis will discuss each of the theories separately before explaining why the author has selected schema congruity theory as the main theoretical underpinnings of this thesis.

### **2.3.1 Schema**

To understand these three theories (Schema congruity theory, Categorisation Theory and Associative Network Theory), it is essential to explain the concept of schema. A schema is a “cognitive structure that contains knowledge about the attributes of a concept and the relationships among those attributes” (Fiske and Taylor, 1984, p.149). As “a stored framework of cognitive knowledge”, schema influences individual perception, thoughts, and behaviours (Aggarwal & McGill, 2007; p. 469). Individuals often use this existing schema of a particular brand or product to influence how the individual structure, interpret, organise and assimilate the new object into their existing knowledge (Fiske, 1982). The term schema or schemata originates from the work of Bartlett (1932) and subsequently used by Piaget (1952) who studies the development of human cognition (Puligadda *et al.*, 2012). Bartlett (1932) argues that individuals actively organise past experiences or past reactions into well-adapted organic response referred as schema as soon as children learn to categorise information (Piaget, 1945; Vernon, 1955). It is persistent and deeply rooted in a person memory in such that it influences the process of categorisation itself (Vernon, 1955).

In general, schema encompasses all sorts of information range from concrete concepts to abstract concepts. A concrete concept includes information relating to; 1) product category (Sujan & Bettman, 1989), and 2) product attributes (Campbell & Goodstein, 2001; Stayman *et al.*, 1992). Abstract concepts includes information relating to; 1) abstract/image and brand concepts (Mao & Krishnan, 2006; Park *et al.*, 1991; Puligadda *et al.*, 2012; Wanke *et al.*, 1998), 2) culture (Torelli & Ahluwalia, 2012), 3) social (Baldwin, 1992; Fiske & Dyer, 1985), and 4) even own self (Baldwin, 1992; Fiske & Dyer, 1985, Hastie & Kumar, 1979, Martin & Stewart, 2001). In many circumstances, schema provides expectancies about type of information that will be encountered next (von Hippel *et al.*, 1993), and blueprint of the acceptable range of variances in values and weight of each schema components (Sujan & Bettman, 1989).

The formation of a single unified schema depends on the individual's own ability to encode incoming information and integrate it with existing prior knowledge (Alba & Hasher, 1983). When a schema about an object or concept is developed and stored, individuals are able to make easier and faster judgments and inference when new information emerges as schema guides the interpretation of new information (Burke *et al.*, 1984; Sujan & Bettman, 1989).

Whenever individuals encounter a new object, schematic processing (i.e. schema-based affect) allows faster and easier evaluations since they do not have to re-evaluate previously processed information and it involves assessing information at schema level (Fiske, 1982; Fiske & Pavelchak, 1986; Sujan, 1985). This schematic process essentially performs two functions; 1) it produces a condition of expectation of what to look for, and 2) it organises and classifies information enabling inferences to newer information (Sujan & Bettman, 1989; Vernon, 1955). Since incoming information of specific instances is

interpreted by relying on prior conceptualizations, perceiver may easily understand and categorise new object. However, schematic process requires the new object or information (hereafter, stimuli will be used interchangeably) to highly resemble the existing schema (Rocsh & Mervis, 1975), or else inferences may not be drawn from existing schemas to the object (Fiske *et al.*, 1987; Loken *et al.*, 2008). The reason is new object must establish the link directly to the activated schema (Jhang *et al.*, 2012) at the time of encoding (Alba & Hasher, 1983) and can be further assisted with the relevant semantic context (Bransford & Johnson, 1973). Thus, schematic process will not be activated without this linkage. In the condition where new object is congruent with the activated schema, individuals follow category-based process (e.g. Boush & Loken, 1991; Fiske & Pavelchak, 1986). If categorisation is successful, the affects associated with the activated schema is applied to the new object (Boush & Loken, 1991).

### **2.3.2 Updating Schema**

In the previous subsections, the author has discussed the schematic processes for both moderate and extreme congruities. Although this is one of the major focuses of this thesis, it is also important to elaborate on how schema updates and assimilates new relevant information. In general, individuals cope with moderately incongruent information through the process of assimilation (Aggarwal & McGill; 2007; Campbell & Goodstein, 2001; Mandler, 1982; Meyers-Levy & Tybout, 1989; Manis *et al.*, 1988; Noseworthy *et al.*, 2010; Perrachio & Tybout, 1996; Sujjan & Bettman, 1989; Weber & Crocker, 1983). Herr (1986) refers assimilation effect as part of a function of degree of overlap between features of activated schema and new object (see Herr *et al.*, 1983; Tversky, 1977). The potential for feature matching is relatively high in the case of moderate incongruity, thus assimilation process is relatively fast (Herr, 1986). In this

situation, individuals follow a piecemeal-based process (Boush & Loken, 1991; Fiske *et al.*, 1987).

Incongruent information needs to be representative of the activated schema or showing family resemblance for updates to happen (see Rocsh & Mervis, 1975; Tversky, 1977). When individual involves in matching process, Hastie (1980) argues that information is classified into core and peripheral information in which core congruent information represent the 'quintessentially characteristic' of a schema. Consequently, both congruent and incongruent peripheral information will be filtered out of the process leaving both core congruent and incongruent information. It is also important that the stimulus presented readily identified as an exemplar for assimilation to occur (Herr *et al.*, 1983).

Furthermore, assimilation is the function of ambiguity and similarity to the conceptual category (Herr *et al.*, 1983). Weber and Crocker (1983) further argue that under such condition, assimilation follows bookkeeping model. It appears that bookkeeping process operates when the incongruent information is dispersed across schema members. Bookkeeping model views that assimilation is an incremental process happens when large amount of substantial incongruent information elicits a minor change in the activated schema. Furthermore, schema plus tag model (this model is discussed in Chapter 2.5) views that assimilation of moderately incongruent information leads to differentiation since tags are discrepancies of the general schema (Graesser *et al.*, 1979; O'Sullivan & Durso, 1984; Sujan & Bettman, 1989).

Conversely, the conversion model posits that extreme incongruity is needed to drastically update the schema because heterogeneity or variation in the sample is always expected (Weber & Crocker, 1983). In other words, the schema undergoes a substantial modification (Sujan & Bettman, 1989). However, the evident for conversion model is



weak, since there is higher probability for subtype to develop under extreme incongruent condition (Weber & Crocker, 1983).

On the other hand, accommodation follows subtyping model or activation of alternative schema when the stimulus is extremely incongruent (Ozanne *et al.*, 1992; Sujan & Bettman, 1989; Weber & Crocker, 1983). Most of the times, this may result in negative affect responses given the absence of structural congruity that could lead to positive evaluation (Mandler, 1982). Accommodation is caused when individuals primed with extreme incongruity condition see little features overlap or match between stimulus and activated schema (Herr, 1986) or if the stimulus is unrepresentative of the activated schema (Weber & Crocker, 1983). Moreover, extremely incongruent information causes a contrast effect in which individual's evaluation moves away from the activated schema which served as anchor or standards of comparison (Herr, 1986; Herr *et al.*, 1983).

Subtyping occurs when incongruent information strongly deviates and prohibits assimilation through fine-tuning and is perceived as unrepresentative of the activated schema (Weber & Crocker, 1983). This is because extremely incongruent information is compared to some internal standard or reference point creating a contrast effect (Skowronski & Carlston, 1989). Such extreme discrepancy requires deep cognitive process and is well remembered (Sujan & Bettman, 1989), and may void of frustration or negative affects (Meyers-Levy & Tybout, 1989; Meyers-Levy *et al.*, 1994). However, negative mood has been shown to improve memory recall for extremely incongruent information (Forgas, 1992).

Consequently, when both assimilation and accommodation fail, anxiety or frustration increases which in turn leads to increase in more negative evaluation (Meyers-Levy & Tybout, 1989; Stayman *et al.*, 1992). This may contribute to such outcomes: 1)

assimilation fails because the new object is extremely incongruent with the activated schema; 2) deep structural changes to the schema is required; or 3) switching is problematic because of context or knowledge-based effects (Stayman *et al.*, 1992).

The next section explains the three main theoretical lens that has been used to explain how individuals uses schema to evaluate new object; 1) categorisation theory, 2) associative network theory and 3) schema congruity theory.

## **2.4 Categorisation Theory**

Categorisation theory postulates that when a new object highly resembles the existing family schema, one would use prior knowledge to judge the relationship between them (Rosch & Mervis, 1975). If the relationship is perceived to be high, inferences are drawn from the existing schema to the object (Loken *et al.*, 2008). Categorisation process will not take place when the object does not possess categorising features of the activated schema (Fiske *et al.*, 1987). Schema incongruity occurs when the total configuration of a product's attributes is not represented in the activated schema (see Murphy & Medin, 1985; Rosch, 1978).

Under categorisation theory, there is a unanimous agreement in literature that schematic processing follows the categorisation process (DeRosia, 2011). When individuals encounter new object, schematic processing allows faster evaluations since they do not have to re-evaluate the previously process information (Fiske, 1982).

Similarity-based categorisation model argued that objects, events and entities can be grouped together because they are glued by how easily they are learned and used by the consumer (Ratneshwar *et al.*, 2001). One would use prior knowledge to judge the relationship of congruent information as it resembles existing schema (Rosch & Mervis, 1975). When the relationship is perceived to be high, inferences are drawn from existing

schemas to the object (Loken *et al.*, 2008). Congruent information is likely to be forgotten or omitted due to the fact that the recall of new information can be triggered by a scripted event (i.e. schema) that corresponds to conventional or frequently enacted activities (Schank & Abelson, 1977). Highly congruent information is readily available in the real-world experiences and has been represented in a prototypical script, allowing for economical storage in the space allocated for memory (Alba & Hasher, 1983).

In the brand extension literature, a specific model in this theory that has been generally adopted is similarity-based categorisation model (Medin, 1989). It states that objects, events, or entities can be grouped together because they are glued through how easily they are learned and used (Barsalou, 1982; Ratneshwar *et al.*, 2001), or being a member of a category which shared common and distinctive features (Fiske *et al.*, 1987; Tversky, 1977). Individuals identify members of a particular category by evaluating similarities between the new member and the category prototype (Fiske & Taylor, 1984), the new member will be evaluated based on the beliefs and affect associated with the prototype and these are transferred to the new member (Bhat & Reddy, 2001).

Literature on category-level fit has used categorisation theory as its main theoretical lens. The literature posits that consumers are likely to form perception of fit between parent and sub-brand based on their categorical judgements because they consider how the sub-brand product attribute fits to the prototypical attributes of the parent brand (Keller, 1998).

#### **2.4.1 Processing Moderately Incongruent Information**

Categorisation process will not take place when the object does not possess factors that fit with the features of activated schema (Fiske *et al.*, 1987). In the case of moderate incongruity, the new object can be categorised into several hierarchical levels, thus

allowing individuals to resolve incongruity by moving up or down the multiple steps in the hierarchy (e.g. Mandler, 1982; Meyers-Levy & Tybout, 1989). Such process has empirically proven to garner more favourable evaluations (Aggarwal & McGill, 2007).

Individuals spend more time and processing effort on a set of moderately incongruent information rather than collect information on a broader range of attributes, thus resulting in an enhanced positive response (Ozanne *et al.*, 1992). This is because common shared information between them does not provide diagnostic information for evaluation, therefore, individuals tend to put more weight on distinctive incongruent information (Dhar & Sherman, 1996) and focus more on points of difference between them (Wansink & Ray, 1996). Therefore, assimilation of moderately incongruent object will likely to occur as individuals engage in feature-matching process (Herr *et al.*, 1983) in which new object is classified into core and peripheral information – core congruent information represents the ‘quintessential characteristics’ of the schema (Lane, 2000).

Essentially, peripheral information both congruent and incongruent will be filtered out of the process leaving both core congruent and incongruent information (Hastie, 1980). However, it is crucial that the new object is readily identified as an exemplar for assimilation to occur (Herr *et al.*, 1983). Under such conditioning, assimilation follows a bookkeeping model and appears to operate when the incongruent information is dispersed across schema members (Weber & Crocker, 1983). Bookkeeping model views that assimilation is an incremental process happens when large amount of substantial incongruent information elicits a minor change in the activated schema.

### **2.4.2 Processing Extremely Incongruent Information**

Similarly, some authors who subscribe to prototype (group-level information) and exemplar model of categorisation theory argued that if prototypical information is highly diagnostic and accessible, it alone suffice to generate favourable evaluations despite accessibility to exemplar information (Mao & Krishnan, 2006). Subtyping model proposed that when new object is extremely incongruent, individuals will form sub-categories to accommodate such information (Ozanne *et al.*, 1992) and may often subtype if the information provided gives a reason to do so (Kunda & Oleson, 1997).

Subtyping occurs when individuals primed with extreme incongruity see little features overlap or match between the new object and activated schema (Weber & Crocker, 1983). Furthermore, the higher the proportion of incongruent information (e.g. concentrated to a stimulus compared to those dispersed to several stimuli), the more likely that subtyping occurs regardless of level of incongruity (Sujan & Bettman, 1989). In other words, incongruent information is judged as incongruous if members of a schema are homogeneous. Furthermore, there are fewer tendencies to ascribe attributes consistent with the schema since subtype is seen as unique (Sujan & Bettman, 1989). Therefore the subtype is evaluated using the piecemeal approach which can lead to either positive or negative affective responses (Boush & Loken, 1991).

### **2.5 Associative Network Theory**

Another theory that has been used to evaluate congruity judgment is the associative network theory, conceptualised as a network of concepts (nodes) that are interconnected by links in the memory (Anderson, 1983). These nodes can induce the individual's thinking about other nodes, a process that is known as the 'spreading activation process' (Anderson, 1983; p. 261). This process predicts that the 'retrieval of the informational

nodes of interconnected network is performed by spreading activation throughout the network' (Anderson, 1983; p. 261). The likelihood of the activation of one node will also activate the other, thus, creating an image transfer (Herr *et al.*, 1996).

The associative network theory conceptualises memory as a network of concepts (nodes) that are interconnected by links (Anderson, 1975; 1983; Collins & Quillian, 1970; Collins & Loftus, 1975; Hastie, 1980). These nodes can induce the individual's thinking about other nodes, a process that is known as the 'spreading activation process' (Anderson, 1983; p. 261). This process predicts that the 'retrieval of the informational nodes of interconnected network is performed by spreading activation throughout the network' (Anderson, 1983; p. 261). Thus, the activation of one node will likely activate the other. This theory is used to predict the amount of information a consumer recalls about an entity, the types of information recalled under different circumstances and conditions, the order of recall of different information and the time taken to affect recall (Srull & Wyer, 1989).

Another theory that mirrors the associative network theory is the schema plus tag model. This model posits that since incongruent information is not descriptive, it is stored and linked to the activated schema with unique 'tags' (Graesser *et al.*, 1979, 1980; O'Sullivan & Durso, 1984; Smith & Graesser, 1981; Sujon & Bettman, 1989). Tags are created when the new object is atypical or incongruent of the activated schema (Graesser *et al.*, 1980) and further divided to two sets of tags for moderate and extreme incongruent information (Smith & Graesser, 1981). The model assumes that a schema is accessed in all-or-none manner in which all relevant information is embedded in specific memory trace constructed for specific passage or excerpts with equally chance for both congruent and incongruent information being retrieved (Smith & Graesser, 1981). Evidently, being

unique allows tags to be better recalled and recognized with greater accuracy (Graesser *et al.*, 1980; Smith & Graesser, 1981). However, although tags are differentiated, they are prone to memory degradation under temporal constraint because it is inconsistent with the organising schema (Sujan & Bettman, 1989). Additionally, individuals have greater propensity to ascribe other consistent attributes to incongruent information (Sujan & Bettman, 1989).

Recent study by Jhang *et al.* (2012) who adopt this theory provides new evidence that addresses the relationship between favourable evaluation and level of congruity, specifically how to generate more favourable evaluation of highly incongruent information. The favourable evaluation is achieved through the manipulation of cognitive flexibility and positive affect, which then allow individuals to establish uncommon associations that link across different schemas. Jhang and colleagues (2012) verify that extreme incongruent information can be resolved and can lead to favourable response. They view that the incongruity is a function of shared associations needed to arrive to a resolution. If the new object does not share similar associations with existing schema attributes, then it is classified to be extremely incongruent with the existing schema. In other words, extremely incongruent information neither is part of the pre-existing schema associations nor holds pre-existing shared association between the schema and attribute (Jhang *et al.*, 2012). Through this conceptualization, moderate incongruity is resolved with links to a shared association, whereas extreme incongruity cannot. The authors further give examples of their operationalization of congruity. For example, orange juice and vitamin is congruent since they share a lot of common attributes such as healthy and 'good start to the day'. Moderate incongruity is exemplified with coffee and vitamin in which they only share 'good start to the day' attribute. Whereas, examples for extreme incongruity are vodka and vitamin where neither of them share any common attributes.

### **2.5.1 Processing Moderately Incongruent Information**

Hastie (1980) suggests that incongruent information has more associative paths compared to congruent information in the schema, thus making comprehension difficult yet memorable under the assumption that incongruent information is retained and actively integrated in the memory for a relatively long period of time for additional processing (Graesser *et al.*, 1980; Hastie, 1980; Srull, 1981). Under the assumptions that only incongruent information central to the schema are encoded, this encoding effect would be more pronounced and reactivated as new incongruent information is introduced, hence providing more linkages to both congruent and incongruent items representing a consolidation of schematic information (O'Sullivan & Durso, 1984). A well-developed schema which has been 'unitized' or stored in one chunk, would then facilitate retrieval speed and confidence since a loosely linked schematic information may interfere with relevant schematic processing (Fiske & Dyer, 1985, O'Sullivan & Durso, 1984; von Hippel *et al.*, 1993).

In a study, Hastie and Kumar (1979) investigate the role of personality traits as a basis for schematic processing in impression formation. Their findings reveal that in a memory recall task, individuals remember traits that are incongruent more accurately in reference to an individual's general impression. Furthermore, recall for incongruent traits is even greater when their numbers are low in relation to congruent items (Hastie & Kumar, 1979) and are highly diagnostic of a schema (Ford & Stangor, 1992). Incongruent information is atypical (Smith & Graesser, 1981), novel (Greenwald & Sakura, 1967), and distinctive (Hamilton & Gifford, 1976) and given more weight, thus it enhances perceiver's ability to distinguish information (Fiske, 1980). Such behaviour is further mediated by individuals' processing strategies when they are in a negative mood particularly for incongruent information (Forgas, 1992). Srull (1981) even suggests that



there is a significant linear relationship between the total number of incongruent and congruent information. In other words, the lesser the incongruent information, the more memorable it will be (Hastie & Kumar, 1979).

### **2.5.2 Processing Extremely Incongruent Information**

Following associative network model (see Anderson, 1975; Collins & Quillian, 1970; Collins & Loftus, 1970; Hastie, 1980), extremely incongruent information is connected to extensive network links available for elaborative processing (O'Sullivan & Durso, 1984). Herr and colleagues (1996) argue that links may vary in their bi-directional strength or dominance (category vs. instance) between a schema and its members, and intercategory relatedness to the schema. There is higher probability of subtyping when category dominance is high, and relatedness is low (Herr *et al.*, 1996). Additionally, the higher the proportion of the incongruent information e.g. concentrated to a stimulus compared to dispersed to several stimuli, the more likely that subtyping occurs regardless the level of incongruity (Hastie & Kumar, 1979; Sujana & Bettman, 1989). In other words, incongruent information is judged incongruous if members of a schema are homogenous rather than heterogeneous since group variability increased assimilation (Lambert, 1995). Furthermore, there are fewer tendencies to ascribe attributes consistent with the schema since subtype is seen as unique (Sujana & Bettman, 1989), hence subtype is evaluated on piecemeal approach (Fiske, 1982; Sujana, 1985) and may produce either positive (Fiske, 1982) or negative affective responses (Boush & Loken, 1991).

Alternatively, extreme congruity can be accommodated through activation of nearby schema in the network, referred as 'schema switching' (Anderson, 1975; Fiske & Neuberg, 1990; Herr *et al.*, 1983; Stayman *et al.*, 1992). Schema switching' may produce positive evaluations for an established positively valenced schema; however evaluations

are weaker than assimilation process (Stayman *et al.*, 1992). Mandler (1982) argues that switching is attempted prior to accommodation because it reduces cognitive cost. Rather than attempting for extensive information search (e.g. Ozanne *et al.*, 1992), restructuring the schema through either bookkeeping or conversion model (e.g. Weber & Crocker, 1983), or allocating a schema space for a subtype (e.g. Weber & Crocker, 1983), schema switching requires less cognitive efforts particularly when an alternative schema is readily available (Stayman *et al.*, 1992). Findings from Stayman *et al.* (1992) indicate that schema switching is probable even when only a single incongruent attribute existed in a set of incongruent information. However, if a specific schema is strongly activated, switching is not worth the additional cognitive effort because the cost may exceed the perceived effort (Ozanne *et al.*, 1992).

## **2.6 Schema Congruity Theory**

Schema congruity theory evolves from the cognitive psychology (Fiske, 1992) and social psychology disciplines (see Bartlett, 1932; Hastie & Kumar, 1979; Osgood & Tannenbaum, 1955; Vernon, 1955). The theory is used as the theoretical lens to conceptualise how individuals transfer associations from one object to another (Fiske & Taylor, 1984).

The role of congruity is an integral part of schematic processing. Osgood and Tannenbaum's (1955) principle of congruity states that '*changes in evaluation are always in the direction of increased congruity with the existing frame of reference.*' In other words, highly congruent objects or information will lead to more positive evaluations. Thus, if information does not relate to an existing object of judgment, congruity issue arises (Osgood & Tannenbaum, 1955). Such frame of reference is highly evaluative determined by organised cognitive activities or schemas (Vernon, 1955).

Literatures in psychology, social psychology, and marketing has conceptualised various approaches to understand the notion of schema congruity. In general, Schema Congruity Theory proposes that assimilation of new information is dependent on the levels of fit or matches between the new information and the existing schema. Although congruity is viewed as a continuum, researchers have focused on three specific levels – congruent, moderately incongruent, and extremely incongruent (e.g. Stayman *et al.*, 1992).

Empirically, there are numerous studies on schematic processing of investigating the effects of different levels of congruity on affective evaluations. One perspective, proposed by Fiske (1982), is schema-triggered affect model. Fiske (1982) posits that schema categories are stored in memory with an associated affective tag. When individuals are exposed to a congruent object or information, they will evaluate it with the affect associated with the activated schema (Fiske, 1982; Fiske & Pavelchak, 1986). It is further argued that the schematic process of searching for relevant schema is usually quick, and may without extended deliberation (Rosch & Mervis, 1975). The reason is the individual engages on category-based processing, efficiently reducing cognitive search effort (Fiske *et al.*, 1987). However, if category matching is not possible, piecemeal-based processing is engaged in which the individual will decompose the information into pieces of attributes to be compared to those of a particular schema (Fiske *et al.*, 1987). This type of schematic process however is more taxing and requires greater cognitive effort. Though this schematic process model is economical (i.e. requires less cognitive effort), Schank and Abelson (1977) argue that introduction of congruent stimuli will soon be forgotten or omitted from the representation since recall of the new information can be triggered by a scripted event – i.e. the information has been represented in a prototypical script, allowing for economical storage in the space allocated for memory (Alba & Hasher, 1983).

In contrast, Mandler's (1982) schema congruity theory states that affective response is not transferred from the original schema to the stimuli. It is the (mis)match between stimuli and the existing schema that generates affective response. Such affective response is a result of the process of responding to different levels of schema congruity (i.e. congruity, moderately incongruent and extremely incongruent) and how much effort is involved to resolve the incongruity (Galbarino & Edell, 1997). In other words, the affective response is not part of the schema, but is generated in the process of matching. Past studies demonstrate that having greater congruity does not equate with a favourable response or evaluation. The level that has demonstrated highest level of favourable response or evaluation is when the new information is moderately incongruent with the existing schema (e.g. van Horen & Pieters, 2012). Moderately incongruent information is found to be more interesting, memorable and create highly affective response (e.g. Walchi, 2007; Meyers-Levey *et al.*, 1994). Studies adopting this principle support the inverted-U or nonmonotonic relationship between level of positive evaluation and level of congruity, where congruent and highly incongruent information received less favourable evaluation as compared to moderately incongruent information (e.g. Aggarwal & McGill; 2007; Campbell & Goodstein, 2001; Mandler, 1982; Meyers-Levy & Tybout, 1989; Noseworthy *et al.*, 2010). This inverted U-shaped relationship of congruity can be traced back to social judgment theory in the context of persuasion and attitude change (cf. Sherif & Hovland, 1967). The theory predicts that as the discrepancy of a persuasive message increases, so does one's latitude of acceptance. However, as the message becoming more discrepant and falls within one's latitude of rejection, persuasion would then decrease (Kunda & Oleson, 1997).

Although Mandler (1982) lays down the principle of schema congruity theory, it is not until a study by Meyers-Levy and Tybout (1989) who operationalize it. Borrowing from

categorisation theory, they propose that schemas are arranged in a hierarchical manner. In general, movement from the highest level to the lowest level increase shared-within category attributes rather than shared-between category attributes. At the highest level is the superordinate in which category members only share a few attributes which make them easily distinguishable amongst them (e.g. beverage). At the basic level, shared-within the category attributes increases such that they provide the greatest discrimination among categories and tend to be used to categorise both natural and social objects (e.g. orange juice vs. coffee) (Lingle *et al.*, 1984). The next lower level is the subordinate in which a small number of attributes discriminate an object which shares a large number of other attributes (e.g. both orange juice and coffee are taken in the morning) (Meyers-Levy & Tybout, 1989).

Studies on incongruity mostly focus evaluations of moderate and extreme incongruities (see Aggarwal & McGill; 2007; Boush & Loken, 1991; Campbell & Goodstein, 2001; Fiske & Pavelchak, 1986; Herr, 1986; Kunda & Oleson, 1997; Mandler, 1982; Manis *et al.*, 1988; Meyers-Levy & Tybout, 1989; Noseworthy *et al.*, 2010; Ozanne *et al.*, 1992; Perrachio & Tybout, 1996; Sherif & Hovland, 1967; Stayman *et al.*, 1992). The next discussions will focus on these two incongruity types.

### **2.6.1 Processing Moderately Incongruent Information**

Schemas are extremely resistant to new incongruent information (Taylor & Crocker, 1981) and resolutions often dispel conflict (Asch & Zukier, 1984). Empirical studies adopting Mandler's (1982) schema congruity theory find that congruity evaluations follow nonmonotonic effects – i.e. an inverted-U relationship (e.g. Noseworthy *et al.*, 2010). In other words, most favourable evaluations are generated when individuals are presented with new object or information that is moderately incongruent with the

activated schema. This theory focuses on how much effort is involved in resolving the incongruity (Galbarino & Edell, 1997) and the affective responses that follow (Meyers-Levy & Tybout, 1989).

According to schema congruity theory, solving incongruity involves cognitive elaboration and process through sequentially accessing the next lower levels in the schema hierarchy (Aggarwal & McGill; 2007; Campbell & Goodstein, 2001; Mandler, 1982; Meyer-Levy & Tybout, 1989; Noseworthy *et al.*, 2010; Perrachio & Tybout, 1996). Specifically, moderate incongruity refers to an incongruity that can be resolved by moving to the next lower level in the hierarchical structure as opposed to extreme incongruity which cannot be resolved by moving down multiple steps in the hierarchy. By stepping down to lower levels, individuals have greater access to more features, thus enabling feature-matching process or piecemeal approach (Basu, 1993; Fiske *et al.*, 1987; Meyers-Levy & Tybout, 1989; Sujan 1985).

Both moderately and extremely incongruent stimuli require more cognitive efforts and as a result, increase the chances of generating conflicts in the act of resolving both congruity levels. Findings further show that moderate incongruity produces more favourable evaluations compared to extremely incongruent ones and may be seen as more interesting because it slightly deviates from congruity (Stayman *et al.*, 1992). Individuals spend more time and processing effort on a set of moderately incongruent information rather than collecting information on a broader range of attributes (Ozanne *et al.*, 1992) in which resulted in enhanced positive response (Stayman *et al.*, 1992). This positive response is also influenced by the fact that moderately incongruent information can be resolved (Meyers-Levy & Tybout, 1989). One factor seems to influence moderate congruity effect

is the schema members – having fewer members (i.e. lesser breadth) accentuate this effect (Boush & Loken, 1991; Hastie & Kumar, 1979).

### **2.6.2 Processing Extremely Incongruent Information**

In contrast, since extremely incongruent information deviates so much from schematic representation, individuals would perform less internal information search (Ozanne *et al.*, 1992), consume less (Stayman *et al.*, 1992), and evaluate more negatively (Meyers-Levy & Tybout, 1989). Prior levels of expectation or experience with a schema are likely to influence and lead schematic process which set the paths for either assimilation or accommodation (Stayman *et al.*, 1992), and will depend on the sheer magnitude of the extremely incongruent information (Kunda and Oleson, 1997). Thus, extremely incongruent information is unlikely to be assimilated and could even provoke a boomerang effect, referred as the enhancement of the stereotypical schema that it violated (Kunda & Oleson, 1997). This may be attributed by the perceivers' beliefs that it is unnecessary, even in appropriate, to be generalised from the extreme exemplar which is highly incongruent from the schema (Kunda & Oleson, 1997), and result from schematic search process that confirms the original schema, thereby enhancing it (Markus & Kunda, 1986; Sherman & Gorkin, 1980). Evidently, boomerang effect only occurs in the extreme incongruent stimulus (Kunda & Oleson, 1997). Although category breadth affects evaluations for moderate incongruity, it however does not affect the judgment of extreme incongruent information, and this is arguably followed by a less favourable evaluation (Boush & Loken, 1991).

## 2.7 Justification for Selecting Schema Congruity Theory

Schema congruity theory postulates that the process of matching stimuli with existing schema will generate most favourable affective response (Mandler, 1982). This is because moderately incongruent stimuli slightly deviates from congruity, thus engagement of schematic processing is interesting and will not end in frustration. In other words, moderately incongruent stimuli are generally assimilated to the existing schema. Findings have shown that moderately incongruent stimuli usually produce most favourable evaluations compared to those of congruent and extremely incongruent stimuli (e.g. Aggarwal & McGill; 2007; Campbell & Goodstein, 2001; Mandler, 1982; Meyers-Levy & Tybout, 1989; Noseworthy *et al.*, 2010).

While schema congruity theory focuses on how congruity judgment generates affective evaluation, categorisation theory otherwise focuses on; 1) hierarchical structure of category (Rocsh & Mervis, 1975), 2) formation of sub-categories (Weber & Crocker, 1983), and 3) how existing category updates its information (Weber & Crocker, 1983). Despite its utilitarian function to categorise information, categorisation-based similarity model (Medin, 1989) argues that if stimuli do not possess categorising features of the activated category (i.e. schema), categorisation process will not take place. Literature on category-level fit has used categorisation theory as its main theoretical lens. Findings reveal that consumers are likely to form perception of fit between parent and brand extension based on their categorical judgements. This is primarily because consumers consider how the brand extension attributes match to the prototypical attributes of the parent brand (Keller, 1993). Nevertheless, both schema congruity and categorisation theories focus on the notion of similarities between the existing knowledge and the new object (Boush *et al.*, 1987).



In contrast, the associative network theory is used to predict the amount of information a consumer recalls about an entity, the types of information recalled under different circumstances and conditions, the order of recall of different information, and the time taken to affect the recall (Srull & Wyer, 1989). In the marketing literature, researchers adopt this theory to explain brand concept dilution of parent brands (e.g. Morrin, 1999), the transfer of parent brand affect to the extension (e.g. Herr *et al.*, 1996), and positive spillover effect of brand portfolio to parent brand (Lei *et al.*, 2008). Overall, the associative network theory does not provide the framework to examine levels of similarity between parent brand and the extension.

In general, findings from studies that adopt the above theories have consistently arrived to support that incongruent information requires more detailed and in-depth processing, thus allowing it to be remembered and evaluated better than congruent ones (see Forgas, 1992; Hastie & Kumar, 1979; Herr, 1986; Mandler, 1982; Meyers-Levy *et al.*, 1994; O'Sullivan & Durso, 1984; Schank & Abelson, 1977; Srull, 1981; Smith & Graesser, 1981).

The study of affect transfer and evaluation of brand extension have used either one of the above theories. Since the main emphasis of this thesis is to investigate the generation of more favourable evaluations for extremely incongruent extension, the author adopts schema congruity theory as the main theoretical lens to identify factors that influence this phenomenon. Specifically, the author will examine evaluations between different congruity levels (i.e. congruent, moderately incongruent, and extremely incongruent extensions). The next section will delve deeper into the theory and identify what are the gaps in theory that this thesis will be addressing.

Insofar, the author has described the theoretical development and significance of schema congruity theory. Both theoretical discussions and empirical findings are in favour of

moderate incongruity effect. Yet some studies reveal that the negative evaluation of extreme incongruity can be resolved, thus creating positive evaluation of the new item (Jhang *et al.*, 2012). Such resolution is done by eliciting cognitive flexibility of individuals through positive affect, future framing, and prior generation of multiple explanations for a situation (Jhang *et al.*, 2012). Both consumer intervention and advertisement copy approaches provide evidence of extreme incongruity resolutions. Another method of resolving extreme incongruity is through the use of repetitive advertising that fosters schema elaboration in which both abstract and concrete attributes of parent brand are evoked to elicit transfer associations (Lane, 2000). This is because extremely incongruent extension requires a deeper understanding of how the parent brand's attributes and benefits are imbued to it.

The schema congruity theory will be the main theoretical lens to explain how evaluations of extreme incongruity can be moderated. Schema congruity theory postulates that the process of matching extremely incongruent stimuli with existing schema will generate less evaluative response because of frustration in resolving incongruity (Mandler, 1982). Most findings indicate that extremely incongruent extension creates a contrast effect (e.g. Noseworthy *et al.*, 2011). In other words, it seems impossible for a brand to extend to a totally different product category. The author proposes the adoption of brand personality complementarity (BPC) principle within the schema congruity theory may resolve extreme incongruity effect. Such proposal will require the discussions on human personality trait theory (e.g. McCrae & Costa, 1997) and the complementarity principle (e.g. Zentner, 2005).

## 2.8 Review of Personality Trait Theory

Research on brand extension has been leveraging on theories from sociology and psychology to explain why a product is purchased. Sociological theories use social class, peer influences, reference group and other concepts to explain consumer behaviour while psychological theories argued that though consumers can be categorised into various groups and classes, it does not explain how individuals belonging to an individual group behave in distinct ways. Psychological theories, including personality theories, explain these inter-individual differences (Lazarus, 1971).

The psycholexical approach to personality assumes that personality characteristics are encoded in language as a single-word descriptor (Barelds & Barelds-Dijkstra, 2007). This notion emerged with the studies from Klages (1926), Baumgarten (1933), and Allport and Odbert (1936). Throughout decades of research, studies have identified several re-emerging first higher-order factors that represent personality (John & Srivastava, 1999). However, since the early 1960s, personality trait researchers have generally agreed that trait disposition of human can be classified into 5 orthogonal factors using factor analytic methodology (Goldberg, 1992; McCrae & Costa, 1997). In general, personality trait researchers agree to label these factors as; 1) openness to experience, 2) conscientiousness, 3) extroversion, 4) agreeableness and 5) neuroticism. All these factors are known as Big Five trait taxonomy (FFM) (McCrae & Costa, 1997). Evidently, FFM has shown to be stable and replicable across 50 different cultures (see McCrae *et al.*, 2005). However the focus of FFM has started to look away from factor analytics study and towards the predictive utility of FFM (Cuperman & Ickes, 2009).

Generally, personality researchers agree that the effect of personality is bigger than relationship effect on personality (e.g. Neyer & Asendorpf, 2001). Personality trait is one

of the factors that influences how a person reacts and responds to his/her environment, which in turn can determine their overall relationship with other around them (Olver & Mooradian, 2003). Researchers have argued that at least some aspects of relationship functioning are due to the stable traits of individuals (e.g. Robins *et al.*, 2002). One domain of interest to study of the predictive value of FFM is to look at its relationship with human social behaviour (e.g. Sherman *et al.*, 2010). Under this domain are the studies of assortative mating (e.g. Zentner, 2005), and interpersonal theory (e.g. Tiedens *et al.*, 2007). Based on these two theoretical domains, the author will discuss them in the next subsections

### **2.8.1 Compatibility Models of Assortative Mating**

Within the assortative mating (Furler *et al.*, 2013; Zentner, 2005) literature, there are two schools of thoughts regarding the composition of traits in couples that promote close relationship; 1) similar principle, and 2) complementarity principle. Zentner (2005) refers them as the *compatibility* models. Studies which support similarity principle usually investigate the effect of personality trait similarity (vs. differences) in dyadic relationship and how it may lead to better relationship satisfaction and well-being. A group of researchers argue that couples whose personality traits are similar achieved better life and marital satisfaction (e.g. Lee *et al.*, 2009) and relationship quality (e.g. Dyrenfourth *et al.*, 2010). They strongly adhere to the principle that ‘birds of a feather flock together’ (e.g. Umphress *et al.*, 2007). This is known as the *similarity principle* (Zentner, 2005). Bauer and Green (1996) suggest that people are more attracted to others that possess similar personality, for it enables them to build trust more easily than individuals who are dissimilar from them. The concept of similarities in personality trait has been applied in the work environment to determine how individuals are able to work well with each other based on how similar their personalities are (Bauer & Green, 1996). Having similar

personality amongst colleagues or between leader and employee make it easier for them to predict what the other will do therefore allowing them to have a better working relationship (Antonioni & Park, 2001).

However, a significant number of studies have emerged proving that similarity within the FFM framework does not generate favourable relationship outcome. Using dyadic approach, there is little evidence for associations between personality similarities in couple and each partner's life satisfaction (e.g. Furler *et al.*, 2013). For example, Cuperman and Ickes (2009) find that dyads who score low in agreeableness have the least pleasant interaction. In another study, despite having matching age and education, similarity in couple's personality trait is weak and less consistent (Gattis *et al.*, 2004). This may be influenced by the unique quality of the relationship as a function of each partner's contribution (Robins *et al.*, 2000). Furthermore, Karney and Bardbury (1995) reveal that there is a negative relationship between neurotic and relationship quality in which high levels of neuroticism between couples causes higher level of conflicts. Such evidence shows that similarity between a couple's personality traits appears not to be important in mate selection and is likely to influence later in the couple's lives more indirectly and subtly, especially on how they feel about who they really are (Luo & Klohnen, 2005). In a study, which involved marital couples over 12-year period, it is found that similarity in personality predicted lower marital satisfaction (Shiota & Levenson, 2007).

The second group of researchers adheres to the principles that 'birds of a feather don't always fly farthest' (e.g. Shiota & Levenson, 2007), which is also known as the complementarity principle (Hinde, 1997; Winch, 1958; Zentner, 2005). Complementarity is defined as being attracted to a partner who confirms one's views on the self in relation

to others (Peitromonoca & Carnelly, 1994). Complementarity occurs when personality traits of an individual serve to make a whole or complement the personality trait of another, therefore resulting in positive outcomes (Muchinsky & Monahan, 1987). Complementarity also occurs when dissimilar traits are able to satisfy the needs and desires of the other individual (Kristof, 1996). Early work by Winch and colleagues (1954) has long proposed that the notion of complementarity is prevalent in mate selection. They suggest that individuals seek a mate that would maximally gratify his or her needs, and individuals are more prone to selecting personality traits that are complementary rather than similar. It is argued that this selection is directed by a desire to possess characteristics, which are felt by the individual to be necessary for his/her self-concept or his/her social and general life (Cattell & Nesselroade, 1967; Klohnen & Luo, 2003).

When specific traits are concerned, a longitudinal empirical study reveals that individuals with low openness and high in neuroticism traits have higher tendency and are more likely to be complementarity seekers (Zentner, 2005). Watson and colleagues (2004) further indicate that individuals who are complementarity seekers (e.g. extroverts) are moderately likely to marry introverts. Other studies find that complementarity of personality traits predicts better relationship outcomes (e.g. Dryer & Horowitz, 1997), and contribute to relationship quality (see Kurtz & Sherker, 2003; Robins *et al.*, 2002; 2000). The enduring dispositional differences in personality affect the relationship dynamics and even shape the quality of the relationship, thus explaining why some people cannot be satisfied with any relationship while others could (Robins *et al.*, 2002). Needless to say, these stable personality traits play a crucial role in determining the nature of the relationship (Botwin *et al.*, 1997).

## 2.8.2 Interpersonal Theory

Complementarity is also a major component within the interpersonal theory (e.g. Gurtman, 2001; Orford, 1986; Strong *et al.*, 1988; Tiedens, 2007). The theory was introduced by a group of researchers from the Kaiser Foundation (Freedman *et al.*, 1951; LaForge *et al.*, 1954; Leary, 1957). Its main proposition advocates that each interpersonal behaviour invites a particular class of response in the interpersonal circle (Strong *et al.*, 1988). This principle posits that differences, sometimes opposites, in needs and personality characteristics drive mating and personal satisfaction (Zentner, 2005). Within this theory, fit can be referred to individuals having complementary, dissimilar traits (Muchinsky & Monahan, 1987). Nonetheless, Gurtman (2001) argues that complementarity principle within the interpersonal theoretical framework involves two basic assumptions; 1) interpersonal behaviours tend to ‘elicit’ or ‘invite’ certain kind of reciprocal behaviours, and, 2) over time, these action-reaction sequences lead to particular forms of stable, repetitive patterns of interpersonal relating. Thus, responding to a complementary way arise as a resolution to build strong and long-lasting relationship (Tiedens *et al.*, 2007).

Researchers in this literature generally agree that there are two primary dimensions of interpersonal behaviour – and affiliation and dominance dimensions (Tiedens *et al.*, 2007). They refer affiliation dimension as the degree to which a person is agreeable or quarrelsome (i.e. being friendly or hostile), or behaves in agreeable or quarrelsome fashions. Whereas, dominance dimension refers to the degree to which a person is dominant or submissive, or behaves in dominant or submissive fashions (Tiedens *et al.*, 2007). Researchers in this theoretical domain generally define interpersonal complementarity as the partners’ interaction which are similar in terms of affiliation dimension (an affiliation effect), but different in terms of dominance (a contrast effect)

(Tiedens *et al.*, 2007). Recent studies have provided some evidence on this argument (e.g. Dryer & Horowitz, 1997; Sadler & Woody, 2003; Tiedens *et al.*, 2007) though there are other studies which disagree that dominance begets submission (e.g. Bluhm *et al.*, 1990).

Though both personality trait and interpersonal theories use human trait adjectives as a major component in their conceptualisation, the role of traits are different. A major purpose of FFM is for the identification of universal higher-order traits to measure individuals in different cultural contexts. Successful identifications enable researchers to examine how (dis)similarity in personality dimensions affects relationship outcome between individuals. In contrast, interpersonal theory emphasizes on the behavioural aspects of the trait adjectives, in which opposite traits meaning along the dimensions of affiliation and dominance are plotted to a circumplex model (see Kiesler, 1983). Hogan (1983) further differentiates these two theoretical frameworks such that ‘circumplex models are concerned with the circular arrangement of types, whereas factor models are concerned with the delineation of the minimum number of orthogonal factors.’

Overall, this implicates that certain combination of different traits should be able to promote better relationship outcomes. Traits in people are viewed to be related to each other (Hochwalder, 1995). For example, an individual who is very confident and fun at a party can be perceived as being an extrovert. Certain traits are close related and are well-organized in an individual’s mind (Wyer & Gordon, 1982), which in turn provides evidence that is consistent with the operation of organised knowledge structures. These organised structures can be thought of as a person schema (Fiske & Taylor 1984).

From the discussion above, though complementarity principle is predominantly used within the management, personality and social psychology literature, its adoption into the



marketing and branding literature may provide deeper understanding of the brand personality concept, and the influence of brand personality traits in generating favourable brand evaluations. Marketing literature has long discussed the importance of brand personality in developing strong brand equity (Aaker, 1996) and extending into new product category (Aaker & Keller, 1990). Recent study by Monga and Lau-Gesk (2007) has provided some evidence in the role of complementarity principle between two brand personality dimensions. To expand their findings, this thesis intends to apply complementarity principle into the brand personality concept. To do so, the author will first discuss the theoretical underpinnings of brand personality.

## **2.9 Brand Personality**

Aaker (1997) seminal article introduces brand personality concept in the marketing literature, though prior studies and practitioners have long argued individuals' innate tendency to imbue human characteristics to brands (Batra *et al.*, 1993; Ogilvy, 1983; Plummer, 1984). Brand personality refers to 'the set of human characteristics associated with a brand' (Aaker, 1997; p.347). A strong and positive brand personality often leads to benefits such as increasing consumer preferences, usage, trust, loyalty and brand equity (Freling & Forbes, 2005; Smit *et al.*, 2007). It can be leveraged to differentiate a brand from its competitors (Chun & Davies, 2006). Although consumers readily assign personality qualities to brand objects (Aaker, 1997) or characterize them (Plummer, 1984), it is important that a brand must focus on one personality dimension to achieve high degree of singularity to avoid confusion to the consumers, as singularity is an important driver of brand performance (Malär *et al.*, 2012). Furthermore, appeals to brand personalities signify individuals' outlets for self-expression and symbolic consumption purposes (Aaker, 1997; Swaminathan *et al.*, 2009).

There are previous attempts to measure brand personality however, the measurements are adhoc and unreliable (Aaker, 1997). The Aaker's brand personality scale is adopted from the trait perspective of human personality and largely influenced by the Five-Factor model (see McCrae & Costa, 1997). Using factor analytic methodology, Aaker (1997) finds that the US brand personality structure mirrors the FFM albeit with some differences. The sincerity, excitement, and competence brand personality dimensions (or factors) correspond to FFM's agreeableness, extroversion, and conscientiousness all of which are hypothesized to tap 'an innate part of human personality' (Aaker, 1997; p. 353). Whereas, sophistication and ruggedness are posited to tap into humans' desires that they do not necessarily have (Aaker, 1997, p. 353). Aaker's proposal is in line with self-concept literature which advocates that some brands are seen as a medium to strengthen one's actual self, while other brands help individuals transcend to an ideal self (see Dolich 1969; Kassarian, 1971; Malhotra, 1988; Sirgy, 1982; Sirgy *et al.*, 1997). Moreover, individuals prefer distinctive and appealing brand personalities since these brands rub off their personalities onto them (Park and John, 2010), and express, affirm, and enhance their sense of self (Aaker, 1999; Chernev *et al.*, 2011; Escalas & Bettman, 2003; Gao *et al.*, 2009; Park & John, 2010; Swaminathan *et al.*, 2009).

However, Aaker's (1997) brand personality scale is not void of criticisms. First, subsequent studies criticise the 'loose' definition of brand personality which particularly include items that describe gender (e.g. feminine) and demographics (e.g. upper-class); all of which personality researchers worked hard to eliminate (Azoulay & Kapferer, 2003). Thus, some newer studies define brand personality as 'the set of human personality traits that are both applicable to and relevant for brands (e.g. Geuens *et al.*, 2009; Azoulay & Kapferer, 2003). Second, there are issues of non-generalizability of the factor structure for the analyses at the respondent level (i.e. for a specific brand or within product

category (e.g. Austin *et al.*, 2003; Batra *et al.*, 2010). Third, the scale is not replicable cross culturally, thus cultivating the emergence of other brand personality scales specific to countries (e.g. Aaker *et al.*, 2001; Rojas-Méndez *et al.*, 2013; Sung & Tinkham, 2005), organisation (e.g. Chun & Davies, 2006; Slaughter *et al.*, 2004), tourism destination (e.g. Hosany *et al.*, 2006), city (Kaplan *et al.*, 2010), store (d'Astous & Lévesque, 2003; Willems *et al.*, 2012), online brand (Aggarwal *et al.*, 2009), and print media (Valette-Florence & De Barnier, 2013).

Due to the above limitations, Aaker's study has sparked numerous studies extending brand personality concept in the marketing literature, predominantly focus on the identification of personality structures (e.g. Geuens *et al.*, 2009), and its predictive value (e.g. Yorkston *et al.*, 2010). Generally, studies on brand personality can be classified into four broad investigations; 1) scale validity, reliability, and development 2) consequence of brand personality, 3) consumer level differences in brand personality impression and dynamic updating, and 4) brand personality impressions through advertising and marketing communications (Puzakova *et al.*, 2013).

The focus of the first stream of research is the development of valid and reliable personality scales using psychometric methodology (e.g. Geuens *et al.*, 2009). As mentioned above, findings from these research suggest that dimension of brand personality scale differ according to cultural and context (e.g. Aaker *et al.*, 2001; Sung & Tinkham, 2005). Generally, findings in various brand personality scale development studies have led to the assumptions that; 1) when human personality scale is used to measure brands, the factors that emerge do not resemble the FFM (see Caprara *et al.*, 2001; Milas & Mlačić, 2007), and 2) brand personality scale is culturally embedded in language (e.g. Aaker *et al.*, 2001; Bosnjak *et al.*, 2007; Milas & Mlačić, 2007; Rojas-

Méndez *et al.*, 2013; Sung & Tinkham, 2005). Despite the criticism, studies which adopt Aaker's (1997) brand personality scale have cited strong reliability (i.e. Cronbach's  $\alpha$  values above .70) (Aaker, 1999; Aaker *et al.*, 2004; Ang & Lim, 2006; Puzakova *et al.*, 2013).

The second stream of research mirrors the development in FFM where researchers start to examine the predictive utility of brand personality scale (e.g. Aaker *et al.*, 2010; Monga & Lau-Gesk, 2007; Yorkston *et al.*, 2010). Brand personality has progressed beyond its evaluative and profiling purposes (e.g. Mathur *et al.*, 2012; Aaker *et al.*, 2010). There are numerous researchers who study the predictive value of each of Aaker's (1997) brand personality dimensions (e.g. Puzakova *et al.*, 2013). Aaker (1999) finds that both sophistication and ruggedness elicited greater favourable evaluations when these traits are congruent with individual's self-schema. Aaker and colleagues (2004) also find that consumer-brand relationship (see Fournier, 1998 for further reading) varies according to type of personality traits that a brand projects. In a non-transgressive relationship, sincere brand follows the friendship template over a time period, while exciting brand shows characteristic of a short-lived fling. In contrast, the onset of a transgression weakened sincere brand while, exciting brand shows signs of reinvigoration.<sup>1</sup> A brand imbued with sincere traits is perceived to be warmer, considerate and more caring (Aaker *et al.*, 2004). In fact, preference towards sincere (vs. exciting) brand is stronger if the consumer-brand relationship is stable (vs. threatened) across time (Aaker *et al.*, 2004). Since the brand personality helps customers co-create mutually beneficial relationship with the brand, this meaning goes beyond functionality and symbolism (Berthon *et al.*, 2009). It gives meaning to consumer's lives and they would instinctively consider the brand as a partner

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<sup>1</sup> Transgression refers to a violation of the implicit or explicit rules guiding relationship performance and evaluations (Metts, 1994). Aaker *et al.* (2004) conditioned act of transgression as the act of service failure (i.e. accidental erasure of digital prints by an employee of an online photo printer).

in a relationship (Breivik & Thorbjørnsen, 2008; Fournier, 1998). The brand's appeals to the ideal (desired) self which fuels the need for self-esteem (Bosnjak & Rudolph, 2008) and/or articulate their own relationship views (Blackston, 1992). Brands imbued with personality traits are desired, particularly for symbolic and self-expressive consumptions which ascribes meaning to one's own consumption (McCracken, 1986).

Another stream of research examines consumer level differences and its influence on brand personality impression and updating. In a study, Johar and colleagues (2005) investigate how individuals' chronicity influences their updates on initial inferences or trait schema. Here, chronicity refers to the tendency to activate and use specific personality trait to a high degree (i.e. trait accessibility) (Johar *et al.*, 2005). They find that chronics (vs. non-chronics) have higher tendency of piecemeal-based (vs. schema-based) approach to incongruent (vs. congruent) new trait information. In other words, individuals with higher accessibility to traits will update initial inferences on the basis of trait valence, salience and how they view themselves.

A study in brand extension literature reveals that the brand personality of a parent brand is enduring and stable in both good and bad fitting extensions (Diamantopoulos *et al.*, 2005). Brand personality may represent a categorisation foundation of a brand schema (see Fitzsimons *et al.*, 2008). Individuals use brand schema as the source of judgement and inferences, especially when there is limited amount of information available for the extended brand (e.g. Johar *et al.*, 2005; Puzakova *et al.*, 2013). The study also provides the evidence of trait inference in the tradition of impression formation literature.

In another study, Puzakova and colleagues (2013) show that individuals are able to relate two brand personality dimension although they are only given the information for only one dimension. Specifically, they find that individuals infer different brand personalities

when they are exposed to new, ambiguous and novel trait information. The reason is self is viewed as having multiple traits that co-vary either positively or negatively (see Critcher & Dunning, 2009). Such co-variation becomes the foundation of the individuals' own geography of self to form impression towards a brand (Puzakova *et al.*, 2013) or another individual (Critcher & Dunning, 2009). Such findings provide the evidence that individuals refer to their own set of personality traits to form a belief about how traits co-existed and co-vary in others.

The fourth stream of research investigates advertising and marketing communication factors that affect the formation of brand personality impression. To the author's knowledge, one notably study by Machle and Supphellen (2011) indicates that sources of brand personality formation may originate from fourteen different media. Furthermore, depending on Aaker's (1997) personality dimensions, certain media seem to be more influential than others to form certain dimension. For example, they argue that important media sources that form dimensions of competence and sincerity are company-level sources – company's moral values, managing director, and employees (Machle & Supphellen, 2011). Nevertheless, studies in brand personality have yet to investigate the effect of different stimuli (text-based vs. visual-based) in for the formation of brand impression. Findings other related studies in the marketing and advertising literature seem to suggest the influence of 'imagery values' (e.g. Poor *et al.*, 2013; Lutz & Lutz, 1977), and overall tonality of the message conveyed through vocabulary choice, phrasing and taglines of advertisements in forming brand personality impression (Aaker *et al.*, 2004).

## 2.10 Malaysian Brand Personality (MBP) Structure

In order to examine and establish BPC principle, a reliable and valid brand personality scale is required. Insofar, extensive research on brand personality scale development has indicated cultural- or contextual-specific brand personality scales relevant to countries (e.g. Aaker *et al.*, 2001; Rojas-Méndez *et al.*, 2013; Sung & Tinkham, 2005), organisation (e.g. Chun & Davies, 2006; Slaughter *et al.*, 2004), tourism destination (e.g. Hosany *et al.*, 2006), city (Kaplan *et al.*, 2010), store (d'Astous & Lévesque, 2003; Willems *et al.*, 2012), online brand (Aggarwal *et al.*, 2009), and print media (Valette-Florence & De Barnier, 2013). This is expected since Aaker (1997) argues that not all of the U.S. brand personality items are universal (Rojas-Méndez *et al.*, 2013).

Such developments are also being called within the development of FFM or Big Five personality assessments (e.g. Cheung *et al.*, 2011; McAdams and Pals, 2006). Although personality traits are viewed to be stable and enduring (e.g. McCrae & Costa, 1997), some cultural psychologists start to re-emphasize the important of combined emic-etic approaches to personality assessment (e.g. Cheung *et al.*, 2011). The reason is this approach will provide a comprehensive theory of personality (Church, 2009). There are three approaches to examine psychological phenomena (Aaker *et al.*, 2001). The first is the emic approach which explores a particular psychological construct from within the cultural system. In other words, indigenous measures and stimuli are developed in order to examine the psychological phenomena. In contrast, the etic approach explores the indigenous psychological phenomena by importing other established or universal measures and stimuli. However, adoption of either one of these approaches limits the integrated perspective of human universal (Cheung *et al.*, 2011). To address this issue, cultural psychologists recommend the adoption of combined emic-etic approach. It requires the identification of psychological measures and stimuli that comprise both

universal and indigenous measures and stimuli (Aaker *et al.*, 2001; Cheung *et al.*, 2011; Hui and Triandis, 1985). In the brand personality literature, there are several studies which adopt the combined emic-etic approach to scale development (e.g. Aaker *et al.*, 2001; d'Astous & Lévesque, 2003; Geuens *et al.*, 2009; Slaughter *et al.*, 2004; Sung & Tinkham, 2005; Venable *et al.*, 2005).

By adopting emic-etic approach to scale development, it is expected that the MBP scale consists of both etic (i.e. universal) and emic (i.e. culture-specific) trait items. Brands are symbols that carry and communicate cultural meaning (Douglas & Isherwood, 1979; McCracken, 1986; Richins, 1994), and it is particularly evident when well-known brands become strongly associated with the country of its origin, for example Samsung, a brand that signals Korea's competencies in high-end consumer electronics. It is argued that although both Western and East Asian cultures may exhibit different values, these cultures may have similar characteristics that can be personified through brand personality dimensions (Sung & Tinkham, 2005). McCrae *et al.* (2005) further argue that geographically and historically related cultures have higher tendency to exhibit similar human personality factors. Looking back historically, Malaysia was a British colony until it achieved its independence in the late 1950s. Additionally, rapid expansion of MNCs by the earlier twentieth century such as Nestle in Malaysia (established in 1912) to an extent influences Malaysian preferences for global brands.

Hence, the author expects that at least one brand personality dimension from previous research may prove to be universal and emerged as higher-order factors in MBP structure, although their trait items may show some variations. Such evidence has been proven by previous brand personality scale development studies where some of these brand personality structures are represented by both emic and etic dimensions (e.g. Aaker *et al.*,



2001; d'Astous & Lévesque, 2003; Geuens *et al.*, 2009; Slaughter *et al.*, 2004; Sung & Tinkham, 2005; Venable *et al.*, 2005). Furthermore, previous studies indicate that there is strong probabilities that dimensions such as sophistication, excitement, and sincerity will emerge as the higher-order factors (see Aaker *et al.*, 2001; Bosnjak *et al.*, 2007; Hosany *et al.*, 2006; Willems *et al.*, 2012). This probably because these dimensions have been cited as a culturally universal brand personality dimension, thus should be equally accessible and familiar to individuals regardless of their cultural background (Aaker *et al.*, 2001).

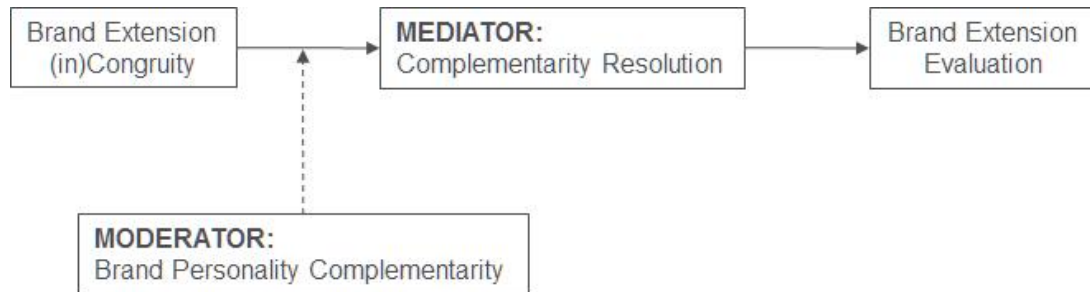
# CHAPTER 3 – Conceptual Model and Hypotheses Development

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## 3.1 Introduction

All of the previous discussions have led to the development of the conceptual model below (see **Figure 3.1**). Prior to addressing this conceptual model, the study will need to; 1) first develop a cultural-specific brand personality scale which identify the higher-order dimensions in Malaysia, and 2) second operationalize brand personality complementarity (BPC) principle. The author argues that the BPC principle moderate the relationship between brand extension congruity and extension evaluation. The relationship is however mediated by complementary resolution. The following subsections will discuss the development of the conceptual model.

*Figure 3.1 Conceptual Model*

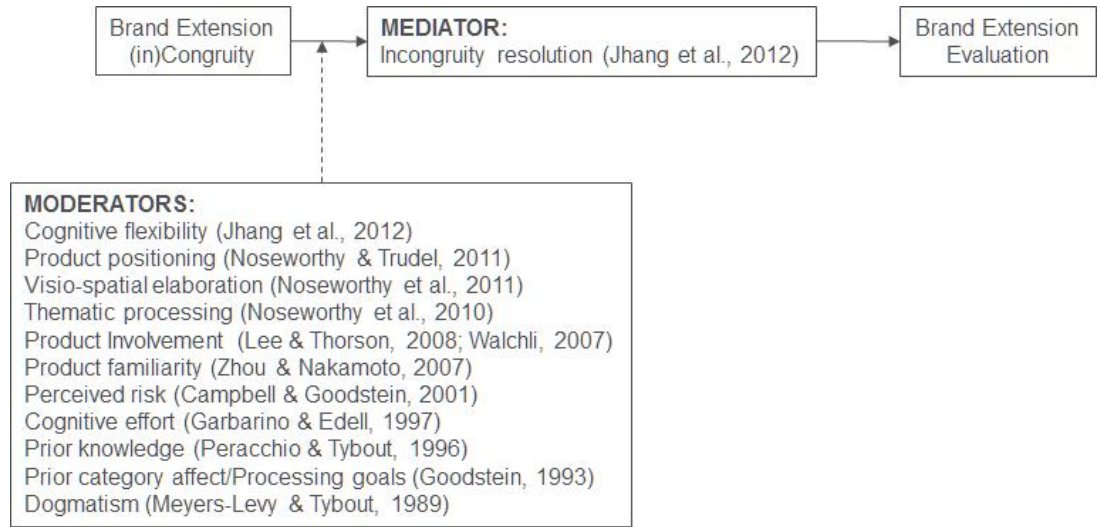


### 3.1.1 Consolidated Conceptual Model of Previous Studies

In chapter 2, the author has reviewed the relevant theories that will be adopted in this thesis. Most importantly, the author adopts schema congruity theory (SCT) as the core theory in which this thesis is based on, to explain the evaluation of extremely incongruent extensions. Empirical research adopting SCT is pioneered by Meyers-Levy and Tybout (1989) whom include dogmatism as a moderator. Since then, the development of SCT has investigated several other moderators such as prior knowledge (Peracchio & Tybout,

1996), product familiarity (Zhou & Nakamoto, 2007), and product positioning (Noseworthy & Trudel, 2011) (see **Figure 3.2** for a complete list of moderators). It is not until recently that Jhang and colleagues (2012) investigate complementarity resolution as mediator.

*Figure 3.2 Consolidated Conceptual Model of Past Studies*



The author extends the work of Jhang and colleagues (2012) by adopting their conceptual model to include BPC as a moderating factor. Therefore, literature review of SCT does not include recent studies after 2012 (e.g. Yang *et al.*, 2014). According to author's knowledge to date, BPC has not been studied in any recent study (as of July, 2015). Specifically, the author proposes that the evaluation of extremely incongruent can be enhanced when brand personality of the extension is complementary to that of parent brand. In the next sections, the author will discuss specific hypotheses of this thesis.

### **3.1.2 The Brand Personality Complementarity (BPC) Principle**

The above discussions on personality trait theory, complementarity principle, and brand personality serve as the foundation for the BPC principle. The author proposes that the adoption of BPC principle in schema congruity theory will enhance the evaluation of

extremely incongruent brand extensions. Drawing from previous studies, it can be implicitly assume that complementary principle is applicable to brand personality concept. Most importantly, it is a major component of BPC principle. To be able to conceptualise BPC principle, the author adopts the definition from assortative mating literature (see Peitromonoca & Carnelly, 1994). It is defined as being attracted to a brand personality which confirms one's views on the self in relation to other brand personalities.

Complementarity of brand personality (i.e. abstract level) has not been properly examined (e.g. Monga & Lau-Gesk, 2007), though there are studies which investigate complementarity level at product category level (e.g. Aaker & Keller, 1990; Mao *et al.*, 2012; Shine *et al.*, 2007). Evidence from earlier research indicates that pairing of brand personality dimensions or brand images can enhance evaluations of a new product or extension (e.g. Lau & Phau, 2007; Monga & Lau-Gesk; 2007; Puzakova *et al.* 2013; Simonin & Ruth, 1998). A study by Simonin and Ruth (1998) reveals that in a cobranding situation, brand image fit is positively related to the cobrands' evaluations. In other words, consistency in the brand image associations enhances the acceptance of new product developed by the two parent brands. Their results are supported by Lau and Phau (2007) who find that brand image fit between parent brand and brand extension prevents further dilution of parent brand affect. Both of these studies prove that consistency in brand-image associations is needed to generate greater evaluative responses (e.g. Park *et al.*, 1991).

However, similarity in image seems to producing lesser evaluation when individuals are presented with stimuli paired with dissimilar brand personality dimensions (e.g. Monga and Lau-Gesk, 2007). In a cobranding study, in which two parent-brand join forces to create a new product, Monga and Lau-Gesk (2007) discover that two brands in the same

product category are not evaluated favourably when they are conditioned to project one single personality (either sophistication or excitement). In contrast, evaluations are more favourable for dual-personality cobrand in which sophistication-excitement cobrand elicits higher favourable evaluations as compared to those of sophistication-sophistication, or excitement-excitement cobrand. Similarly, Yang and colleagues (2014) find two dissimilar brand personalities enhance purchase interest of a pair of unrelated product. They further argue that brand personality dimensions are likely to be perceived as inherently opposing in nature, given the different brand relationship outcome that they predict (see Aaker *et al.*, 2004).

The tendency to follow complementarity principle is also evident in a study done by Puzakova *et al.* (2013) who found that individuals infer different brand personalities when they are exposed to new, ambiguous, and novel trait information. This is possibly because self is viewed as having multiple traits that covary either positively (i.e. similar) or negatively (i.e. complementary) (Critcher & Dunning, 2009). Such covariation becomes the foundation of the individuals' own geography of self to form impression towards a brand (Puzakova *et al.*, 2013) or another individual (e.g. Critcher & Dunning, 2009).

Despite the early evidence of complementarity between sophistication and excitement, the author postulates that different brand personality dimension pairs will generate different BPC levels (i.e. high, moderate and low). Referring to assortative mating literature, individuals have the propensity to search for optimal trait combinations when relationship is concerned (Zentner, 2005). As previously discussed, individuals who adhere to the complementarity principle are driven to look for different sometimes opposite in needs and personality characteristics to achieve better relationship satisfaction

(see Hinde, 1997; Winch, 1958; Zentner, 2005). This inclination is particularly strong when individuals' choice of lifetime partner is determined by the personality traits held in their ideal self-concept, hence selection of partner depends whether he/she possess these traits (Klohn & Mendelsohn, 1998; Zentner, 2005). This is because these are the ideal personality patterns that the individuals desire, value, and seek out (see Zentner, 2005). Such reasoning is akin to the dimensions of the brand personality structure. Consensus in this literature agrees that individuals leverage on brand personality either to signal their actual self, or to enhance the desire self (see Aaker, 1997; Dolich 1969; Kassarian, 1971; Malhotra, 1988; Sirgy, 1982; Sirgy *et al.*, 1997). Such reasoning may indicate that some dimension or trait pairs are more favourable than others. Thus, the author posits that

H<sub>1A</sub>: Favourable brand personality dimension pairs will elicit higher rating of BPC evaluations.

Other researchers in both interpersonal complementarity and implicit personality literatures suggest that trait dominance may influence BPC evaluations (see Asch & Zukier, 1984; Bluhm *et al.*, 1990; Dryer & Horowitz, 1997; Gurtman, 2001; Orford, 1986; Kiesler, 1983; Sadler & Woody, 2003; Strong *et al.*, 1988; Tiedens *et al.*, 2007; Tracey, 1994; Wiggins, 1979). According to Asch and Zukier (1984), individuals have the tendency to assign one trait to be dominant when they are presented with two incongruent traits. In doing so, it enable individuals to resolve the incongruent pairs.<sup>2</sup> Furthermore, interpersonal theorists argue that complementarity is an instance where partners' interactions are similar in terms of affiliation (the affiliation effect), but complementary in terms of dominance (a contrast effect) (Tiedens *et al.*, 2007). The role of affiliation promotes similarity which in turn produces attractions, however interaction

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<sup>2</sup> Here, Asch and Zukier (1984) operationalizes incongruity by pairing two traits that are opposite in their semantic meaning for example, sociable-lonely.

between partners tends to differentiate in terms of dominance in which resulted in a better relationship outcomes (Tiedens *et al.*, 2007). Appeals to dominance is said to be innate and motivated by the needs to maintain hierarchically differentiated relationships particularly in task-oriented inter-individual relationships (e.g. Glomb & Welsh, 2005; Tiedens *et al.*, 2007). Moreover, it is reported that a relationship is more satisfying when dominant individuals are coupled with submissive partners (Dryer & Horowitz, 1997). Following the above reasoning, the author posits that individuals' perception of trait dominance may influence BPC effect. Thus, the author posits that;

H<sub>1B</sub>: Brand personality dimension pairs will elicit higher rating of BPC evaluation if one of the traits is perceived to be dominant over the other.

Recently, findings from implicit personality literature indicate that the individuals' own impression of traits in others is dependent on the ways traits covary in the self onto their impressions of others (Critcher & Dunning, 2009; Powell & Juhnke, 1983; Puzakova *et al.*, 2013). Researchers label this concept as the 'geography of self', and argue it to be an important source of impression formation (Critcher & Dunning, 2009). Most importantly, the inference of traits onto brands can be characterized as an *egocentric pattern projection*. Essentially, it presumes that salience and accessibility of traits within the perceivers are the focal determinant of trait projection. These self-generated inferential beliefs are argued to have a strong influence on brand evaluations, since inferential beliefs are often internally generated, held with greater confidence and are more accessible from memory (Gardial *et al.*, 1993; Kardes *et al.*, 2004). To examine this trait covariation in individuals, the author will assess the participants personality using MBP scale since previous brand personality scales are proven reliable to assess people (Batra & Homer, 2004), and situation (Aaker, 1999). Thus, following this reasoning, the author posits that;

H<sub>1C</sub>: BPC evaluations are moderated by the traits of the participants.

In order to examine these hypotheses, the author will adopt the experimental methodology. The next subsection will lead to specific hypotheses related to schema congruity theory.

### **3.1.3 Moderating Effect of BPC on Schema Congruity Theory**

Schema congruity theory predicts that congruity-based process between the existing schema and the extremely incongruent new item will lead to frustration, hence lower extension evaluations. The author proposes that extreme congruity effect can be mitigated. Assortative mating, implicit personality, and brand personality literature provide ample evidence to support this hypothesis. Many researchers in the assortative mating literature agree that agreeableness reduces conflict, conscientiousness increases relationship contact frequency, while extraversion overall increases couple's interaction (e.g. Asendorpf & Wilpers, 1998; Gattis *et al.*, 2004). While, studies in brand personality also reveal the influence of excitement, sincerity and competence in maintaining long lasting brand relationship (Aaker *et al.*, 2004; Folse *et al.*, 2013; Swaminathan *et al.*, 2009). Most importantly, studies have started to examine combination of pairing of dissimilar traits in enhancing evaluations (Monga & Lau-Gesk, 2007; Yang *et al.*, 2014).

As mentioned previously, schematic processing (i.e. schema-based affect) allows faster and easier evaluations by accessing information at the schema level, thus reducing the individuals' efforts to re-evaluate previously processed information (Fiske, 1982; Fiske & Pavelchak, 1986; Sujon, 1985). Within the context of brand extension, extremely incongruent extension signifies a significant deviation from schematic representation of a parent brand particularly on its concrete brand attributes such as product category (see Jhang *et al.*, 2012). Both parent and extended brands will not share any common concrete



or tangible product attributes. Hence, depending on the sheer magnitude of the incongruity extremity, schematic processing may accommodate (i.e. by subtyping or schema switching) or contrasts against the existing schema (Aggarwal & McGill; 2007; Anderson, 1975; Boush & Loken, 1991; Campbell & Goodstein, 2001; Fiske & Neuberg, 1990; Fiske & Pavelchak, 1986; Herr, 1986; Herr *et al.*, 1983; Kunda & Oleson, 1997; Mandler, 1982; Manis *et al.*, 1988; Meyers-Levy & Tybout, 1989; Noseworthy & Trudel, 2011; Ozanne *et al.*, 1992; Perrachio & Tybout, 1996; Sherif & Hovland, 1967; Stayman *et al.*, 1992).

In the situation where extended brand is extremely incongruent, it is argued that individuals encounter with extreme incongruity will cause individuals to perform less internal information search (Ozanne *et al.*, 1992). Thus, this implies that accessibility and diagnosticity of external information is essential. Since both parent brand and extensions share concrete attributes between them, brand personality impressions (i.e. the abstract attributes) of both parent and extensions provide the primary linkage. Trait information is highly diagnostic and easily accessible (e.g. Srull & Wyer, 1979; Tausch *et al.*, 2007). Earlier research in brand personality literature has provided strong argument for trait complementarity and its diagnostic role (Johar *et al.*, 2005; Monga & Lau-Gesk, 2007). Furthermore, high information accessibility and diagnosticity have proven to enhance parent brand evaluation regardless of extension congruity levels (Ahluwalia & Gürhan-Canli, 2000). Following these arguments, the author posits that;

H<sub>2A</sub>: Evaluations of extremely incongruent brand extension is more [vs. less] favourable when BPC level is high [vs. low].

Research that adopts schema congruity theory has yet to delineate the influence of high and low involvement products. With the exception of few studies which use digital

camera and cars (e.g. Aggarwal & McGill, 2007; Noseworthy *et al.*, 2010; Ozanne *et al.*, 1992), most studies use low involvement products such as soft drinks, fruit juice, rice, and toilet papers (Jhang *et al.*, 2012; Meyers-Levy & Tybout, 1989; Stayman *et al.*, 1992). However, there are several conceptualisations of involvement. Spielmann and Richard (2012) list several of them which are; situational (Celsi & Olson, 1988), product-related (Zaichkowsky, 1994), enduring (Lumpkin, 1985), message (Lord & Burnkrant, 1993), purchase (Slama & Tashcian, 1985), and program (Levy & Nebenzahl, 2006). Days and colleagues (1995) then classify them into either enduring or situational. In this thesis, the author adopts the work of Zaichkowsky (1994; 1985) whose product-related involvement is classified as enduring. Following the work of Zaichkowsky, Howard and Kerin (2006) define involvement as ‘the level of personal relevance that a product or purchase decision has for a consumer.’ Involvement has shown to be influencing the extent to which individuals process advertisements and type of information included (Chaiken, 1980; Petty and Cacioppo, 1986). Specifically, high involvement product elicits greater information scrutiny compared to low involvement product (Chen & Chaiken, 1999). Following this argument, the author posits that;

H<sub>2B</sub>: Evaluations of extremely incongruent high involvement extension are more favourable compared to those of extremely incongruent low involvement extension.

In order to increase the generalizability of BPC principle, examination on types of stimuli that form brand personality impression is important. With the exception of study by Aaker and colleagues (2004) which incorporate both text and visual into their ad stimuli, other brand personality studies have mainly adopted either text- (e.g. Johar *et al.*, 2005) or visual-based ad stimuli to form brand personality impressions (e.g. Swaminathan, 2009).

Text-based stimuli use trait adjectives which are highly diagnostics of trait behaviours and their conceptual categories (Srull & Wyer, 1979; Tausch *et al.*, 2007), and are high in ‘imagery values’ (LaBarbera *et al.*, 1998; Rossiter & Percy, 1980; Unnava & Burnkrant, 1991). Thus, accessibility to trait schema is fast and the impressions formed are accurate since for most traits, their corresponding behaviours are informative and predictive (Dyrenforth *et al.*, 2010; Tausch *et al.*, 2007). In contrast, visual-based ad stimuli are more abstract and contextual since elements of images such as gender, behaviours, situations, and activities done may activate incidental and multiple cues beyond the core central features (e.g. Meyvis *et al.*, 2012; Paivio, 1986). This visual imagery fluency effect is more pronounced when imagery is presented in a vivid way, in other words, it promotes easier visual imagination (Petrova & Cialdini, 2005). Thus, extremely incongruent extension should benefit from text-based ad stimuli in both high and low BPC levels since they are highly diagnostics. The observation should be similar for visual-based ad stimuli in high BPC level. Thus, the author posits that;

H<sub>2C</sub>: Evaluations of extremely incongruent brand extension using visual-based ad [vs. text-based] stimuli for low BPC trait pairs will generate low [vs. high] evaluations compare to those using text-based ad stimuli.

Overall, for BPC principle to work, the author posits that individuals must be able to resolve incongruity between a pair of traits. Thus, the author introduces a mediating factor which is complementarity resolution.

### **3.14 Complementarity Resolution**

Findings in the implicit personality literature (e.g. Asch & Zukier, 1984; Critcher & Dunning, 2009; Hampson, 1998; Puzakova *et al.*, 2013) may explain why trait incongruity can be resolved and perceived as complementary. Individuals assume

inferential relationships among traits even when they are incongruent (Asch & Zukier, 1984; Casselden & Hampson, 1990; Hampson, 1998). Judgment of incongruity between traits depends on two components of trait meanings – descriptive and evaluative (Hampson, 1998). Two traits are descriptively similar when their semantic meaning infer similar trait behaviours. For example, trait pair of generous-extravagant is descriptively consistent compared to generous-thrifty since semantically it represents the act of giving (Hampson, 1998). In contrast, evaluative similarity represents traits that are desired for example, generous-thrifty is more desirable than extravagant-stingy trait pair. Evidently, an incongruent trait pair is reconciled because they represent descriptively consistent trait meaning, although they may or may not be evaluatively consistent (e.g. Hampson, 1998).

This implies that a set of traits that are descriptively similar is more preferred to those which are evaluatively similar. It is the semantic relatedness that define it distances and similarity amongst traits (Borkenau, 1992). For example, for highly similar traits like helpful, generous, and charitable, it is the actions and the anticipated consequences that differentiate them (Borkenau, 1992). Most empirical studies in this area of interest have found that individuals have greater tendency to choose descriptively congruent trait meaning as personality descriptors (e.g. Borkenau & Ostendorf, 1989; Hampson, 1998; Peabody, 1967; Wyer & Gordon, 1982). Inferring from one's own multi-trait dispositions as an introspective diagnosis to project similar (e.g. Holme, 1991) or opposite (e.g. Lemon & Warren, 1974) personality traits to another individual, this 'egocentric pattern projection' help resolve a pair of traits that are incongruent (Critcher & Dunning, 2009). Furthermore, the process of trait projection onto others is facilitated by FFM trait structure (e.g. Schneider & Blankmeyer, 1983). Thus, following these reasoning, the author posits that;

H<sub>3</sub>: Complementarity resolution mediates the relationship between BPC and extension evaluations.

### **3.2 Conclusion**

In sum, the above discussions on theories and concepts should provide a strong foundation to pursue the objectives and hypotheses of this thesis. By introducing BPC as a moderator to schema congruity theory, the author posits that evaluations of extreme incongruity in particular can be enhanced. The foundation of BPC like brand personality concept originates from personality and social psychology literature. Though the role of perceived fit or congruity perception has been empirically proven to be the major determinant of extension success, the author posits that BPC is a significant moderator variable. In the next chapter, the author will discuss the methodologies that will be adopted. They are mainly factor analytic and experimental methodologies.

# CHAPTER 4 – Methodology

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## 4.1 Introduction

The purpose of this thesis is two-fold. First, the author intends to develop a robust and reliable Malaysian brand personality scale. This is based on the criticisms on the weak generalizability of brand personality scales developed by Aaker and colleagues (1997; 2001). Studies contained within the literature generally agree that brand personality scales are contextual which comprise specific or unique personality traits for brands (Geuens *et al.*, 2009; Venable *et al.*, 2005), organisation (Chun and Davies, 2006; Slaughter *et al.*, 2004), store (d'Astous & Lévesque, 2003), and country (Hosany *et al.*, 2006; Rojas-Méndez *et al.*, 2011).

Second, the author intends to test the *complementarity hypothesis* of brand personality when a new product is highly incongruent. Such task is achieved through experimental design and requires the author to investigate complementarity effect of each brand personality dimension (i.e. factor) that emerged from the scale development process. The experimental studies will also encompass testing mediation of complementarity effect.

## 4.2 Research Paradigm

Crotty (1998) asserts that researchers consider four questions when designing a research proposal; 1) epistemology, 2) theoretical perspectives, 3) methodology and 4) methods. Philosophically, researchers need to state their claim(s) about; what is knowledge (ontology), how do we come to know it (epistemology), and the process for studying it (methodology) (Cresswell, 2009). The ontological and epistemological discussions set the justification for the research design and address the theoretical contributions. Ontology relates with how reality is viewed, where it focuses on the philosophical assumptions about the nature of reality, whilst epistemology focuses on the source of

knowledge (Bryman, 2012). Specifically, ontology addresses the format of social reality that questions social reality is considered an objective entity to which people have experiential excess (Bryman, 2012). An objective entity refers to the social reality exists outside of the human mind thus is independent from interpretation (Corbetta, 2003). Whereas, Denzin and Lincoln (2011) explain that the selection of methodology is dependent on the perspective of the study and the nature of the questions being asked by the researcher.

The research paradigm is specified by its ontological and epistemological assumptions and each paradigm differs in their philosophical assumptions (Hudson & Ozanne, 1988). The two dominant and broad paradigms are positivism and interpretivism, which majority of the social research is predominantly based on (Lincoln & Guba, 2000). The positivist paradigm focuses on a model simplifying reality; the interpretivist paradigm reflects that reality (Bryman, 2012). The positivist paradigm uses quantitative methods to investigate a phenomenon (Crossan, 2003). It looks at the reality objectively, where epistemologically the research is carried out with apparent levels of certainty. It applies objective scientific approaches, where the researchers are independent from the reality that is being researched (Carson *et al.*, 2001). In this paradigm, the purpose is to produce hypothesis that can be tested using a more deductive approach to research (Bryman, 2012). The use of deductive approach permits statistical testing and generalisations (Guba & Lincoln, 1994).

This thesis adopts a positivist or functionalist approach to research. A positivist paradigm “seeks to examine regularities and relationships that lead to generalization and (ideally) universal principles” (Gioia & Pitre, 1990). It focuses on theory refinement; nevertheless theory building takes place in a deductive manner based on a set of priories. Hypotheses

function to extend prior theory in a new direction, explain gaps in the knowledge, or test competing possible explanations for structural relationships (Gioia & Pitre, 1990). In fact, positivists place a high priority on identifying causal linkages (Hudson & Ozanne, 1988) in which data are collected through instruments and procedure designed according to hypotheses formulated (Gioia & Pitre, 1990).

Positivists view that reality exists as a structure of relationship among its parts (Hudson & Ozanne, 1988). They assume that reality is fragmented and divisible, thus precise measurements and observations of this world are possible (Bagozzi, 1980). Ultimately, absolute understanding should come in a laboratory setting where confounding variables are controlled (Calders *et al.*, 1981). Positivists also view that human behaviour is determined by their beliefs, attitudes, and intention (Anderson, 1986) where individuals behave reactively in a response-reinforcement fashion to the external world (Morgan & Smircich, 1980; Rubinstein, 1981). Furthermore, positivist goal in explanation entails prediction. Such task is achieved when systematic association of variables underlying a phenomenon is demonstrated (Hudson & Ozanne, 1988). This should also show some level of prediction. Overall, the results will be either verification or falsification of the hypotheses which will lead to “abstract laws that can be ideally applied to an infinitely large number of phenomena, people, setting, and times” (Hudson & Ozanne, 1988).

In contrast, the interpretivist paradigm epistemological underpinnings explain how the paradigm values in-depth understanding of a particular phenomenon (Weber, 1981). One of the key methods in this paradigm is the qualitative methods, where they seek to “describe, decode, translate and otherwise come to terms with the meaning not frequency, of certain more or less naturally occurring phenomena in the social world” (Van Maanea, 1979; p. 520). It delves into the issues in greater depths and detail as opposed to



quantitative methods. This paradigm facilitates the understanding of how and why of the social reality by taking into account the complexity of the phenomenon and the contextual factors that surrounds the phenomenon (Bryman, 2012). Furthermore, Carson *et al.* (2001) suggest that interpretive qualitative methods are valuable for they provide an in-depth understanding of the phenomenon specifically in the marketing domain. In particular, these methods emphasize on interrogating behavioural phenomena through detection and explanation of patterns (Yin, 2014).

Both paradigms and methods have their limitations. The qualitative methods are criticized for lacking in generalizability as compared to quantitative methods, whilst the quantitative methods are criticized for ignoring historical and special contingencies (Bryman, 2012). Quantitative methods are based on simplifying reality whereas qualitative methods reflect the reality. This in turn affects the suitability of the methods to answer the research questions pose by the researcher. Both methods, though diverse, have their own valuable contribution to the body of knowledge. The interpretivist paradigm often involves theory building inductive method that necessitates the researcher to interact with participants to build up knowledge through the interaction (Guba & Lincoln, 1994). Meanwhile, the positivist paradigm declares an objective reality is out there, and research can be carried out with apparent levels of certainty through the application of objective scientific approaches (Carson *et al.*, 2001). The intention of such research is to produce hypothesis that can be tested, thus following a more deductive approach to research (Guba & Lincoln, 1994).

In this thesis, the author seeks to simplify the nature of a specific psychological phenomenon – evaluation of extremely incongruent brand extension through the theoretical lens of schema congruity theory (SCT) (Mandler, 1982). A hypo-deductive

methodology is more appropriate since the author is interested in investigating specific views of the phenomenon. Specifically, the author proposes specific hypotheses regarding the causal relationships of several constructs of interests (i.e. brand personality, and brand personality complementarity). While the importance and the contributions of their original constructs (i.e. personality traits, assortative mating, implicit personality theory, and interpersonal circumplex theory) have long established in personality and social psychology literatures, they are yet to be adopted and investigated in the brand, marketing and consumer behaviour literatures. In the next section, the author will review the scale development process.

### **4.3 Scale Development Process**

Churchill's (1979) seminal article on scale development is a concern regarding reliability and validity of scales in measuring the intended constructs in research. Poorly constructed scale is the major source of contradictory findings amongst studies (Hinkin, 1995). When developing new measures, Churchill (1979) recommends researchers to follow a sequence of steps which comprise domain specification of construct, item generation, item purification, and construct validation with new sample. Updated approaches to scale development do not deviated much from these steps (see Hinkin, 1995; 1998; DeVellis, 2003). Despite these variations, American Psychological Association (1995) states that "an appropriate operational definition of a construct a measure purports to represent should include a demonstration of content validity, criterion-related validity, and internal consistency" (Hinkin, 1998).

In this thesis, the author adopts the three-phase scale development process recommended by Hinkin (1995; 1998). Compared to Churchill's (1979), Hinkin's (1995; 1998) guidelines update the statistical methods that analyse convergent and discriminant

validities. Specifically, Hinkin recommends the adoption of confirmatory factor analysis to establish both validities (cf. multi-trait multi-method of Churchill). Additionally, the author adopts parallel analysis in the scale development phase. Hinkin identifies three phases in scale development. In each phase, there are a series of steps within which certain analyses are implemented. **Figure 4.1** below illustrates Hinkin's (1995) scale development phases. Discussion on the guidelines will be in the next sections.

*Figure 4.1 Scale Development Phases.*



Source: Hinkin (1995)

#### **4.4 Etic-Emic Approach to Scale Development**

There are two types of approaches in the development of the scale, which consists of the etic and emic approaches. Both approaches are adopted from cross-cultural studies in social psychology (see Berry, 1969). For those who subscribe to emic approach, theories and instruments are developed by relying on a systematic process that generates a set of culture-specific attributes. This creates a scale that is indigenous to the target culture. In contrast, the etic approach utilises theories or instruments that are either imported in their original form or translated into the local language (Enriquez, 1979).

The goal of adopting an etic approach is to find a set of universal attributes that can be generalised across different cultures. This has always been the thrust of sociology and psychological disciplines which seek for general relationships that transcend particular circumstances. This mainstream approach is focused on universal theories that

incorporate cultural dimensions (Miller-Loessi & Parket, 2003). However, this may distort the meaning of constructs in some culture or overlook their culture-specific aspects (Aaker *et al.*, 2001).

On the other hand, an emic approach would be advantages for researchers to emphasize the contextual, historically bound, socially constructed nature of the phenomenon at hand (Miller-Loessi & Parket, 2003). Even, some emic approach proponents argue that cross-cultural studies can only progress through a dialectics of both approaches (Kagitcibasi & Berry, 1989). Yet, the adoption of this approach would make cross-cultural comparisons difficult (Aaker *et al.*, 2001).

To address the underlying issues of both approaches, Hui and Triandis (1985) combine both approaches into what is known as a combined emic-etic approach. This combined approach provides a 'more complete and unbiased picture of the degree of cross-cultural overlap and specificity between constructs' which would not bias the results in favour of universality (Aaker *et al.*, 2001). These cultural variations are then captured in the form of personality attributes (Church & Katigbak, 1988). Applying such approach involves the following steps:

1. Indigenous attributes relevant to the target concept (e.g. commercial brands) are isolated in the new cultures and their underlying dimensional structures are identified;
2. Using an independent set of participants, the author combines the set of emic-based attributes with attributes from other cultures (e.g. US Brand Personality Scale), and the overlap between the emic and etic dimensions underlying these two sets of attributes are measured.

Following recommendations from Aaker and colleagues (2001), the author adopts the emic-etic approach to scale development.

## **4.5 Phase 1 – Item Generation**

There are 3 steps in phase 1: 1) literature review, 2) item development, and 3) content adequacy. The purpose of these steps are to gather a large pool of brand personality trait items (henceforth, are also called traits) from past studies, as well as generating traits from Malaysian samples. Hereafter, the study determines content and face validities (DeVellis, 2003; Hinkin, 1995; 1998). The following sections will further discuss literature reviews, item development, and content validity in details.

### **4.5.1 Literature Reviews**

This first step is to identify the domain of interest (i.e. brand personality concept) in existing literature. Keyword “brand personality” will help with the selection of relevant articles. Further selection of articles from top-tier peer-reviewed journals (i.e. *International Journal of Research in Marketing*, *Journal of Applied Psychology*, *Journal of Business Research*, *Journal of Consumer Psychology*, *Journal of Economic Psychology*, *Journal of Marketing Research*, *Journal of the Academy of Marketing Science*, *Journal of Personality and Social Psychology*, *Psychology & Marketing*, and *Social Behavior & Personality*) help limit the search results. In particular, the author pays specific attention to the method section (see Hinkin, 1995; p. 968). The brand personality scales selected need to adhere to strict psychometric process during scale development.

The brand personality concept is deeply rooted in the personality literature (Aaker, 1997), in which traits are described using natural language adjectives (McCrae *et al.*, 1996). It assumes all relevant and salient traits arrive from lexical perspective (Allport, 1937).

Thus, the difficulty of reviewing, selecting, and deletion of items are guided by adjectives that describe personality traits. Furthermore, all positive and negative valence traits should be included in the pool of items prior to content/face validity (see DeVellis, 2003). By assigning Aaker's (1997) brand personality traits as the initial traits in the pool of items, the author adds up to the pool by keeping only unique traits (i.e. other traits that appear after Aaker's (1997) studies) from newer studies. Thus, this will be done sequentially until all recent and relevant brand personality scales are included.<sup>3</sup>

#### **4.5.2 Top-of-Mind Elicitation Task**

The extensive literature reviews help with the generation of initial pool of trait items. After collating unique non-redundant traits from consecutive studies, the next step is to develop items from Malaysian samples. Potential items should adequately represent the construct under examination (Ghiselli *et al.*, 1981). The existing theoretical foundation from previous study provides sufficient evidence and guide for traits development for this task (Hinkin 1995; 1998). Importantly, the definition and conceptual framing of brand personality will determine traits generated. This approach is called deductive scale development (Hinkin, 1995; 1998).

There are two variations in the definition of brand personality. Aaker (1997) refers brand personality as “the sets of human characteristics associated with a brand.” However, a subsequent study by Azoulay and Kapferer (2003) defines brand personality as ‘the set of human personality traits that are both applicable to and relevant for brands.’ The need for a newer definition revolves around the argument that personality researchers argued against the use of intellectual abilities, gender, and social class to define human

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<sup>3</sup> Traits from human personality are not be included since studies that adopted items or complete personality scale (e.g. Big Five and AB5C) weakly described brands (e.g. Caprara *et al.*, 2001; Milas & Mlačić, 2007)

personality (Azoulay & Kapferer, 2003; Valette-Florence & De Barnier, 2013). This thesis adopts the latter definition for brand personality for item development process.

Prior to trait development, the study needs to identify commercial brands which serve as stimuli. The selection of commercial brands is based on Katz's (1960) symbolic-utilitarian framework (Aaker, 1997, Aaker *et al.*, 2001). Katz (1960) argues that products can vary from many categories but only serve 4 functions which are: 1) utilitarian, 2) ego defensive, 3) value-expressive, and 4) knowledge. Two functions pertinent to brand personality development are value-expressive (i.e. symbolic) and utilitarian functions. Aaker and colleagues (1997; 2001) view that they are two ends of a continuum where the mid position comprises products or services which serve both functions.

Nevertheless, Malaysia brands are of particular interest in this thesis. The author identifies 20 product and services categories taken from Readers' Digest Trusted Brand 2011 for Asia and Malaysia. This is an annual award recognition given to local and international brands in Malaysia that gained premium brand valuation in the previous year. These 20 product/services categories are classified following Katz's (1960) symbolic-utilitarian framework. **Table 4.1** below summarises the categories.

*Table 4.1 Katz's (1960) symbolic-utilitarian framework adopted by Aaker (1997)*



Next, a free-association (i.e. top-of-mind brand elicitation) task will be conducted to randomly sampled students. The purpose is to find top-of-mind brands in 20 product and services categories. Students will go through the lists, and be asked to recall and write only the first brand that emerges in their minds as they go through the categories. The free-association task ensures that brands elicited are high in brand awareness and familiarity. The author will then count the percentage of brand occurrence in every category. The brands which are recalled the most in every category will be selected for the next study – traits generation. This step is required prior to item development (e.g. Aaker, 1997; Aaker *et al.*, 2001; Geuens *et al.*, 2009). The free association task ensures that brands elicited are recognisable, thus ensuring that the sample is familiar with the brands.

The next step is to generate a list of traits. The purpose is to identify similar traits which have been developed in previous studies, and unique (i.e. different) traits which are generated in this task. The author will select student samples using convenient sampling



method. From the free association task, ten brands will be select based on Katz's (1960) symbolic-utilitarian framework. The author will add a well-known brand (Coca-Cola) to control for the variation of perception in traits (see Aaker *et al.*, 2001). To communicate brand personality concept to the samples, the author will use Azoulay and Kapferer's (2003) definition for brand personality, and give an example of a brand with the description of its traits (e.g. Aaker, 1997; Aaker *et al.*, 2001). The main outcome of this step is the generation of traits that are relevant to the Malaysian market. Traits generated will be added to the trait pool gathered from previous brand personality studies, and will then be used for the next phase of scale development.

#### **4.5.3 Content Adequacy and Face Validity**

The purpose of this step is to determine the content adequacy and face validity of items, and reduce the pool of items into a more manageable number. There are two processes that maximize content representation of traits. First, traits are check for synonyms, negative valence, relevancy, and ambiguity to the construct of interest (Aaker *et al.*, 2001).<sup>4</sup> This will ensure that only traits that are conceptually relevant to brand personality remain in the list (Hinkin, 1998). Second, the remaining traits will be then administered to another random sample of students, along with the definition of brand personality concept together with an example of a brand with its traits description. All items will be rated in a Likert-type scale that measures the extent of which items are relevant to brand (1 = Not at all relevant; 7 = Extremely relevant). Since there is a possibility that the pool of items will be large, the authors may divide the traits into 2 or 3 sets. This is recommended to avoid respondents' fatigue and boredom (Batra *et al.*, 2010). To isolate the most relevant traits, the cutoff point for the final list of personality

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<sup>4</sup> Several studies on brand personality scale development did not include this process (e.g. Bosnjak *et al.*, 2007; Caprara *et al.*, 2001; Milas & Mlačić, 2007; Valette-Florence & De Barnier, 2012)

traits is set above the mean score of 5.<sup>5</sup> Doing so will limit the traits into manageable numbers, and at the same time will not reduce it too extensively. The outcome of this step is a refined list of trait items which will be then included in a questionnaire in the next scale development phase.

## **4.6 Phase 2 – Scale Development**

The purpose of this phase is to reduce the items that survived content adequacy assessment (Hinkin, 1998). In this phase, the remaining traits are further reduced and refined to a smaller set of variables. Furthermore, the author will determine the underlying latent structures for group of traits.

### **4.6.1 Data Collection Strategy**

Phase 2 of scale development will require another set of random student samples. The author will follow the guideline discussed in the following Section 3.6.3.1 to decide on the appropriate item-to-response ratio. It is important that cleaned data (i.e. without outliers) achieve minimum ratio value. Items that survived content validation are distributed through questionnaires. Once the data is collected, the author will examine: 1) outliers and normality, 2) latent structures, and 2) construct validity of latent factors. The following sections will discuss steps in data analyses strategy in this phase.

### **4.6.2 Missing Data, Outliers, and Normality**

Prior to any multivariate analysis, the author will check for: 1) missing data, 2) outliers, and both univariate and multivariate normalities. First, missing data decrease statistical power by reducing the number of available observations, and threaten validity of statistical inferences as the result maybe bias (Fichman & Cummings, 2003). To deal

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<sup>5</sup> Aaker and colleagues (1997; 2001) have set different cut off points (i.e. 4 and 6) for their studies.

with missing data, the author follows recommended classification by Fichman and Cummings (2003). They are:

- Complete case analysis – listwise deletion;
- Available case analysis – pairwise deletion;
- Unconditional mean imputation;
- Conditional mean imputation, usually using least square regression;
- Maximum likelihood; and
- Multiple imputation (MI)

Nonetheless, listwise deletion is the most efficient means in dealing missing data (Hair *et al.*, 2010), while the other option is pairwise deletion (Fichman & Cummings, 2003).

Second, the author needs to detect the severity of outliers in the data. Hair *et al.* (2010) recommended that researcher be cautious of the 3 sources of outliers. Outliers may occur during data collection (e.g. data recording), and errors in preparing data for analysis (typos or typing mistakes). It may also occur from unpredictable measurement-related errors from participants, including participant' guessing, inattentiveness that might be caused by fatigue or mis-responding which happens when, for example, instructions were misunderstood. Additionally, it may be caused by the inclusion of participants who do not belong in to the target. These 3 sources of outliers can be minimised by checking for typos, content validity, and appropriate sampling frame (Hair *et al.*, 2010). After researcher checks for these sources, outlier can be detected by standardising the raw scores of items (i.e. z-scores). Items with z-scores of more than  $\pm 3.0$  should be deleted from further analyses (Ng & Houston, 2009). As an additional step, researcher may want to examine skewness and kurtosis of data since they are indications of normality. Skewness should be near the value of zero, while kurtosis should be near the value of 3 as indications of normality (Hair *et al.*, 2010).

Lastly, most multivariate analyses require data to meet both univariate and multivariate normality assumption. In particular, multivariate normality is stringent prerequisite for maximum likelihood estimation in confirmatory factor analysis (CFA) and structural equation modeling (SEM). However, method of extraction in EFA (both components and common factor analyses) does not entail any distributional assumption (Fabrigar *et al.*, 1999). Thus, normality assumption for data is relaxed in EFA. Univariate normality is checked with Kolmogorov-Smirnov and Shapiro-Wilk's tests, while multivariate normality is checked using Mardia's (1970) test (Hair *et al.*, 2010).

When the author has accounted for these 3 concerns, then the study can proceed to factor analytic techniques. The discussions on factor analysis will be in the next section.

#### **4.6.3 Statistical Software Packages for Factor Analyses**

There are many commercially available statistical software packages that run both exploratory and confirmatory factor analyses – i.e. EFA and CFA. A widely popular option for running EFA is SPSS, currently on its 23<sup>rd</sup> version. In this thesis, the author will use SPSS PASW 18 to run EFA. For CFA, the author will use LISREL version 8.8. LISREL, which stands for *linear structural relationships*, has a longstanding history in covariance-based factor analyses, and structural equation modeling (SEM) (Byrne, 1998; Viera, 2011). LISREL also introduces SIMPLIS, which stands for simple LISREL, to ease complex Greek LISREL command language to English. As compared to AMOS, another commercially popular CFA and SEM software package by SPSS, LISREL requires its users to grasp an understanding on the conventional “command-line” structures of software language programming. Thus, LISREL users are ‘forced’ to first enter SIMPLIS text commands in a sequence of lines to run CFA and SEM, while AMOS users work directly with ‘drawing’ path diagrams of the model’s latent constructs and

measures. Both are powerful software packages to run CFA and SEM, thus it totally depends on the users' preference. In this thesis, the author will use LISREL since "command-line" fastens the analyses of complex model (i.e. having several latent variables) by the ease of removing or adding command texts by line and sequentially. Additionally, LISREL reports modification indices which allow its users to identify and remove weak measurement items and latent constructs.

#### **4.6.4 Exploratory Factor analysis (EFA)**

Factor analysis is commonly used analytic techniques for data reduction and refining of constructs (Church & Burke, 1994; Ford *et al.*, 1986; Gerbing & Anderson, 1988; Gerbing & Hamilton, 1996; Hinkin, 1995; Schmitt, 2011). It is useful when there is no priori or absolute agreement on the number of factors in the construct of interest (Fabrigar *et al.*, 1999). The goal is to find the few most influential sources of variation underlying a set of items i.e. parsimonious account of the factors (de Vellis, 2003). EFA requires items to be relevant to the domain of interest by which if they are not, spurious common factors may emerge, or true common factors might be obscured (Fabrigar *et al.*, 1999). Items that consistently group together should demonstrate factor unidimensionality. There are several important decisions which should be addressed prior to EFA.

##### **4.6.4.1 Item-to-Response Ratios**

First, literature has argued for the minimum item-to-response ratios range from 1:4 (Rummel, 1970) to at least 1:10 (Schwab, 1980) in EFA. Recently, Hair *et al.* (2010) suggested that a minimum ratio of 1:5 is sufficient. There are four studies in brand personality scale development which fail to achieve the minimum ratio of 1:4 (Bosnjak *et al.*, 2007; d'Astous & Boujbel, 2007; Milas & Mlačić, 2007; Rojas-Mendez *et al.*, 2011), while other related studies are within recommended ranged of between 1:4 (Caprara *et*

*al.*, 2001; Slaughter *et al.*, 2004; Sung and Tinkham, 2005) and 1:14 (Aaker *et al.*, 2001).<sup>6</sup> Literature agrees that higher ratio is better (Hinkin, 1995). Hence, the author adopts the minimum item-to-response ratio of at least 1:4 and above.

#### **4.6.4.2 Methods of Estimation**

Second, it is important to address the difference between Principal Component Analysis (PCA), and Principal Axis Factoring (PAF) in extracting factors (vs. components). The debate on methods of estimation (i.e. extraction) remains heated despite 30 years of dialogue (Gorsuch, 2003). Both methods allow for data reduction (Kim & Mueller, 1978). However, it is recently accepted that PAF is used to identify latent factor, whereas PCA is used for item reduction (Conway & Huffcutt, 2003). The main difference is that PCA does not assume measurement error (Schmitt, 2011; Thompson, 2004), thus the sum of all communalities in component model is unity (Kline, 1994; p. 43). A set of observed items is transformed into a new set of items, which are linear composites of the observed variables, to account for as much variance possible in the data (Kim & Mueller, 1978). By performing linear transformations rather than yielding composite (latent) factor (de Vellis, 2003), PCA mixes common, specific, and random error variances (Conway & Huffcutt, 2003; Fabrigar *et al.*, 1999; Ford *et al.*, 1986).

In contrast, PAF decomposes variances of each measured items into common and unique portions, where unique variances include random error variance and systematic variance (Ford *et al.*, 1986). The primary aim is to account for the correlation between items hence, explaining covariance of items (Kim & Mueller, 1978). Factors extracted are imperfectly reflected by the measured items and variances are due to common factors (i.e. factors that influence more than one measure), or unique factors (i.e. factors that influence

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<sup>6</sup> These are based on the selected articles which are further discussed in Chapter 4 in Section 4.2

only one measure) (Conway & Huffcutt, 2003). The author follows both Conway and Huffcutt's (2003) and Hinkin's (1998) recommendation that investigation on latent structure should use PAF method of extraction.

#### **4.6.4.3 Number of Factors**

Third is the decision on selecting appropriate number of factors. There are several methods available to decide factor retention, which are: 1) statistical significance tests, 2) Kaiser's (1956) eigenvalue-greater-than-1.0 rule, 3) scree test, and 4) parallel analysis (Conway & Huffcutt, 2003; Ford *et al.*, 1986; Schmitt, 2011; Thompson, 2004). There are two commonly used statistical significance tests when running EFA which are Kaiser-Meyer-Olkin (KMO) index and Bartlett's test of sphericity. These tests determine the appropriateness of the correlation matrices to factor analysis. The KMO value should range between 0 to and 1 and the minimum cut-off value should be more than .70 (Nunnally, 1978). The Bartlett's test of sphericity must be significant ( $p < .05$ ). Next, the eigenvalue-greater-than-1.0 rule (Kaiser criterion) dictates that only factors that achieve eigenvalues greater than one are retained (Kim & Mueller, 1978; Schmitt, 2011). Another method is scree test (Cattell, 1966). It plots graph of eigenvalue magnitude on the vertical axis, with eigenvalue numbers on the horizontal axis. Factor extraction stops when there is an 'elbow' or levelling off the plot forming a straight line with an almost horizontal slope (Kim & Mueller, 1978; Thompson, 2004). The final method is Horn's (1965) parallel analysis (PA) (Hayton *et al.*, 2004; Schmitt, 2011; Zwick & Velicer, 1986). PA has not been adopted in brand personality scale development literature. Essentially, it is based on the assumption that "some of the eigenvalues from real data with a valid underlying factor structure should be substantially larger than eigenvalues from random data where there are no underlying factors" (Humphreys & Montanelli, 1974). PA generates random data sets on the basis of the same number of items and

persons as in real data matrix (Reise *et al.*, 2000). It is argued that PA is proven to be the most accurate method determining number of factors to retain (Fabrigar *et al.*, 1999; Schmitt, 2011). Factors are retained whenever the actual eigenvalue exceeds eigenvalues of randomly ordered data (Hayton *et al.*, 2004). PA can be run with statistical software such as STATA 11 SE, in which factors are retained to the adjusted eigenvalues of above 1.0. The number of factors retained in PA will determine the number of factor extracted in the following EFA in SPSS PASW 18. SPSS allows the author to limit the numbers factors extracted. Thus, the author will add PA as a decision to factor retention and limit factor extraction in EFA.<sup>7</sup>

#### **4.6.4.4 Rotation Methods**

The forth decision that need to be addressed is types of EFA rotation methods. The goal of all rotations is to achieve the simplest factor structure (Kim & Mueller, 1978). There are 2 types – orthogonal (non-correlated) and oblique (correlated). Orthogonal rotation such as varimax by far is the most widely used rotation. Hinkin (1998) argues that if the intention is to develop a scale that is independent of each other than, orthogonal rotation is appropriate. However, Harman (1976) argues that constructs in the real world are rarely un-correlated (i.e. independent of each other). Thus, researchers have recently argued for the use of oblique rotation in EFA since it is better in representing reality and producing better simple structure (Conway & Huffcutt, 2003; Fabrigar *et al.*, 1999; Ford *et al.*, 1986; Gorsuch, 1997). Fabrigar *et al.* (1999) proves that oblique rotation, direct oblimin, resulted in few “cross-loadings” than did varimax rotation on the same data. Foremost, since orthogonal rotation is a subset of oblique rotation (Ford *et al.*, 1986),

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<sup>7</sup> Several brand personality scale development studies identified facets (i.e. sub-scales) within a factor (e.g. Aaker *et al.*, 2001). The author disagrees with such procedure because it is highly likely that the general factor accounts for the lion’s shares of total score variance (Cronbach, 1951). In fact, when the author followed Aaker *et al.*’s (2001) procedure by choosing the first 3 strongest loadings of every facet, the following EFA run produced factors with weak item loadings.



oblique rotation will produce orthogonal solutions if an orthogonal solution is appropriate (Reise *et al.*, 2000). Thus, the author adopts oblique rotation in EFA.

#### **4.6.4.5 Factor Unidimensionality – Item Deletion**

Once retained factors shows unidimensionality, the next decision is item deletion. Hair *et al.*, (2010) suggest that poor performing items can be detected by examining: 1) factor loadings, 2) communalities, 3) inter-item correlation matrix, item-to-total correlations, and Cronbach's  $\alpha$ . When factor loading is concerned, most researchers either adopt values of .40 (Ford *et al.*, 1986), .60 (Bagozzi & Yi, 1988), or .70 (Fornell & Larcker, 1988) as the minimum cut-off point for item retention. Hair *et al.* (2010) suggested some guidelines for identifying significant factors loadings based in sample size. For a .40 factor loading to be significant ( $p < .05$ ,  $\alpha = .80$ ), a minimum of 200 sample size is needed. However, they further argued that values of great than .50 are necessary for practical significance. A related issue is item cross-loads to more than one factor. Hair *et al.* (2010) recommended that an item should be deleted if cross-loading exceed the value of .40. Thus, this thesis will adopt a minimum factor loading of .50 for item retention, and a maximum of .40 cross-loading values for item deletion. The next indicator is communality coefficients. They represent the amount of variance accounted for based by the factor solution of each item. Communality values of below .50 demonstrate that items do not provide sufficient explanation of retained factors (Hair *et al.*, 2010). This thesis will retain items if their communalities exceed the minimum value of .50. Finally, inter item and item-to-total correlations are indicators of reliability (i.e. assessment of the degree of consistency between multiple items of a construct (Hair *et al.*, 2010). One type of reliability coefficients that can be produced from the above correlation matrix is Cronbach's  $\alpha$ . Hair *et al.* (2010) suggest that inter item correlations should be above .30, and item-to-total correlations to be at minimum value of .50 for item retention decision.

Additionally, a construct should achieve a minimum value of Cronbach's  $\alpha$  of .70 to show modest reliability (Nunnally, 1978; Nunnally and Bernstein, 1994). However, DeVellis (2003) suggests a minimum  $\alpha$  value of above .80. Thus, the author will follow all of the above recommendations for item retention and deletion decision.

The final outcome from EFA is a reduced and refined scale that achieves high reliability. EFA provides model that pass CFA fit criteria (Church & Burke, 1994). PAF is a useful precursor of identifying measurement models in subsequent confirmatory factor analysis (CFA) (Gerbing & Hamilton, 1996). This is important because CFA works best when the factor structure is clean i.e. when each item loads highly on only one structure (Reise *et al.*, 2000). CFA runs in the next phase will use a different set of sample to ensure high level of construct validity. This is recommended as it will further validate and further refine the new scale. The next section will discuss on CFA which will further refine the scale to achieve construct validity.

#### **4.7 Phase 3 – Scale Evaluation**

The goal of phase 3 is to determine the reliability and validity of the newly refined scale (Hinkin, 1995). Items that load clearly in EFA may demonstrate a lack of fit in a multiple indicator measurement model due to lack of consistency (Gerbing & Anderson, 1988). CFA using LISREL 8.8 allows the author to assess the quality of factor structures by statistically testing the overall model and of item loadings on factors (Hinkin, 1998). All items and factors that were retained in phase 2 will be validated using a new sample. CFA also allows the assessment of convergent and discriminant validities of all factors retained. The following sections will discuss the steps and analyses taken in more detail.

#### **4.7.1 Data Collection Strategy**

A new questionnaire consisted of refined items will be distributed to a non-student sample to increase the generalizability of the scale, and as required in scale validation process (Anderson and Gerbing, 1991; Schwab, 1980). Respondents are randomly selected from working professionals in Kuala Lumpur using convenient sampling method.

#### **4.7.2 Missing Data, Outliers, and Normality**

The discussions on missing data, outliers and normality are similar to those in section 3.6.2. Thus, please refer to the section for detailed discussion. CFA assesses the extent to which the measurement model explains the variance in the data. Importantly, CFA using Maximum likelihood (ML) estimation requires the data to meet multivariate normality assumptions (McDonald & Ho, 2002; Schmitt, 2011). If the assumption is not met, LISREL 8.8 provides a solution in which the raw data is transformed using the Normal Scores option.<sup>8</sup> This step is recommended by LISREL 8.8 user guide (Jöreskog & Sörbom, 1993). If multivariate normality is not met, the author will use this option. Although Satorra and Bentler's (1988) Robust ML estimation is recommended for non-normal data, this estimation does not allow for  $\chi^2$  difference test as recommended by Gerbing and Anderson (1988) when testing for discriminant validity, which is an important test in phase 3. Thus, normal score option will be used if data is non-normal.

#### **4.7.3 Factor Unidimensionality prior to CFA**

Prior to CFA, the author will check again for factor unidimensionality, thus deleting poor performing items. Hair *et al.*, (2010) suggest that poor performing items can be detected by examining: 1) factor loadings, 2) communalities, 3) inter-item correlation matrix, item-

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<sup>8</sup> Tabachnick and Fidell (2007) suggested data transformation if data are non-normal.

to-total correlations, and Cronbach's  $\alpha$ . For detailed discussion of these steps, please refer back to section 3.6.3.5. These steps will further reduce the scale into a smaller set of items.

#### **4.7.4 CFA Sample Size**

In general, CFA performs on a larger sample size is more stable (DeVellis, 2003). Over the years, suggested subjects-to-item ratio ranges from 5:1 (Gorsuch, 1983; Tinsley and Tinsley, 1987) up to 20:1 (Nunnally, 1978). However, if the factor is reliable and not overly complex, smaller sample size is adequate (Bearden *et al.*, 1982). For instance sample size between 100 to 200 is enough if factor is well-determined (i.e. not a large number of factors with only few items each) (Fabrigar *et al.*, 2010; MacCallum *et al.*, 1999). The author will adopt the minimum ratio of 5:1 for this thesis.

#### **4.7.5 CFA – Items Reduction and Scale Refinement**

Following the above assessments, the next step is to run individual CFA on each remaining factors together with their corresponding items. In CFA, factors retained from previous EFA is called measurement model. CFA involves testing the fit of measurement models to data (Thompson, 2004). By identifying the strengths of items' coefficient paths to the observed latent factors, CFA assesses the strength of the measurement model in explaining the data. The process of fitting model to data is called specification search (MacCallum, 1986). In specification search, the goal is to correct (usually by item deletion) specification errors that show weak fitting between the proposed model and the true model (Segars & Grovers, 1993). Re-specification is done item-by-item because a single change in the model can affect other parts of the solution (Anderson & Gerbing, 1988). When an item is deleted, CFA is re-run which then requires the author to examine the modification indices (MI) again. This process is repeated until model fit is achieved.

LISREL 8.8 provides MI in its output. MI allows the author to identify and delete the item with the highest measurement error value by which overall likelihood ratio  $\chi^2$  value for the model decreases if the correspondent parameter were freed (MacCallum *et al.*, 1992; Schmitt, 2011).

#### **4.7.6 Measurement Model Validity**

The measurement model validity is established by: 1) having acceptable goodness-of-fit statistics and, 2) finding evidence of construct validity (Hair *et al.*, 2010). The following sections discuss these two in details.

##### **4.7.6.1 Goodness-of-Fit (GOF) Statistics**

A common indicator of model fit is the  $\chi^2$  statistics (Mulaik *et al.*, 1989). When a model achieves adequate fit, the  $\chi^2$  value should be non-significant ( $p \geq .05$ ). A smaller the  $\chi^2$  value is preferred as it shows a better model. A model is not rejected when  $\chi^2$  value is non-significant. Furthermore, the value of  $\chi^2$  over the degree of freedom (df) should be  $\leq 3$  for a better fitting model (Iacobucci, 2010; Segars and Grove, 1993). However, Mulaik *et al.*, (1989) found that  $\chi^2$  is not sufficient to measure model fit.  $\chi^2$  is highly influenced by sample size, as a large sample size would always present significant levels of  $\chi^2$ . To provide an alternative perspective on model fit, researchers over the years developed a number of goodness-of-fit (GOF) measures which are classified into: 1) absolute fit indices, 2) incremental fit indices, and 3) parsimony fit indices (Hair *et al.*, 2010).

Absolute fit indices measures how well a specified model fits the data evaluated independently of other possible models (Hair *et al.*, 2010). Under this classification are  $\chi^2$  statistics, goodness-of-fit (GFI), root mean square error of approximation (RMSEA),

root mean square residual (RMR), and standardized, root mean square residual (SRMR). Recent studies frequently reported  $\chi^2$  statistics, RMSEA, and SRMR values.

Incremental (comparative) fit indices assess how well the estimated model fits relative to some alternative baseline model (Hair *et al.*, 2010). Incremental fit indices comprise normed fit indices (NFI), Tucker-Lewis index (TLI) also known as non-normed fit index (NNFI), incremental fit index (IFI), comparative fit index (CFI), and relative non-centrality index (RNI). Widely reported incremental indices are NFI, NNFI, IFI, and CFI.

Parsimony fit indices provides information about which model among a set of the competing models is best considering its fit relative to its complexity (Hair *et al.*, 2010). They are adjusted goodness of fit index (AGFI), and parsimony normed fit index (PNFI). As compared to PNFI, some studies still report AGFI values.

Overall, a 'good' model should have the following fit statistics, the  $\chi^2$  test should be non-significant with  $p \geq 0.05$ ,  $\chi^2/df \leq 3$  (Iacobucci, 2010; Segars & Grover, 1993), SRMR  $\leq .07$  (Bagozzi, 2010), RMSEA  $\leq 0.06$ , NNFI  $\geq 0.95$ , CFI  $\geq 0.95$  (Hu & Bentler, 1999), other fit statistics should be .90 or above (Lance *et al.*, 2006).

#### **4.7.6.2 Construct Validity**

Construct validity is the extent to which a set of measured items actually reflects the theoretical latent construct those items are designed to measure (Hair *et al.*, 2010). Bagozzi and colleagues (1991) find that CFA provides a better assessment of construct validity as compared to Campbell and Fiske's (1959) MTMM method. The following sections further discuss assessments on construct validity.

#### **4.7.6.2.1 Convergent Validity**

Ashill and Jobber (2010) recommend that convergent validity is assessed by three measures: 1) Cronbach's  $\alpha$ , 2) composite reliability (CR), and 2) average variance extracted (AVE). First, Cronbach's  $\alpha$  needs to be at least .70 to show convergent validity (Nunnally, 1978). Additionally, reliability also entails the examination of factor loadings of items. Item loadings of at least .50 or ideally above .70 indicates the measure accounts at least 50 per cent of the variance of the underlying latent factor (Bagozzi & Yi, 1988; Falk & Miller, 1992; Fornell & Larcker, 1981, Hair *et al.*, 2010; Nunnally & Bernstein, 1994). The second indicator is CR value. CR is similar to Cronbach's  $\alpha$  except that it takes into account the actual factor loading rather than assuming that each item is equally weighted in the composite load determination (Chau & Hu, 2001). A minimum CR value of .60 would suggest convergent validity (Bagozzi & Yi, 1988; Fornell & Larcker, 1981). However, some researchers suggested a value of above .70 (Hair *et al.*, 2010; Nunnally & Bernstein, 1994). The final indicator of convergent validity is AVE value. AVE value represents shared variation in the latent factor. In other words, it indicates how much each item represents the latent factor (Fornell & Larcker, 1981). It must be above .50 for the factor to demonstrate convergent validity (Hair *et al.*, 2010).

Additionally, goodness-of-fit indexes or statistics such as NNFI, NFI, TLI, and CFI should be at least above .90, or even better at above .95, and both RMSEA and SRMR below .05 for a good fitting model (Hu & Bentler, 1999; Bagozzi & Yi, 1988). Once the new scale has demonstrated convergent validity, the scale will be then tested for discriminant validity.

#### **4.7.6.2.2 Discriminant Validity**

Two factors achieve discriminant validity when they are not highly correlated with each other (Fornell & Larcker, 1981). There are two assessments of discriminant validity: 1) AVE value (Fornell & Larcker, 1981), and 2) the nested model (Gerbing & Anderson, 1988).

The first assessment is the evaluation of AVE values. Discriminant validity is achieved when the AVE values of two factors are greater than the common variance shared (phi-squared,  $\phi^2$ ) between them (Fornell & Larcker, 1981). Specifically, when two factors are tested for discriminant validity, both AVE values of two factors should be greater than the correlation (i.e.  $\phi^2$ ) value of these factors. Factors are to be examined pair by pair until all possible pairs are tested (see Ramani & Kumar, 2008).

The second discriminant validity test is the nested models. Gerbing and Anderson (1988) suggested that discriminant validity is achieved when the inter-construct correlations of two factors are significantly different from unity. In other words, the estimated correlation parameter ( $\phi$ ) of two factors is constrained to 1 (i.e. nested). Nested (constraint) model is compared with the unconstrained model in CFA by looking at the difference in chi-square ( $\chi^2$ ) between those two models. With the degree of freedom (df) of 1, the value of  $\chi^2$  differences should be greater than 3.841 ( $p = .05$ ) to achieve discriminant validity for the unconstrained model (Gerbing & Anderson, 1988). It is advised that this test should be performed one pair of factors at a time (Anderson & Gerbing, 1988). Comparing these two methods, Fornell and Larcker's (1981) method is a more stringent method of assessing discriminant validity (Ramani & Kumar, 2008).



#### **4.7.6.2.3 Second Higher-Order Construct**

A second higher-order construct is a multidimensional construct that has a higher abstraction level than its dimensions (Cheung, 2008). Depending on the nature of the construct, the first-order constructs are grouped together to define the second-order construct (Law *et al.*, 1998). The possibility of second-order construct is higher when first-order factors are oblique (Kline, 1994; Thompson, 2004). However, Byrne (1998) advised that individual model identification in the first-order level is attained prior to second-order conceptualization.

The purpose of this analysis is to determine whether the scale can represent a second-order construct. The author will compare model fit of first-order model and second-order model. Additionally, consistent with current practice, the study will conduct CFA of the second-order model using average scores of each first-order construct, and examine if the second-order model using individual items scores shows good model fit (see Homburg *et al.*, 2011; Jayachandran *et al.*, 2005 Ramani & Kumar, 2008).<sup>9</sup>

#### **4.7.6.2.4 Nomological Validity**

All of the discussed steps in phase 3 will ensure that the new scale is refined and robust. The step is to examine the scale in relations with antecedents or consequences or varies across conditions in exhibiting consequential effect (Hinkin, 1998; Iacobucci *et al.*, 1995). The author will adopt Anderson and Gerbing's (1988) two-step approach to structural equation modeling (SEM) to test nomological validity of the new scale.

In the two-step approach, the author will estimate CFA measurement model prior to structural model in SEM. Please refer to the discussion of measurement model validity in section 3.7.6. As an additional step, the author will check the natural grouping of latent

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<sup>9</sup> Bagozzi and Edwards (1998) recommended item parceling (i.e. using average scores) to keep the numbers of parameters at manageable level while preserving the multidimensional nature of the specified construct.

construct using EFA prior to CFA (PAF method of extraction and Oblimin rotation). Measurement model should attain good model fit prior to structural model in which assessment of fit will determine re-specification iterations (Anderson & Gerbing (1988).

The second step is the structural model. Here, the hypothesized relations (i.e. structural paths) are fitted to the measurement model. All latent exogenous and endogenous constructs are fitted with these paths as well as the disturbance terms (i.e. measurement errors). SEM will then estimate the causal relationship using ML estimation.

By referring to GOF statistics (please refer to section 3.7.6.1), the author will be able to identify structural model fit. Once model fit is achieved, the next step is to analyse the causal paths between the various latent constructs which allows for hypotheses testing and explain the variations in dependent constructs, measured by the squared multiple correlations (SMC) values of each path (structural equation) in the model. A statistical significance path coefficient will suggest the strength of the relationship of two corresponding constructs, which can be interpreted as weak, moderate or strong.

The path coefficients are reported as both standardized and unstandardized beta ( $\beta$ ) weights. Garson (2009) suggested that the standardized  $\beta$  weights should be  $> 0.32$  to suggest a meaningful relationship between the constructs. However, Cohen (1988) suggested that  $\beta < 0.20$  to be weak,  $\beta$  values between  $0.20 - 0.50$  to be moderate and  $\beta > 0.50$  to be strong. However, standardized  $\beta$  weights limits the comparison across different samples and studies (Gelfand *et al.*, 2009), therefore it is advisable to report the unstandardized beta weights to allow the comparison between samples and studies.

The final outcome of this phase is the Malaysian brand personality (MBP) scale which adheres to stringent psychometric properties, and can be applied to Malaysian market.

The scale will be then used in the experimental studies to investigate the BPC effect on extremely incongruent brand extension.

#### **4.8. Experimental Approach to Hypotheses Testing**

In the previous sections, the author has discussed a detailed process of scale development. The development of Malaysian brand personality scale serves as measurement instrument to test the hypotheses of this thesis. The next phase of the study involves experimental methodology. It is also known as the confirmatory approach to theory testing (see Sternthal *et al.*, 1987). There are three procedures involved in experimental approach. The first procedure is manipulation checks which ensure that independent variables are consistent with those specified by the theory. This is usually done by asking participants to rate their assessment on given measure instruments or scales. The goal is to ‘determine whether the manipulations of the independent variable in fact created different levels of the psychological state or dimension represented by the causal construct’ (Sternthal *et al.*, 1987). The second procedure is process measures which determine whether intervening events specified by the theory occur. This is accomplished by asking the participants to do certain required tasks. The final procedure involves repeated operationalization to see if the effects can be obtained in other contexts. This should demonstrate the reliability and robustness of theoretical prediction (Sternthal *et al.*, 1987). All of these procedures are placed to rule out rival hypotheses, and for rigorous tests of theory (Sternthal *et al.*, 1987). The following sections will further discuss the experimental studies in details.

##### **4.8.1 Experimental Design**

The author posits that brand personality complementarity (BPC) effect will influence the evaluation of extremely incongruent brand extension. The author will divide the experimental studies in three major studies.

The first study involves studies that investigate the BPC effect on all possible pairs of personality dimensions. This is dependent on the number of factors emerge in the scale development process. For example, if five personality dimensions emerged, then there would be ten possible pairs. The main goal is to find the magnitude or strength of BPC effect amongst all possible personality dimension pairs, and to classify them into low, moderate, and high categories.

The second and third experimental studies involves investigation of BPC effect on extremely incongruent brand extensions using different ad stimuli (i.e. text- vs. visual-based). As stated in Chapter 2, studies have revealed that moderately congruent extension generates most favourable evaluation when compared to those of congruent low or extremely incongruent extension (e.g. Aggarwal & McGill, 2007; Meyers-Levy & Tybout, 1989; Peracchio & Tybout, 1996; van Horen & Pieters, 2012). The author however posits that BPC effect moderates this relationship, and additionally argues that complementarity resolution is a mediator in this relationship. Therefore, experimental studies in part two will focus on investigating the hypotheses of BPC effect.

#### **4.8.2 Participant Selection**

Marketing literature has debated the issue of students versus real-people (e.g. Lynch, 1999). Evidently, most experiments in brand personality used students as participants with the exception of a study by Aaker *et al.* (2004) which proved that response bias did not significant differ in age, gender, and product category involvement. Nevertheless, students provide useful and informative data about moderating variables and mediating processes in the context of carefully controlled studies and well-developed measures (Kardes, 1996). The author will invite undergraduate students of top public and private universities in Kuala Lumpur to participate to participate in all pretests and main

experimental studies. It will be voluntary with no rewards or any exchange for extra credit in the courses they are taking. In essence, students will be randomly assigned to corresponding cells i.e. the manipulated independent variable conditions in the experimental studies.

#### **4.8.3 Study 1 – Brand Personality Complementarity (BPC) Effect Study**

The main objective of the studies in this part is to investigate which MBP dimension pairs can be identified as low, moderate, and high BPC levels. The author will test hypotheses  $H_{1A}$  to  $H_{1C}$ . Sections below will discuss the pretests and experimental study in further detail.

##### **4.8.3.1 Pretest 1 (Brand Elicitation) – Stimuli Development and Measures**

Stimuli development is an essential part of experimental studies. All stimuli are selected, developed, and pretested prior to experimental studies using questionnaire instrument. Studies in brand personality have either created fictitious brands or used existing brands as stimuli.

There are three methods of selecting appropriate brand stimuli that are high in one of brand personality dimensions. The first method is to create a list of real brand names that strongly projects each personality dimension anchored by a 7-point semantic differential scale (1 = Not at all descriptive, 7 = Extremely descriptive) (e.g. Yorkston *et al.*, 2010). Participants will be then asked to rate each brand in the list using specific brand personality scale. The results would be a list of brands that are high and low values in each brand personality dimension.

The second method is to develop advertisements that correspond to each personality dimensions (e.g. Aaker *et al.*, 2004). In each advertisement, personality is manipulated

through four possible venues: 1) overall content tonality as conveyed vocabulary choice and phrasing, 2) brand identity elements such as logo consistent with intended personalities, 3) visuals and illustrations, and 4) activity context and taglines (Aaker *et al.*, 2004). Nonetheless, some studies only developed contents, claims or taglines to manipulate personality dimensions used in their research (e.g. Johar *et al.*, 2005; Monga & Lau-Gesk, 2007). Participants will then assess each advertisements using the corresponding brand personality scale anchored by a 7-point semantic differential scale (1 = Not at all descriptive, 7 = Extremely descriptive). Another variation within this method is to use dinner scenarios which manipulate type of dinners and persons at the dinner (Aaker, 1999).

A third method is to cue (trigger) brand personality by listing traits that describe a particular brand personality dimension. This method has been used in personality and social psychology literature specifically in impression formation studies (see Asch and Zukier, 1984). The purpose of presenting traits is to cue a particular personality dimension and its designated brand exemplar. Adoption of this method will require listing the items of personality dimension of interest, then asking participants to name a brand, and/or write a short description about the brand.

The author will adopt the third method for developing brand exemplars that strongly represent one specific brand personality dimension using questionnaire instrument. To measure brand personality, the author adopts MBP scale. Specifically, items in each personality dimension of MBP scale will be listed to cue the top-of-mind brands for each brand personality dimension.

Additionally, other measures are also included. Attitude towards the personality is measured to control for influence of attitude on different personality in explaining the

experimental results (see Monga & Lau-Gesk2007). Attitude scale comprises 6 items taken from Campbell and Keller’s (2003) and Park *et al.*’s (2010) studies. To control for participants’ familiarity of a brand, Kent and Allen’s (1994) familiarity scale will be adopted with the addition of another familiarity item from Kumar (2005). Familiarity scale consists of a total of 4 items. Similarly, attitudes scale will also be used to measure respondents’ attitude towards the brands elicited (Park *et al.*, 2010; Campbell & Keller, 2003). All scales will be checked for Cronbach’s  $\alpha$  reliability, and should meet the minimum requirement value of .70 (Nunnally & Bernstein, 1994). Following current practice in the literature, the items scores of highly reliable scales will then be averaged, to form a single index of the corresponding scales prior to further statistical analyses (see Jhang *et al.*, 2012). **Table 4.2** below lists the scales and their items. Overall, the outcome of the first pretest is a list of brands that will be used in the main experimental study to operationalize BPC effect.

*Table 4.2 Scales and Measures - Pretests*

<b>Attitude scale – Campbell and Keller (2003), and Park <i>et al.</i> (2010)</b>									
Bad	1	2	3	4	5	6	7	Good	
Low Quality	1	2	3	4	5	6	7	High Quality	
Unappealing	1	2	3	4	5	6	7	Appealing	
Unpleasant	1	2	3	4	5	6	7	Pleasant	
Negative	1	2	3	4	5	6	7	Positive	
Dislike	1	2	3	4	5	6	7	Like	
<b>Familiarity scale – Kent and Allen (1994), and Kumar (2005)</b>									
Unfamiliar	1	2	3	4	5	6	7	Familiar	
Inexperienced	1	2	3	4	5	6	7	Experienced	
Not knowledgeable	1	2	3	4	5	6	7	Knowledgeable	
Did not Recognize	1	2	3	4	5	6	7	Recognize	

#### **4.8.3.2 Pretest 2 (Brand Selection) – Stimuli Development and Measures**

The author will invite a set of new student samples for the second pretest. Twelve brands (i.e. 3 brands for each brand personality dimension) which include 4 brands from the first pretest will be tested on Malaysian brand personality scale.<sup>10</sup> This is to ensure the brands are appropriate stimuli, and achieve high scores on the intended brand personality dimensions. All scales will be checked for reliability using Cronbach's  $\alpha$  and should meet the minimum requirement value of .70 (Nunnally & Bernstein, 1994). Following current practice in the literature, the items scores of highly reliable scales will then be averaged, to form a single index of the corresponding scales prior to further statistical analyses (e.g. Jhang *et al.*, 2012).

#### **4.8.3.3 Main Experimental Study 1 – Operationalization of BPC and Measures**

Brands identified in the pretests will be used in the experimental study. Pairs of different possible combinations among brand personality dimension will be tested for complementarity effect.<sup>11</sup> Respondents will begin with brief definition of brand personality together with an example of a brand with specific personality traits. The author will adopt Monga and Lau-Gesk's (2007) co-branding study with slight variation. In study 1, respondents will be told that two well-known global brands are joining forces to create a new product.<sup>12</sup>

Respondents will be then asked to take a moment to think about the new product personality traits. They then rate complementarity effects, brand personality dominance, attitude towards cobrand personality, and purchase intention. To eliminate order effect,

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<sup>10</sup> The scale development process in Chapter 4 revealed a 4-factor Malaysian brand personality scale, hence the selection of 3 brands per dimension for the second pretest.

<sup>11</sup> Since MBP comprises 4 first-order latent constructs, there would be 6 possible different personality pairs. The author will also run another study in which the second brand will be replaced with another brand that has similar personality with the first brand. This is to control for the effect of cobranding with similar brand personality. Brands that replace the second brand are taken from the second pretest results.

<sup>12</sup> Products are chosen from pretest 1 and pretest 2.



the second brand will be counterbalanced with the first brand. Please refer **Table 4.2** and **Table 4.3** for attitude complementarity and dominant scales.

The results from the experiment will reveal the complementarity effects (i.e. low, moderate, and high) among brand personality dimensions. The results will also show the influence of dominance between two different brand personality dimensions. Next, the author will proceed to experiments that investigate effect of complementarity of highly incongruent product extension.

*Table 4.3 Scales and Measures – Experiments*

**Complementarity scale – Monga & Lau-Gesk (2007), and Mao *et al.* (2012) 7-point semantic differential (1 = Not at all, 7 = very much)**

1. Do both personalities fit each other?
2. How different are these two personalities?
3. Do both personalities complement each other?

**Dominant scale – Wiggins (1979) 7-point semantic differential (1 = Not at all characteristics, 7 = Extremely characteristics)**

Dominant, Assertive, Forceful, Domineering, Firm, Self-confident, Self-assured, and Un-self-conscious

#### **4.8.3.4 Dependent Variables and Measures**

The author will measure 2 dependent variables. The first is 4-item purchase intention which is measured on a 7-point semantic differential scale adopted from Lei *et al.* (2008) and Yi (1999). Consistent with brand extension literature, the second dependent variable is brand extension evaluation. This is measured using 6-item 7-point semantic differential attitude scale adopted from Campbell and Keller (2003) and Park *et al.* (2010). **Table 4.4** below lists the scales for the two dependent variables.

Table 4.4 Dependent Variables

<b>Purchase Intention – Lei <i>et al.</i> (2008), and Yi (1999)</b>									
Unlikely	1	2	3	4	5	6	7	Likely	
Impossible	1	2	3	4	5	6	7	Possible	
Improbable	1	2	3	4	5	6	7	Probable	
Undesirable	1	2	3	4	5	6	7	Desirable	
<b>Attitude scale – Campbell and Keller (2003), and Park <i>et al.</i> (2010)</b>									
Bad	1	2	3	4	5	6	7	Good	
Low Quality	1	2	3	4	5	6	7	High Quality	
Unappealing	1	2	3	4	5	6	7	Appealing	
Unpleasant	1	2	3	4	5	6	7	Pleasant	
Negative	1	2	3	4	5	6	7	Positive	
Dislike	1	2	3	4	5	6	7	Like	

#### 4.8.3.5 Manipulation Checks

Manipulation checks for attitudes, familiarity, BPC, and dominance will be assessed using similar scales in **Table 4.2**, **4.3**, and **4.4**. To ensure that the manipulated conditions for brand personalities are as intended, respondents will be asked to rate the personality of the brands using 22-item MBP scale (please refer to chapter 4.5).

#### 4.8.3.6 Analyses

The author will use SPSS PASW 18 to analyse the data. Outlier and heterogeneity assumptions of data will be checked prior to all t-tests, ANOVAs and ANCOVAs. The author will use EFA using PAF method of extraction and oblimin rotation to check the natural grouping of measurement items. Personality dominance will be tested for moderation on brand personality complementarity using Hayes' (2013) SPSS PROCESS macro.

#### **4.8.4 Study 2 and 3 – Schema Incongruity Studies**

The second part of the experimental studies is to investigate BPC effect within schema congruity theory. In particular, the author is interested in enhancing product acceptance of extremely incongruent brand extension. Mandler (1982), who originally proposes schema congruity theory, does not provide a definition of the difference between moderate and high incongruity (Jhang *et al.*, 2012). Nonetheless, previous studies define incongruity through several operationalizations and how it is resolved. An early empirical study by Meyers-Levy and Tybout (1989) operationalizes incongruity through categorisation hierarchical structure in which incongruity can be resolved by navigating down from a superordinate level (e.g. beverages) to basic level (e.g. soft drinks), or basic level to subordinate level (e.g. diet colas) (e.g. Noseworthy *et al.*, 2011). A variation is visual-based hierarchy in which physical shape and metric properties of a product design represent superordinate and basic levels (see Noseworthy *et al.*, 2011). In a recent study, resolution of incongruity is operationalized by type of associations the consumers must make to understand the benefit of the new product (Jhang *et al.*, 2012). For example, the number of shared linkages between vitamin and orange juice, vitamin and coffee, and between vitamin and vodka signal incongruity levels of a new product (Jhang *et al.*, 2012). The author adopts the latter operationalization of incongruity. Sections below will discuss stimuli development, the experimental design, and procedures in further details.

#### 4.8.4.1 Pretest 3 (Product Involvement) – Stimuli Development and Measures

In pretest 3, the development of appropriate product stimuli is dependent on product involvement of respondents. The objective is to identify products with low and high involvement. Listing of product categories are taken from Malaysian eBay website. The author will measure involvement using Zaichkowsky's (1994) personal involvement inventory (PII). PII comprises both cognitive and affective dimensions, in which the affective dimension has been argued to an important component of incongruity resolution (Isen, 2001; Jhang *et al.*, 2012). A minimum Cronbach's  $\alpha$  value of .70 (Nunnally & Bernstein, 1994) will indicate that PII achieves modest reliability, thus all items can be averaged to form a single PII index. **Table 4.5** below lists each PII items.

*Table 4.5 Scale and Measures – Pretest 3*

<b>Product involvement inventory (PII) – Zaichkowsky (1994)</b>									
Unappealing	1	2	3	4	5	6	7	Appealing	
Mundane	1	2	3	4	5	6	7	Fascinating	
Worthless	1	2	3	4	5	6	7	Valuable	
Uninvolving	1	2	3	4	5	6	7	Involving	
Not needed	1	2	3	4	5	6	7	Needed	
Unimportant	1	2	3	4	5	6	7	Important	
Boring	1	2	3	4	5	6	7	Interesting	
Irrelevant	1	2	3	4	5	6	7	Relevant	
Unexciting	1	2	3	4	5	6	7	Exciting	
Means Nothing	1	2	3	4	5	6	7	Means a lot to me	

The outcome of pretest 3 will be a list of products with their PII scores. From the pretest results, the author will choose three products with the highest PII index, and three with lowest PII index. This will enable the author to re-confirm the BPC moderating effects on schema congruity theory on high and low involvement products

#### 4.8.4.2 Pretest 4 (Brand Extension Congruity) – Stimuli Development and Measures

The next pretest is to identify three product categories that are low, moderate and extremely incongruent. Congruity measure is adopted from Jhang *et al.* (2012) and John *et al.* (1998). As an extra measure, the author will include Aaker and Keller’s (1990) perceived fit scale since few studies adopted the scale to measure congruity (e.g. Lane, 2000; Noseworthy & Trudel, 2011). **Table 4.6** lists the items of congruity and perceived fit scales. The results from this pretest will be used as manipulated conditions in the experimental studies.

*Table 4.6 Scales and Measure – Pretests 4*

<b>Congruity scale – Jhang <i>et al.</i> (2012), and John <i>et al.</i> (1998)</b>									
Inconsistent	1	2	3	4	5	6	7	Consistent	
Atypical	1	2	3	4	5	6	7	Typical	
Unusual	1	2	3	4	5	6	7	Usual	
<b>Perceived fit – Aaker and Keller (1990)</b>									
Bad fit	1	2	3	4	5	6	7	Good fit	
Not at all appropriate	1	2	3	4	5	6	7	Very appropriate	
Not at all logical	1	2	3	4	5	6	7	Very logical	

#### 4.8.4.3 Pretest 5 – Brand Personality Visual Ad Stimuli

Prior to Study 3, visual ad-stimuli will be developed and pretested to ensure that they are supposed to form specific MBP dimensions. These dimensions will be measured using MBP scale (please refer to **Figure 5.17** in chapter 5). Each of the ad stimuli should be forming only one strong MBP dimensions. Doing so will control for confounding effect of other MBP dimensions when measuring BPC between two ad stimuli.

#### 4.8.4.4 Conceptual Model

Both Study 2 and 3 will test the conceptual model (see **Figure 4.2**). In Study 2, ad stimuli will be text-based, whereas Study 3 is a replication study with visual-based ad stimuli. Both studies will be between-subjects ANOVA design.

*Figure 4.2 Conceptual Model*



#### 4.8.4.5 Main Experimental – Study 2

The main objective of study 2 is to investigate BPC effect on brand extension congruity. All four pretests results will reveal 1) MBP dimension pairwise BPC ratings, 2) product involvement ratings, and 3) brand extension congruity ratings. Study 2 is a 3 (BPC: control vs. low vs. high) × 3 (brand extension congruity: low vs. moderate vs. high) × 2 (involvement: low vs. high) between-subjects design. The objective of study 2 is to prove H<sub>2A</sub> and H<sub>2B</sub> (please refer to chapter 3.1.2). The author will expect more favourable evaluations of high [vs. low] involvement products in both moderate and extremely incongruent extension for high [vs. low] BPC pairs. Stimuli for Study 2 will be text-based ad stimuli with undisclosed brand name (i.e. brand X) (LaBarbera et al., 1998).

#### 4.8.4.6 Main Experimental – Study 3

The third experimental study is a replication study, however using visual-based ad stimuli. It is a 3 (BPC: control vs. low vs. high) × 3 (brand extension congruity: low vs. moderate vs. high) × 2 (involvement: low vs. high) between-subjects design. The

objective is to re-examine  $H_{2A}$  and test  $H_{2C}$ . **Figure 3.1** (in chapter 3) illustrates the conceptual framework for this thesis. The objective is to replicate that a pair of highly complementary brand personalities will generate favourable brand extension evaluations.

#### **4.8.4.7 Dependent Variables**

Similar to section 3.8.3.4, the author will measure 2 dependent variables. They are 1) 4-item purchase intention (Lei *et al.*, 2008; Yi, 1999), and 2) 6-item extension evaluation (Campbell and Keller, 2003; Park *et al.*, 2010).

#### **4.8.4.8 Manipulation Checks**

For both Study 2 and 3, the author will check the manipulations using; 1) product involvement inventory (please refer to **Table 4.5**), MBP scale (please refer to **Figure 5.17** in chapter 5), congruity and perceived fit scale (please refer to **Table 4.6**), and BPC scale (please refer to **Table 4.3**)

#### **4.8.4.9 Mediators**

In order to measure difficulty to resolve, the author adopted Jhang *et al.*'s (2012) 1-item incongruity resolution. Lower scores indicate that incongruity is harder to resolve. The author also measures complementarity resolution by adopting Jhang *et al.*'s (2012) item. **Table 4.7** below lists the scales.

*Table 4.7 Scale and Measures*

**Congruity resolution – Jhang *et al.* (2012), 7-point semantic differential scale**

- 1) Extending to the new product...

Does makes no sense / Make sense

**Complementarity resolution – Jhang *et al.* (2012) 7-point semantic differential**

- 1) Having two personalities for parent brand and brand extension...

Does makes no sense / Make sense

#### **4.8.4.10 Covariate**

In Study 3, since the author uses a fictitious brand name (i.e. Astra) for the parent brand, covariate brand name likability is measured. **Table 4.8** below summarises the items.

*Table 4.8 Scale and Measures*

**Brand name likability –Torelli and Ahluwalia (2012) and Warlop *et al.* (2005) 7-point semantic differential scale**

- 1) Please indicate your likability for Astra as a brand name

Unfavourable / Favourable

- 2) Is Astra appropriate for a brand name?

Not at all appropriate / Very appropriate

#### **4.8.4.11 Analyses**

The author will use SPSS PASW 18 to analyse the data. Outlier, normality and heterogeneity assumptions of data will be checked prior to all t-tests, ANOVAs, ANCOVAs or MANOVAs. The author will use EFA using PAF method of extraction and oblimin rotation to check the natural grouping of measurement items. Mediation



effect of complementarity will be tested with bootstrap analysis using Hayes' (2013) SPSS PROCESS macro. This utilises the bootstrapping method by extensively using the observed data to estimate parameters and standard errors of successive randomly replacement samples usually in thousands (Cooil *et al.*, 1987; Efron, 1982; Rasmussen, 1987). Bootstrapping produces estimators with low variability and it is theoretically appealing since it mimics the statistical distribution of the data original sample (Cooil *et al.*, 1987; Dalgleish, 1994). This proves to be useful as bootstrapped samples provides an empirical sampling distribution of the test statistics independent of what the data really is (Chan *et al.*, 1999). The author will also adopt Johnson-Neyman techniques to assess moderation effect as recommended by Spiller *et al.* (2013) using the similar SPSS PROCESS macro by Hayes (2013).

#### **4.9 Conclusions**

In general, the overall studies are divided into 2 major components. The first component is the development of Malaysian brand personality scale (MBP). It follows stringent and current scale development process. In particular, parallel analysis (PA) is included in the process to determine numbers of factors. Together with exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modeling (SEM), MBP should be a reliable and valid scale to measure brand personality in Malaysia. The development of MBP scale also follows etic-emic approach to personality scale development as recommended by Aaker *et al.* (2001) and Cheung *et al.* (2011).

The second component is further divided into 3 studies, in which in the first study operationalization of BPC is examined. Since prior operationalization of BPC is non-existence, it is essential that the author tests BPC among possible MBP pairs. Pairwise comparison will reveal MBP pairs that are low, moderate or high in BPC effect. In the

second and third study, BPC effect is investigated with brand extension incongruity levels (i.e. low, moderate, and high) using different ad-stimuli. The author will expect that high BPC level will mitigate schema incongruity effect, thus boosting the level of brand extension evaluations particularly for extremely incongruent brand extensions. The next chapter will be discussing the process of developing MBP scale.

# CHAPTER 5: Scale Development Analyses – Phase 1, Phase 2, and Phase 3

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## 5.1 Introduction

There are 3 phases in scale development process – item generation, scale development, and scale evaluation (Hinkin, 1995; 1998). The objective of Phase 1 was to generate culture-specific brand personality traits. In this phase, the author used combined etic-emic approach to identify brand personality traits unique to Malaysia (see Aaker *et al.*, 2001). Phase 1 was broken into three studies. The purpose of Study 1 was to identify suitable brands needed for Study 2. In Study 2, the 10 brands that were identified in study 1 were used as stimuli to elicit brand personality traits. In Study 3, content analysis was done to reduce the items into a manageable list prior to exploratory factor analysis (EFA) in phase 2. The purpose of the third study was to reduce the number of personality traits to ensure that only the traits relevant to the Malaysian context were retained.

There was only 1 study in phase 2. The objective was to find the underlying latent factors (i.e. structures) of Malaysian brand personality using EFA. Similarly, there was only one study in phase 3 in which latent factors were tested for unidimensionality and construct validity using confirmatory factor analysis (CFA).

All steps taken were strongly suggested by previous and recent studies that; 1) developed scale (e.g. Aaker, 1997; Aaker *et al.*, 2001; Ashill & Jobber, 2010; Geuens *et al.*, 2009; Ramani & Kumar, 2008), 2) reviewed the general practices of scale development (e.g. Anderson & Gerbing, 1988, Hinkin, 1995; 1998), and 3) discussed the use of EFA and CFA for scale development (Conway & Huffcutt, 2003; Gerbing & Anderson, 1988;

Farell, 2010; Fabrigar *et al.* 1999, Ford *et al.*, 1986; Gerbing & Hamilton, 1996; Hayton *et al.*, 2004; Reise *et al.*, 2000; Schmitt, 2011).

## 5.2 Phase 1: Item Generation

Prior to item generations, literature review revealed there are many brand personality scales developed since Aaker's (1997) seminal study. The author decided that only scales published in top-ranked journal were reviewed. As a result, 10 brand personality scales were selected. Selecting Aaker's (1997) study as the starting comparison base, only unique items of latter studies were retained. Sequentially, newer studies were compared to the existing lists of items retained, adding to a pool of only unique items. This resulted in 188 unique items which will be cross-referenced with items generated in this phase (see **Table 5.1** and **Table 5.2**). The author then conducted three studies to refine the pool of trait items. Student samples were used for all three studies in this phase, since homogeneous characteristics of the samples allow assessment consistency across study 1, 2 and 3.

*Table 5.1 Brand Personality Scales*

<b>Author (s)</b>	<b>Country</b>	<b>Traits</b>
Aaker (1997)	US (brands)	42
Aaker <i>et al.</i> (2001)	Japan (brands)	36
Aaker <i>et al.</i> (2001)	Spain (brands)	33
Caprara <i>et al.</i> (2001)	Italy (brands)	40
D'Astous & Levesque (2003)	Canada (stores)	34
Slaughter <i>et al.</i> (2004)	US (brands)	33
Sung & Tinkham (2005)	US (brands)	80
Venable <i>et al.</i> (2005)	US (non-profit)	15
Chun & Davies (2006)	Unknown (company)	43
Bosnjak <i>et al.</i> (2007)	Germany (brands)	20
Geuens <i>et al.</i> , (2009)	International (brands)	12

Table 5.2 Unique Items from Literature Reviews

Aaker (1997)	Aaker et al. (2001)	Caprara et al. (2001)	d'Astous & Boujbel (2003)	Slaughter et al. (2004)	Sung & Tinkham (2005)	Venable et al. (2005)	Chun & Davies (2006)	Bosnjak et al. (2005)	Geuens et al. (2009)
Charming	Affectionate	Active	Annoying	Attentive	Bubbly	Caring	Achievement -Oriented	Adventurous	Bold
Cheerful	Bohemian	Altruist	Chic	Boring	Handy	Compassionate	Aggressive	Bourgeois	Emotional
Confident	Childlike	Calm	Congenial	Busy	Informative	Loving	Agreeable	Good Natured	Ordinary
Contemporary	Considerate	Competitive	Conservative	Cooperative	Playful		Ambitious	Hypocritical (Deceitful)	
Cool	Consistent	Conscientious	Dynamic	Fashionable	Professional		Arrogant	Obtrusive (Pushy)	
Corporate	Dependent	Cordial	Hardy	Helpful	Satisfying		Authoritarian	Old-Fashioned	
Daring	Determined	Creative	Imposing	Interesting	Strict		Concerned	Orderly	
Down-To-Earth	Dignified	Dominant	Irritating	Low Class	Traditional		Controlling	Saucy (Disrespectful)	
Exciting	Elegant	Efficient	Loud	Pleasant	Versatile		Elitist	Small-Minded	
Family-Oriented	Energetic	Faithful	Outmoded	Simple	Well-made		Extrovert		
Feminine	Extravagant	Fanciful	Reputable	Sloppy			Hardworking		
Friendly	Fervent	Generous	Selective				Inward-Looking		
Glamorous	Free	Informed	Snobbish				Open		
Good Looking	Fun	Innovative	Solid				Prestigious		
Hard Working	Funny	Level-headed	Superficial				Reassuring		
Honest	Gentle	Light-hearted	Thriving				Refined		
Imaginative	Happy	Lively	True				Selfish		
Independent	Intense	Loyal	Trustworthy				Snobby		
Intelligent	Kind	Modern	Welcoming				Socially Responsible		
Leader	Likeable	Precise	Well-Organised				Straightforward		
Masculine	Mild Mannered	Productive					Supportive		
Original	Mythical	Relaxed							
Outdoorsy	Naïve	Resolute							
Real	Optimistic	Scrupulous							
Reliable	Outgoing	Stable							
Rugged	Passionate	Strong							
Secure	Patient								
Sentimental	Peaceful								
Sincere	Persistent								
Small-Town	Positive								
Smooth	Responsible								
Spirited	Romantic								

Aaker (1997)	Aaker et al. (2001)	Caprara et al. (2001)	d'Astous & Boujbel (2003)	Slaughter et al. (2004)	Sung & Tinkham (2005)	Venable et al. (2005)	Chun & Davies (2006)	Bosnjak et al. (2005)	Geuens et al. (2009)
Successful	Shy								
Technical	Sophisticated								
Tough	Spiritual								
Trendy	Stylish								
Unique	Sweet								
Upper Class	Talkative								
Up-To-Date	Tenacious								
Western	Thoughtful								
Wholesome	Warm								
Young	Well -Mannered								
	Youthful								

### 5.2.1 Study 1 – Top-of-Mind Brand Elicitation

Following Hinkin's (1995; 1998) recommendations, the first phase of scale development is item generation. However, before items can be generated, Study 1 was done to select top-of-mind brands. A total of 47 university students were invited to participate in a free-association task. Almost 38 percent of the participants were males and 96 percent aged between 18 and 24 years old. Approximately 97 percent were full-time business undergraduates in the Faculty of Business and Accountancy of a top public university in Kuala Lumpur. Participation was voluntary. The students were given a list of a total 20 product and services categories taken from Readers' Digest Trusted Brand 2011 for Asia and Malaysia. The students were asked to recall and write down only the first brand that emerged in their minds as they went through the categories.

Following steps by Aaker *et al.* (2001), 20 product categories were chosen based on whether the products or services fulfilled 1) utilitarian, 2) symbolic, and 3) both utilitarian/symbolic benefits based on their frequency (see **Table 5.3**). The products chosen for Study 2 are showed in **Table 5.4**. Coke was added as a control brand for Study 2 because it is an established global brand (e.g. Aaker *et al.*, 2001). The study decided to select Berjaya Hotels and Resorts even though Hilton had the highest frequency. This was because Hilton was also associated with Paris Hilton's sensationalised appearances in the media for the past few years. This will create negative valence traits elicited from this brand. Thus, the study wanted to limit elicitation of such valence. In total, 11 brands (7 global brands, 4 local brands) were chosen for items generation in Study 2.

*Table 5.3 Product Categories and Brands*

Product Category	Brand	Percentage	Product Category	Brand	Percentage
Fast-food restaurant	KFC	44.7%	Smartphone	Apple	51.1%
Airlines	AirAsia	70.2%	Sports wear	Nike	51.1%
Detergent	Dynamo	19.1%	Car	Perodua	25.5%
Toothpaste	Colgate	80.9%	Bank	Maybank	36.2%
Medicine (pain reliever)	Panadol	74.5%	Mattress	Vono	14.9%
Bread	Gardenia	68.1%	Tyres	Dunlop	25.5%
Women's undergarments	Triumph	17.0%	House paints	Nippon	46.8%
Make-up and beauty	Mac	21.3%	Laptops	Dell	23.4%
Men's fragrance	CK	14.9%	Hotel	Hilton	23.4%*
Luxury car	BMW	34.0%	Carbonated drinks	Coke	48.9%

\*Berjaya Hotel had 12.8% recalls

*Table 5.4 Brands Chosen for Item Generations*

Utilitarian	Symbolic	Utilitarian/Symbolic
Colgate	CK	Berjaya Hotel
Gardenia	Apple	AirAsia
Dell	Triumph	Perodua
Coke	Nike	

### 5.2.2 Study 2 – Item Generations

The purpose of Study 2 was to generate personality traits that are culturally specific to Malaysia. A different set of sample in which a total of 65 students were invited to participate in Study 2. Students were from Faculty of Business and Accountancy of a top public university in Kuala Lumpur. About 31 percent of the participants were males and 97 percent aged between 18 to 24 years old. Approximately 82 percent were full-time business undergraduates in the Faculty of Business and Accountancy of a top public university in Kuala Lumpur. Participation was voluntary.

To communicate the brand personality concept to participants, they were given a definition of brand personality in the instruction, “Brands personality refers to the set of personality traits that are both applicable to and relevant for brands”. They were



instructed to think about brand in the study as if it were a person and described them with personality attributes or traits. For example, they might think that the human personality traits of TV3, Malaysia's local TV channel as fun, reliable and vibrant. Participants were asked to write down as many amounts of personality traits that they could think of. They were given 20 minutes to go through all 11 brands.

The results showed that a total of 169 traits were generated from the free association task. To reduce the number of traits, the author followed previous conventions in which redundant, ambiguous and irrelevant traits including those that described demographic were deleted (e.g. Aaker *et al.*, 2001; Azoulay & Kapferer, 2003). A total of 80 traits were deleted (see **Table 5.5**); 3 traits have similar meanings to Aaker's (1997) upper class and small town (i.e. high status classy, and local), 2 negative traits (cramp and unhealthy), 69 traits which describe products features and attribute (e.g. fluffy, long lasting, and nutritious), 5 traits that describe demographic profile (e.g. sexy, beautiful, and low profile), and 1 ambiguous trait (i.e. informal).

The remaining 94 items were then cross-referenced with items available from 188 unique items from the 10 previous studies. Forty two items from the 94 items were found to be similar to the aggregated 10 published scales. Thus, 52 items unique to Malaysia were found. Both traits from the published scales and those generated were combined to form a list of 240 items. These traits will be included in study 3.

Table 5.5 Eighty Deleted Items

Synonyms	Negative Traits	Product Descriptors			Demographics profiles	Ambiguous
Classy (Upper Class) High Status (Upper Class) Local (Small-Town)	Cramp Unhealthy	Advanced	Easy	Long Lasting	Beautiful	Informal
		Addictive	Economy	Low Quality	Fun Looking	
		Affordable	Effective	Noticeable	Low-profile	
		Attractive	Exclusive	Nutritious	Rich	
		Best	Expensive	Popular	Sexy	
		Big	Familiar	Pricey		
		Branded	Famous	Quality		
		Business oriented	Favourable	Recognizable		
		Cheap	Festive	Routine		
		Clean	Fluffy	Safe		
		Colourful	Freedom	Satisfactory		
		Comfortable	Fresh	Satisfied		
		Common	Generic	Save		
		Compact	Great	Secure		
		Compatible	Halal	Small		
		Comfortable	Healthy	Sleek		
		Convenient	High End	Soft		
		Cramp	High Standard	Soothing		
		Custom-made	High Tech	Specialised		
		Delicious	Huge	Standard		
		Deluxe	Hygienic	Tasteful		
		Durable	Ideal	Tasty		
		Different	International	Variety		

### 5.2.3 Study 3 – Item Reduction

The objective of study 3 was to conduct content analysis for findings in study 2, thus reducing the items into a manageable list prior to EFA on another new sample. Recommended step was adopted from Aaker *et al.* (2001) and Aaker (1997) with slight variation. Since the amount of traits was large, the 240 items were randomly and equally divided into 3 set of questionnaires comprising only 80 items.<sup>13</sup> The task was accomplished using random sequence generator from random.org website (<http://www.random.org/sequences/>). This split-questionnaire design will be less burdensome, and reduce participants' fatigue and boredom (Adigüzel & Wedel, 2008; Batra *et al.*, 2010). Questionnaire with large number of items take more time, induces undesired response style (i.e. response order effect), and result in more non-response or early break-off (Adigüzel & Wedel, 2008; Dillman, 1991; Dillman *et al.*, 1993; Heberline & Baumgartner, 1978; Krosnick, 1999). The three sets of questionnaires were distributed randomly in a large lecture hall to a total of 89 students who participated voluntarily. About 90 percent were females, and 92 percent were full-time business undergraduates in the Faculty of Business and Accountancy of a top public university in Kuala Lumpur

Participants were briefly given the definition of brand personality. They were informed that if they were asked to give their impressions of a particular person, they would reply back with a set of personality attributes/traits. The study directed the participants to think about brands in the same manner, i.e. to think of each brand as if it were a person. For example, they might think that the human personality traits of BlackBerry as fun, innovative and vibrant; Nike as energetic, cool and aggressive and Toyota as competent, reliable and trustworthy. Since the study was not about any particular brand, participants

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<sup>13</sup> The author did not control for primacy and recency effects in which items were supposed to be counterbalanced (see Aaker *et al.*, 2001). However, random assignment of traits into 3 sets should be sufficient.

were urged to think about all of their favourite local and global brands that they were using and wish to purchase in the future in various product/service categories.<sup>14</sup> Participants were asked to evaluate each trait on a Likert-type scale range from 1 (not at all relevant) to 7 (extremely relevant).

Mean scores were calculated for each 240 items. Items with mean scores less than 5.00 were eliminated. Although Aaker *et al.* (2001) recommended eliminating items with mean scores of less than 5.50, the study did not want to delete as many possible items at this stage.<sup>15</sup> Results from study 3 are shown in the **Table 5.6**. In total, 96 items were retained for the scale development phase.

*Table 5.6 Item Reduction*

1 <sup>st</sup> Set		2 <sup>nd</sup> Set		3 <sup>rd</sup> Set	
Item	Means	Item	Means	Item	Means
Achievement Oriented	5.222	Good-natured	5.179	Hard Working	5.680
Efficient	5.278	Unique	5.143	Casual	5.680
Intelligent	5.250	Reasonable	5.464	Trendy	5.920
Glamorous	5.389	Social Responsible	5.286	Creative	5.920
Confident	5.389	Versatile	5.000	Clever	5.720
Interesting	5.639	Dynamic	5.107	Enjoyable	6.320
Happy	5.556	Friendly	5.607	Youthful	6.080
Precise	5.167	Futuristic	5.179	Universal	5.600
Proud	5.556	Kind	5.179	Active	5.480
Cheerful	5.222	Successful	5.714	Cool	5.760
Exciting	5.861	True	5.857	Charming	5.560
Well-made	6.000	Flexible	5.607	Urban	5.320
Loyal	5.056	Honest	5.357	Faithful	5.240
Elite	5.000	Generous	5.000	Passionate	5.240
Productive	5.222	Sincere	5.250	Leader	5.360
Competitive	5.056	Likable	5.500	Homely	5.080
Modern	5.500	Strong	5.250	Luxurious	5.560
Selective	5.139	Prestigious	5.179	Elegant	5.760

<sup>14</sup> There are two methods to rate content adequacy of the traits generated. The first method is by asking the participants to think as many different types of brands in various product categories (Aaker, 1997). The second method is to use brands as referent points. Aaker (1997) used the first method since there were 309 traits to be rated on a 7-point scale. However, in later study Aaker and colleagues (2001) skipped this method and followed the second method since the traits generated were lesser – 100 for Japanese, and 77 for Spanish. Geuens *et al.* (2009) also followed the second method to rate 40 traits. The author adopted the first method because: 1) there were 240 traits that needed to be checked for content adequacy, 2) using specific brands will be too restrictive, since the author will have a better chance to capture cultural relevant traits when local brands are triggered.

<sup>15</sup> Aaker (1997) decided to delete traits which scored less than 6.0. Similarly, adopting the value of 5.50 will significantly reduce the traits to 40. Thus, the author decided to choose 5.0 and used more advanced statistical methods to reduce the pool of traits.

1 <sup>st</sup> Set		2 <sup>nd</sup> Set		3 <sup>rd</sup> Set	
Item	Means	Item	Means	Item	Means
Pleasant	5.139	Informative	5.464	Vibrant	5.240
Consistent	5.139	Established	5.250	Innovative	5.880
Fashionable	5.750	Well-Organised	5.250	Nice	5.640
Relaxed	5.194	Free	5.250	Reliable	5.320
Smooth	5.000	Outgoing	5.250	Purposeful	5.320
Up-to-date	5.889	Determined	5.000	Simple	5.400
Cute	5.056	Easy Going	5.821	Positive	5.640
Champion	5.278	Feminine	5.286	Good Looking	5.880
		Stylish	5.643	Upper Class	5.360
		Smart	5.607	Reassuring	5.000
		Real	5.500	Supportive	5.400
		International	5.571	Extravagant	5.200
		Welcoming	5.357	Lively	5.600
		Gentle	5.214	Satisfying	6.040
		Concerned	5.000		
		Adventurous	5.143		
		Trustworthy	5.500		
		Original	5.750		
		Open Minded	5.536		
		Professional	5.960		

## 5.3 Phase 2: Study 4 – Scale Development

### 5.3.1 Outliers, Skewness, Kurtosis, and Normality

In phase 2, 96 traits that survived content adequacy went through exploratory factor analysis (EFA). The main objective of study 4 was to uncover the underlying latent factors of Brand Personality of Malaysia. A sample of 520 students was asked to voluntarily participate. Exactly 35 questionnaires were rejected because they were more than 50 percent incomplete. Hair *et al.*, (2010, p.48) suggested 50 percent or more missing data should be deleted. Thus, the remaining samples of 485 were fully completed and available for scale development phase. About 27 percent of the samples were male, and 96% aged between 18 and 24 years old. Approximately 84 percent were full-time business students in the Faculty of Business and Accountancy in a top public university in Kuala Lumpur.

The remaining cases of 485 were analysed for outliers, skewness and kurtosis. Cases were transformed to z-scores to check for outliers. All z-scores indicated that none of the

cases were  $> \pm 3.0$  (Ng & Houston, 2009). Skewness of items ranged from  $-.704$  to  $.116$  and kurtosis ranged from  $-1.211$  to  $.375$ , which showed a reasonable range for skewness and kurtosis (see **Table 5.7** in Appendix). Furthermore, the effect of skewness and kurtosis disappear with samples of 200 or more (Tabachnick & Fidell, 2007).

Additionally, Kolmogorov-Smirnov and Shapiro-Wilk tests indicated a significant deviation from univariate normality ( $p < .05$ ) (see **Table 5.8** in Appendix). Mardia's (1970) multivariate skewness and kurtosis was also significant ( $p < .01$ ) (see **Table 5.9**). However, at this phase, EFA using Principal Axis factoring method does not require normality assumptions (Kaplan, 2009).

*Table 5.9 Mardia's (1970) Test of Multivariate Normality*

Test for Multivariate Normality				
Mardia mSkewness	= 3882.738	$\chi^2(152096)$	= 0.00003	$p$ -value < .01
Mardia mKurtosis	= 11478.4	$\chi^2(1)$	= 26198.74	$p$ -value < .01

### 5.3.2 Exploratory Factor Analysis (EFA)

The study followed recommendations from studies that argued for the use of EFA to identify latent factors prior to Confirmatory Factor Analysis (CFA), which will then be used to evaluate the latent factors identified (see Gerbing & Anderson, 1988; Hinkin, 1995; Church & Burke, 1994; Ford *et al.*, 1986; Gerbing & Hamilton, 1996; Schmitt, 2011). Literature in scale development mostly argued for 2 different samples or splitting a large sample (e.g. Anderson and Gerbing, 1988; Hinkin, 1995) – one half for scale construction, and the other half for scale evaluation and validation. The author opted for the first choice.

With total samples of 485, it fulfilled the requirement of having the minimum ratio of 5:1 for Exploratory Factor Analysis (EFA) (Hair *et al.*, 2010). Principal Axis Factoring

(PAF) extraction method with oblimin rotation was used as the purpose was to uncover the latent constructs (Conway & Huffcutt, 2003; Fabrigar *et al.*, 1999; Ford *et al.*, 1986). EFA of 96 items generated 14 factors with KMO = .914 and Bartlett's test of Sphericity was significant ( $p < .01$ ). However, scree plot revealed a sharp break at 6 or 7 factors (see **Figure 5.1**). As an additionally measure, Horn's (1965) Parallel Analysis (PA) was performed. Recently, researchers have argued for the use of PA as a decision to retain number of factors in factor analysis (see Crawford *et al.* 2010; Hayton *et al.*, 2004; Reise *et al.*, 2000; Schmitt, 2011). It is argued that PA-PAF method will perform better when one or more factors are present (Crawford *et al.*, 2010). The 95<sup>th</sup> percentile eigenvalues were drawn from default random iteration of 2880 (30 times of each 96 items) using Stata 11. Results from PA-PAF revealed a 6-factor structure with adjusted eigenvalues  $> 1$  (see **Table 5.10**). EFA was re-run using PAF with oblimin rotation and factor was restrained to six. KMO improved to .946 and Bartlett's test of Sphericity was significant ( $p < .01$ ). One item (i.e. well-organised) was deleted since its loading was  $< .30$ .

*Table 5.10 Parallel Analysis-PAF*

Component or Factor	Adjusted Eigenvalue	Unadjusted Eigenvalue	Estimated Bias
1	31.101	32.447	1.346
2	7.424	8.655	1.232
3	5.767	6.918	1.151
4	5.090	6.191	1.101
5	2.114	3.174	1.060
6	1.683	2.691	1.008
7	0.895	1.884	0.990

Further assessment of individual factor's reliability and communalities has led to the deletion of another 5 items (see **Table 5.11**). A re-analysis of EFA with remaining 90 items while factor restrained to 6 further revealed 8 items with loadings  $< .5$  (see **Table**

5.12 in Appendix). However, these items were not deleted and will be further analysed using Confirmatory Factor Analysis (CFA) in Phase 3 which is the scale validation phase.

Figure 5.1 Scree Plot of 96 Items

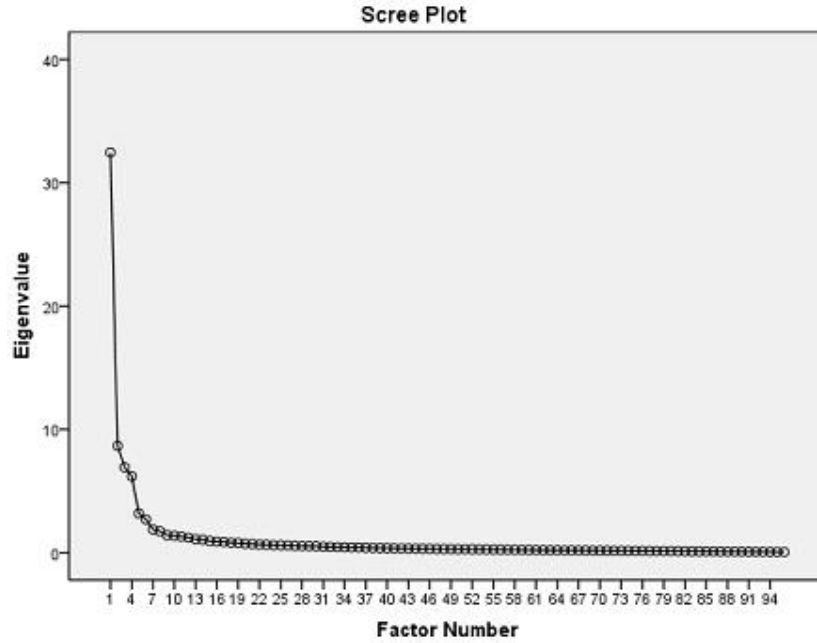


Table 5.11 Items deleted

Factor	Original number of items	Iterations	Reason for iteration	Cronbach's $\alpha$ (KMO)	Number of Items Remained
1	23	2	Item-to-Total Correlation < .50	0.968 (.958)	21
2	18	2	Communalities < .50	0.949 (.945)	16
3	24	1	Communalities < .50	0.964 (.963)	23
4	11	0		0.954 (.942)	11
5	9	0		0.947 (.949)	9
6	10	0		0.958 (.965)	10



## 5.4 Phase 3: Study 5 – Scale Validation

The purpose of Study 5 was to evaluate the stability of the factor structures identified in Study 4. A different set of non-student sample of 457 was collected. Exactly, 19 questionnaires were removed since they were more than 50% incomplete (Hair *et al.*, 2010). Questionnaires were distributed through convenience sampling. Demographic profiles showed that 41.8% were male, 91.9 percent aged between 18 and 50, and 71 percent were working. In this phase, CFA was used to assess convergent, discriminant, and nomological validities of the 6 factors. The study used LISREL 8.8 for CFA.

### 5.4.1 Outliers, Skewness, Kurtosis, and Normality

Prior to CFA, the remaining 90 items which survived phase 2 were checked for outliers. Cases were transformed to z-scores to check for outliers. Z-scores indicated that none of the cases were above  $\pm 3.0$  (Ng & Houston, 2009). Skewness of items ranged from -.582 to .124 and kurtosis ranged from -1.130 to -.026, which showed a reasonable range for skewness and kurtosis. Furthermore, the effect of skewness and kurtosis disappear with samples of 200 or more (Tabachnick & Fidell, 2007).

The remaining 90 items were then assessed for reliability and communalities. Another 11 items were deleted as the communalities were  $< .50$ , thus resulting in a remaining list of 79 items available for CFA (see **Table 5.13**). All 6 factors showed Cronbach's  $\alpha$  ranged from .899 to .955, and KMOs of .959 with significant Bartlett's test of Sphericity ( $p < .01$ ).

Table 5.13 Items Deleted

Factor	Original number of items	Iterations	Reason for iteration	Cronbach's $\alpha$ (KMO)	Number of Items Remained
1	21	2	Communalities < .50	0.954 (.955)	15
2	16	2	Communalities < .50	0.930 (.929)	13
3	23	0		0.955 (.953)	23
4	11	1	Communalities < .50	0.939 (.927)	10
5	9	0		0.915 (.915)	9
6	10	1	Communalities < .50	0.899 (.919)	9

Importantly, Maximum Likelihood (ML) estimation in CFA requires that the data are univariate and multivariate normal (McDonald & Ho, 2002; Schmitt, 2011). Kolmogorov-Smirnov and Shapiro-Wilk tests indicated that univariate normality was violated (see **Table 5.14**). Further assessment of Mardia (1970) multivariate skewness and kurtosis also showed a significant result,  $p < .01$  (see **Table 5.15**). As a remedy, LISREL 8.8 provided a solution if normality were not met. Raw data were transformed using the Normal Scores option. This step was recommended by LISREL 8.8 user guide.

Table 5.15 Mardia's (1970) Multivariate Normality

Test of Multivariate Normality				
Mardia mSkewness	= 2529.624	$\chi^2(85320)$	= 1.86e + 5	$p$ -value < .001
Mardia mKurtosis	= 8276.984	$\chi^2(1)$	= 30175.587	$p$ -value < .001

### 5.4.2 Convergent Validity

Following recommendation from Ashill and Jobber (2011), convergent validity was assessed by three measures: Cronbach's  $\alpha$ , composite reliability and average variance extracted (AVE) (Fornell & Larcker, 1981). Nunnally (1978) recommended that Cronbach's  $\alpha$  to be at least .70 to show convergent validity. Item loadings of at least .60 or ideally .70 or more should indicate that the measure accounted at least 50% or more of

the variance of the underlying latent factor (Bagozzi & Yi, 1988; Fornell & Larcker, 1981, Hair *et al.*, 2010; Nunnally & Bernstein, 1994). Additionally, AVE of .50 or more, and composite reliability (CR) above .60 will suggest convergent validity (Bagozzi & Yi, 1988; Fornell & Larcker, 1981).

Furthermore, assessment of unidimensionality which included both convergent and discriminant validities were further assessed with CFA in LISREL 8.8 (Gerbing & Anderson, 1988; Hinkin, 1995; Noar, 2003). Fit indexes or statistics such as NNFI, NFI, TLI, and CFI should be at least above .90, or even better at above .95, and both RMSEA and SRMR below .05 for a good fitting model (Bagozzi & Yi, 1988; Hu & Bentler, 1999). Through Modification Indices (MI) provided in LISREL 8.8 output (MacCallum *et al.*, 1992; Schmitt, 2011), items with the largest measurement errors were deleted sequentially until a model fit was achieved. This was because a single change in the model can affect the outcome of the re-specified model (Anderson & Gerbing, 1988). Once the poor item was removed, CFA was re-run.

#### **5.4.2.1 Factor 1 – Sophistication**

There were 15 items remained in Factor 1 prior to CFA. The factor went through 9 iterations of sequentially deleting the items with the largest measurement errors until it achieved model fit. Results showed remaining 6-item factor with fit statistics that were more than the recommended value of .95, and RMSEA and SRMR below .05 (Bagozzi & Yi, 1988; Hu & Bentler, 1999). Cronbach's  $\alpha$  was .913, CR was .910 and AVE was .619. All of the results suggested that the measure achieved convergent validity (see **Table 5.16**). The study also called this construct sophistication as the items reflected items in Aaker's (1997) sophistication dimension.

Table 5.16 Factor 1 Scale Statistics

Construct Name and Item	MN	SD	t-values	Std Error	Unstd $\lambda_x$	Std $\lambda_x$	$\Theta\delta$	$r^2$	CR	AVE
<b>Sophistication</b>			10.327						<b>0.910</b>	<b>0.629</b>
Luxurious	4.116	1.812			1.000	0.826	0.318	0.682		
Elite	4.057	1.769	21.079	0.048	1.003	0.848	0.281	0.719		
Stylish	4.265	1.722	15.208	0.051	0.770	0.669	0.552	0.448		
Elegant	4.228	1.780	21.473	0.048	1.022	0.859	0.263	0.737		
Proud	4.340	1.687	20.475	0.046	0.938	0.831	0.309	0.691		
Charming	4.164	1.659	16.276	0.048	0.781	0.705	0.502	0.497		
$\chi^2 (9) = 20.349, p\text{-value} = .016, \text{RMSEA} = .054, \text{SRMR} = .017, \text{NFI} = .992, \text{NNFI} = .993, \text{CFI} = .996, \text{IFI} = .996$										

#### 5.4.2.2 Factor 2 – Sincerity

The study further ran CFA of the 15 remaining items of factor 2. Modification Indices (MI) helped eliminated the largest measurement errors sequentially. CFA ran 7 iterations before a model fit was achieved. The remaining 6-item factor was called sincerity, as items represented Aaker’s (1997) sincerity dimension. Cronbach’s  $\alpha$  was .863, CR was .867 and AVE was .527. Fit statistics also achieved recommended values (see Table 5.17). Thus, results showed strong convergent validity for the measure. However, it should be noted that items original and nice had loadings of between .50 and .60

Table 5.17 Factor 2 Scale Statistics

Construct Name and Item	MN	SD	t-values	Std Error	Unstd $\lambda_x$	Std $\lambda_x$	$\Theta\delta$	$r^2$	CR	AVE
<b>Sincerity</b>			8.297						<b>0.867</b>	<b>0.527</b>
Sincere	4.694	1.404			1.000	0.719	0.483	0.517		
Original	4.678	1.664	11.313	0.084	0.948	0.575	0.670	0.330		
Flexible	4.699	1.446	16.506	0.074	1.221	0.852	0.275	0.725		
Nice	4.626	1.586	11.356	0.080	0.907	0.577	0.667	0.330		
Casual	4.667	1.379	15.371	0.070	1.101	0.805	0.352	0.648		
Good-natured	4.509	1.438	14.997	0.073	1.090	0.765	0.415	0.585		
$\chi^2 (9) = 10.67, p\text{-value} = .299, \text{RMSEA} = .021, \text{SRMR} = .018, \text{NFI} = .994, \text{NNFI} = .998, \text{CFI} = .999, \text{IFI} = .999$										

### 5.4.2.3 Factor 3 – Competence

Factor 3 maintained a large number of items prior to running CFA. From 23-item measure, sequentially deleting the item with the largest measurement errors retained 9 items through 14 iterations. Cronbach's  $\alpha$  was .881, CR was .875, however AVE was .469, which was slightly below recommended .50 (Bagozzi & Yi, 1988).<sup>16</sup> A closer look at the loadings revealed that intelligent had a loading of below .60 although it was still above the .50 value. Otherwise, other fit statistics showed a strong convergent validity (see **Table 5.18**). The study decided to name this factor as competence although most items were different from those of Aaker's (1997) items for competence. However, all items still represented the competitiveness traits of personality.

*Table 5.18 Factor 3 Scale Statistics*

Construct Name and Item	MN	SD	t-values	Std Error	Unstd $\lambda_x$	Std $\lambda_x$	$\Theta\delta$	$r^2$	CR	AVE
<b>Competence</b>			8.660						<b>0.875</b>	<b>0.469</b>
Champion	4.420	1.519			1.000	0.740	0.452	0.548		
Intelligent	4.388	1.508	11.331	0.067	0.757	0.565	0.681	0.319		
Competitive	4.534	1.497	12.627	0.066	0.834	0.627	0.607	0.393		
Achievement-oriented	4.468	1.577	12.620	0.070	0.879	0.627	0.607	0.393		
Efficient	4.575	1.554	12.849	0.069	0.881	0.637	0.594	0.406		
Successful	4.605	1.448	15.297	0.063	0.971	0.754	0.432	0.568		
Professional	4.623	1.551	14.201	0.068	0.968	0.702	0.507	0.493		
Strong	4.587	1.473	13.621	0.065	0.883	0.674	0.545	0.455		
Productive	4.573	1.391	15.374	0.061	0.937	0.758	0.426	0.574		
$\chi^2(27) = 34.268, p\text{-value} = .158, \text{RMSEA} = .025, \text{SRMR} = .023, \text{NFI} = .990, \text{NNFI} = .997, \text{CFI} = .998, \text{IFI} = .998$										

<sup>16</sup> Lower AVE value is an indicator of weak construct unidimensionality. Further inspection revealed that most  $\Theta\delta$  values (i.e. measurement error) were above .50 values which will influence AVE value. Additionally, results from EFA run in section 4.4.4 revealed that efficient, intelligent, and strong have loadings below  $< .50$ . At this stage, the author will not to delete any more traits until discriminant validity is done.

#### 5.4.2.4 Factor 4 – Excitement

There were 10 items remained for CFA run. After the fifth iteration through deletion of items with the largest measurement errors, a total of 5 items remained. Cronbach’s  $\alpha$  was .875, CR was .877 and AVE was .59. All item loadings were above the ideal .70 value except for versatile which was .64. Fit statistics were above recommended values, whereas RMSEA and SRMR were below .05 value (see **Table 5.19**). The study decided to name this factor excitement, as most item reflected Aaker’s (1997) excitement dimension.

*Table 5.19 Factor 4 Scale Statistics*

Construct Name and Item	MN	SD	t-values	Std Error	Unstd $\lambda_x$	Std $\lambda_x$	$\Theta\delta$	$r^2$	CR	AVE
<b>Excitement</b>			8.981						<b>0.877</b>	<b>0.590</b>
Exciting	4.450	1.486			1.000	0.760	0.423	0.577		
Cool	4.527	1.573	17.889	0.066	1.186	0.851	0.276	0.724		
Versatile	4.393	1.499	13.233	0.064	0.853	0.642	0.587	0.413		
Up-to-date	4.712	1.448	15.064	0.062	0.928	0.723	0.477	0.523		
Interesting	4.553	1.568	17.772	0.066	1.173	0.845	0.287	0.713		
$\chi^2 (5) = 2.904, p\text{-value} = .715, \text{RMSEA} = .000, \text{SRMR} = .009, \text{NFI} = .998, \text{NNFI} = 1.003,$ $\text{CFI} = 1.000, \text{IFI} = 1.001$										

#### 5.4.2.5 Factor 5 – Youth

There were 9 items that remained prior to CFA run. After 3 CFA iterations, modification indices showed 3 items with largest measurement errors, which were deleted one per iteration. Cronbach’s  $\alpha$  was .883, CR was .884 and AVE was .559. Items loadings were above the value of .60. Fit statistics achieved above recommended value of .95, and both RMSEA and SRMS were below .05 (see **Table 5.20**). Considering the items did not load into factor 4 or excitement, this factor was referred as youth.

Table 5.20 Factor 5 Scale Statistics

Construct Name and Item	MN	SD	t-values	Std Error	Unstd $\lambda_x$	Std $\lambda_x$	$\Theta\delta$	$r^2$	CR	AVE
<b>Youth</b>			8.497						<b>0.884</b>	<b>0.559</b>
Youthful	4.484	1.619			1.000	0.731	0.465	0.535		
Active	4.660	1.468	14.180	0.062	0.881	0.711	0.495	0.505		
Outgoing	4.537	1.492	15.661	0.063	0.989	0.785	0.384	0.616		
Positive	4.724	1.447	13.744	0.061	0.842	0.689	0.525	0.475		
Enjoyable	4.521	1.583	15.047	0.067	1.008	0.754	0.432	0.568		
Happy	4.600	1.554	16.151	0.066	1.064	0.810	0.343	0.657		
$\chi^2 (9) = 11.934, p\text{-value} = .217, \text{RMSEA} = .027, \text{SRMR} = .017, \text{NFI} = .994, \text{NNFI} = .998, \text{CFI} = .999, \text{IFI} = .999$										

#### 5.4.2.6 Factor 6 – Social Responsibility

The remaining 9 items in factor 6 were reduced to 7 items after 2 CFA runs through modification indices. Cronbach’s  $\alpha$  was .868, CR was .868 and AVE was .485.<sup>17</sup> All items loadings were between the recommended .66 and .74. Fit statistics achieved the recommended values of more than .95, and both RMSEA and SRMR were below .05 (see Table 5.21). The results indicated that the measure achieved convergent validity.

Table 5.21 Factor 6 Scale Statistics

Construct Name and Item	MN	SD	t-values	Std Error	Unstd $\lambda_x$	Std $\lambda_x$	$\Theta\delta$	$r^2$	CR	AVE
<b>Social Responsibility</b>			7.337						<b>0.868</b>	<b>0.485</b>
Honest	4.626	1.338			1.000	0.660	0.564	0.436		
Social responsible	4.479	1.486	12.683	0.095	1.201	0.714	0.490	0.510		
Supportive	4.555	1.461	11.932	0.092	1.096	0.663	0.560	0.440		
Kind	4.329	1.596	12.187	0.101	1.228	0.680	0.537	0.463		
Reasonable	4.591	1.425	13.056	0.091	1.194	0.740	0.452	0.548		
Trustworthy	4.728	1.475	12.726	0.094	1.197	0.717	0.486	0.514		
Purposeful	4.852	1.446	12.414	0.092	1.138	0.695	0.516	0.484		
$\chi^2 (14) = 25.334, p\text{-value} = .031, \text{RMSEA} = .043, \text{SRMR} = .024, \text{NFI} = .988, \text{NNFI} = .992, \text{CFI} = .995, \text{IFI} = .995$										

<sup>17</sup> There are only 4 items having  $\Theta\delta$  values of more than .50. EFA results in section 4.4.4 revealed that purposeful, supportive, kind, reasonable, and nice have loadings < .50 and share more variations with sincerity dimension. The author will check for discriminant validity to decide the removal of items or factor.

### 5.4.3 Discriminant Validity

The results from CFA runs indicated that all factors achieved convergent validity. The next step was to investigate the discriminant validity amongst the factors. Discriminant validity is achieved if, 1) the squared correlation of two factors (i.e.  $\phi^2$ , shared variance) is larger than AVE (Fornell & Larcker, 1981), and 2) inter-construct correlations are significantly different from unity (Gerbing & Anderson, 1988) – i.e. the difference of the nested and non-nested model should achieve  $\chi^2$  value of more than 3.841 for 1 degree of freedom (df). Both methods of testing discriminant validity were done in LISREL 8.8.

Following Fornell and Larcker's (1981) method, each factor was tested for discriminant validity sequentially pairing of factors, started off with factor 1 paired with factor 2, factor 1 and factor 3, and so forth. Then, factor 2 was compared to all remaining factors. The process was repeated until all possible pairs had been compared. Results showed that 4 pairs did not achieve discriminant validity – pair of factor 1 and 3, pair of factor 2 and 6, pair of factor 3 and 6, and pair of factor 4 and 5 (see **Table 5.22**). AVEs were lower than  $\phi^2$  indicating that the respective paired factors were correlated and shared more variation than having explained individual variation (Fornell & Larcker, 1981).

Further testing of discriminant validity was run following Gerbing and Anderson's (1988) method. Repeating the same sequential pairing of factors for all possible combination, results indicated that 7 pairs did not achieve discriminant validity (see **Table 5.23**). The pairs that failed the discriminant validity further implied that correlations of respective pairs were high.



Table 5.22 Discriminant validity – Fornell and Larcker’s (1981) method

Composite Reliability, Shared Variance ( $\phi^2$ ) and Average Variance Extracted						
Factor	F1	F2	F3	F4	F5	F6
F1	.910	.629 (.523)	.630 (.461)	.630 (.591)	.630 (.560)	.629 (.484)
F2	.208	.867	.525 (.461)	.525 (.589)	.525 (.560)	.525 (.485)
F3	<b>*.476</b>	.406	.875	.461 (.592)	.461 (.560)	.461 (.485)
F4	.240	.446	<b>*.489</b>	.877	.592 (.559)	.591 (.485)
F5	.326	.489	.436	<b>*.619</b>	.884	.559 (.485)
F6	.283	<b>*.739</b>	<b>*.501</b>	.388	.425	.868

Note: Diagonals are composite reliability, below diagonals are  $\phi^2$ , and above diagonals are AVEs of 2 respective factors.

\*  $\phi^2 > AVE$

Table 5.23 Discriminant Validity – Gerbing and Anderson’s (1988) method

Paired Measurement Models	$\chi^2$ (df) (Phi-matrix Unconstrained)	$\chi^2$ (df) (Phi-matrix Constraint)	$\Delta\chi^2$ (df)
F1-F2	110.158 (53)	117.801 (54)	7.643 (1)
F1-F3	205.406 (89)	207.315 (90)	<b>*1.909 (1)</b>
F1-F4	95.392 (43)	97.293 (44)	<b>*1.901 (1)</b>
F1-F5	199.357 (53)	199.376 (54)	<b>*0.019 (1)</b>
F1-F6	174.853 (64)	181.844 (65)	6.991 (1)
F2-F3	161.727 (89)	169.387 (90)	7.660 (1)
F2-F4	87.907 (43)	94.222 (44)	6.315 (1)
F2-F5	122.993 (53)	126.613 (54)	<b>*3.620 (1)</b>
F2-F6	196.158 (64)	200.405 (65)	4.247 (1)
F3-F4	210.114 (76)	211.709 (77)	<b>*1.595 (1)</b>
F3-F5	243.899 (89)	245.362 (90)	<b>*1.463 (1)</b>
F3-F6	252.583 (103)	262.740 (104)	10.157 (1)
F4-F5	140.666 (43)	140.778 (44)	<b>*0.112 (1)</b>
F4-F6	143.328 (53)	159.288 (54)	15.960 (1)
F5-F6	160.331 (64)	170.042 (65)	9.711 (1)

Note: \* < 3.841 for df = 1

#### 5.4.4 Discriminant Validity through EFA

Both methods of investigating discriminant validity suggested that some factor pairs were non-discriminant. Recently, researchers have suggested the use of EFA to investigate poor fitting (i.e. cross-loading) items in post-CFA test to achieve discriminant validity (Farrell, 2010; Schmitt, 2011). The removal of weak loading items was necessary to achieve convergent and discriminant validities (Hinkin, 1995).

In applying EFA to achieve both convergent and discriminant validities, principal axis factoring (PAF) method of extraction with oblimin rotation was recommended (Conway & Huffcutt, 2003; Fabrigar *et al.*, 1999; Ford *et al.*, 1986). Since the intention was to assess the latent grouping of items, PAF was preferred rather than Principal Component Analysis (PCA) (Kline, 1994).

All 39 items went through EFA using PAF extraction with oblimin rotation. KMO was .951. Results showed that only one latent factor was reflected by items of both factor 2 (sincerity) and factor 6 (social responsibility) (see **Table 5.24**). In other words, these items were measuring a single latent variable. In addition, 13 items were identified to have loadings of  $< .50$ . The study decided to remove these items since their loadings were weak, i.e. below .50 (Bagozzi & Yi, 1988; Fornell & Larcker, 1981, Hair *et al.*, 2010; Nunnally & Berstein, 1994).

Table 5.24 First EFA Run – PAF Extraction with Oblimin Rotation

Item	Factor					
	1	2	3	4	5	6
Sincere	.827					
Flexible	.736					
Honest	.722					
Casual	.680					
Good-natured	.644					
*Social responsible	.517					
<b>*Purposeful</b>	<b>.472</b>					
<b>*Supportive</b>	<b>.470</b>			<b>.312</b>		
<b>*Kind</b>	<b>.443</b>					
<b>*Reasonable</b>	<b>.425</b>					<b>-.313</b>
<b>*Nice</b>	<b>.335</b>					
Elegant		.916				
Luxurious		.848				
Proud		.794				
Elite		.791				
Charming		.625				
Stylish		.589				
Cool			-.748			
Interesting			-.662			
Exciting			-.596			
<b>*Up-to-date</b>			<b>-.422</b>	<b>.401</b>		
<b>*Versatile</b>			<b>-.346</b>			
Productive				.716		
Successful				.633		
Professional				.602		
Champion				.568		
Achievement - oriented				.564		
Competitive				.544		
<b>*Efficient</b>				<b>.475</b>		
<b>*Intelligent</b>				<b>.417</b>		<b>.310</b>
<b>*Strong</b>				<b>.413</b>		
Happy					.763	
Outgoing					.724	
Enjoyable					.602	
Youthful					.591	
Positive					.566	
<b>*Active</b>					<b>.476</b>	
<b>**Original</b>						
<b>*Trustworthy</b>	<b>.318</b>					<b>-.413</b>

Note: \* Items Loading < .50, \*\* Item Loading < .30. Loadings < .30 were suppressed.

With the removal of 13 weak loading items, EFA was re-run. Results showed a 5-factor solution with KMO of .934 (see **Table 5.25**). However, the loading of item social responsible was below .50, thus it was removed and another EFA was done.

*Table 5.25 Second EFA Run – PAF Extraction with Oblimin Rotation*

Item	Factor				
	1	2	3	4	5
Happy	.811				
Outgoing	.809				
Youthful	.612				
Enjoyable	.603				
Positive	.592				
Elegant		-.910			
Luxurious		-.837			
Proud		-.800			
Elite		-.780			
Charming		-.636			
Stylish		-.543			
Sincere			.857		
Flexible			.745		
Honest			.733		
Casual			.688		
Good-natured			.675		
<b>*Social Responsible</b>			<b>.478</b>		
Successful				.710	
Productive				.702	
Professional				.666	
Champion				.618	
Achievement-oriented				.597	
Competitive				.571	
Cool					-.754
Interesting					-.573
Exciting					-.517

Note: Item loading < .50. Loadings < .30 were suppressed.

With the deletion of social responsible, EFA output revealed a 4-factor solution with item loading ranged from .505 to .886 (see **Table 5.26**). The remaining 25 items went through CFA in LISREL 8.8 to investigate factors' convergent and discriminant validities.

Table 5.26 Third EFA Run – PAF Extraction with Oblimin Rotation

Item	Factor			
	1	2	3	4
Happy	.770			
Youthful	.751			
Outgoing	.729			
Enjoyable	.696			
Interesting	.682			
Exciting	.627			
Cool	.597			
Positive	.525			
Elegant		-.886		
Luxurious		-.784		
Proud		-.783		
Elite		-.769		
Charming		-.625		
Stylish		-.505		
Sincere			.860	
Flexible			.743	
Honest			.721	
Casual			.706	
Good-natured			.684	
Successful				.716
Professional				.668
Productive				.638
Champion				.636
Competitive				.585
Achievement-oriented				.557

Note: Loadings < .30 were suppressed

#### 5.4.5 Measurement Model Evaluations – 4-, 5-, and 6-factor MBP

Following the reduction of factors from 6 to 4, the author proceeded to compare goodness-of-fit statistics for all 3 models as an additional measure. The results in **Table 5.27** showed that 4-factor structure was a better model that represented the data. Fit statistics achieved recommended values in which  $\chi^2/df \leq 3$  (Iacobucci, 2010; Segars & Grover, 1993), SRMR  $\leq .07$  (Bagozzi, 2010), RMSEA  $\leq 0.06$ , NNFI  $\geq 0.95$ , CFI  $\geq 0.95$  (Hu & Bentler, 1999), other fit statistics should be .90 or above (Lance *et al.*, 2006).

Table 5.27 Evaluation of Models

Measurement Model	df	$\chi^2$	$\chi^2/df$	RMSEA	SRMR	CAIC	NFI	NNFI	CFI	IFI
6-Factor	687	1972.725	2.872	0.065	0.055	2631.371	0.962	0.973	0.975	0.975
5-Factor	290	755.403	2.605	0.061	0.048	1187.418	0.966	0.975	0.978	0.978
4-Factor	203	483.071	2.380	0.056	0.044	837.182	0.969	0.979	0.981	0.982

#### 5.4.6 Re-analysis of Convergent Validity

The 4-factor solution given by the EFA results represented sophistication, youth, sincerity, and competence factors of the previous study 4 in phase 2. The two factors that did not survive were excitement and social responsibility. Assessment of unidimensionality and convergent validity of each factor was again assessed with CFA in LISREL 8.8 (Anderson and Gerbing, 1988; Hinkin, 1995; Noar, 2003). Modification Indices (MI) provided in LISREL 8.8 output revealed items with the largest measurement errors to be deleted sequentially until a model fit was achieved (MacCallum *et al.*, 1992; Schmitt, 2011). Once the poor item was removed, CFA was re-run.

##### 5.4.6.1 Factor 1 – Sophistication

All 6 items of this factor were retained in the EFA re-run. They showed stability in both EFA and CFA despite the removal of other items and factors. **Table 5.16** summarised the scale and fit statistics of the factor. Items loadings ranged from .669 to .859 with t-values above 1.96 (one-tailed). Cronbach's  $\alpha$  was .913, CR was .910, and AVE was .619. Items loadings ranged from .669 to .859 with t-values above 1.96 (one-tailed). All fit statistics were above .95 and both RMSEA and SRMR were below .05 (Hu & Bentler, 1999; Bagozzi & Yi, 1988). The result from a battery of both EFA and CFA tests suggested

that sophistication as a factor or dimension in Malaysian Brand Personality Scale with a total of 6 items.

#### 5.4.6.2 Factor 2 – Sincerity

The results from EFA re-runs eliminated 2 items from sincerity dimension, and 6 items from social responsibility dimension. The new sincerity factor was reflected by 4 items from previous sincerity and only 1 item from social responsibility. However, CFA run removed the only item from social responsibility which was honest. Thus, the 4 items survived were sincere, flexible, casual and good-natured. Items loadings ranged from .719 to .858 with t-values above 1.96 (one-tailed) (see **Table 5.28**). Cronbach’s  $\alpha$  was .870, CR was .866, and AVE was .620. All fit statistics were above .95 and both RMSEA and SRMR were below .05.

*Table 5.28 Factor 2 Scale Statistics*

Construct Name and Item	MN	SD	t-values	Std Error	Unstd $\lambda_x$	Std $\lambda_x$	$\Theta\delta$	$r^2$	CR	AVE
<b>Sincerity</b>			8.234						<b>0.866</b>	<b>0.620</b>
Sincere	4.694	1.404			1.000	0.719	0.483	0.517		
Flexible	4.699	1.446	16.201	0.076	1.229	0.858	0.264	0.736		
Casual	4.667	1.379	15.505	0.071	1.101	0.806	0.350	0.650		
Good-natured	4.509	1.438	14.676	0.074	1.080	0.759	0.425	0.575		
$\chi^2(2) = .339, p\text{-value} = .844, \text{RMSEA} = .000, \text{SRMR} = .006, \text{NFI} = 1.000, \text{NNFI} = 1.005, \text{CFI} = 1.000, \text{IFI} = 1.002$										

#### 5.4.6.3 Factor 3 – Competence

In this factor, 3 items were removed from the lists of 9 items through EFA. Items removed were intelligent, efficient and strong. In CFA run, the 6 items showed strong convergent validity (see **Table 5.29**). Cronbach’s  $\alpha$  was .850, CR was .855, and AVE

was .496, slightly below recommended .50 value.<sup>18</sup> The improvement of previous AVE from .469 was anticipated as CR reduced from .875. Items loadings ranged from .634 to .765 with t-values above 1.96 (one-tailed). Fit statistics achieved above .95 and below .50 for both RMSEA and SRMR. Overall, latent factor competence was reflected in those items.

*Table 5.29 Factor 3 Scale Statistics*

Construct Name and Item	MN	SD	t-values	Std Error	Unstd $\lambda_x$	Std $\lambda_x$	$\Theta\delta$	$r^2$	CR	AVE
<b>Competence</b>			8.411						<b>0.855</b>	<b>0.496</b>
Champion	4.420	1.519			1.000	0.736	0.459	0.541		
Competitive	4.534	1.497	12.335	0.069	0.848	0.634	0.599	0.401		
Achievement-oriented	4.468	1.577	12.357	0.072	0.895	0.635	0.597	0.403		
Successful	4.605	1.448	14.802	0.067	0.991	0.765	0.415	0.585		
Professional	4.623	1.551	13.609	0.071	0.971	0.700	0.510	0.490		
Productive	4.573	1.391	14.451	0.064	0.927	0.745	0.445	0.555		
$\chi^2 (9) = 13.635, p\text{-value} = .136, \text{RMSEA} = .034, \text{SRMR} = .020, \text{NFI} = .992, \text{NNFI} = .996, \text{CFI} = .997, \text{IFI} = .997$										

#### 5.4.6.4 Factor 4 – Youth

Similarly, as items that previously measured both sincerity and social responsibility merged, items that previously measured both excitement and youth also grouped together to represent one latent factor. Only 3 items from excitement survived the EFA test, whereas 5 items were from youth. Through modification indices (MI) output in LISREL 8.8, only cool and interesting (i.e. excitement) were deleted, sequentially. Cronbach's  $\alpha$  was .871, CR was .870, and AVE was .531. Fit statistics achieved above .95 and below .50 for both RMSEA and SRMR (see **Table 5.30**). Items loadings ranged from .577 to .805 with t-values above 1.96 (one-tailed). The only item that previously reflected

<sup>18</sup> Competence dimension increased its AVE value from .469 to .496. All item loadings were above .50 value. Results from discriminant validity in section 4.4.7 showed that all factors achieved unidimensionality. Thus, it was reasonable to state that competence dimension is a reliable and valid construct.



excitement dimension was exciting. Thus, the study maintained the factor's name as youth.

*Table 5.30 Factor 4 Scale Statistics*

Construct Name and Item	MN	SD	t-values	Std Error	Unstd $\lambda_x$	Std $\lambda_x$	$\Theta\delta$	$r^2$	CR	AVE
<b>Youthful</b>			8.33						<b>0.870</b>	<b>0.531</b>
Youthful	4.484	1.619			1.000	0.577	0.668	0.332		
Exciting	4.450	1.486	11.319	0.065	0.732	0.723	0.477	0.523		
Outgoing	4.537	1.492	15.306	0.065	0.999	0.784	0.385	0.615		
Positive	4.724	1.447	13.584	0.063	0.857	0.693	0.520	0.480		
Enjoyable	4.521	1.583	14.953	0.069	1.034	0.765	0.415	0.585		
Happy	4.600	1.554	15.689	0.068	1.069	0.805	0.351	0.649		

$\chi^2(9) = 12.332, p\text{-value} = .195, RMSEA = .029, SRMR = .017, NFI = .993, NNFI = .997, CFI = .998, IFI = .998$

#### 5.4.7 Re-analysis of Discriminant Validity

A further testing of unidimensionality consisted of the test for discriminant validity (Fornell & Larcker, 1981, Gerbing & Anderson, 1988). All 22 items demonstrated convergent validity. As previously done, discriminant validity was done in LISREL 8.8 using both methods suggested by Fornell and Larcker (1981), and Gerbing and Anderson (1988) (see Table 5.31 and Table 5.32).

*Table 5.31 Discriminant validity – Fornell and Larcker's (1981) method*

Composite Reliability, Shared Variance ( $\phi^2$ ) and Average Variance Extracted				
Factor	F1	F2	F3	F4
<b>F1</b>	0.910	0.629 (0.619)	0.630 (0.496)	0.630 (0.531)
<b>F2</b>	0.202	0.866	0.620 (0.496)	0.620 (0.531)
<b>F3</b>	0.484	0.329	0.855	0.496 (0.532)
<b>F4</b>	0.306	0.426	0.391	0.870

Note: Diagonals are composite reliability, below diagonals are  $\phi^2$ , and above diagonals are AVEs of 2 respective factors

Table 5.32 Discriminant Validity – Gerbing and Anderson’s (1988) method

Paired Measurement Models	$\chi^2$ (df) (Phi-matrix Unconstrained)	$\chi^2$ (df) (Phi-matrix Constraint)	$\Delta\chi^2$ (df)
F1-F2	175.783 (53)	182.158 (54)	6.375 (1)
F1-F3	61.39 (34)	79.834 (35)	18.444 (1)
F1-F4	99.367 (53)	114.389 (54)	15.022 (1)
F2-F3	79.736 (34)	87.611 (35)	7.875 (1)
F2-F4	128.828 (53)	130.789 (54)	<b>*1.961 (1)</b>
F3-F4	46.444 (34)	57.626 (35)	11.182 (1)

Note: \* < 3.841 for df = 1

It was evident that all 4 factors achieved discriminant validity both through two methods of assessing it although one pair failed (i.e. F2-F4) Gerbing and Anderson’s (1988) method. However, Fornell and Larcker’s (1981) method is a more stringent method of assessing discriminant validity (Ramani & Kumar, 2008). Overall, CRs were above the recommended value of .60 and AVE of above .50, except AVE of factor 3 which was .496, slightly below .50 (Bagozzi & Yi, 1988; Fornell & Larcker, 1981). All  $\phi^2$  values were smaller than AVE of each factor, while almost all  $\Delta\chi^2(1)$  values were above 3.841, thus an indication of discriminant validity.

As an additional measure, the author examined correlations between factors. Correlations between factors ranged from .449 to .696 (see **Table 5.33**). Using Fisher’s r-to-z transformation, all correlations are non-significant with  $z < 1.96$  ( $se = .047$ ;  $p < .05$ ), thus further validate that factors are unidimensional (see Aaker *et al.*, 2001). **Table 5.34** summarises Fisher’s r-to-z transformation.

Table 5.33 Correlations of Factors

Factor	Sophistication	Sincerity	Competence	Youth
<b>Sophistication</b>	1.000			
<b>Sincerity</b>	0.449	1.000		
<b>Competence</b>	0.696	0.574	1.000	
<b>Youth</b>	0.553	0.654	0.625	1.000

Table 5.34 Fisher's *r*-to-*z* Transformation

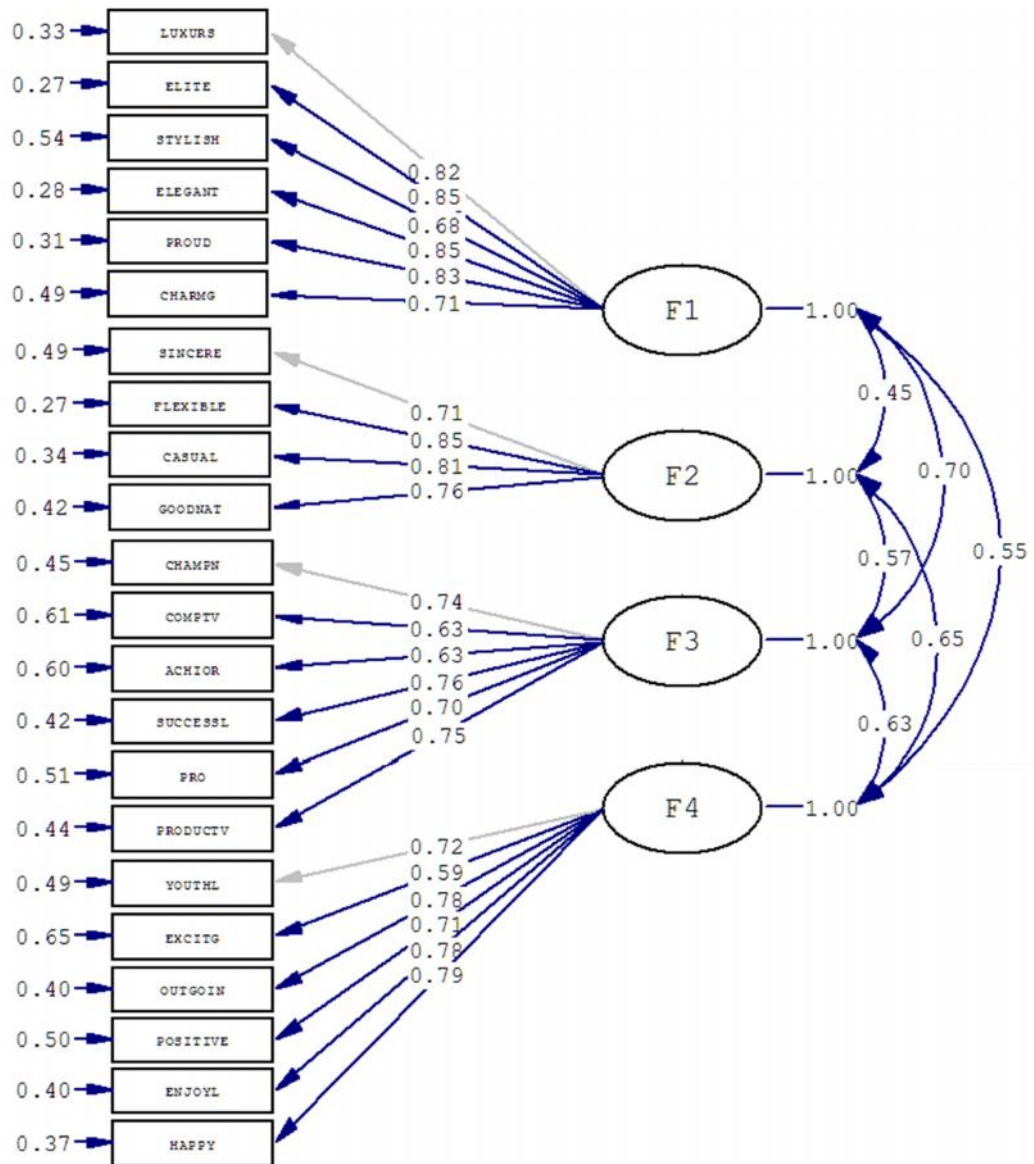
Factor	Sophistication	Sincerity	Competence	Youth
<b>Sophistication</b>	1.000			
<b>Sincerity</b>	0.483	1.000		
<b>Competence</b>	0.860	0.654	1.000	
<b>Youth</b>	0.623	0.782	0.733	1.000

Note: Standard error = .047

#### 5.4.8 Second Higher-Order Construct

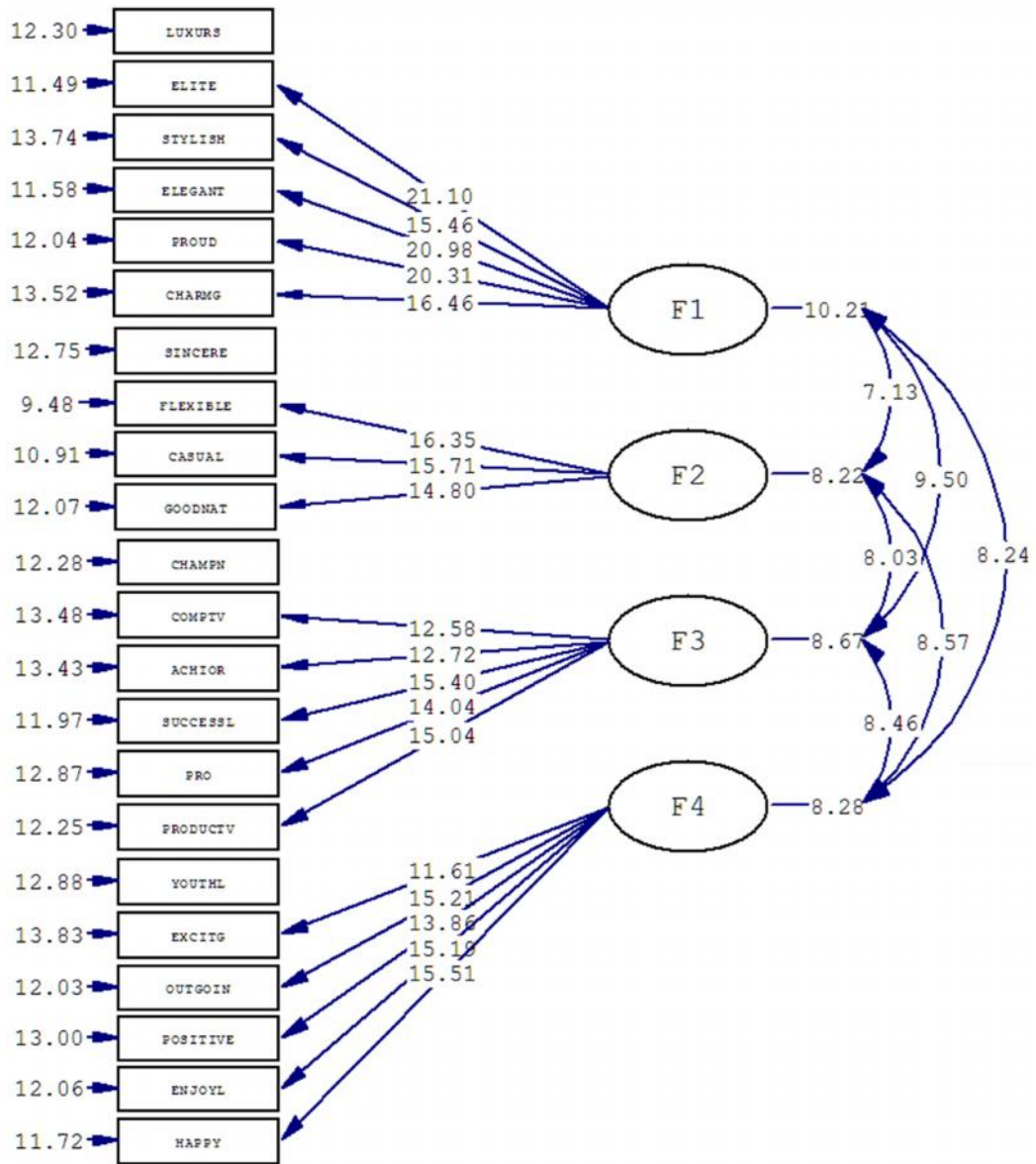
Using both EFA and CFA, convergent and discriminant validities of 4-factor Malaysian brand personality structure were achieved. Measurement model of 4 factors achieved above the recommended fit statistics, SRMR was below the recommended .05, whereas RMSEA was slightly above .05, and (see **Figure 5.2**). All t-values were above 1.96 (one-tailed) (see **Figure 5.3**). In addition, the study tested for a second higher-order construct labelled 'Malaysian Brand Personality' (MBP) following a suggestion from recent brand personality studies (see Brakus *et al.*, 2009; Rojas-Méndez *et al.*, 2013; Valette-Florence *et al.*, 2011). Measurement model of the second higher-order construct of MPS revealed a good fit model. All fit statistics were above .95, while RMSEA and SRMS were slightly above .05 values (see **Figure 5.4**). Factor loadings between four first higher-order MBP factors were at least .70 and above (Nunnally & Bernstein, 1994) ranged from .70 to .85 while all t-values were above 1.96 (one-tailed) (see **Figure 5.5**). These results implied MBP as a second higher-order construct.

Figure 5.2 4-factor Measurement Model – Standardised Loadings



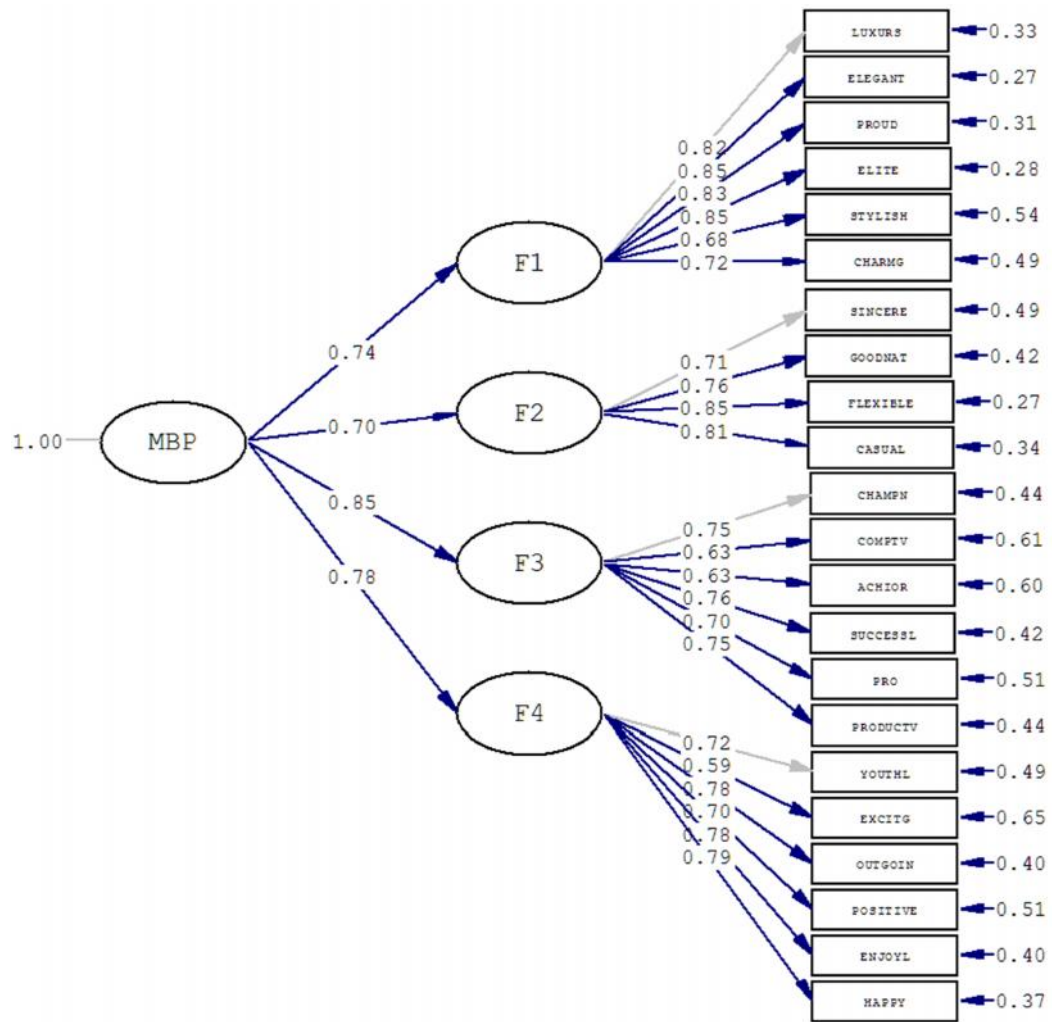
$\chi^2(203) = 483.071, p\text{-value} = .000, RMSEA = .056, SRMR = .044, NFI = .969, NNFI = .979, CFI = .981, IFI = .982$

Figure 5.3 4-factor Measurement Model – t-values



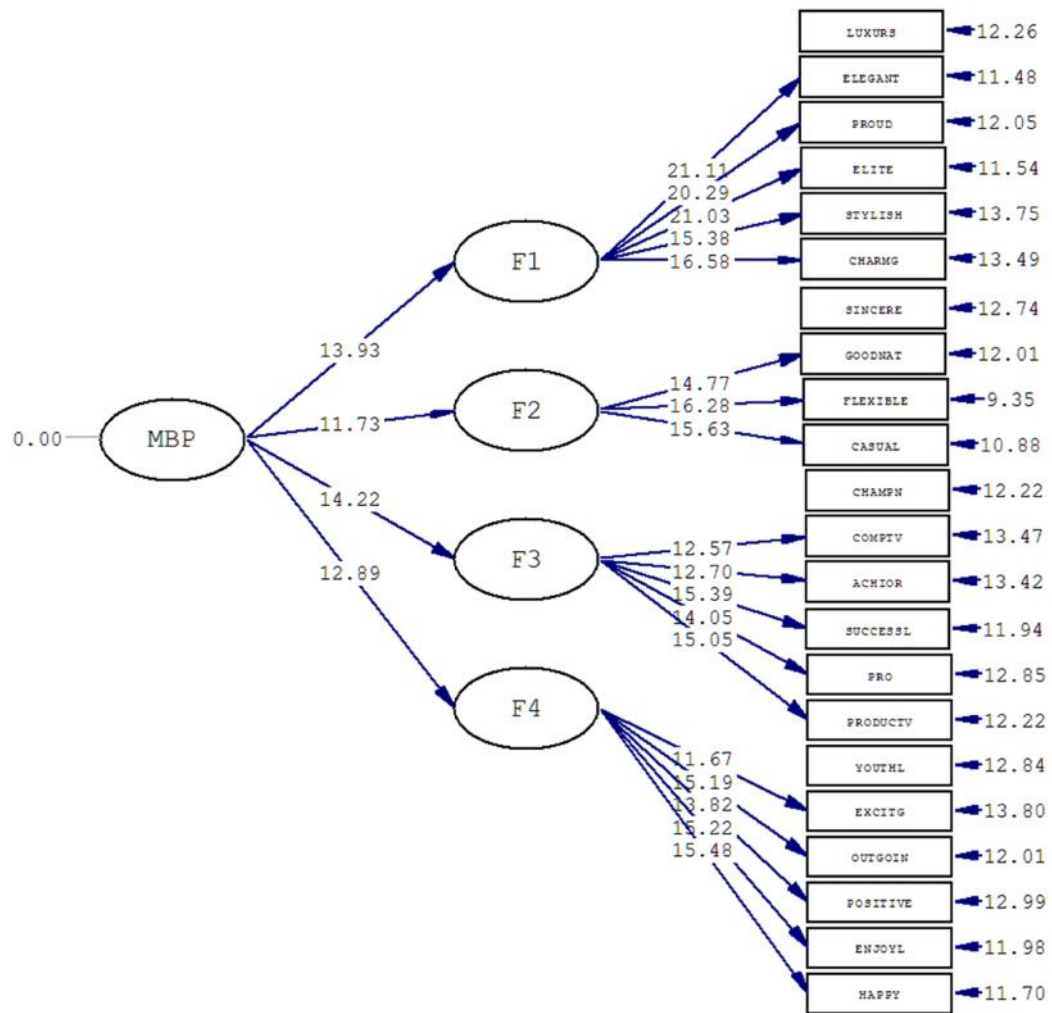
$\chi^2(203) = 483.071, p\text{-value} = .000, \text{RMSEA} = .056, \text{SRMR} = .044, \text{NFI} = .969, \text{NNFI} = .979, \text{CFI} = .981, \text{IFI} = .982$

Figure 5.4 Second Higher-Order MBP – Standardised Loadings



$\chi^2(205) = 521.869, p\text{-value} = .000, \text{RMSEA} = .060, \text{SRMR} = .052, \text{NFI} = .967, \text{NNFI} = .977, \text{CFI} = .980, \text{IFI} = .980$

Figure 5.5 Second Higher-Order MBP – t-values



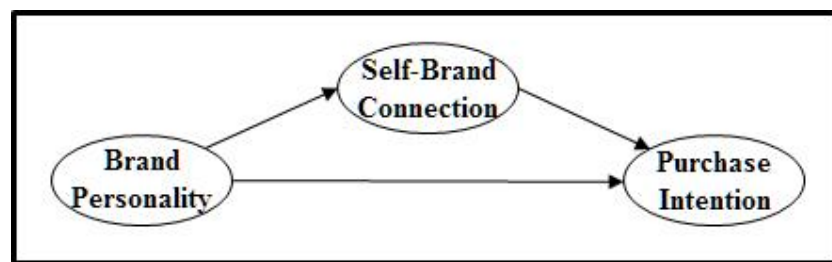
$\chi^2(205) = 521.869, p\text{-value} = .000, \text{RMSEA} = .060, \text{SRMR} = .052, \text{NFI} = .967, \text{NNFI} = .977, \text{CFI} = .980, \text{IFI} = .980$

The results indicated that the four brand personality dimensions can be organised as distinct and concrete representations of a second higher-order construct, which the author named as Malaysia Brand Personality (MBP) construct. This finding was consistent with common practice in scale development process (see Ramani & Kumar, 2008).

### 5.4.9 Nomological Validity

The next step was to test for criterion-related or nomological validity (Hinkin, 1995). To do so, the author adopted a previous conceptual framework (see Aaker *et al.*, 2004; Park *et al.*, 2010; Swaminathan *et al.*, 2009) (see **Figure 5.6**). Brand personality was hypothesized to be an antecedent of self-brand connection (SBC) and purchase intention. The study also hypothesized the mediating relationship of self-brand connection.

*Figure 5.6 Conceptual Model*



#### 5.4.9.1 Outliers, Skewness, Kurtosis, and Normality

Using the same sample in Phase 3, only 22 items of MBP, 5 items of self-brand connection, and 3 items of purchase intention were re-examined for outliers, skewness, kurtosis and normality. Cases were transformed to z-scores to check for outliers. All z-scores indicated that none of the cases was above  $\pm 3.0$  (Ng & Houston, 2009). Skewness of items ranged from -4.841 to -.222 and kurtosis ranged from -13.130 to -.064, which showed that the data did not meet the assumption of univariate and multivariate normality. This was also supported by Kolmogorov-Smirnov and Shapiro-Wilk tests which showed that all items were significant ( $p < .01$ ).

#### 5.4.9.2 Exploratory Factor Analysis

Prior to CFA, EFA was run to investigate the grouping of items of latent factors. PAF with oblimin rotation was used and revealed that there were 6 latent factors – 4 factors reflecting MBP, one for self-brand connection, and the other for purchase intention



(Conway & Huffcutt, 2003; Fabrigar *et al.*, 1999; Ford *et al.*, 1986). Results showed KMO was .927 with significant Bartlett's test of sphericity ( $p < .01$ ). All loadings were above .50 except for exciting ( $\lambda = .475$ ) (see **Table 5.35**).

*Table 5.35 EFA – PAF with Oblimin Rotation*

Item	Factor					
	1	2	3	4	5	6
Happy	.797					
Outgoing	.792					
Youthful	.695					
Enjoyable	.618					
Positive	.516					
<b>*Exciting</b>	<b>.475</b>					
Attach03		-.929				
Attach02		-.920				
Attach04		-.881				
Attach01		-.850				
Attach05		-.764				
Elegant			-.905			
Luxurious			-.800			
Proud			-.789			
Elite			-.780			
Charming			-.613			
Stylish			-.532			
Pint03				.927		
Pint02				.904		
Pint01				.751		
Successful					.688	
Professional					.650	
Champion					.650	
Productive					.615	
Competitive					.568	
Achievement-oriented					.556	
Flexible						-.824
Casual						-.768
Good-natured						-.741
Sincere						-.735

\*Loading < .50. Loadings < .30 were suppressed.

### 5.4.9.3 Confirmatory Factor Analysis – Measurement Model

The results from EFA indicated that all items showed satisfactory factor loadings. The study followed Anderson and Gerbing’s (1988) two-step approach to Structural Equation Modeling (SEM), in which the first step was to build good fitting measurement model, which will be then followed by structural model. The study decided to use Satorra and Bentler’s (1988) Robust ML estimation since the data violated the assumption of multivariate normality (see Hu & Bentler, 1999; Madrigal & Boush; 2008). Both the measurement and structural models will be using this estimation. CFA run revealed that all factors demonstrated satisfactory convergent and discriminant validities (see **Table 5.36**). Convergent validity was achieved as all Cronbach’s  $\alpha$ , CR and AVE values were above recommended values. In addition, discriminant validity was achieved as all AVEs were higher than  $\phi^2$  (Fornell and Larcker, 1988).

*Table 5.36 Composite Reliability, Shared Variance, and AVEs*

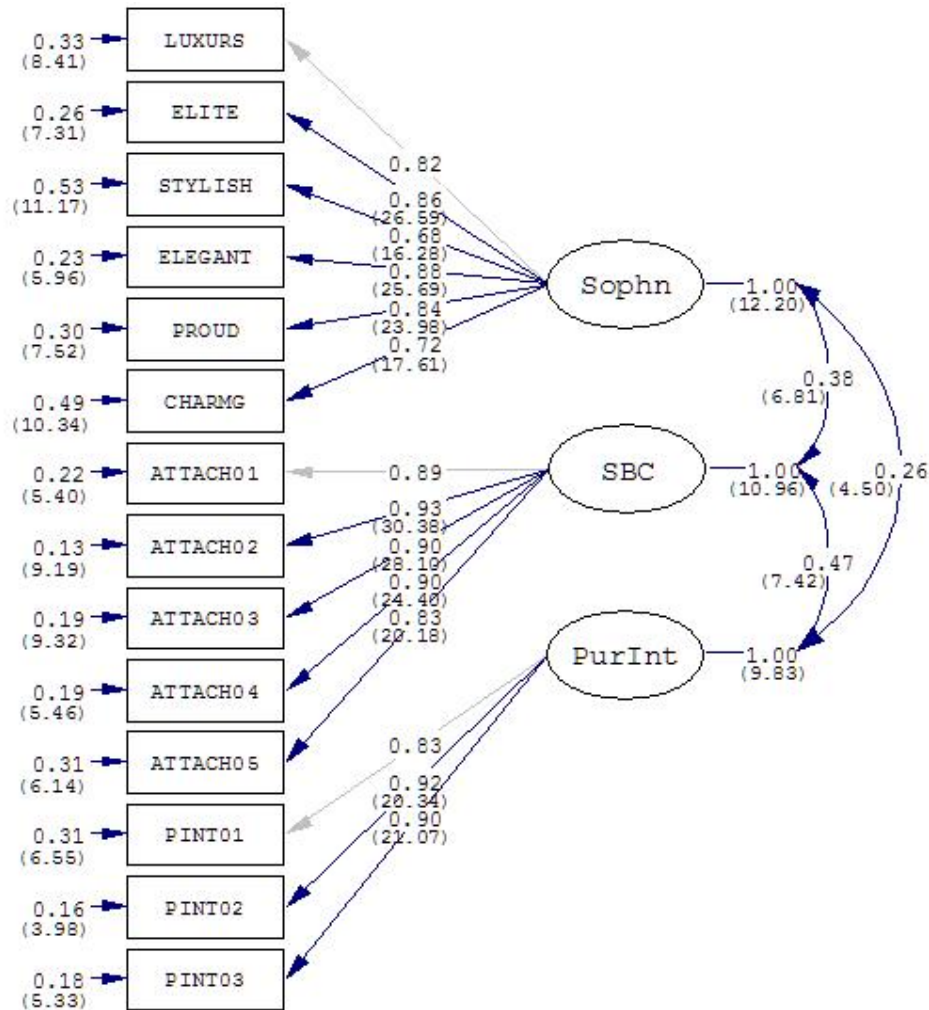
Factor	Sophisticated	Sincerity	Competence	Youth	Self-Brand Connection	Purchase Intention
<b>Sophisticated</b>	0.915 ( $\alpha = .913$ )	0.644 (0.630)	0.644 (0.490)	0.644 (0.536)	0.644 (0.793)	0.644 (0.784)
<b>Sincerity</b>	0.210	0.871 ( $\alpha = .870$ )	0.630 (0.490)	0.630 (0.536)	0.630 (0.793)	0.630 (0.784)
<b>Competence</b>	0.479	0.324	0.851 ( $\alpha = .850$ )	0.490 (0.536)	0.490 (0.793)	0.490 (0.784)
<b>Youth</b>	0.307	0.433	0.388	0.873 ( $\alpha = .871$ )	0.592 (0.793)	0.591 (0.784)
<b>Attachment</b>	0.147	0.232	0.169	0.243	0.950 ( $\alpha = .950$ )	0.559 (0.784)
<b>Purchase Intention</b>	0.067	0.181	0.192	0.262	0.222	0.916 ( $\alpha = .914$ )

Note: Diagonals are composite reliability and Cronbach’s  $\alpha$ , below diagonals are  $\phi^2$ , and above diagonals are Average Variance Extracted of 2 respective factors.

The study proceeded to test the each of the MBP dimensions in the conceptual model. In the measurement model, sophistication showed a good fitting model (see **Figure 5.7**). All factor loadings were above .70, and t-values were above 1.96 (one-tailed) (Nunnally &

Bernstein, 1994). Fit statistics were above the recommended .95, while RMSEA and SRMR were below .05 (Bagozzi & Yi, 1988). All MBP dimensions were tested in separate measurement model. As expected, all measurement models demonstrated good fitting models (see **Figure 5.8**, **Figure 5.9**, & **Figure 5.10**).

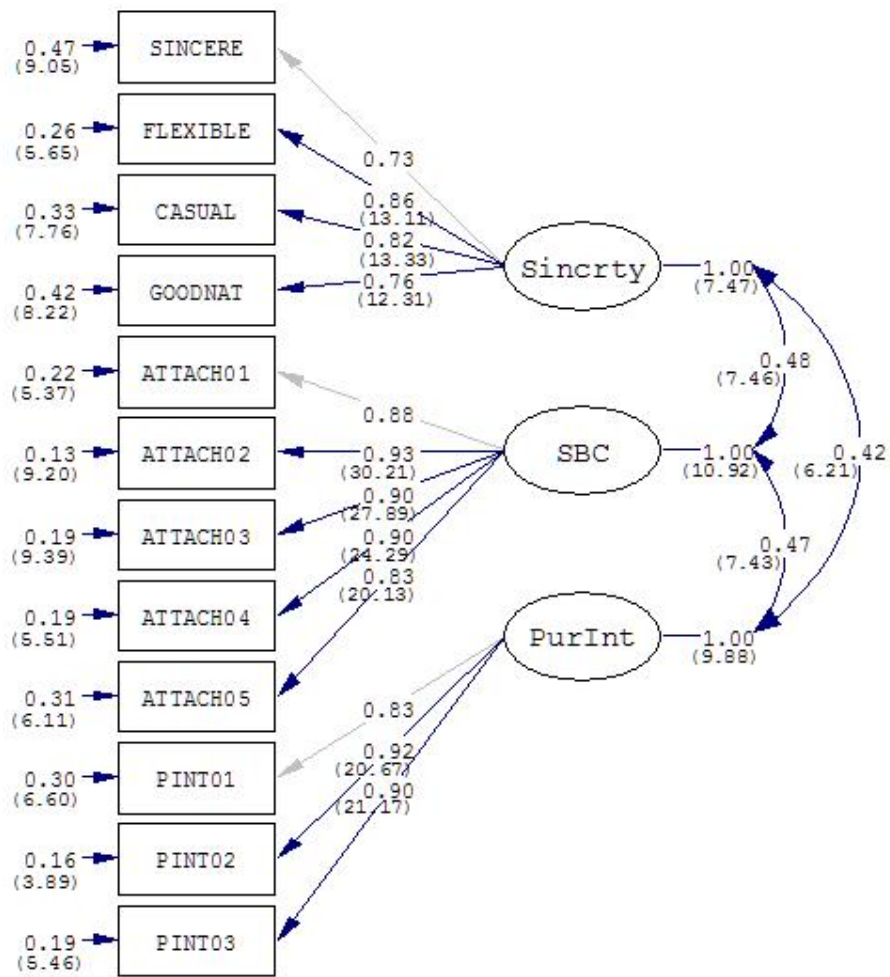
*Figure 5.7 Sophistication – Measurement Model*



Satorra-Bentler scaled  $\chi^2(74) = 136.491$ ,  $p$ -value = .000, RMSEA = .044, SRMR = .034, NFI = .981, NNFI = .989, CFI = .991, IFI = .991

Note: Standardised loadings & t-values (in parentheses)

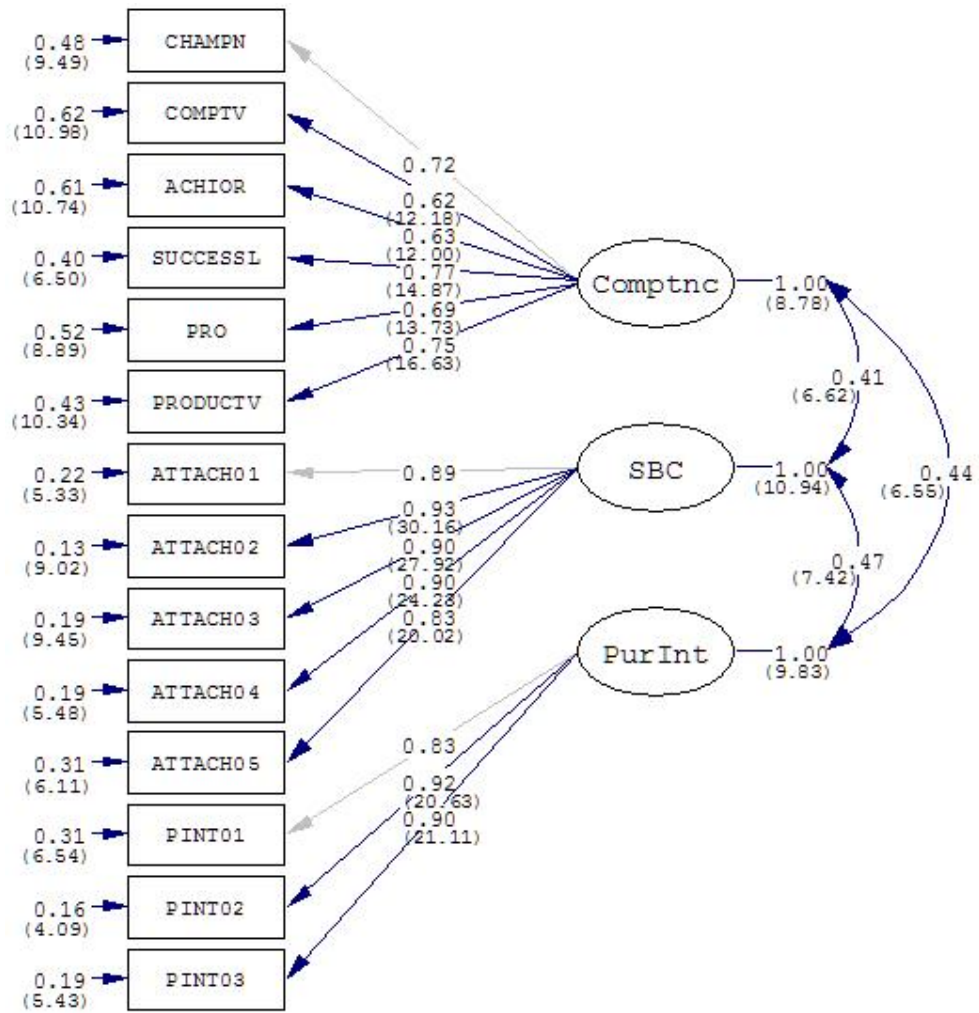
Figure 5.8 Sincerity – Measurement Model



Satorra-Bentler scaled  $\chi^2(51) = 109.49$ ,  $p$ -value = .000, RMSEA = .051, SRMR = .031, NFI = .980, NNFI = .986, CFI = .989, IFI = .989

Note: Standardised loadings & t-values (in parentheses)

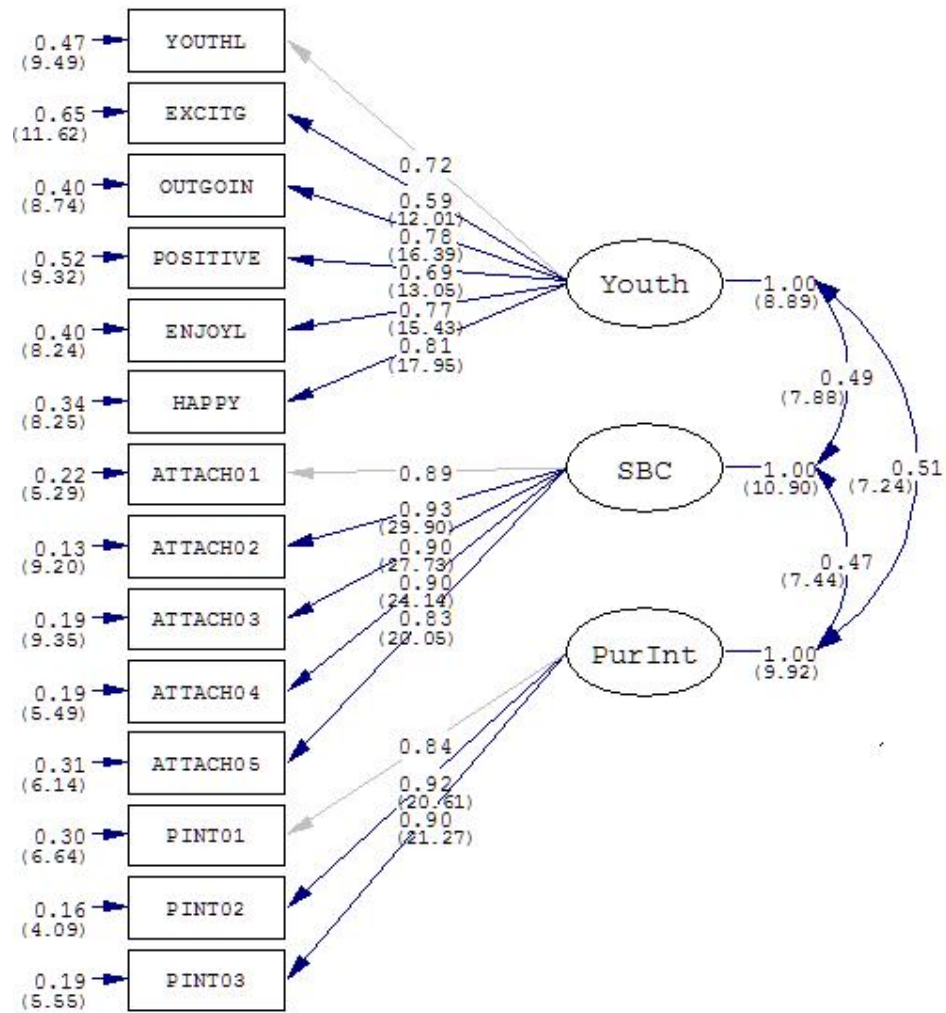
Figure 5.9 Competence – Measurement Model



Satorra-Bentler scaled  $\chi^2(74) = 147.815$ ,  $p$ -value = .000, RMSEA = .048, SRMR = .035, NFI = .972, NNFI = .985, CFI = .987, IFI = .988

Note: Standardised loadings & t-values (in parentheses)

Figure 5.10 Youth – Measurement Model

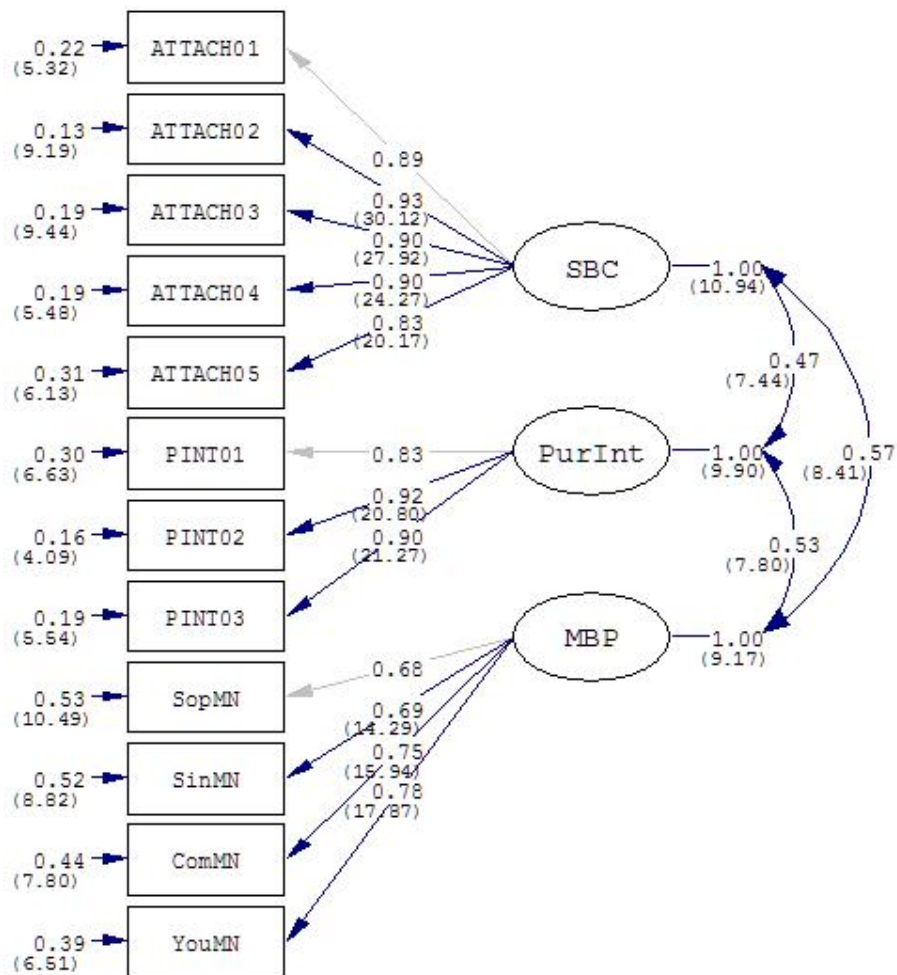


Satorra-Bentler scaled  $\chi^2(74) = 130.436$ , p-value = .000, RMSEA = .042, SRMR = .031, NFI = .981, NNFI = .990, CFI = .992, IFI = .992

Note: Standardised loadings & t-values (in parentheses)

Additionally, following current practices (e.g. Ramani & Kumar, 2008), mean scores of each MBP dimensions were run in the measurement model. MBP as a second higher-order construct measured by mean scores demonstrated a good model fit (see **Figure 4.11**). All fit statistics were above .95 values, RMSEA was .063, which was slightly above .06 cutoff value for a good fit (Hu & Bentler, 1999), and SRMR was .043.

Figure 5.11 MBP - Measurement Model



Satorra-Bentler scaled  $\chi^2(51) = 140.103, p\text{-value} = .000, RMSEA = .063, SRMR = .043, NFI = .974, NNFI = .979, CFI = .983, IFI = .983$

Note: Standardised loadings & t-values (in parentheses)

#### 5.4.9.4 Structural Models

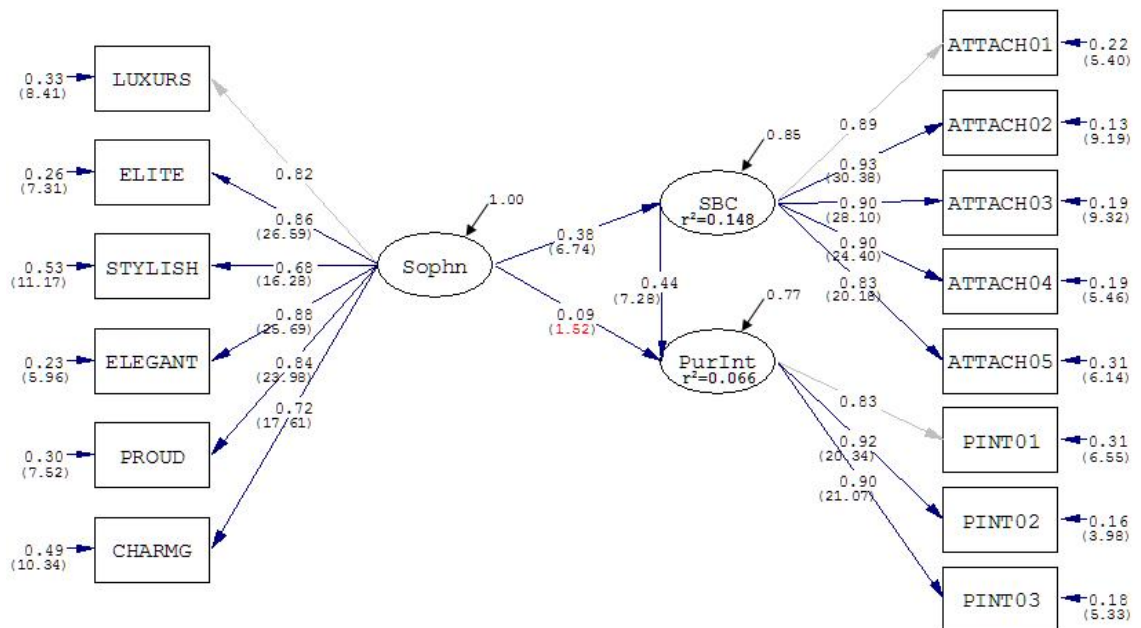
The results from CFA of all measurement models demonstrated good fitting models even when MBP was measured by the mean scores. Following suggestion from Anderson and Gerbing (1988), the second step was to run the structural model. The study sequential ran each of the MBP factors and was lastly followed by MBP measured by mean scores. Again, the study used Satorra-Bentler's (1988) robust ML estimation for all structural model runs since data violated multivariate normality (Hu & Bentler, 1999).

The structural model of sophistication revealed a good model fit (see **Figure 5.12**). Fit statistics achieved above .95, RMSEA and SRMR were below .05, while t-values were above 1.96 (one-tailed) except for the t-value of the path between sophistication and purchase intention which indicate a non-significant direct path (i.e. a potential full mediation effect).

Mediation was further tested following suggestion from Iacobucci *et al.* (2007) through SEM and Sobel's (1982) test. Both direct and indirect paths were fitted simultaneously in the structural model. The proportion of mediation effect was .655 which was lower than the recommend cutoff value of .80, thus this model did not fulfil a full mediated relationship (Kenny, 2013, <http://davidakenny.net/cm/mediate.htm>). Sobel's (1982) value was 4.905 (se = .027,  $p < .001$ ) which showed that the partial mediation was significant.



Figure 5.12 Sophistication – Structural Model

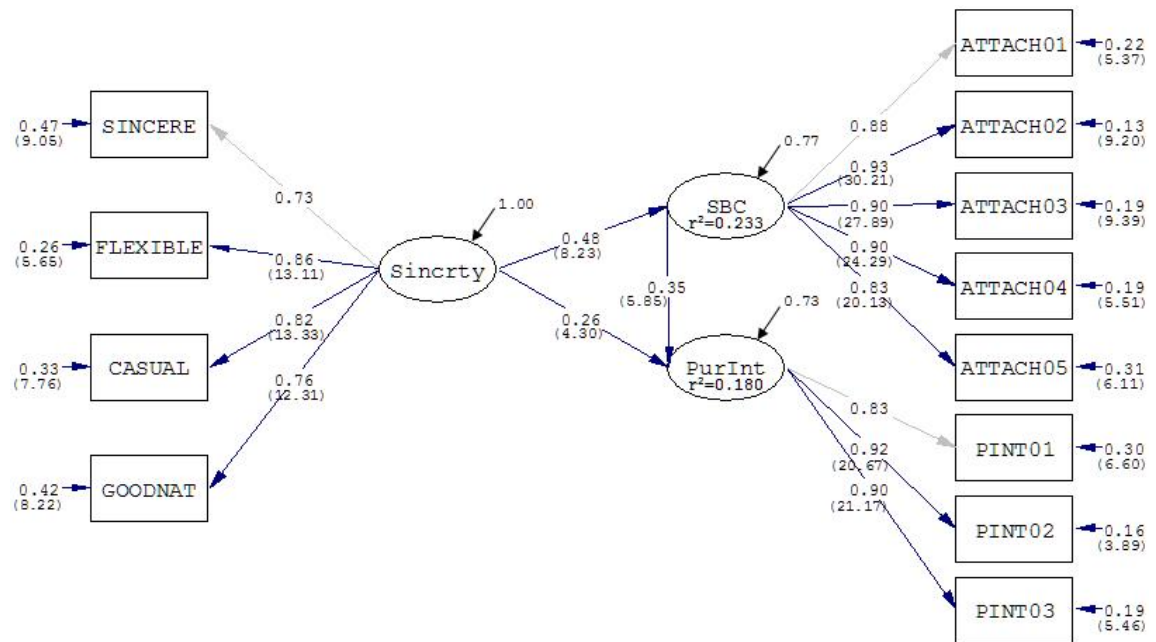


Satorra-Bentler scaled  $\chi^2(74) = 136.491$ ,  $p$ -value = .000, RMSEA = .044, SRMR = .034, NFI = .981, NNFI = .989, CFI = .991, IFI = .991, CAIC = 356.04

Note: Standardised loadings & t-values (in parentheses)

Equally, the structural model of sincerity revealed a good fitting model (see **Figure 5.13**). Fit statistics achieved above .95, RMSEA and SRMR were below .05, while t-values were above 1.96 (one-tailed). Results demonstrated the partial mediation effect of SBC. Similarly, mediation was tested following suggestion from Iacobucci *et al.* (2007) through SEM and Sobel's (1982) test. Both direct and indirect paths were fitted simultaneously in the structural model. The proportion of mediation effect was .395 which was lower than the recommend cutoff value of .80, thus this model did not fulfil a full mediated relationship (Kenny, 2013, <http://davidakenny.net/cm/mediate.htm>). Sobel's (1982) value was 4.780 (se = .041,  $p < .001$ ) which showed that the partial mediation was significant.

Figure 5.13 Sincerity – Structural Model

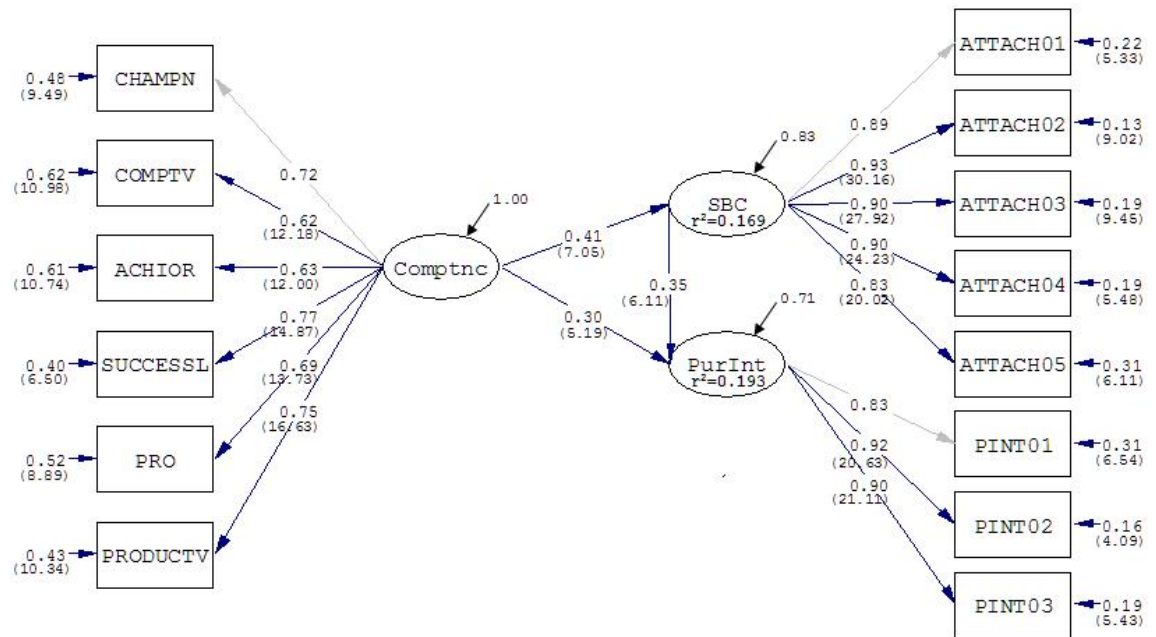


Satorra-Bentler scaled  $\chi^2(51) = 109.49$ ,  $p$ -value = .000, RMSEA = .051, SRMR = .031, NFI = .980, NNFI = .986, CFI = .989, IFI = .989, CAIC = 300.71

Note: Standardised loadings & t-values (in parentheses)

The next structural model was for competence. Similarly, all fit statistics achieved above .95, RMSEA and SRMR were below .05, while t-values were above 1.96 (one-tailed) (see **Figure 5.14**). Results demonstrated again the partial mediation effect of SBC. Both direct and indirect paths were fitted simultaneously in the structural model. The proportion of mediation effect was .326 which was lower than the recommended cutoff value of .80, thus this model did not fulfil a full mediated relationship (Kenny, 2013, <http://davidakenny.net/cm/mediate.htm>). Sobel's (1982) value was 4.609 (se = .034,  $p < .001$ ) which showed significant partial mediation.

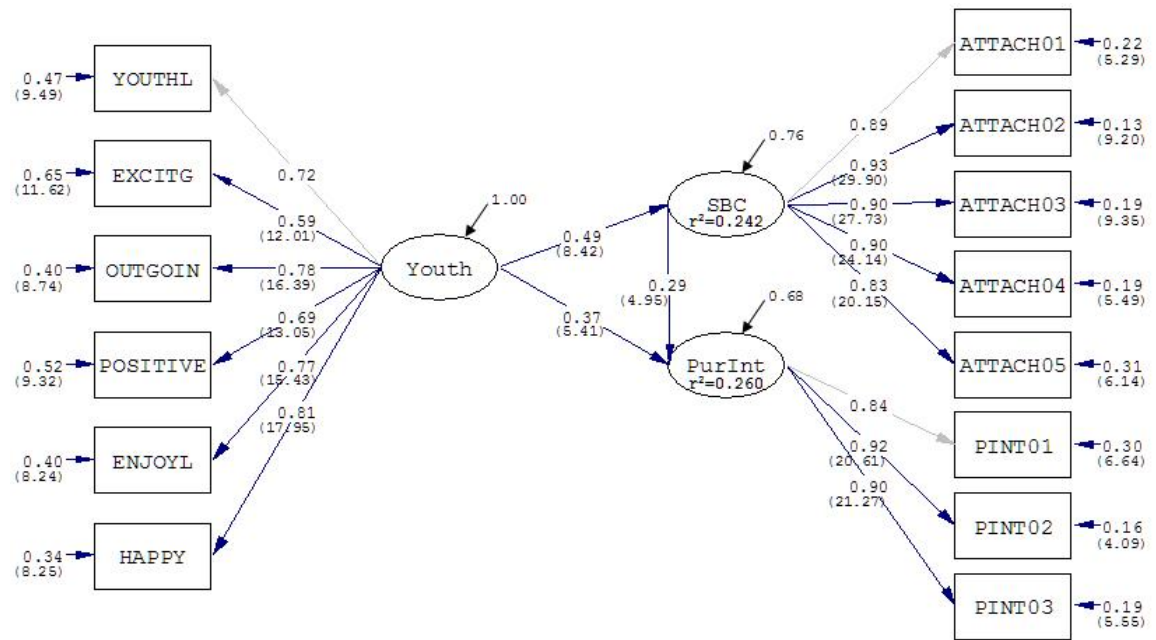
Figure 5.14 Competence – Structural Model



Satorra-Bentler scaled  $\chi^2(74) = 147.815, p\text{-value} = .000, RMSEA = .048, SRMR = .035, NFI = .975, NNFI = .985, CFI = .987, IFI = .988, CAIC = 367.364$   
 Note: Standardised loadings & t-values (in parentheses)

Similarly, structural model with youth as an antecedent of SBC showed a good fitting model (see **Figure 5.15**). Fit statistics achieved above .95, RMSEA and SRMR were below .05, while t-values were above 1.96 (one-tailed). Results also demonstrated the partial mediation effect of SBC. Both direct and indirect paths were fitted simultaneously in the structural model. The proportion of mediation effect was .280 which was lower than the recommended cutoff value of .80, thus this model did not fulfil a full mediated relationship (Kenny, 2013, <http://davidakenny.net/cm/mediate.htm>). Sobel's (1982) value was 4.255 (se = .034,  $p < .001$ ) which showed significant partial mediation.

Figure 5.15 Youth – Structural Model

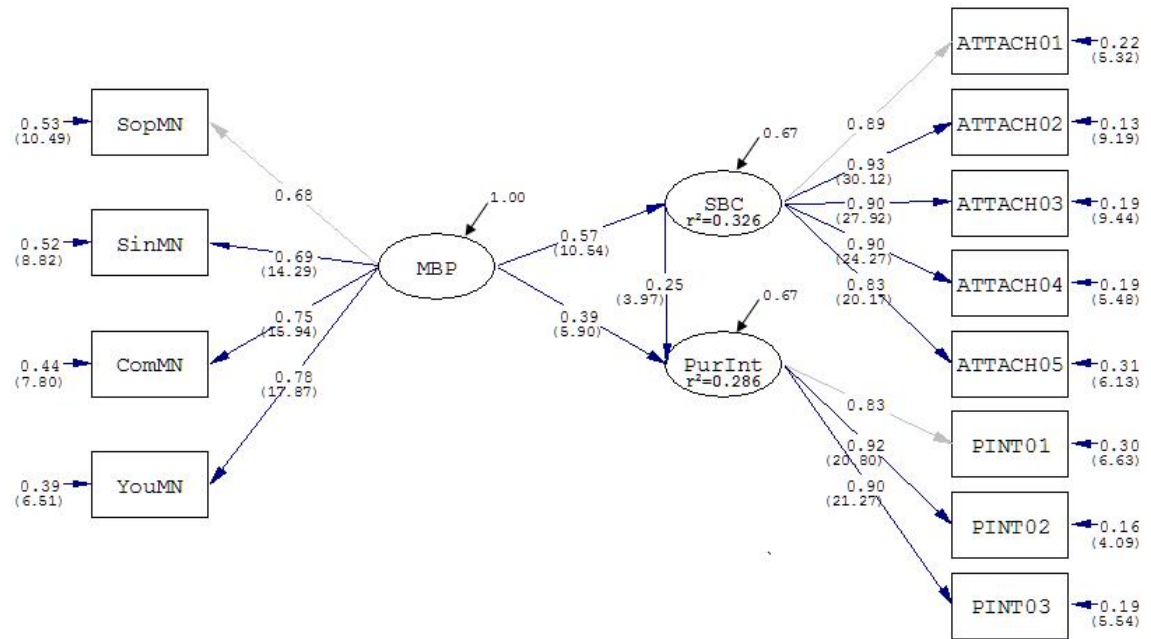


Satorra-Bentler scaled  $\chi^2(74) = 130.436$ , p-value = .000, RMSEA = .042, SRMR = .031, NFI = .981, NNFI = .990, CFI = .992, IFI = .992, CAIC = 348.985  
 Note: Standardised loadings & t-values (in parentheses)

All of the structural models demonstrated good fitting models. The next step was to run structural model of MBP using mean scores i.e. item parceling of each brand MBP dimension. Several researchers recommended item parceling to keep the numbers of parameters at manageable level while preserving the multidimensional nature of the specified construct (e.g. Bagozzi & Edwards, 1998; Hall *et al.*, 1999; Ramani & Kumar, 2008). It is important that unidimensionality is achieved prior to item parcelling (Bagozzi & Heatherton, 1994; Little *et al.*, 2002; Ramani & Kumar, 2008). Results indicated that all fit statistics achieved above .95, RMSEA and SRMR were below .05, while t-values were above 1.96 (one-tailed). Similarly, both direct and indirect paths were fitted simultaneously in the structural model (see **Figure 5.16**). The proportion of mediation effect was .262 which was lower than the recommended cutoff value of .80, thus this model did not fulfil a full mediated relationship (Kenny, 2013,

<http://davidakenny.net/cm/mediate.htm>). Sobel's (1982) value was 5.155 (se = .112,  $p < .001$ ) which showed significant partial mediation.

Figure 5.16 MBP – Structural Model

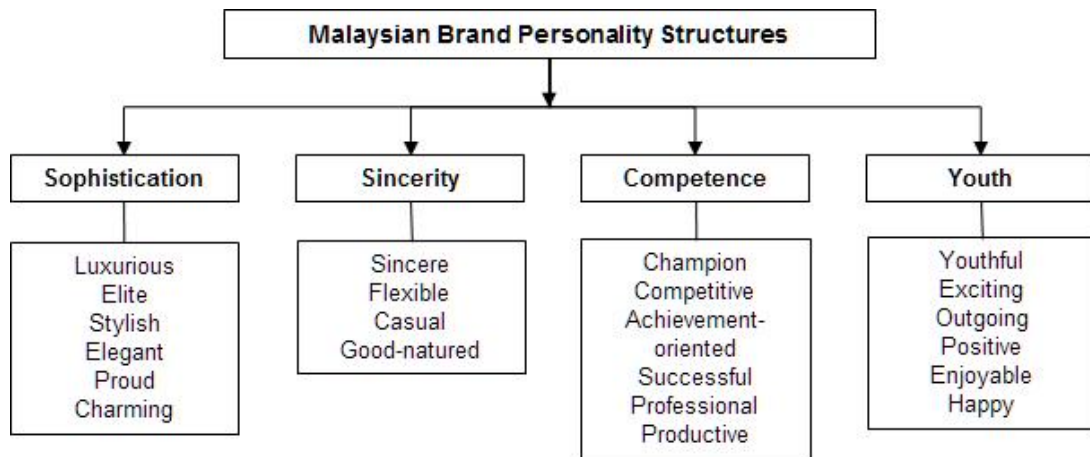


Satorra-Bentler scaled  $\chi^2(51) = 140.103$ ,  $p$ -value = .000, RMSEA = .063, SRMR = .043, NFI = .974, NNFI = .979, CFI = .983, IFI = .983, CAIC = 331.323  
 Note: Standardised loadings & t-values (in parentheses)

## 5.5 Conclusion

The scale development process for MBP has adhered to stringent psychometric evaluations which were divided into 3 phases – item generation, scale development and scale evaluation (see Hinkin 1995; 1998). In each phase, trait items were removed until unidimensionality and construct validity were achieved using factor-analytic methods such as EFA, PA, CFA and SEM. MBP is a second-order construct reflected by 4 latent factors/dimensions – sophistication, sincerity, competence, and youth. The findings confirm that the possibility of second-order construct is higher when first-order factors are oblique (Kline, 1994; Thompson, 2004). **Figure 5.17** lists the factors and items of MBP scale.

Figure 5.17 4-factor MBP



Evidently, cultural specific traits have survived scale development process. These traits are luxurious, elite, proud, flexible, casual, champion, youthful, and enjoyable. This is consistent with the personality literature which argues that lexical approach to traits is embedded in culture (Aaker *et al.*, 2001; McCrae and Costa, 1997). Most importantly, predictive validity of MBP is demonstrated. Thus, MBP is a valid measure for brands in Malaysian context, in which a large majority of the population comprises multi-race and multi-ethnic Asian individuals which are influenced by both western and eastern cultural elements. Results from SEM also reveal that competence and youth have higher loadings compared to sophistication and sincerity. It may have been influenced by the demographic profile of samples which were students and young professionals. Nevertheless, they are a major proportion of Malaysian active consumers. Population census in 2010 reveals that Malaysians who are between the age 15 and 29 constitute 21.6 percent of Malaysian total population (Department of Statistics Malaysia, 2010).

The next chapter will examine the influence of complementarity hypothesis between MBP dimensions. The author will proceed to the experimental studies in the following chapter.

# CHAPTER 6: Experiment Analyses

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## 6.1 Introduction

The previous chapter has focused on the development of Malaysian brand personality (MBP) scale. MBP was constructed through stringent psychometric methods to ensure that its dimensions are relevant and valid for the Malaysian context. This is an important step to achieve the main theoretical contribution of this thesis, and investigate the influence of brand personality complementarity (BPC) principle within the schema congruity theoretical framework. The author conducted three separate experimental analyses to address this contribution.

The objective of the first experiment is to identify BPC levels amongst all possible pairs of MBP dimensions of sophistication, youth, competence, and sincerity. The operationalization of BPC is important prior to establish BPC principle. There were 2 pretest and 1 experimental study. The outcomes of the first study were 6 BPC trait pairs that varied in BPC levels – low, medium and high. Only two pairs were selected for the next two experimental studies – high and low BPC pairs.

The objective of the 2<sup>nd</sup> and 3<sup>rd</sup> experimental studies was to investigate the moderating effect of BPC on brand extension congruity. Study 2 was conducted to investigate if evaluations of extremely incongruent brand extension can be mitigated for both low and high involvement products. Ad stimuli that were used to form brand personality impressions were text-based (e.g. Johar *et al.*, 2005). Next, study 3 was a replication study designed to further validate the findings from the study 2. Here, visual-based stimuli instead of text-based ad stimuli were used to form brand personality impressions (e.g. Swaminathan *et al.*, 2009). The findings confirmed similar moderating effects of BPC with some variations.

## **6.2 Study 1 – Brand Personality Complementarity Operationalization**

The objective of study 1 is to operationalize the BPC effect. Since relatively no work has been done to examine BPC principle, it is imperative to establish operationalization of the levels of complementarity for possible brand personality dimension pairs using MBP scale, prior to examine its effect on schema congruity theory.

Based on the scale development process in the previous chapter, the author finds that there are four personality dimensions that are relevant to the Malaysian context; 1) sincerity, 2) sophistication, 3) youthful and 4) competence. A total of 22 trait items are identified. There are 4 trait items which are similar to Aaker's (1997) brand personality scale, while 11 trait items are similar to other brand personality scale development studies (Chun & Davis, 2006; Aaker *et al.*, 2001; Caprara *et al.*, 2001). The author finds 7 personality traits that are unique to the Malaysian context.

Since MBP scale reflects 4 higher-order factors or dimensions, there are six possible unique dimension pairs (e.g. sophistication-youth). All pairs were tested for complementarity ratings which enabled the author to identify low, moderate and high BPC levels. The outcomes of study 1 were high and low BPC pairs which will then be a manipulated factor in study 2 and 3.

Two pretests were conducted prior to study 1. The objective of the first pretest was to determine which brands were strongly associated with each of the 4 MBP dimensions. The objective of the second pretest was to further validate the findings from the first pretest. This was important to ensure that the operationalization of the BPC effect was as intended – i.e. high and low BPC levels.



### 6.2.1 Pretest 1 – Brand Elicitation

The first pretest was to determine the name of brands that were strongly associated with each of the MBP dimensions. Through brand elicitation task, participants were required to recall their top-of-mind brands based on different product category and personality dimensions. A total of 60 undergrads (48% female;  $M_{Age} = 21$ ) from top public and private universities in Kuala Lumpur were invited to participate voluntarily. All participants were full-time students of business studies. Adopting a between-subjects design, 4 versions of questionnaires were distributed randomly to the students, which intended to assess only one MBP dimension in each version (refer to Appendix B). Consistent with impression formation literature (e.g. Asch & Zukier, 1984), traits of each individual MBP dimension was listed in 4 different questionnaire sets.

To communicate brand personality concept, participants were given the definition in the instruction, “*Like human, a brand can be personified with human characters or traits. If Red Bull energy drink were a human being, it can be characterized as having confident and daring traits.*” Following the definition, a list of MBP traits for a particular MBP dimension was given. For example, questionnaire set with MBP dimension of sophistication was described by its 6 traits – luxurious, elite, stylish, elegant, proud, and charming. Participants then recalled and wrote the first 3 brands that possess such traits. Following the recall task, participants were then asked to choose 1 brand and describe briefly any advertisement, events, or personal experience that make the brands feel and looks like the corresponding personality dimension.

After participants wrote a brief brand personality description, participants then were asked to evaluate their attitude (Cronbach’s  $\alpha = .892$ ) towards the MBP dimension, measured using 6 items (*‘bad / good’*, *‘low quality / high quality’*, *‘unappealing /*

*appealing*’, ‘*unpleasant / pleasant*’, ‘*negative / positive*’, and ‘*dislike / like*’) on a seven-point scale adopted from Campbell and Keller’s (2003) and Park *et al.*’s (2010) studies.

Then, participants indicated their familiarity (Cronbach’s  $\alpha = .859$ ) with the brand measured using 3 items (“unfamiliar/familiar,” “inexperienced/experienced,” and “not knowledgeable /knowledgeable” on a seven-point scale adopted from Kent and Allen (1994). This was to ensure participants have experienced using the brand. All cases were then transformed to z-scores to detect influential outliers indicated by values of  $\geq \pm 3.0$  (Ng & Houston, 2009). None of the cases were deleted. Consistent with current practices, a single index was created for both attitude and familiarity ratings since Cronbach’s  $\alpha$ s were above .70 (Noseworthy & Trudel, 2011).

Referring to **Table 6.1**, independent t-test results revealed that there was no significant difference in attitude towards all 4 MBP dimensions (all  $ps > .05$ ). Participants were familiar ( $M = 5.606$ ) with the brands they recalled. For sophistication personality, Prada was recalled 3 times. Nike was recalled twice for youth personality. Samsung was recalled 3 times for competence. Lastly, Body Shop was recalled 3 times for sincerity. In total, there were 38 brands recalled (see Appendix). As an extra step to ensure selection of the 4 brands above were strong exemplars for each 4 MBP dimensions, the author proceeded with a second pretest.

*Table 6.1 Independent T-Tests Results for Brand Personality Attitude Index*

<b>AttitudePersonality</b>	<b>Mean Group 1</b>	<b>Mean Group 2</b>	<b>Std. Dev. Group 1</b>	<b>Std. Dev. Group 2</b>	<b>df</b>	<b>t-value</b>	<b>Sig. (2-tailed)</b>	<b>Effect size (r)</b>	<b>Cohens d</b>
A <sub>Sophistication</sub> – A <sub>Youth</sub>	5.560	5.467	.770	.694	27	.342	.735	.066	.127
A <sub>Sophistication</sub> – A <sub>Competence</sub>	5.560	5.347	.770	.848	24	.669	.510	.135	.263
A <sub>Sophistication</sub> – A <sub>Sincerity</sub>	5.560	5.596	.770	.838	31	-.130	.898	.023	-.046
A <sub>Youth</sub> – A <sub>Competence</sub>	5.467	5.347	.694	.848	25	.403	.690	.080	.156
A <sub>Youth</sub> – A <sub>Sincerity</sub>	5.467	5.596	.694	.838	32	-.483	.632	.085	-.167
A <sub>Competence</sub> – A <sub>Sincerity</sub>	5.347	5.596	.848	.838	29	-.803	.428	.148	-.296

## 6.2.2 Pretest 2 – Brand Selection

The objective of the second pretest was to validate the findings of the first pretest. A total of 28 undergrads (59.3% female;  $M_{Age} = 19.1$ ) participated voluntarily in the second pretest. Participants were business students from top public and private universities in Kuala Lumpur. Each participant received 4 different set of questionnaires and completed this task in 30 minutes. In this pretest, the author added 8 more brands to the list of 4 brands creating a total of 12 brands. This was done to ensure that brands in pretest 1 were salient in one MBP dimension. Specifically, each of the 4 brands (i.e. Prada, Nike, Samsung, and Body Shop) was paired with 2 additional brands which were expected to show strong association towards one particular MBP dimension.<sup>19</sup>

First, participants were introduced to brand personality concept in the instruction, “*Like human, a brand can be personified with human characters such as exciting and youthful for Coke.*” They were then asked to assess brand personality of these 12 brands using MBP 22-item scale (refer to Chapter 4.5 for the lists of traits). To eliminate response order effect (Krosnick, 1999), fatigue, and boredom (Batra *et al.*, 2010), the author divided the questionnaire into 4 sets in which there were 4 groups of 3 brands per set. Four groups of 3 brands were assessed for sophistication, youth, competence, and sincerity dimensions in every set of questionnaire. All brands in the group 1, 2, 3 and 4 of every questionnaire set were only assessed on sophistication, youth, competence, and sincerity respectively. The position of MBP dimensions remained unchanged. The author only repositioned the groups of brands in every questionnaire set. Thus, brand group 1 in the first questionnaire will be repositioned as group 4 in the second

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<sup>19</sup> It is important that the brands chosen show a strong association for one MBP dimension i.e. brand personality singularity (see Malär *et al.*, 2012). This will eliminate confounding effect of other dimensions within the same brand in main study 1.

questionnaire set. This was done following Latin square design and the process was followed for all groups of brands in all questionnaire sets.<sup>20</sup>

Prior to analyses, influential outliers were detected by using z-score transformation. Z-score values of  $\geq \pm 3.0$  were removed (Ng & Houston, 2009). Cronbach's  $\alpha$  values for MBP dimensions of sophistication (.970), youth (.966), competence (.964), and sincerity (.930) were all above the recommended values of .70 (Nunnally and Berstein, 1994). Following current practice, 4 single index ratings were created by averaging the items in each MBP dimension scale (Noseworthy & Trudel, 2011). The results showed that Prada, Xbox, Toyota, and Dettol were salient on MBP dimensions of sophistication, youth, competence, and sincerity respectively (see **Table 6.2**).<sup>21</sup> As an additional analysis, bivariate correlation confirmed that all 4 brands were salient in one MBP dimension. Results from **Table 6.3** showed that correlations amongst MBP dimensions ranged between -.080 to .169 and were non-significant ( $ps > .05$ ).

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<sup>20</sup> In other words, if the 4 clusters of brands were name A,B,C, and D respectively, thus the first set of questionnaire will have ABCD arrangement. Brand groups in the second questionnaire set will have BCDA arrangement. The third and fourth questionnaire set will have the CDAB and DABC arrangements.

<sup>21</sup> Out of the four brands from the first pretest, NIKE, Samsung, and Body Shop showed high scores across all 4 MBP dimensions. The authors decided to replace those brands with Xbox, Toyota, and Dettol since they are strong exemplars of only one MBP dimension.

Table 6.2 Mean Ratings of Single MBP Dimension Index for All 12 Brands

Brand	Sophistication	Youth	Competence	Sincerity
Prada	<b>*5.562</b>	3.821	4.827	3.667
BMW	6.494	5.105	6.031	4.556
Samsung	4.796	5.562	5.537	4.648
NIKE	4.735	6.185	5.790	5.231
Topshop	4.549	4.630	4.488	4.546
Xbox	3.951	<b>*5.611</b>	4.642	4.093
Nikon	4.710	5.272	5.364	4.907
BOSS	5.198	4.074	4.846	4.222
Toyota	4.679	4.630	<b>*5.395</b>	4.870
Body Shop	3.944	4.494	4.278	4.907
Vaseline	3.105	3.827	4.049	4.602
Dettol	2.691	3.895	4.605	<b>*5.231</b>

\* Brands chosen to be exemplars of MBP dimensions

Table 6.3 Bivariate Correlation Results

Brand Pairs	r	Sig.
Prada <sub>Sophistication</sub> - Xbox <sub>Youth</sub>	.045	.824
Prada <sub>Sophistication</sub> - Toyota <sub>Competence</sub>	.169	.400
Prada <sub>Sophistication</sub> - Dettol <sub>Sincerity</sub>	-.051	.801
Xbox <sub>Youth</sub> - Toyota <sub>Competence</sub>	.109	.587
Xbox <sub>Youth</sub> - Dettol <sub>Sincerity</sub>	-.134	.506
Toyota <sub>Competence</sub> - Dettol <sub>Sincerity</sub>	-.080	.690

Both pretests confirmed the Prada, Xbox, Toyota, and Dettol achieved brand personality singularity (Malär *et al.*, 2012). In other words, only one MBP dimension was salient in each brand. This was an important step prior to operationalizing BPC as these 4 brands will be used as the stimuli in the main experiment.

### 6.2.3 Main Experiment Method

A total of 235 undergraduate students (26% female;  $M_{Age} = 20.5$ ) from top Malaysian public universities participated and were randomly assigned to a one-way between-subjects ANOVA design. There were 6 experimental conditions comprised 6 unique possible pairwise of 4 MBP dimensions exemplified by 4 brands – Prada (sophistication),

Xbox (youth), Toyota (competence), and Dettol (sincerity), taken from pretest 2. All participations were voluntary and participants were given 30 minutes to complete the questionnaire. Prior to main analyses, the author removed a total of 19 outliers indicated by z-scores of more than 2.5 from all measurements (Hair *et al.*, 2010). Thus, 216 participants remained for further analysis with equal number of participants in all 6 experimental conditions (i.e. 36 per conditions).

Two different brands were paired to test BPC effect using survey instrument. There were 6 pairwise combinations (i.e. Prada – Xbox, Prada – Toyota, Prada – Dettol, Xbox – Toyota, Xbox – Dettol, and Toyota – Dettol). The questionnaire started with the cueing of the brand personality impressions. The author introduced brand personality concept with the statement, *“Like human, a brand can be personified with human characters or traits. If Prada [Xbox vs. Toyota] was a person how would you describe him or her?”* Participants then assessed the brand on respective MBP sophistication [youth vs competence] dimension. Following the assessment of the first brand, participants read about the second brand. Participants were asked, *“If XBOX [Toyota vs. Dettol] was a person how would you describe him or her?”* Then, participants assessed on respective MBP youth [competence vs. sincerity] dimension. All MBP dimensions showed Cronbach’s  $\alpha$ s of more than .70 – sophistication (Cronbach’s  $\alpha = .880$ ), youth (Cronbach’s  $\alpha = .872$ ), competence (Cronbach’s  $\alpha = .900$ ), and sincerity (Cronbach’s  $\alpha = .816$ ).<sup>22</sup> To eliminate order effect, the arrangement of the 2 brands was counterbalanced in another 6 sets of questionnaires. In total, 12 versions of questionnaires were randomly distributed to participants in lecture halls. The author pre-arranged the order of the

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<sup>22</sup> Studies have been using only one brand personality dimension scale instead of all dimensions for brand personality manipulation checks (e.g. Fennis & Pruyn, 2007).

questionnaires to ensure that participants who were sitting beside each other did not receive the same questionnaire version or the same MBP pairs.

Following the assessments of the 2 brands, participants then read a statement about the first brand. For example;

*“Prada [vs. Xbox vs. Toyota] has always been described as being sophisticated [vs. youthful vs. competent]. For 2014, Prada [vs. Xbox vs. Toyota] intends to include youthful [sophisticated vs. competent] brand personality in its new advertising campaign. The advertising campaign will include youthful [vs. sophisticated vs. competent] personality used in Xbox’s [vs. Prada vs. Toyota] advertising campaigns. The new advertisements for Prada [vs. Xbox vs. Toyota] will portray both sophisticated [vs. youthful vs. competent] and youthful [vs. competent vs. sincere] personalities.”<sup>23</sup>*

After reading the statements, participants then assessed the BPC effect of those personalities on a 3-item 7-point BPC scale (Cronbach’s  $\alpha = .787$ ), ‘Do both personalities fit each other? (not at all fit / fit very well)’ (Monga & Lau-Gesk, 2007), ‘How similar are these two personalities? (very different / very similar)’, and ‘Do both personalities complement each other? (not at all complementing / very complementing)’ (Mao *et al.*, 2012).

Following the assessment of the level of complementary between the different pairs, participant were also ask to measure the dominance of sophistication and youth using Wiggins’ (1979) 8-item Dominant scale (Cronbach’s  $\alpha = .918$ ) ranged from 1 (*not at all*)

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<sup>23</sup> No visual ad stimulus was given to form brand personality impressions (e.g. Johar *et al.*, 2005; Monga & Lau-Gesk, 2007)

to 7 (*extremely*).<sup>24</sup> Specifically, participants were asked to compare the dominant of MBP sophistication [vs. youth vs. competence] dimension with MBP youth [vs. sophistication vs. competence] dimension on 8 statements, “Sophisticated [vs. youthful vs. competent] personality is more (*dominant*, *assertive*, *forceful*, *domineering*, *firm*, *self-confident*, *self-assured*, and *un-self-conscious*).

Next, participants measured their attitude (Cronbach’s  $\alpha = .849$ ) towards the brand personality pairs on 6 items (*bad / good*, *low quality / high quality*, *unappealing / appealing*, *unpleasant / pleasant*, *negative / positive*, and *dislike / like*) on a 7-point semantic differential scale adopted from Campbell and Keller’s (2003) and Park *et al.*’s (2010) studies. Following attitude assessment, participants measured their personality on the MBP scale – sophistication (Cronbach’s  $\alpha = .890$ ), youth (Cronbach’s  $\alpha = .912$ ), competence (Cronbach’s  $\alpha = .907$ ), and sincerity (Cronbach’s  $\alpha = .865$ ).<sup>25</sup> At the end of the survey, they were asked to fill in their personal information.

#### 6.2.4 Manipulation Checks

The author created a single index for all brand personality dimension scores in each experimental condition by averaging the item scores (Jhang *et al.*, 2012) since all Cronbach’s  $\alpha$ s were above the recommended values of 0.70 (Nunnally & Bernstein, 1994).<sup>26</sup> All 4 brands, Prada ( $M_{\text{Sophistication}} = 5.559$ ), Xbox ( $M_{\text{Youth}} = 5.611$ ), Toyota ( $M_{\text{Competence}} = 5.395$ ), and Dettol ( $M_{\text{Sincerity}} = 5.231$ ) achieved brand personality mean

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<sup>24</sup> With item-to-response ratio of 1:27, principal component analysis (PCA) run revealed that 2 items ‘forceful’ and ‘un-self-conscious’ of the Dominance scale had communalities of less than .50. Additionally, ‘un-self-conscious’ had inter-item correlation of  $< .3$ , and item-to-total correlation of  $< .5$ . Thus, the author deleted these two items. The final Cronbach’s  $\alpha$  was based on 6 items (KMO = .878; Bartlett’s Test of sphericity  $< .001$ ).

<sup>25</sup> With item-to-response ratio of 1:9, principal axis factor (PAF) with oblimin rotation revealed a 4-factor MBP scale. The communalities of 22 items were above minimum required value of .50. MBP scale was used to measure both brands and humans. Overall, although MBP reliabilities slightly differed between brands and humans, the 4 MBP dimension scales showed strong reliability of above .80).

<sup>26</sup> All single index ratings were examined for outliers. There were no cases exceeded z-score values of  $\pm 3.0$  (Ng & Houston, 2009)



index scores of above the scale midpoint. A higher score above scale midpoint indicated that the brands were perceived to be strong exemplars of that particular MBP dimension (Heath *et al.*, 2011).

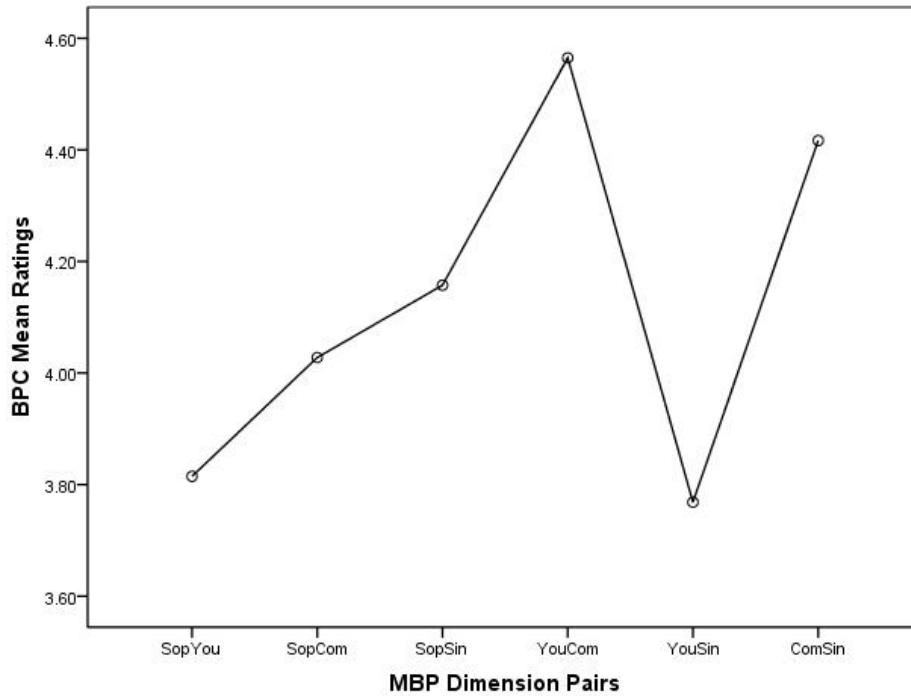
Additionally, the author ran several dependent t-tests to investigate difference among MBP dimension ratings from pretest 2. Prada<sub>Sophistication</sub> (M = 5.559) was significantly different compared to its ratings on Prada<sub>Youth</sub> (M = 3.821;  $t(26) = 6.138, p < .0001, d = 2.407, r = .769$ ), Prada<sub>Competence</sub> (M = 4.827;  $t(26) = 3.576, p < .005, d = 1.403, r = .574$ ), and Prada<sub>Sincerity</sub> (M = 3.667;  $t(26) = 6.678, p < .0001, d = 2.407, r = .769$ ). Xbox<sub>Youth</sub> rating (M = 5.611) significantly differed from its ratings on Xbox<sub>Sophistication</sub> (M = 3.951;  $t(26) = 6.577, p < .0001, d = 2.580, r = .790$ ), Xbox<sub>Competence</sub> (M = 4.642;  $t(26) = 4.474, p < .0005, d = 1.755, r = .659$ ), and Xbox<sub>Sincerity</sub> (M = 4.093;  $t(26) = 6.116, p < .0001, d = 2.399, r = .768$ ). Results from dependent t-test of also revealed that Toyota<sub>Competence</sub> ratings (M = 5.395) differed significantly compared to its rating on Toyota<sub>Sophistication</sub> (M = 4.679;  $t(26) = 3.202, p < .005, d = 1.256, r = .532$ ), Toyota<sub>Youth</sub> (M = 4.630;  $t(26) = 3.224, p < .005, d = 1.265, r = .534$ ), and Toyota<sub>Sincerity</sub> (M = 4.870;  $t(26) = 2.414, p < .05, d = .670, r = .318$ ). Lastly, Dettol<sub>Sincerity</sub> ratings (M = 5.231) differed significantly to its rating on Dettol<sub>Sophistication</sub> (M = 2.691;  $t(26) = 14.126, p < .0001, d = 5.541, r = .941$ ), Dettol<sub>Youth</sub> (M = 3.895;  $t(26) = 5.587, p < .0001, d = 2.192, r = .739$ ), and Dettol<sub>Competence</sub> (M = 4.605;  $t(26) = 2.153, p < .05, d = .844, r = .389$ ). These results showed that the manipulation of stimuli was successful.

### **6.2.5 Results – Operationalization of BPC**

A single index of BPC was created from the 3-item BPC scale in which higher scores indicated stronger complementary ratings. Pairs of youths-sincerity (M = 3.769) revealed lowest BPC ratings, while competence-youth indicated the highest BPC ratings.

The lowest BPC rating is shown by pairs of youth sincerity (see **Figure 6.1**).<sup>27</sup> **Table 6.4** summarises the mean BPC ratings

*Figure 6.1 Mean Ratings of Single Brand Personality Complementary Index*



*Table 6.4 Mean Ratings of Single Brand Personality Complementary Index*

Pairs	Mean	Std. Deviation	N
SopYou (Sophistication-Youth)	3.815	.914	36
SopCom (Sophistication – Competence)	4.028	.758	36
SopSin (Sophistication-Sincerity)	4.157	.964	36
YouCom (Youth-Competence)	4.565	1.118	36
YouSin (Youth-Sincerity)	3.769	1.309	36
ComSin (Competence-Sincerity)	4.417	.903	36

In the following ANOVA and ANCOVA runs, the author tested the influence of 1) MBP pairs, 2) attitude towards MBP pairs as covariates, 3) trait dominance as moderator, and

<sup>27</sup> The author abbreviates SopYou for Sophistication – Youth , SopCom for Sophistication – Competence, SopSin for Sophistication – Sincerity, YouCom for Youth – Competence, YouSin for Youth – Sincerity, and ComSin for Competence – Sincerity.

4) participants' own personality ratings as another covariate on BPC as the dependent variable. Prior to ANOVA run, Shapiro-Wilk's and Mardia's tests revealed that the data violated univariate and multivariate normality assumptions ( $p < .05$ ). However, ANOVA is known to be robust against such violation when group sizes are equal (Field, 2009). Mardia (1971) also argued that  $n=20$  in the smallest cell should ensure robustness.

First, a one-way between-subjects ANOVA of MBP pairs was run to examine the influence on BPC. Levene's test indicated that homogeneity of error variances was violated ( $F(5, 210) = 2.307, p < .05$ ). Brown-Forsythe test also showed that BPC mean ratings were significantly different ( $F(5, 185.677) = 3.618, p < .005$ ). However, equal size cells and with  $n$  of 36 per cell ensure ANOVA robustness against normality assumption.

The omnibus ANOVA results revealed that BPC significant influenced BPC ratings ( $F(2, 210) = 3.618, p < .005, \omega^2 = .057, \eta_p^2 = .079$ ). Planned contrast among all possible brand personality pairs revealed that youth-competence pair showed the highest BPC mean ratings and differed significantly to those of the lowest pair, youth-sincerity ( $M_{\text{YouCom}} = 4.565$  vs.  $M_{\text{YouSin}} = 3.769$ ;  $t(210) = 3.346, p < .001, d = .462, r = .225$ ) at Bonferroni adjusted  $\alpha = .003$  (i.e.  $\alpha = .05/15$  contrast pairs). Overall, these results were consistent with hypothesis  $H_{1A}$ . **Table 6.5** below summarises all planned contrast results.

Table 6.5 Planned Contrast Results of Brand Personality Pairs

Contrast Pairs	Value of Contrast	Std. Error	t	df	Sig. (2-tailed)	Cohen's d	r
SopYou – SopCom	.213	.238	.895	210	.372	0.124	0.062
SopYou – SopSin	.343	.238	1.440	210	.151	0.199	0.099
SopYou – YouCom	.750	.238	3.152	210	<b>** .002</b>	0.435	0.213
SopYou – YouSin	.046	.238	.195	210	.846	0.027	0.013
SopYou – ComSin	.602	.238	2.529	210	<b>* .012</b>	0.349	0.172
SopCom – SopSin	.130	.238	-.545	210	.587	0.075	0.038
SopCom – YouCom	.537	.238	2.257	210	<b>* .025</b>	0.311	0.154
SopCom – YouSin	.259	.238	1.089	210	.277	0.150	0.075
SopCom – ComSin	.389	.238	1.634	210	.104	0.226	0.112
SopSin – YouCom	.407	.238	1.712	210	.088	0.236	0.117
SopSin – YouSin	.389	.238	1.634	210	.104	0.226	0.112
SopSin – ComSin	.259	.238	1.089	210	.277	0.150	0.075
YouCom – YouSin	.796	.238	3.346	210	<b>*** .001</b>	0.462	0.225
YouCom – ComSin	.148	.238	.623	210	.534	0.086	0.043
YouSin – ComSin	.648	.238	2.724	210	<b>** .007</b>	0.376	0.185

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Note: Sop (Sophistication), You (Youth), Com (Competence), and Sin (Sincerity)

Second, the author investigated the effect of attitude towards MBP pairs as covariate on BPC with a one-way between-subjects ANCOVA design. A single mean rating of attitude towards MBP pair's index (Cronbach's  $\alpha = .849$ ) was created (see **Table 6.6**). Prior to ANCOVA, the author checked for the assumption of homogeneity of regression slopes. Specifically, the interaction between attitude towards MBP pairs and BPC should be non-significant ( $p > .05$ ). The result showed that the assumption of homogeneity of regression slopes was not violated ( $F(5, 204) = 2.080, p = .069, \omega^2 = .021, \eta_p^2 = .049$ ). Following such analysis, the ANCOVA result showed that adjusting for attitude, main effect of brand personality complementary was significantly ( $F(5, 209) = 2.995, p < .05, \omega^2 = .04,$

$\eta_p^2 = .067$ ). Furthermore, the model sum square errors were reduced from 214.071 to 197.284 when attitude towards brand personality pairs was the covariate.<sup>28</sup>

Third, the author then investigated the moderating effect of trait dominance on BPC with attitude towards MBP pairs as covariate. The author created a single index to assess trait dominance by averaging 6 items of Wiggins' (1979) dominant scale (Cronbach's  $\alpha = .918$ ). This was a one-way ANCOVA design with moderator. Using Hayes's (2013) Process SPSS Macro code for mediation and moderation analysis, the results showed a significant overall model ( $F(4, 211) = 6.755, p < .0001, R^2 = .114$ ). The main effect of covariate, attitude towards MBP pairs was significant ( $t(211) = 4.410, p < .0001$ ). However, main effect of trait dominance did not significantly influenced BPC ( $t(211) < 1, p = .986$ ). Interaction between MBP pairs and trait dominance did not reach significance ( $F(1, 211) < 1, p .468, \Delta R^2 = .002$ ).<sup>29</sup> A closer look of all mean dominant ratings showed that MBP dimensions were near the midpoint of the scale, which indicated that they were neither submissive nor dominant. Only 3 MBP pairs showed mean ratings of slightly above scale midpoint, while the other 3 pairs were slight below scale midpoint (see **Table 6.7**). Thus, the findings were inconsistent with hypothesis H<sub>1B</sub>.

*Table 6.7 Mean Ratings of Single Dominant Index*

Pairs	Mean	Std. Deviation
SopYou	4.226	1.069
SopCom	3.909	1.111
SopSin	4.048	1.129
YouCom	3.893	1.108
YouSin	3.960	.981
ComSin	4.496	.906

<sup>28</sup> The author decided not to include the covariate in the following main experiments in study 2 since MBP pairs alone indicated a significant influence ( $F(2, 210) = 3.618, p < .005, \omega^2 = .057, \eta_p^2 = .079$ ) on brand personality complementarity ratings

<sup>29</sup> Trait dominance was taken out from the fourth analysis since it was found to be a non-significant moderator.

Fourth, as an additional analysis, the author investigated the influence of participants' personalities using MBP scale on BPC. Ratings above scale midpoint indicated that the MBP dimensions are highly descriptive of the participants. Following current practices (e.g. Aaker *et al.*, 1999; Monga & Lau-Gesk, 2007; Puzakova *et al.*, 2013), the author created a single index for all 4 MBP dimensions by averaging the items of each dimension. Mean MBP ratings revealed that participants rated themselves higher on sincerity (M = 5.412) and youth (M = 5.370), but rating themselves lower on competence (M = 5.067) and sophistication (M = 4.661) (see **Table 6.8**). Similarly, using Hayes's (2013) Process SPSS Macro code for mediation and moderation analysis, participant's personality ratings were tested as covariates.

*Table 6.8 Participants' Self-Report Single Index Mean Personality Ratings*

Personality	Mean	Std. Deviation	N
Sophistication	4.661	.860	216
Youth	5.370	.858	216
Competence	5.067	.834	216
Sincerity	5.412	.810	216

The omnibus ANCOVA results showed that when adjusted for participants' personality ratings, MBP pairs significantly affect BPC ratings ( $F(5, 206) = 3.661, p < .005, \omega^2 = .055, \eta_p^2 = .082$ ). However, only participants' sophisticated personality trait significantly influenced BPC ( $M = 4.661; F(1, 206) = 6.591, p < .05, \omega^2 = .023, \eta_p^2 = .031$ ). Youth ( $M = 5.370$ ), competence ( $5.067$ ), and sincerity ( $M = 5.412$ ) did not significant affect BPC ratings ( $F(1, 206) < 1, ps \geq .080$ ). Thus, hypothesis H<sub>1C</sub> was partially proven.

### 6.2.6 Discussion

Complementarity principle in social psychology has argued that complementary trait dimensions in the Big Five are predictive of positive relationship outcomes between couples (e.g. Dyrenforth *et al.*, 2010; Luo & Klohnen, 2005). In the brand personality literature, this concept is barely explored. Monga and Lau-Gesk (2007) reveal that a cobranding product is more positively evaluated when it has two dissimilar brand personalities as oppose to one similar personality. They claim that there is a possibility that the two brand personalities used in their study are complementary to each other. However, their study did not delve into the degree of complementarity between the two personalities, and analyse if the other brand personality dimensions were complementary to each other. Results from study 1 suggest that there are varying levels of complementary (low, medium and high) between different pairs of brand personality dimensions.

Different combination of MBP dimensions result in certain degrees of BPC effect – low, medium, and high. By controlling the influence of attitudes towards MBP dimensions, trait dominance, and participants' ratings of own self, the author demonstrates that different degrees of trait complementarity exist among different MBP trait pairs. High BPC ratings are achieved when competence is paired with either youth or sincerity. On the other hand, BPC ratings are low when youth is paired with either sophistication or sincerity.

Despite the evidence for trait dominance in interpersonal literature (e.g. Tiedens *et al.*, 2007), the level of trait dominance amongst MBP dimensions are almost neutral, since mean ratings are near scale midpoint. Participants neither view MBP dimensions as being dominant nor submissive. Trait dominance does not influence BPC, thus is taken out in

the next experimental studies. Furthermore, individuals own personalities generally do not influence complementary ratings, with the exception of sophistication. This is probably because sophistication attach strongly to one's desired self (Aaker, 1997).

In the next study, the author will investigate the influence of BPC principle on schema congruity theory, in particular looking at its effects on extremely incongruent brand extension. Based on the results of study 1, the author will choose only the highest complementary pair ( $M_{\text{Youth-Competence}} = 4.565$ ) and lowest complementary pair ( $M_{\text{Youth-Sincerity}} = 3.769$ ;  $t(210) = 3.346$ ,  $p < .001$ ,  $d = .462$ ,  $r = .225$ ) to be used in the next two experimental studies. These MBP dimensions pairs will be used as stimuli in the next two experiments.

### **6.3 Study 2 – Moderating Effects of BPC on Extreme Incongruity**

The main objective of study 2 is to investigate the effects of the interaction between BPC and brand extension congruity on brand extension evaluation. It is to test the hypothesis that the evaluation of brand extension is more favourable when the BPC level is high, especially for extremely incongruent brand extension.

The author chose to examine an undisclosed brand name (i.e. Brand X) and developed brand claims (e.g. Johar *et al.*, 2005; LaBarbera *et al.*, 1998; Monga & Lau-Gesk, 2007) to create 3 brand personality impressions. From the results of study 1, BPC pair of youth-competence was viewed as having the highest BPC ratings, whereas BPC pair of youth-sincerity showed the lowest ratings. Based on these results, the author decided to use these 2 pairs in study 2 in which, MBP dimension of youth was chosen to be the personality of the parent brand. Thus, the brand extensions were manipulated to be perceived as either competent or sincere. The key dependent variable was brand extension evaluation.



Prior to the main study, the author did two pretests to choose the appropriate products with different involvement levels (i.e. pretest 3), and also to classify the product categories into different brand extension congruity levels (i.e. pretest 4). Additionally, from the result of pretest 3, the product category which scored the highest involvement ratings was chosen to be the parent brand category (i.e. smartphone).

### **6.3.1 Pretest 3 – Product Category Selection**

Product categories were selected from Malaysian eBay website ([www.ebay.com.my](http://www.ebay.com.my)). EBay Inc. officially launched its Malaysian version on 1<sup>st</sup> December 2004, thus this provided the author with current and stable product categories generally consumed by Malaysian market. Fourteen widely ranged product categories were selected for stimulus development (see **Table 6.9**).

A total of 54 undergraduate students (80% female;  $M_{Age} = 21$ ) from top public and private universities in Kuala Lumpur were asked to respond voluntarily to a survey about their personal involvement in 14 products of different categories. Product involvement was measured using Zaichkowsky's (1994) personal involvement inventory (PII) which is a 10-item 7-point semantic differential scale reflecting both cognitive and affective involvements (Cronbach's  $\alpha = .976$ ) (see **Table 6.10**).<sup>30</sup> Higher scores indicated a stronger personal involvement towards the product.

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<sup>30</sup> EFA (exploratory factor analysis) with oblimin rotation was done to check for PII dimensionality. Achieving item-to-response ratio of 1:63 by aggregating all PII item scores, EFA run resulted in only one factor with KMO value of .953, significant ( $p < .001$ ) Bartlett's test of sphericity, minimum communality values of .754, and factor loading values of above .868.

Table 6.9 Product Categories

Product Category	Product
Art	Contemporary art posters
Baby	Baby stroller
Books, Comics, & Magazine	Magazine
Camera	Digital camera
Clothing, Shoes, & Accessories	Jeans
Computers, & Tablets	Laptop
Consumer Electronics	Television
Crafts, Toys, & Hobbies	Radio-controlled toys
Health & Beauty	Fragrance
Home & Garden	Microwave oven
Mobile phone	Smartphone
Musical Instrument	Digital piano
Sports Goods	Electronic gym bicycle
Video Games	Game consoles

Table 6.10 Zaichkowsky's (1994) Personal Involvement Inventory

Personal Involvement Inventory
Unimportant – Important
Irrelevant – Relevant
Worthless – Valuable
Means nothing – Means a lot to me
Not needed – Needed
Boring – Interesting
Unappealing – Appealing
Mundane – Fascinating
Unexciting – Exciting
Uninvolving – Involving

The author detected influential outliers by transforming the cases into z-score values. Samples were deleted of outliers if z-score values exceeded  $\pm 3.0$  (Ng & Houston, 2009). A total of 9 cases were deleted. Following current practices (e.g. Jhang *et al.*, 2012), the author created a single index of PII ratings by averaging all 10 items since reliability exceeded the values of .70 (Nunnally & Bernstein, 1994). Results in **Table 6.11** showed that participants' personal involvement mean ratings were highest for smartphone ( $M = 6.767$ ), while radio-controlled toys had the least ( $M = 3.531$ ).

*Table 6.11 Mean Ratings of Single PII Index*

<b>Product</b>	<b>Mean Scores</b>	<b>Std. Dev.</b>
Smartphone	6.767	0.442
Laptop	6.673	0.464
Digital Camera	5.898	0.977
Jeans	5.611	1.005
Fragrance	5.553	1.050
Television	5.342	1.164
Magazine	5.104	0.713
Microwave Oven	4.518	1.068
Contemporary Art Posters	4.333	1.023
Electronic Gym Bicycle	3.960	1.313
Game Consoles	3.920	1.911
Baby Stroller	3.822	1.420
Digital Piano	3.778	1.706
Radio Controlled Toys	3.531	1.555

The author decided to select smartphone as the parent brand category that will be used in study 2 and 3. Additional dependent t-tests revealed that only PII ratings for smartphone did not differ significantly to those of laptop ( $M_{\text{laptop}} = 6.673$ ;  $t(44) = 1.545$ ,  $p > .05$ ,  $d = .446$ ,  $r = .227$ ). However, mean PII ratings for all other product categories were significantly different from those of smartphone ( $t(44) \geq 5.657$ ,  $ps < .0001$ ) (see **Table 6.12**). The decision to choose product categories for study 2 and 3 will depend on the results of pretest 4. In other words, there should be 3 products for high involvement levels, and another 3 for low involvement levels. In the following pretest, the author will investigate and select several product categories on the basis of brand extension congruity (i.e. congruent, moderately incongruent, and extremely incongruent).

Table 6.12 Dependent T-Test Results

Product Categories	Paired Differences					t	df	Sig. (2-tailed)	Cohen's d	r
	Mean	Std. Dev.	Std. Error Mean	95% C.I. of the Difference						
				Lower	Upper					
Smartphone - Laptop	.093	.405	.060	-.028	.215	1.545	44	.130	0.466	0.227
Smartphone - Digital camera	.869	1.030	.154	.559	1.178	5.657	44	.00	1.706	0.649
Smartphone - Jeans	1.156	1.019	.152	.849	1.462	7.607	44	.00	2.294	0.754
Smartphone - Fragrance	1.213	1.037	.155	.902	1.525	7.849	44	.00	2.367	0.764
Smartphone - Television	1.424	1.156	.172	1.077	1.772	8.268	44	.00	2.493	0.780
Smartphone - Magazine	1.662	.899	.134	1.392	1.932	12.409	44	.00	3.742	0.882
Smartphone - Microwave oven	2.249	1.168	.174	1.898	2.600	12.918	44	.00	3.895	0.890
Smartphone - Contemporary art posters	2.433	1.088	.162	2.106	2.760	14.998	44	.00	4.522	0.915
Smartphone - Electronic Gym Bike	2.807	1.368	.204	2.396	3.218	13.768	44	.00	4.151	0.901
Smartphone - Game console	2.847	1.965	.293	2.256	3.437	9.716	44	.00	2.929	0.826
Smartphone - Baby stroller	2.944	1.375	.205	2.531	3.358	14.361	44	.00	4.330	0.908
Smartphone - Digital piano	2.989	1.809	.270	2.445	3.532	11.081	44	.00	3.341	0.858
Smartphone - Radio-controlled toys	3.236	1.599	.238	2.755	3.716	13.577	44	.00	4.094	0.899

### 6.3.2 Pretest 4 – Product Congruity

A total of 128 undergraduate students (59% female;  $M_{Age} = 21$ ) from top public and private universities in Kuala Lumpur volunteered for the study. Based on the results of pretest 3, the author selected smartphone as the anchor (i.e. parent) brand for brand extension scenario, and investigated the incongruity of the product category lists of pretest 3.

Participants were given a survey in which they first read a short statement, “An international smartphone company is thinking of expanding into a new product category. The purpose of this questionnaire is to identify which product category is consistent with the existing product category.” Then, participants were told, “Please evaluate the following product categories whether it is consistent with the smartphone category.” Congruity (Cronbach’s  $\alpha = .984$ ) was measured with a 3-item 7-point semantic

differential scale in which 2 items were taken from Jhang *et al.* (2012) ‘*atypical / typical*’ and ‘*unusual / usual*’, while 1 item ‘*inconsistent / consistent*’ was added to the scale taken from John *et al.* (1998). Scores above scale midpoint indicated congruent brand extension. To detect influential outliers, cases were transformed to z-scores. Z-score values exceeded  $\pm 3.0$  were deleted from further analysis (Ng & Houston, 2009). A total of 5 cases were deleted. Following current practices (e.g. Jhang *et al.*, 2012), the author created a single index of congruity by averaging the 3 items since reliability exceeded values of .70 (Nunnally & Bernstein, 1994). **Table 6.13** below summarises the mean congruity ratings of all product categories. Most congruent extension was smartphone-digital camera, while extremely incongruent extension was smartphone-baby stroller.

*Table 6.13 Mean Rating of Single Congruity Index*

<b>Pairs of Parent Brand - Subbrand</b>	<b>Mean Scores</b>	<b>Std. Dev.</b>
Smartphone – Digital Camera	5.865	1.213
Smartphone – Laptop	5.373	1.710
Smartphone – Game Consoles	5.217	1.806
Smartphone – Television	4.984	1.815
Smartphone – Jeans	4.068	1.875
Smartphone – Magazine	3.840	1.676
Smartphone – Radio Controlled Toys	3.312	1.690
Smartphone – Digital Piano	3.285	1.854
Smartphone – Electronic Gym Bicycle	3.190	1.560
Smartphone – Contemporary Art Posters	3.157	1.775
Smartphone – Fragrance	2.843	1.933
Smartphone – Microwave Oven	2.314	1.643
Smartphone – Baby Stroller	2.011	1.308

The author further divided the congruity of brand extension into 2 categories – high involvement extensions versus low involvement brand extensions based on results of pretest 3. In the high involvement extension, the author selected; 1) laptop ( $M_{\text{Involvement}} = 6.673$ ;  $M_{\text{Congruity}} = 5.373$ ) to represent congruent brand extension, 2) TV ( $M_{\text{Involvement}} = 5.342$ ;  $M_{\text{Congruity}} = 4.984$ ) to represent moderately incongruent brand extension, and 3)

fragrance ( $M_{\text{Involvement}} = 5.553$ ;  $M_{\text{Congruity}} = 2.843$ ) to represent extremely incongruent brand extension.

Results from dependent t-tests revealed that mean congruity ratings of laptop differed significantly from TV ( $t(122) = 3.369$ ,  $p < .001$ ,  $d = .610$ ,  $r = .292$ ), and fragrance ( $t(122) = 12.371$ ,  $p < .0001$ ,  $d = 2.240$ ,  $r = .746$ ). Mean congruity ratings of TV also differed significantly from fragrance ( $t(122) = 8.545$ ,  $p < .001$ ,  $d = 1.547$ ,  $r = .612$ ).

For low involvement extension, the author selected; 1) video game console ( $M_{\text{Involvement}} = 3.920$ ;  $M_{\text{Congruity}} = 5.217$ ) to represent congruent brand extension, 2) radio-controlled toys ( $M_{\text{Involvement}} = 3.531$ ;  $M_{\text{Congruity}} = 3.312$ ) to represent moderately incongruent brand extension, and 3) baby stroller ( $M_{\text{Involvement}} = 3.822$ ;  $M_{\text{Congruity}} = 2.011$ ) to represent extremely incongruent brand extension. Results from dependent t-tests revealed that mean congruity ratings of video game console differed significantly from radio-controlled toy ( $t(122) = 10.025$ ,  $p < .001$ ,  $d = 1.815$ ,  $r = .672$ ), and baby stroller ( $t(122) = 15.052$ ,  $p < .001$ ,  $d = 2.725$ ,  $r = .806$ ). Mean congruity ratings of radio-controlled toy also differed significantly from baby stroller ( $t(122) = 7.127$ ,  $p < .001$ ,  $d = 1.291$ ,  $r = .542$ ).

The results of all pretests contributed to the development of stimuli and identification of levels in the independent variables. In sum, for next study 2, the parent brand category was smartphone cued with a youthful brand personality impression. Brand extension's personality was cued with either competent (i.e. high BPC) or sincere (i.e. low BPC) brand personality impressions. There were 3 congruity levels (i.e. congruent, moderately incongruent, and extremely incongruent) cued by laptop, television and fragrance for high involvement products. The corresponding congruity levels for low involvement products were cued by video-game console, radio-controlled toys and baby stroller.

### 6.3.3 Main Experiment Method

A total of 750 undergraduate students (59% female;  $M_{Age} = 21$ ) from top Malaysian public and private universities were invited to participate in the study. They were randomly assigned to a 3 (congruity: congruent vs. moderately incongruent vs. extreme incongruent)  $\times$  3 (BPC: control vs. low complementary vs. high complementary)  $\times$  2 (involvement: low vs. high) between-subjects design. The author removed a total of 38 influential outliers by first transforming the cases into z-scores and deleted values exceeding  $\pm 3.0$  (Ng & Houston, 2009). Shapiro-Wilk and Mardia's (1970) statistics were significant indicating that the univariate and multivariate normality were violated. Mardia (1971) however argued that  $n=20$  in the smallest cell should ensure robustness. Here, the author achieved to get at least  $n=25$  for the smallest cell (refer to **Table 6.14**).

*Table 6.14 Descriptive Summary*

<b>Brand Extension Congruity</b>	<b>Brand Personality Complementarity</b>	<b>Involvement</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>N</b>
Congruent	Control	Low Involvement	5.179	.729	27
		High Involvement	5.314	.755	35
	Low Complementary	Low Involvement	5.052	.686	55
		High Involvement	5.063	.849	45
	High Complementary	Low Involvement	5.223	.646	47
		High Involvement	5.214	.644	46
Moderately Incongruent	Control	Low Involvement	4.846	.894	41
		High Involvement	4.264	.984	29
	Low Complementary	Low Involvement	4.624	.934	43
		High Involvement	4.616	.753	49
	High Complementary	Low Involvement	4.975	.910	47
		High Involvement	4.966	.847	59
Extremely Incongruent	Control	Low Involvement	4.114	.918	35
		High Involvement	3.817	.701	30
	Low Complementary	Low Involvement	4.281	.671	35
		High Involvement	4.527	1.040	25
	High Complementary	Low Involvement	4.495	.717	33
		High Involvement	5.054	.709	31

All participations were voluntary. Participants in the experimental conditions began the experiment reading a short passage about brand personality;

*“A brand can be described using human personality traits. Brands personality refers to the set of personality traits that are both applicable to and relevant for brands. If I asked you to give me your impressions of a particular person, you might answer with a set of personality attributes/traits. The same process can be done for a brand. Personality traits can be used to describe brands too.”*

Following the statement, participants in high involvement product (i.e. laptop, television, and fragrance) and low involvement products (i.e. video game console, radio-controlled toy, and baby stroller) then read a short passage about Brand X (see LaBarbera *et al.*, 1998), an undisclosed smartphone company.

*“Brand X is a smartphone company. It has always been perceived as a youthful brand, thus portraying itself as enjoyable and having an outgoing personality. Advertisements for Brand X have always focused on individuals having fun and feeling joyful in order to create images of excitement. For 2014, Brand X plans to expand into a new product category, which is the video game console [vs. radio-controlled toy vs. baby stroller vs. laptop vs. television vs. fragrance]. Rather than portraying the video game consoles [vs. radio-controlled toy vs. baby stroller vs. laptop vs. television vs. fragrance] as being youthful, Brand X’s video game consoles [vs. radio-controlled toy vs. baby stroller vs. laptop vs. television vs. fragrance] will be portrayed as being competent [sincere]. All advertising campaigns will focus on building competitive*



*and professional [vs. good-natured and flexible] personalities by showing individuals who achieve success [are sincere]. All video game consoles [vs. radio-controlled toy vs. baby stroller vs. laptop vs. television vs. fragrance] will be designed and produced by the smartphone company.”*

Following the short passage, participants were asked to rate the brand personality of both parent and brand extensions on the MBP scale (youth Cronbach's  $\alpha = .866$ ; competence Cronbach's  $\alpha = .862$ ; sincerity Cronbach's  $\alpha = .806$ ). To assess parent brand personality participants were asked, “*If Brand X was a person, how would you describe him or her on the personality traits below?*” To assess brand extension personality, participants were asked, “*How would you describe the new brand personality for the video game console [radio-controlled toy vs. baby stroller vs. laptop vs. television vs. fragrance]?*”

Following the above scenarios, participants were asked to answer manipulations checks. First, participants rated the brand extension congruity on a 3-item 7-point congruity scale (Cronbach's  $\alpha = .889$ ) in which 2 items were from Jhang *et al.* (2012) ‘*atypical / typical*’ and ‘*unusual / usual*’, while 1 item ‘*inconsistent / consistent*’ was added to the scale from John *et al.* (1998). Participants were also asked to rate perceived fit a using Aaker and Keller's (1990) 3-item 7-point perceived fit scale (Cronbach's  $\alpha = .863$ ) since few studies adopted the scale to measure congruity (e.g. Lane, 2000; Noseworthy & Trudel, 2011). The items are ‘*bad fit / good fit*’, ‘*not at all appropriate / very appropriate*’, ‘*not at all logical / very logical*’. Participants were also asked to rate 1-item congruity resolution on a 7-point scale from Jhang *et al.* (2012), ‘*does not make sense / make sense*’.

Second, the next manipulation check assessed BPC using a 3-item 7-point brand personality complementary scale (Cronbach's  $\alpha = .854$ ) in which 2 items are from Monga and Lau-Gesk (2007), ‘*Do both personalities fit each other? (not at all fit / fit very well)*,

*'How similar are these two personalities? (very different / very similar)'*, and another item from Mao *et al.* (2012), *'Do both personalities complement each other? (not at all complementing / very complementing).'*' Following the manipulation checks, participants rated 1-item 7-point complementarity resolution scale, *'does not make sense / make sense.'* To check product involvement manipulation, a one-way between-subjects ANOVA of involvement levels (high vs. low) will be run on brand extension evaluation.

On the contrary, the author did not introduce brand personality concept in the control conditions. Instead, participants read a general statement about the parent brand:

*"Brand X is a smartphone company. For 2014, Brand X plans to expand its business into the video game console [vs. radio-controlled toy vs. baby stroller vs. laptop vs. television vs. fragrance] market. All video game consoles [vs. radio-controlled toy vs. baby stroller vs. laptop vs. television vs. fragrance] will be designed and produced by Brand X."*

Following the statement, participants rated the above similar 3-item congruity measurement (Jhang *et al.*, 2012; John *et al.*, 1998), 3-item perceived fit measurement (Aaker & Keller, 1990), and 1-item congruity resolution measurement (Jhang *et al.*, 2012) on a 7-point scale.

The dependent variables were 6-item brand extension evaluation (Cronbach's  $\alpha = .911$ ), *'bad / good'*, *'low quality / high quality'*, *'unappealing / appealing'*, *'unpleasant / pleasant'*, *'negative / positive'*, and *'dislike / like'* (Campbell & Keller, 2003; Lei *et al.*, 2008; Milberg *et al.*, 2010; Sood & Keller, 2012), and a 4-item purchase intention (Cronbach's  $\alpha = .910$ ), *'unlikely / likely'*, *'impossible / possible'*, *'improbable / probable'* and, *'undesirable / desirable'* (Fedorikhin *et al.*, 2008; Lei *et al.*, 2008; Yi, 1990)

measured on a 7-point scale. Finally, participants were asked to fill in their demographic profile and their personality using 22-item MBP scale.

#### **6.3.4 Manipulation Checks**

The author created single index ratings for measurements of congruity, perceived fit, BPC, brand extension evaluation, and purchase intention following current practice (e.g. Jhang *et al.*, 2012; Puzakova *et al.*, 2013) and, since all Cronbach's  $\alpha$ s exceeded .70 (Nunnally & Bernstein, 1994). First, to check whether MBP manipulation was successful, the author examined the mean ratings of MBP dimensions. All 3 MBP dimensions of youth ( $M = 5.157$ ), competence ( $M = 4.939$ ), and sincerity ( $M = 4.872$ ) were rated higher than the scale midpoint.

Second, manipulation checks for BPC ratings showed that high and low conditions differed significantly ( $M_{\text{High BPC}} = 4.451$  vs.  $M_{\text{Low BPC}} = 3.873$ ;  $t(499.108) = 5.943$ ,  $p < .0001$ ,  $d = .532$ ,  $r = .257$ ). As an additional step, using a median split to divide the mean brand complementarity ratings, t-test showed that there was a significant difference between high and low BPC conditions ( $M_{\text{High BPC}} = 5.027$  vs.  $M_{\text{Low BPC}} = 3.229$ ;  $t(467.222) = 28.967$ ,  $p < .0001$ ,  $d = 2.678$ ,  $r = .801$ ).

Third, to check congruity manipulation, independent t-test results on brand extension congruity ratings showed that congruent extension ( $M_{\text{Congruent}} = 4.808$ ) differed significantly as compared to those of moderately incongruent ( $M_{\text{Moderately Incongruent}} = 4.210$ ;  $t(521) = 7.535$ ,  $p = .0001$ ,  $d = .660$ ,  $r = .313$ ), and extremely incongruent extensions ( $M_{\text{Extremely Incongruent}} = 3.340$ ;  $t(322.527) = 14.744$ ,  $p = .0001$ ,  $d = 1.617$ ,  $r = .629$ ). Participants also perceived that there was a significant difference between moderately and extremely incongruent extensions ( $M_{\text{Moderately Incongruent}} = 4.210$  vs.  $M_{\text{Extremely Incongruent}} = 3.340$ ;  $t(354.521) = 8.529$ ,  $p = .0001$ ,  $d = .906$ ,  $r = .413$ ). Additionally, the author divided

congruity scores using third split. T-test results confirmed that congruent extension ( $M_{\text{Congruent}} = 5.422$ ) differed significantly to moderately ( $M_{\text{Moderately Incongruent}} = 4.292$ ;  $t(352.418) = 30.368, p = .0001, d = 3.235, r = .851$ ) and extremely incongruent extension ( $M_{\text{Extremely Incongruent}} = 2.887$ ;  $t(423.36) = 46.584, p = .0001, d = 4.528, r = .915$ ). The results also showed that moderately incongruent extension differed significantly to extremely incongruent extension ( $M_{\text{Moderately Incongruent}} = 4.292$  vs.  $M_{\text{Extremely Incongruent}} = 2.887$ ;  $t(307.008) = 29.792, p = .0001, d = 3.401, r = .862$ ).

Fourth, the author ran a 3 (congruity: congruent vs. moderate incongruent vs. extremely incongruent)  $\times$  2 (BPC: high vs. low) between-subjects design on brand extension congruity mean ratings. Results showed significant main effect of congruity ( $F(2, 703) = 129.942, p < .0001, \omega^2 = .255, \eta_p^2 = .270$ ), BPC ( $F(2, 703) = 12.760, p < .0001, \omega^2 = .023, \eta_p^2 = .035$ ), and more importantly, the expected interaction between brand extension congruity and BPC ( $F(4, 703) = 6.869, p < .0001, \omega^2 = .023, \eta_p^2 = .038$ ).

Lastly, the author ran a one-way between-subjects design of product involvement (high vs. low) on brand extension evaluation. Levene's test indicated that homogeneity of error variances assumption was met ( $F(1, 710) = .004, p = .947$ ). One-way ANOVA results revealed that brand extension evaluations did not differ across high ( $M = 4.816$ ) and low product involvement level ( $M = 4.784$ ;  $F(1, 710) = .231, p = .631, \omega^2 = -.001, \eta_p^2 = .000$ ). This initial analysis indicated that brand extension evaluations were not affected by product involvement alone.

### 6.3.5 Results – BPC Effect on Schema Congruity Theory

The author first ran a between-subjects ANOVA, 3 (congruity: congruent vs. moderate incongruent vs extremely incongruent)  $\times$  3 (BPC: control vs. high vs. low)  $\times$  2 (involvement: high vs. low) on brand extension evaluation.<sup>31</sup> Levene's test showed that homogeneity of error variances assumption was violated ( $F(17, 694) = 2.194, p < .05$ ). However, ANOVA is known to be robust against normality for cell sample of above 20 (Mardia, 1971). **Table 6.14** summarises descriptive statistics for each cell.

Results from the ANOVA revealed that the 3-way interaction was not significant. However, all 3 two-way interactions were significant. There was a significant interaction effect between brand extension congruity and BPC ( $F(4, 694) = 5.055, p < .001, \omega^2 = .019, \eta_p^2 = .028$ ) (refer to **Figure 6.2**). Interaction effect were also significant between BPC and involvement ( $F(2, 694) = 4.115, p < .05, \omega^2 = .007, \eta_p^2 = .012$ ) (refer to **Figure 6.3**), and between brand extension congruity and involvement ( $F(2, 694) = 3.089, p < .05, \omega^2 = .005, \eta_p^2 = .009$ ) (refer to **Figure 6.4**).

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<sup>31</sup> A separate  $3 \times 3 \times 2$  between-subjects ANOVA with mean rating of purchase intention as dependent variable revealed slightly different results. Only one interaction effect was significant, between brand personality complementarity and brand extension congruity ( $F(4, 694) = 3.654, p < .005, \omega^2 = .013, \eta_p^2 = .021$ ). This further supported the results using brand extension evaluation as dependent variable.

Figure 6.2 Interaction Effect of BPC and Brand Extension Congruity

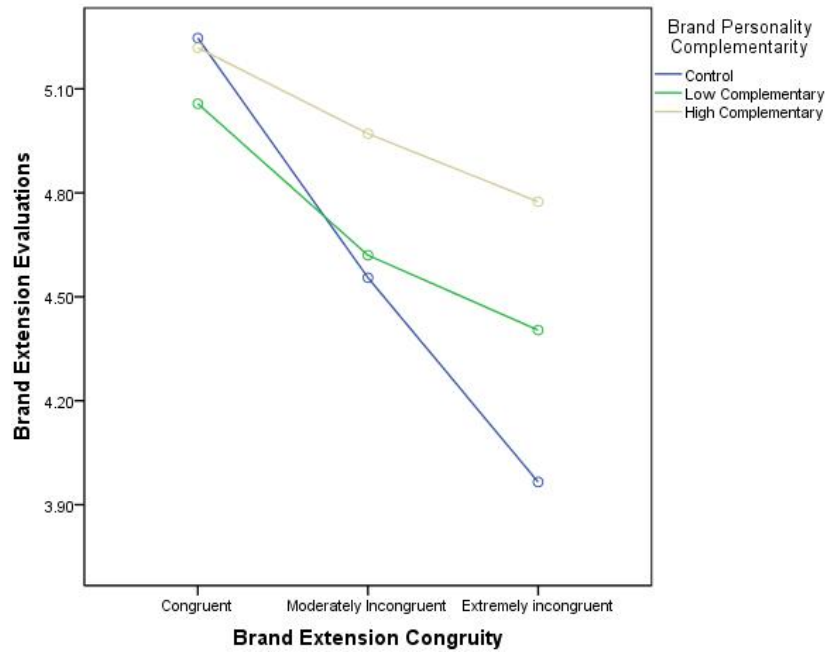


Figure 6.3 Interaction Effect of BPC and Involvement

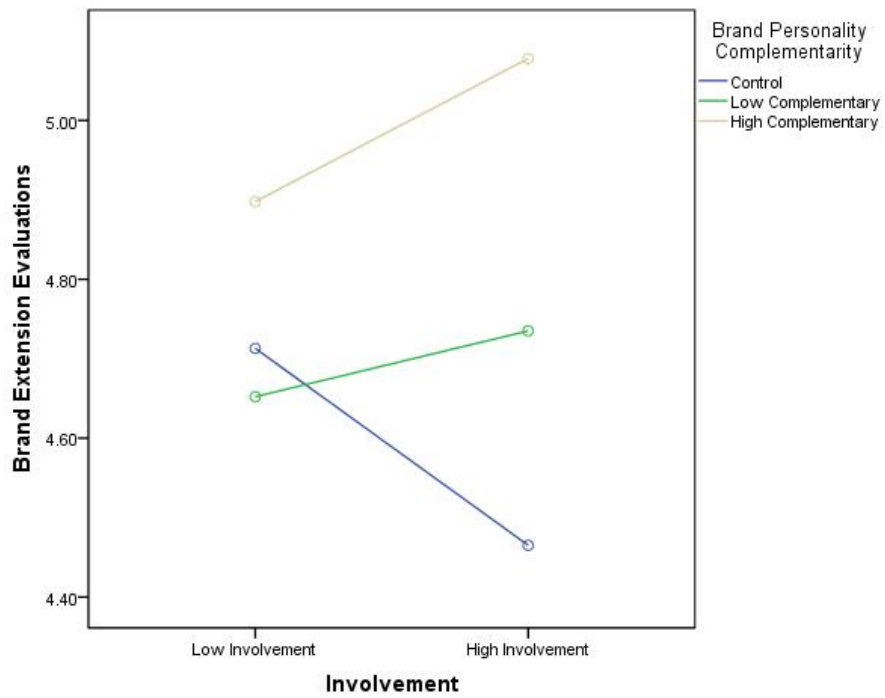
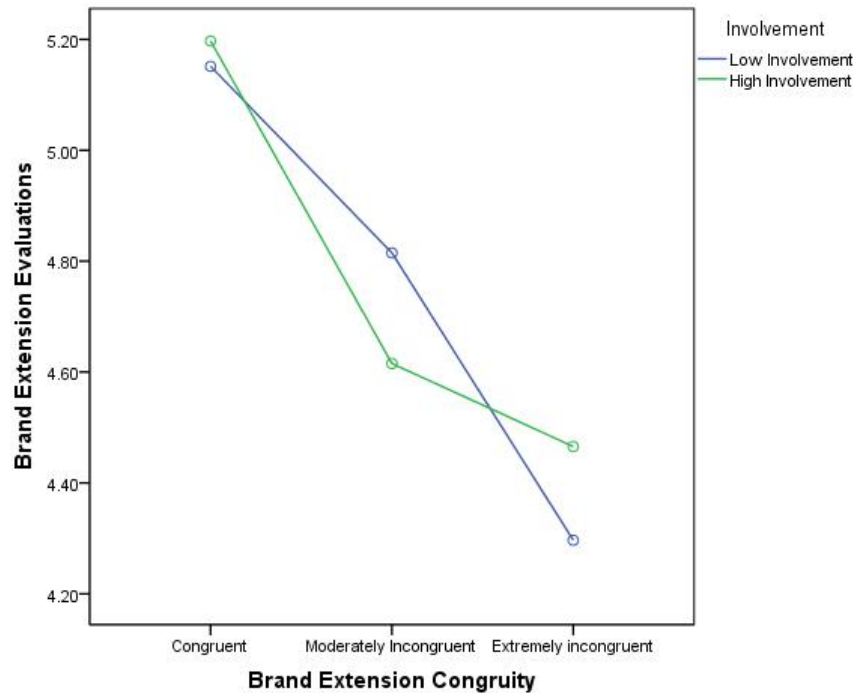


Figure 6.4 Interaction Effect of Brand Extension Congruity and Involvement



The author then ran several simple effect analyses for each of the two-way interactions (Field, 2009). First, simple effect analysis of the interaction between brand extension congruity and BPC showed that when brand extension was congruent, the evaluations were similar ( $F(2, 694) = 1.415, p > .05, \omega^2 = .001, \eta_p^2 = .004$ ) across the control ( $M = 5.247$ ), high BPC ( $M = 5.219$ ), and low BPC conditions ( $M = 5.057$ ) (Please refer to **Table 6.15** below for results summary). On the other hand, brand extension evaluations were significantly different for moderately incongruent brand extension within all BPC levels ( $F(2, 694) = 7.158, p < .001, \omega^2 = .014, \eta_p^2 = .020$ ), especially for high BPC ( $M = 4.971$ ) as compared to those in low BPC ( $M = 4.620$ ), and control condition ( $M = 4.555$ ). As expected, when the brand extension was extremely incongruent, BPC significantly influenced brand extension evaluation ( $F(2, 694) = 16.375, p < .001, \omega^2 = .035, \eta_p^2 = .045$ ). The highest evaluation rating was from the high BPC ( $M = 4.774$ ), followed by

low BPC ( $M = 4.404$ ), and lastly by the control condition ( $M = 3.965$ ). Thus, the results were consistent with hypothesis  $H_{2A}$ .

*Table 6.15 Descriptive Summary*

<b>Brand Extension Congruity</b>	<b>Brand Personality Complementarity</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>N</b>
Congruent	Control	5.255	.741	62
	Low Complementary	5.057	.760	100
	High Complementary	5.219	.641	93
Moderately Incongruent	Control	4.605	.969	70
	Low Complementary	4.620	.838	92
	High Complementary	4.970	.872	106
Extremely Incongruent	Control	3.977	.832	65
	Low Complementary	4.383	.846	60
	High Complementary	4.766	.762	64

As recommended by Spiller and colleagues (2013), the author used Johnson-Neyman technique to identify the range of BPC for which the simple effect of the manipulation was significant. Using Hayes's (2013) Process SPSS Macro code, the analysis revealed that there was a significant positive effect of BPC values of  $\geq 1.820$  ( $B_{JN} = .102$ , 95% CI:  $.000$  and  $.204$ ,  $SE = .052$ ,  $p = .05$ ), but not for BPC level less than 1.820. Next, the author ran several interaction contrasts as recommended by Page and colleagues (2003). The interaction contrast between control and both experimental conditions (i.e. average of high and low BPC) yielded significant effect for only for participants in the extremely incongruent brand extension condition ( $F(1, 703) = 23.263$ ,  $p < .0001$ ,  $\omega^2 = .026$ ,  $\eta_p^2 = .032$ ).<sup>32</sup> Further contrast between control and low BPC only reached significance for extremely incongruent brand extension ( $M_{Control} = 3.977$  vs.  $M_{LowBPC} = 4.383$ ;  $F(1, 703) = 7.875$ ,  $p < .01$ ,  $\omega^2 = .008$ ,  $\eta_p^2 = .011$ ). Conversely, control and high BPC yielded significant effect in both moderately ( $M_{Control} = 4.605$  vs.  $M_{HighBPC} = 4.970$ ;  $F(1, 703) = 8.601$ ,  $p < .005$ ,  $\omega^2 = .009$ ,  $\eta_p^2 = .012$ ) and extremely incongruent ( $M_{Control} = 3.977$  vs.

<sup>32</sup> To control for Type I error,  $\alpha$  value was set at  $.0167$  ( $.05/3$ ) for all interaction contrasts between BPC  $\times$  brand extension congruity.



$M_{\text{HighBPC}} = 4.766$ ;  $F(1, 703) = 30.656, p < .0001, \omega^2 = .035, \eta_p^2 = .042$ ) brand extensions. Likewise, interaction contrasts between low and high BPC reached significant effect when brand extensions were moderately ( $M_{\text{LowBPC}} = 4.620$  vs.  $M_{\text{HighBPC}} = 4.970$ ;  $F(1, 703) = 8.601, p < .005, \omega^2 = .009, \eta_p^2 = .012$ ) and extremely incongruent ( $M_{\text{LowBPC}} = 4.383$  vs.  $M_{\text{HighBPC}} = 4.766$ ;  $F(1, 703) = 8.601, p < .005, \omega^2 = .009, \eta_p^2 = .012$ ).

Second, simple effect analysis was done to breakdown the interaction effect between BPC and involvement. BPC significantly influenced brand extension evaluations of both high involvement ( $F(2, 694) = 16.079, p < .001, \omega^2 = .035, \eta_p^2 = .044$ ) and low involvement product categories ( $F(2, 694) = 3.151, p < .05, \omega^2 = .005, \eta_p^2 = .009$ ). However, interaction contrasts further revealed non-significant results for low involvement products. Similarly, interaction contrasts between control and BPC (i.e. average of high and low) revealed significant effect only for high involvement product ( $F(1, 706) = 14.857, p < .0005, \omega^2 = .019, \eta_p^2 = .021$ ).<sup>33</sup> Interaction contrasts between control condition versus low BPC were non-significant in both involvement levels ( $p > .025$ ). Next, contrasts between control and high BPC were only significant for high involvement condition ( $M_{\text{Control}} = 4.512$  vs.  $M_{\text{HighBPC}} = 5.070$ ;  $F(1, 706) = 22.742, p < .0001, \omega^2 = .029, \eta_p^2 = .031$ ). Similarly, interaction contrasts between low and high BPC were significant only for high involvement condition ( $M_{\text{LowBPC}} = 4.766$  vs.  $M_{\text{HighBPC}} = 4.970$ ;  $F(1, 703) = 8.601, p < .005, \omega^2 = .009, \eta_p^2 = .012$ ). Please refer to **Table 6.16** for results summary.

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<sup>33</sup> To control for Type I error,  $\alpha$  value was set at .025 (.05/2) for all interaction contrasts between BPC  $\times$  involvement.

Table 6.16 Descriptive Summary

BPC	Involvement	Mean	Std. Deviation	N
Control	Low Involvement	4.6845	.95740	103
	High Involvement	4.5124	1.03443	94
Low Complementary	Low Involvement	4.7105	.82849	133
	High Involvement	4.7661	.88040	119
High Complementary	Low Involvement	4.9423	.81714	127
	High Involvement	5.0699	.75511	136

Lastly, simple effect analysis for the interaction effect between brand extension congruity and involvement revealed that without the influence of BPC, congruent brand extension received the highest brand extension evaluation ratings for both high ( $M = 5.187$ ) and low involvement conditions ( $M = 5.141$ ). This was followed by brand extension evaluations in the moderately incongruent extension for both high ( $M = 4.692$ ) and low involvement conditions ( $M = 4.819$ ). Whereas, the lowest brand extension evaluations were those of extremely incongruent brand extension for both high ( $M = 4.469$ ) and low involvement conditions ( $M = 4.293$ ). Please refer to **Table 6.17** for results summary. A significant effect of brand extension congruity on both low ( $F(2, 694) = 31.393, p < .0001, \omega^2 = .070, \eta_p^2 = .083$ ), and high involvement conditions ( $F(2, 694) = 25.897, p < .0001, \omega^2 = .057, \eta_p^2 = .069$ ) was revealed. However, there was no significant difference ( $p > .05$ ) of extension evaluations between low and high involvement in all congruity conditions with the exception of extension evaluations in moderately incongruent extension ( $F(1, 694) = 3.955, p < .05, \omega^2 = .057, \eta_p^2 = .069$ ). Thus, hypothesis  $H_{2B}$  was partially proven.

Table 6.17 Descriptive Summary

Brand Extension Congruity	Involvement	Mean	Std. Deviation	N
Congruent	Low Involvement	5.1408	.68034	129
	High Involvement	5.1878	.75395	126
Moderately Incongruent	Low Involvement	4.8193	.91801	131
	High Involvement	4.6922	.88282	137
Extremely Incongruent	Low Involvement	4.2929	.78537	103
	High Involvement	4.4690	.96254	86

Nonetheless, only 2 main effects were significant; BPC ( $F(2, 694) = 15.211, p < .001, \omega^2 = .033, \eta_p^2 = .042$ ), and brand extension congruity ( $F(2, 694) = 53.010, p < .001, \omega^2 = .012, \eta_p^2 = .133$ ). Involvement main effect was non-significant ( $F(1, 711) < 1, p = .935$ ).

### 6.3.6 Complementarity resolution

To understand the underlying process, the author further examined whether BPC  $\times$  brand extension congruity effect on brand extension evaluation was mediated by complementarity resolution. To test for mediation, the author used Hayes's (2013) Process SPSS Macro code for mediation and moderation analysis. Prior to analysis, product term for the interaction was calculated. With a sample size of 515 excluding cases in the control condition, findings revealed that the model was significant ( $F(2, 512) = 153.943, p < .0001, R^2 = .376$ ). Complementarity resolution was a significant mediating variable. Unstandardised indirect effect of complementarity resolution was .010 (95% CI = .005 and .015).<sup>34</sup> The proportion of mediation effect was .166 (95% CI = .085 and .251), which was lower than the recommended cut-off value of .80. Thus this model did not fulfil a full mediated relationship (Kenny, 2013, <http://davidakenny.net/cm/mediate.htm>). Sobel's (1982) z value was 4.672 (se = .002,  $p < .0001$ ) which showed significant partial mediation. Preacher and Kelley's (2011)  $\kappa^2$

<sup>34</sup> Hayes PROCESS SPSS macro calculates confidence intervals (CI) using bias-corrected bootstrap method.

was .107 (CI = .055 and .153), indicating a medium effect size. Thus, hypothesis H<sub>3</sub> was proven

The author then examined the possibility of sequential double mediation model of complementarity and incongruity resolutions. Extending the work of Jhang *et al.* (2012), complementarity resolution was posited to be the second mediator after congruity resolution. Similarly, using Hayes (2013) Process SPSS Macro code and a sample size of 515, the model with sequential double mediation was significant ( $F(3, 511) = 109.475, p < .0001, R^2 = .391$ ). Unstandardised indirect effect of both congruity and complementarity resolutions was .003 (95% CI = .001 and .005). The proportion of mediation effect was .043 (95% CI = .019 and .085) which was lower than the recommended cutoff value of .80. Thus, this model did not fulfil a full mediated relationship (Kenny, 2013, <http://davidakenny.net/cm/mediate.htm>). Based on a better  $R^2$  value, the analyses showed that double sequential mediation model was a slightly better model than the single mediator model.

### **6.3.7 Discussion**

The literature on brand personality posited that the brand personality plays a role in eliciting favourable evaluations from consumers (Aaker, 1997). Specifically, the author extends the findings from Monga and Lau-Gesk (2007) who argue for dual brand personalities in cobrands generate more favourable evaluation for the sub-brand. In their study, they highlight the possibility of the two brand personalities (excitement and sophistication) as complementarity and future studies should investigate this possibility.

The results from study 2 indicate that the BPC has a moderating influence on brand extension congruity. In order to discuss the moderating influence, the author must first discuss the role of brand extension congruity on customer's brand extension evaluation

and then analyse how these evaluations differ when customers are presented with BPC as additional information to base their evaluations on.

The evaluations of brand extension solely based on the product category and without any other diagnostic information about the brand (i.e. without brand personality impressions) indicate that participants in the control group evaluate congruent extensions more favourably than moderate and extreme incongruent extensions. The reason is participants can only activate category-level schema to process congruity information. Without attribute-level and brand-level information, individuals cannot resolve the incongruity since they are unable to move up or down the hierarchical (Fiske & Pavelchak, 1986; Nan, 2006; Murphy & Medin, 1985; Park *et al.*, 1991). Based on the brand extension literature, moving down the hierarchical level can be facilitated by abstract attributes (e.g. brand personality) or brand concept (e.g. Monga & John, 2010; Park *et al.*, 1991). Murphy and Medin (1985) suggest that the conceptual coherence serves as a mechanism people use to 'hang' classes of objects together, where consumers can use similarity at the brand level for their extension evaluations (Farquhar *et al.*, 1990). Moving down is when individuals evaluate the brands based on similarities at the category or attribute levels (e.g. Boush & Loken, 1991). Evaluations can be positive when the extension product attributes are complementary, substitutable and transferable to the existing brand (Mao & Krishnan, 2006). When similarity is operationalized through brand extension congruity, only congruent extensions received most favourable evaluations, whereas moderately and extremely incongruent product categories received less favourable evaluations depicting a linear decreasing function (e.g. Maoz & Tybout, 2002).

Nonetheless, results indicate that the moderating effect of BPC is only observed at moderately and extremely incongruity levels. There is no significant difference in the

extension evaluations when the extensions are congruent. In other words, both control, low BPC and high BPC elicit similar extension evaluations. Conversely, when the extension is moderately incongruent, only high BPC enhances the evaluations. There is no difference in evaluations for both control and low BPC. Surprisingly, when extension is extremely incongruent, both low and high BPC improves the extension evaluations in which high BPC performs better than low BPC.

This demonstrates BPC principle plays an important role in enhancing brand extension evaluations especially for extremely incongruent extensions. The results further strengthen the status of the brand personality concept in its role to elicit more favourable evaluations. Specifically, the author extends the findings of Monga and Lau-Gesk (2007) who argue for dual brand personalities to enhance evaluations. The findings also further both authors' argument that it is even important to have dual brand personalities that are highly complementary to improve evaluations of moderately and extremely incongruent extensions. In the absence of other diagnostic brand information, accessibility to brand personality impressions that are highly complementary increases the chances of receiving more favourable evaluations.

The author further investigates the higher-order interaction effect of BPC  $\times$  brand extension congruity is mediated by participant's ability to resolve both complementary and congruity. The results demonstrate that both complementary resolution and congruity resolutions mediate the relationship. The results support the view that trait resolution facilitates congruity resolution thus leading to a more positive evaluation. The findings also demonstrate a significant sequential double mediation effect of both incongruity and complementarity resolutions. This is an extension of the study conducted by Jhang *et al.* (2012) in which congruity resolution mediates the relationship between product

incongruity and evaluation. They however did not test for complementarity resolution, thus unable to uncover the effects of complementarity on the overall extension evaluation.

BPC effect can also be observed with product involvement. Based on literature, involvement alone does not influence brand extension evaluation, where Samuelsen and Olsen (2010) find that involvement merely approach significant effect on brand attitude ( $p = .067$ ). Importantly, a significant interaction between involvement  $\times$  ad claims in their study supports that the involvement effect only occurs in tandem with other variables. In agreement with their findings, significant interaction effect of BPC  $\times$  involvement further justifies the interdependent relationship of involvement with other variables. Only participants in high BPC generate most favourable evaluation for both involvement levels. The effect of low BPC is negligible, generating similar evaluations to those in the control conditions. Specifically, high complementarity brand personalities consequently elicit better evaluations for high involvement products.

Furthermore, there is an interaction between congruity and involvement. Congruent extensions generate most favourable evaluations followed by moderately incongruent extension and extremely incongruent extensions. This is evident in both high and low involvement extensions.

Despite the expected results of BPC effect, extension evaluations do not confirm the inverted-u shape of schema congruity theory, instead depicting a linear decreasing function. Highest extension evaluations are observed in the congruent condition followed by moderately and extremely incongruent brand extensions. This is evident for both interactions of brand extension congruity with BPC, and with product involvement. Even without brand personality impression (i.e. control condition), moderately incongruent

brand extension do not elicit highest favourable extension evaluations. Such evaluations pattern has been observed in several studies (e.g. Jhang *et al.*, 2012).

To reconfirm these findings, the author will replicate the influence of BPC in the next study. However, the author will be using fictitious brand name, while using visual-based ad stimuli to form brand personalities impressions. In doing so, the use of fictitious brand will allow clean manipulation of BPC and brand extension congruity while controlling for brand name. This will also enable the author to test the robustness of the interaction between BPC and brand extension congruity in the context of unknown or new brand (see Swaminathan *et al.*, 2009). Additionally, the author will present visual-based ad stimuli to communicate the same brand personality impression following the previous study design (i.e. youth, competence, sincerity) (see Aaker *et al.*, 2004; Swaminathan *et al.*, 2009). Lastly, the author eliminates low involvement products since interaction contrast between low and high BPC  $\times$  product involvement is only significant for high involvement products.

### **6.3.5 Study 3 – Replication using Visual-Based Ad Stimuli**

The purpose of study 3 is to extend the findings in study 2. In study 2, high BPC level was shown to garner more favourable extension evaluations especially when the brand extension was extremely incongruent. In fact, even cueing low BPC level resulted in better evaluations for extremely incongruent extension as compared to those in the control condition in which parent brand and brand extensions were not cued with any brand personality impression. To test the robustness of this finding, the author intends to investigate BPC effect using visual-based ad stimuli. The examination will uncover if there are differences in the interaction effects based on different types of ad stimuli. The



development of visual-based ad stimuli follows the current practices in literature (see Aaker, 1999; Aaker *et al.*, 2004; Johar *et al.*, 2005; Monga and Lau-Gesk, 2007).

The author developed ad stimuli that were visual-heavy and coupled with a tagline adopted from Swaminathan and colleagues' (2009) to create brand personality impressions (cf. text only ad stimuli in study 2). These stimuli were developed in pretest 5. Additionally, the author replaced the undisclosed brand name (Brand X) with a fictitious brand name adopted from the study of Swaminathan and colleagues (2009). Product categories chosen for this main study were based on pretest 4. They were high involvement products which resulted in higher brand extension evaluation ratings in the previous study. These product were; laptop, television, and fragrance.

### **6.3.1 Pretest 5 – Brand Personality Visual Advertising Stimuli**

A total of 55 undergrads (65.5% female;  $M_{Age} = 21$ ) from top public and private universities in Kuala Lumpur were invited to participate voluntarily. The author developed 3 different sets of questionnaires to cue 3 different types of MBP dimensions – youth, competence, and sincerity. Participants were randomly given 1 survey questionnaire from the set of 3 questionnaire versions. They were first asked to read a short passage about brand personality,

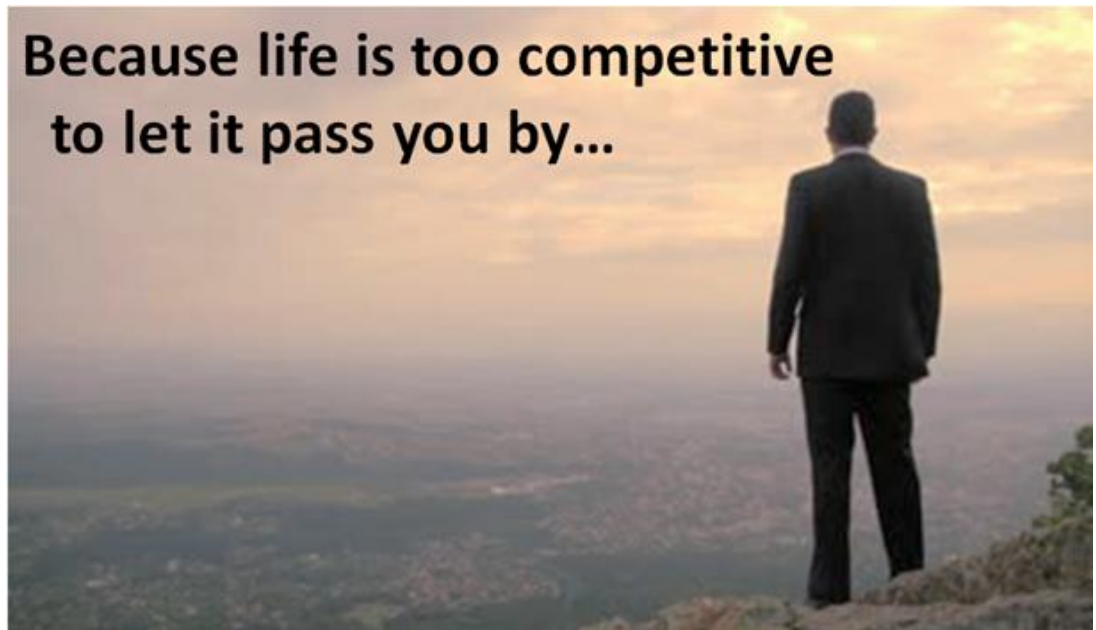
*“A brand can be described using human personality traits. Brands personality refers to the set of personality traits that are both applicable to and relevant for brands. If I asked you to give me your impressions of a particular person, you might answer with a set of personality attributes/traits. The same process can be done for a brand. Personality traits can be used to describe brands too.”*

Following the short passage, participant then viewed an advertisement, which comprised 1 main visual with a single tagline. Adopting ad stimuli development by Swaminathan and colleagues (2009), the author used their ad tagline, “*Because life is too exciting [vs. competitive vs. meaningful] to let it pass you by...*” to communicate youth [vs. competence vs. sincerity] MBP dimension. Though few studies have used several images (e.g. Swaminathan *et al.*, 2009) the author decided to use one main visual (e.g. Poor et al., 2013). Please refer to **Figures 6.5** to **6.7** below for the ad visual stimuli.

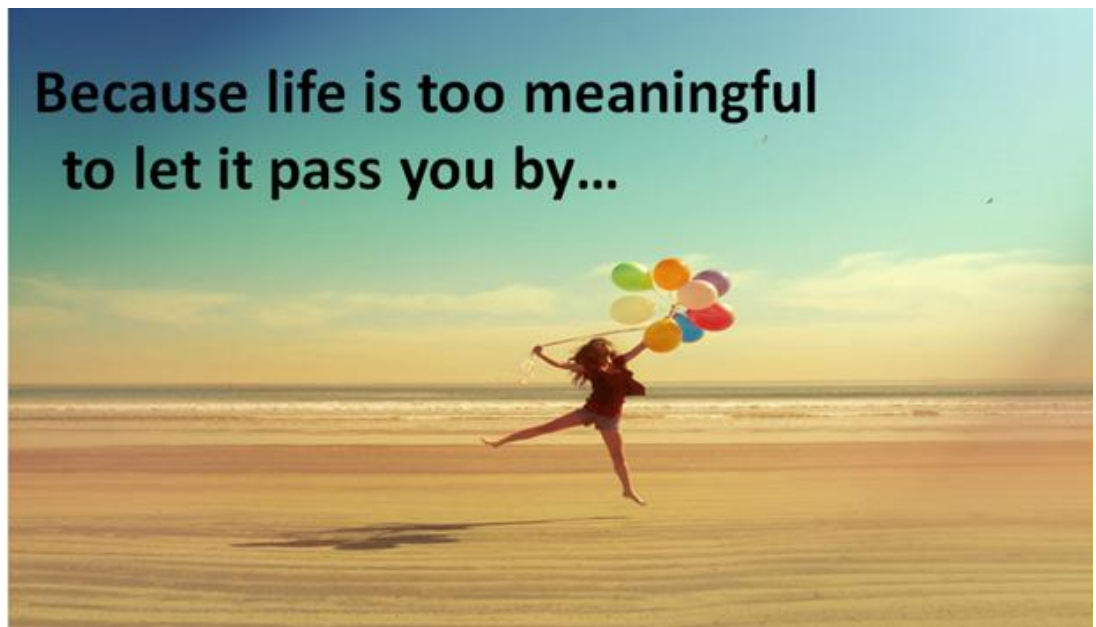
*Figure 6.5 Youthful Advertisement*



*Figure 6.6 Competent Advertisement*



*Figure 6.7 Sincere Advertisement*



After viewing an ad stimulus, participants were then asked to rate their attitude towards the ad stimulus (Cronbach's  $\alpha = .886$ ) on a 6-item 7-point semantic differential scale, "bad / good", "low quality / high quality", "unappealing / appealing", "unpleasant /

*pleasant*, *'negative / positive'*, and *'dislike / like'* (Campbell & Keller, 2003; Lei *et al.*, 2008; Milberg *et al.*, 2010; Sood & Keller, 2012). Then, they rated the brand personality of the ad visual using 22-item 7-point MBP scale (sophistication Cronbach's  $\alpha = .946$ ; youth Cronbach's  $\alpha = .971$ ; competence Cronbach's  $\alpha = .956$ ; sincerity Cronbach's  $\alpha = .898$ ).<sup>35</sup> At the end of the questionnaire, participants filled in their demographic data.

Using z-score transformation to detect influential outliers values exceeded  $\pm 3.0$ , none of the cases were deleted (Ng & Houston, 2009). The author created single index mean ratings for attitude, sophistication, youth, competence, and sincerity since all Cronbach's  $\alpha$ s exceeded the recommended value of .70 (Nunnally & Bernstein, 1994). T-test results showed that attitudes were similar between youth and competence ( $M_{\text{Youth}} = 4.537$  vs.  $M_{\text{Competence}} = 4.079$ ;  $t(35) = 1.682$ ,  $p = .101$ ,  $d = .569$ ,  $r = .273$ ), youth and sincerity ( $M_{\text{Youth}} = 4.537$  vs.  $M_{\text{Sincerity}} = 4.333$ ;  $t(34) = .713$ ,  $p = .481$ ,  $d = .245$ ,  $r = .121$ ), and competence and sincerity ( $M_{\text{Competence}} = 4.079$  vs.  $M_{\text{Sincerity}} = 4.333$ ;  $t(35) = .897$ ,  $p = .376$ ,  $d = .303$ ,  $r = .150$ ).

The author then ran dependent t-tests for each of the 3 ad stimuli. For youthful ad, participants perceived the ad to be more youthful ( $M = 5.343$ ) than competent ( $M = 4.259$ ;  $t(17) = 4.965$ ,  $p = .0005$ ,  $d = 2.408$ ,  $r = .769$ ), sincere ( $M = 4.259$ ;  $t(17) = 3.861$ ,  $p = .005$ ,  $d = 1.873$ ,  $r = .684$ ), or sophisticated ( $M = 3.667$ ;  $t(17) = 5.880$ ,  $p = .0001$ ,  $d = 2.852$ ,  $r = .819$ ). For competent ad, participants viewed the advertisement as more competent ( $M = 4.518$ ) than youthful ( $M = 2.544$ ;  $t(18) = 4.635$ ,  $p = .0005$ ,  $d = 2.185$ ,  $r = .738$ ), sincere ( $M = 3.303$ ;  $t(18) = 3.015$ ,  $p = .005$ ,  $d = 1.421$ ,  $r = .579$ ), or sophisticated ( $M = 2.895$ ;  $t(18) = 4.619$ ,  $p = .0005$ ,  $d = 2.177$ ,  $r = .736$ ). Lastly, participants perceived

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<sup>35</sup> To eliminate confounding effect of brand name and product category, the ad stimuli elements only consisted of the main visual and tagline. The pretest purely investigated the influence of ad visual and tagline to create brand personality impression. In study 3, however, a fictitious brand name and product category were included in every ad stimuli.

sincere ad to be more sincere ( $M = 4.972$ ) than youthful ( $M = 4.102$ ;  $t(17) = 3.061$ ,  $p = .005$ ,  $d = 1.485$ ,  $r = .596$ ), competent ( $M = 3.398$ ;  $t(17) = 4.977$ ,  $p = .0005$ ,  $d = 2.414$ ,  $r = .770$ ), and sophisticated ( $M = 2.935$ ;  $t(17) = 7.188$ ,  $p = .0001$ ,  $d = 3.487$ ,  $r = .867$ ).

The results from the pretest showed that the stimuli were appropriate to cue each 3 MBP dimensions of youth, competence and sincerity. Following the pretest, the author proceeded with the main experiment.

### **6.3.2 Main Experiment Method**

A total of 293 undergraduate students (66% female;  $M_{\text{Age}} = 21$ ) from top Malaysian public and private universities were invited to participate voluntarily in the study. They were randomly assigned to a 3 (congruity: congruent vs. moderately incongruent vs. extreme incongruent)  $\times$  3 (BPC: control vs. high complementary vs. low complementary) between-subjects design. The author removed a total of 13 influential outliers by transforming the cases into z-scores and deleting values exceeding  $\pm 3.0$  (Ng & Houston, 2009). Shapiro-Wilk and Small's omnibus test (DeCarlo, 1997) were significant indicating that the univariate and multivariate normality assumptions were violated. However, Mardia (1971) argued that  $n=20$  in the smallest cell should ensure robustness. Here, the author achieved to get at least  $n=27$  for the smallest cell. Refer to **Table 6.18** for cases summary.

Table 6.18 Descriptive Summary

Brand Extension Congruity	Brand Personality Complementarity	Mean	Std. Deviation	N
Congruent	Control	4.932	.950	27
	Low Complementary	4.247	.748	29
	High Complementary	5.177	.909	33
Moderately Incongruent	Control	4.583	.924	34
	Low Complementary	4.361	.648	30
	High Complementary	4.672	.648	34
Extremely incongruent	Control	4.068	.639	32
	Low Complementary	4.068	.868	27
	High Complementary	4.642	.567	34

Participants in the experimental conditions began the experiment by reading a similar short passage about brand personality used in study 2. Following the short passage, participants were then introduced to a short statement about the parent brand, “*Astra is a smartphone company.*” They were then asked to assess 2-item brand name favourability on a 7-point scale (Cronbach’s  $\alpha = .825$ ), ‘*unfavourable / favourable*’, ‘*not at all appropriate / very appropriate*’ adopted from Swaminathan *et al.* (2009) and Warlop *et al.* (2005) respectively. Participants then viewed ad stimuli for the parent brand (i.e. smartphone) (refer to **Figure 6.8**). They were then asked, ‘*Based on the advertisement, if Astra Smartphone was a person, how would you describe him or her on the personality traits below?*’ The author presented the 6-item MBP youth dimension (Cronbach’s  $\alpha = .876$ ) measured on a 7-point scale for the participants to rate. Following the assessment, participants were introduced to Astra’s brand extension, “*Astra plans to expand its business into the laptop computer [vs. television vs. fragrance] market. All laptop [vs. television vs. fragrance] will be designed and produced by Astra. Below is the advertisement for its laptop [vs. television vs. fragrance].*” They then viewed the ad stimuli for competent [sincere] brand personality (refer to **Figure 6.9** and **Figure 6.10**) and rated the competent [sincere] brand personality using MBP competence [sincerity] dimension on a 7-point scale.

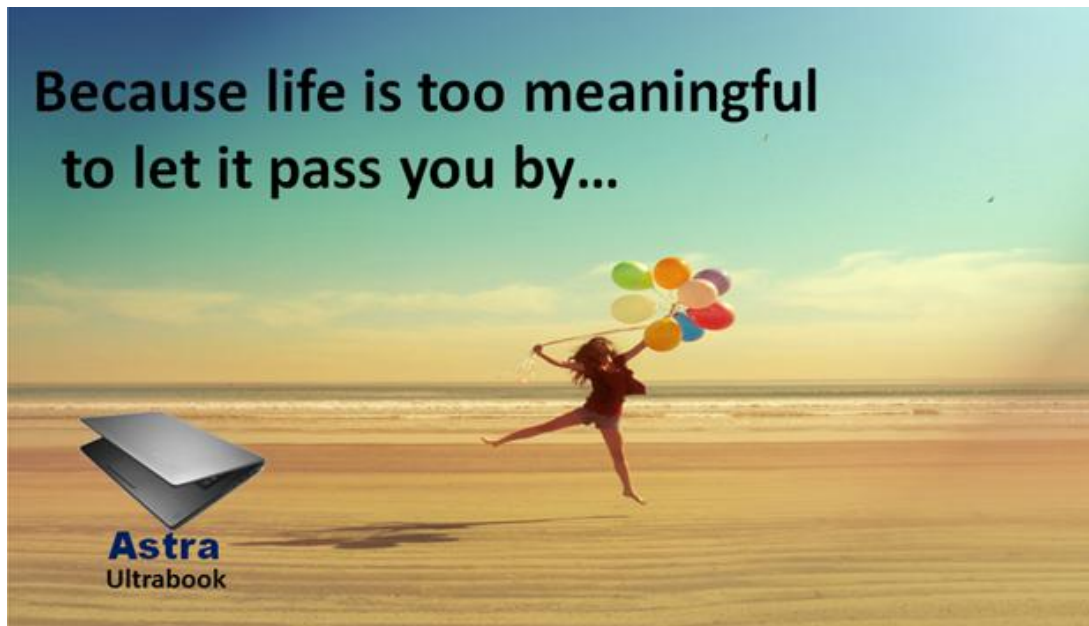
*Figure 6.8 Astra Smartphone – Youthful Advertisement*



*Figure 6.9 Astra Laptop – Competent Advertisement*



Figure 6.10 Astra Laptop – Sincere Advertisement



Following the above experimental conditions, participants answered manipulation checks similar to those in study 2. Manipulation checks were assessed by 3-item brand extension congruity (Cronbach's  $\alpha = .903$ ), 3-item perceived brand extension fit (Cronbach's  $\alpha = .872$ ), 1-item congruity resolution, 3-item BPC (Cronbach's  $\alpha = .903$ ), 1-item complementarity resolution scale, 6-item competence (Cronbach's  $\alpha = .815$ ), and 4-item sincerity (Cronbach's  $\alpha = .785$ ).

In contrast, participants in the control condition were shown parent and extension products and not introduced to any brand personality. Instead, they read, "*Astra is a smartphone company. Astra plans to expand its business into the laptop computer [vs. television vs. fragrance] market. All laptop computers [vs. television vs. fragrance] will be designed and produced by Astra.*" Following the statement, participants rated the above similar 2-item brand name favourability, 3-item congruity measurement, 3-item perceived fit measurement, and 1-item congruity resolution measurement.



After manipulation checks, participants in both experimental and control conditions assessed the dependent variables, 6-item brand extension evaluation (Cronbach's  $\alpha = .906$ ), and 4-item purchase intention (Cronbach's  $\alpha = .908$ ). Participants then filled in their demographic profile and their personality using 22-item MBP scale (Cronbach's  $\alpha$ s; sophistication = .910, youth = .933, competence = .897, sincerity = .894).

### 6.3.3 Manipulations Checks

All Cronbach's  $\alpha$  values were above the recommended values of .70 (Nunnally & Bernstein, 1994). Thus, single index ratings were created by averaging the items in each of the scales used (e.g. Jhang *et al.*, 2012; Puzakova *et al.*, 2013). Mean single index ratings were created for 1) brand name favourability, 2) MBP dimensions of youth, competence, and sincerity, 3) brand extension congruity, 4) perceived fit, 5) BPC, 6) brand extension evaluation, 7) purchase intention, and 8) participants MBP dimensions of sophistication, youth, competence, and sincerity.

First, brand personality impression manipulations were successful as all mean ratings of MBP dimensions of youth ( $M = 4.943$ ), competence ( $M = 4.852$ ) and sincerity ( $M = 4.715$ ) were above scale midpoint. Second, independent t-test results showed that BPC ratings between high and low BPC conditions differed significantly ( $M_{\text{High BPC}} = 5.261$  vs.  $M_{\text{Low BPC}} = 2.830$ ;  $t(185) = 27.867$ ,  $p < .0001$ ,  $d = 4.098$ ,  $r = .899$ ). Additionally, median split of mean BPC ratings also resulted in significant difference between high and low BPC conditions ( $M_{\text{High BPC}} = 5.326$  vs.  $M_{\text{Low BPC}} = 2.894$ ;  $t(168.978) = 28.180$ ,  $p < .0001$ ,  $d = 4.336$ ,  $r = .908$ ).

Third, independent t-test results for brand extension congruity showed that congruent extension ( $M_{\text{Laptop}} = 5.161$ ) differed significantly between moderately incongruent extension ( $M_{\text{Television}} = 4.221$ ,  $t(185) = 9.366$ ,  $p < .0001$ ,  $d = 1.377$ ,  $r = .567$ ), and

extremely incongruent brand extension ( $M_{\text{Fragrance}} = 2.792$ ,  $t(180) = 24.268$ ,  $p < .0001$ ,  $d = 3.618$ ,  $r = .875$ ). While, moderately incongruent brand extension ( $M_{\text{Television}} = 4.221$ ) was perceived to be significantly different from extremely incongruent brand extension ( $M_{\text{Fragrance}} = 2.792$ ,  $t(189) = 14.770$ ,  $p < .0001$ ,  $d = 2.149$ ,  $r = .732$ ). As an additional step, using third split, independent t-test showed that congruent brand extension ( $M_{\text{Laptop}} = 5.358$ ) differed significantly between moderately incongruent extension ( $M_{\text{Television}} = 4.070$ ,  $t(157.884) = 25.678$ ,  $p < .0001$ ,  $d = 4.087$ ,  $r = .898$ ), and extremely incongruent brand extension ( $M_{\text{Fragrance}} = 2.695$ ,  $t(173.612) = 37.882$ ,  $p < .0001$ ,  $d = 5.750$ ,  $r = .944$ ). The results also indicated that moderately incongruent brand extension ( $M_{\text{Television}} = 4.070$ ) was significant different from extremely incongruent brand extension ( $M_{\text{Fragrance}} = 2.695$ ,  $t(133.232) = 22.116$ ,  $p < .0001$ ,  $d = 3.832$ ,  $r = .887$ ).

Fourth, covariate brand name favorability was checked for homogeneity of regression assumption. Following Field (2009) suggestion, the author ran a two-way ANCOVA to observe whether interaction between BPC, brand extension congruity, and brand name favorability on brand extension evaluation was nonsignificant. In other words, the assumption was met and covariate can be included in the analysis. Levene's test indicated that the assumption of equality of error variance was not met ( $F(8, 271) = 4.344$ ,  $p < .0001$ ). However, Mardia (1971) argued that  $n = 20$  in the smallest cell should ensure robustness. Overall, the interaction was significant ( $p < .05$ ), an indication that the homogeneity of regression assumption was violated (Field, 2009). Thus, the covariate was not included in further analysis.

Fifth, the author ran a 3 (congruity: congruent vs. moderate incongruent vs. extremely incongruent)  $\times$  2 (BPC: high vs. low) between-subjects ANOVA design on brand extension congruity mean ratings. This was done as an initial check for the interaction

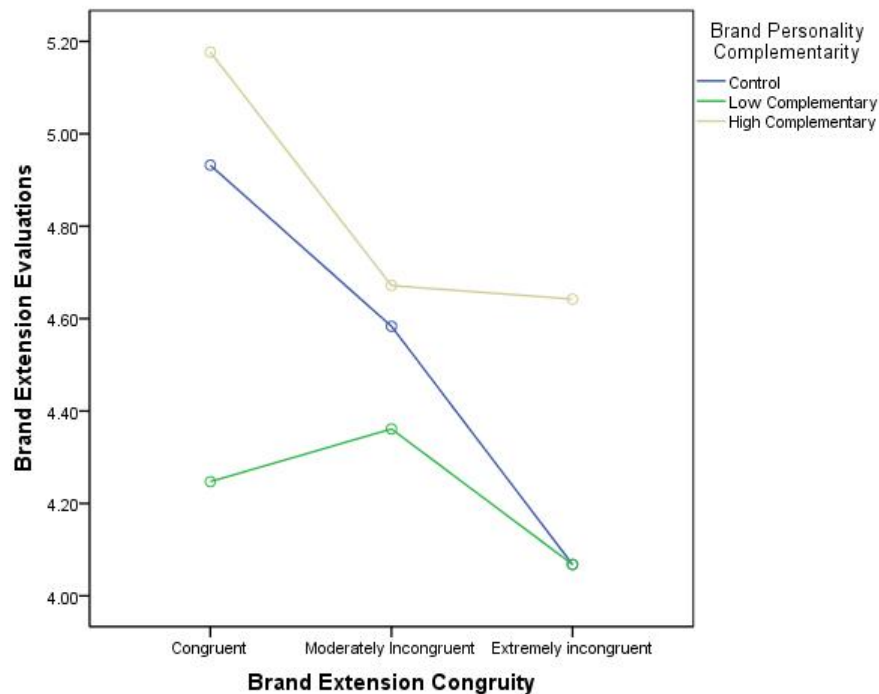
between BPC and brand extension congruity. Results showed significant main effect of congruity ( $F(2, 271) = 312.375, p < .0001, \omega^2 = .697, \eta_p^2 = .662$ ), BPC ( $F(2, 271) = 5.173, p < .005, \omega^2 = .009, \eta_p^2 = .037$ ), and more importantly, the expected interaction between brand extension congruity and BPC ( $F(4, 271) = 5.730, p < .0005, \omega^2 = .020, \eta_p^2 = .078$ ).

#### **6.3.4 Results – BPC Effects on Schema Congruity Theory**

The author first ran a 3 (congruity: congruent vs. moderate incongruent vs extremely incongruent)  $\times$  3 (BPC: control vs. high vs. low) between-subjects design. Levene's test showed that homogeneity of error variances assumption was violated ( $F(8, 271) = 3.174, p < .05$ ). However, ANOVA is known to be robust against normality for cell sample of above 20 (Mardia, 1971). **Table 6.18** summarises the descriptive statistics of each condition.

ANOVA results indicated that the interaction effect between brand extension congruity  $\times$  BPC approached significant ( $F(4, 271) = 1.422, p = .053, \omega^2 = .017, \eta_p^2 = .034$ ) (refer to **Figure 6.11**). The author then ran simple effect analysis to breakdown the two-way interaction (Field, 2009). BPC significantly influenced brand extension evaluations in both congruent ( $F(2, 271) = 11.683, p < .0001, \omega^2 = .065, \eta_p^2 = .079$ ) and extremely incongruent ( $F(2, 271) = 5.930, p < .005, \omega^2 = .030, \eta_p^2 = .042$ ) brand extensions. However, the results were non-significant for moderately incongruent ( $F(2, 271) = 1.341, p = .263, \omega^2 = .002, \eta_p^2 = .010$ ) brand extension.

Figure 6.11 Interaction Effect of BPC and Brand Extension Congruity



Next, following Spiller and colleagues' (2013) recommendation, the author used Johnson-Neyman technique to identify the range of BPC for which the simple effect of the manipulation was significant. Using Hayes's (2013) Process SPSS Macro code, the analysis revealed that there was a significant positive effect of BPC values of  $\geq 3.351$  ( $B_{JN} = .104$ , 95% CI = .000 and .208, SE = .053,  $p = .05$ ), but not for BPC level less than 3.351. The author also ran several interaction contrasts similar to study 2. Contrasts between control and BPC (i.e. the average of high and low ratings) were not significant across all congruity levels ( $ps > .05$ ).<sup>36</sup> Contrasts between control versus low BPC were only significant when brand extension was congruent ( $M_{Control} = 4.932$  vs.  $M_{Low\ BPC} = 4.247$ ;  $F(1, 271) = 10.933$ ,  $p < .0005$ ,  $\omega^2 = .030$ ,  $\eta_p^2 = .039$ ). On the other hand, contrasts between control and high BPC were significant only for extremely incongruent

<sup>36</sup> To control for Type I error,  $\alpha$  value was set at .0167 (.05/3) for all interaction contrasts between BPC  $\times$  brand extension congruity.

brand extensions ( $M_{\text{Control}} = 4.067$  vs.  $M_{\text{High BPC}} = 4.642$ ;  $F(1, 271) = 9.066$ ,  $p < .005$ ,  $\omega^2 = .024$ ,  $\eta_p^2 = .032$ ). Lastly, interaction contrasts between low and high BPC were significant for only congruent ( $M_{\text{Low BPC}} = 4.247$  vs.  $M_{\text{High BPC}} = 5.177$ ;  $F(1, 271) = 22.232$ ,  $p < .0001$ ,  $\omega^2 = .064$ ,  $\eta_p^2 = .076$ ) and extremely incongruent ( $M_{\text{Low BPC}} = 4.067$  vs.  $M_{\text{High BPC}} = 4.642$ ;  $F(1, 271) = 8.271$ ,  $p < .005$ ,  $\omega^2 = .022$ ,  $\eta_p^2 = .030$ ) brand extensions.

Nonetheless, 2 main effects were significant; BPC ( $F(2, 271) = 14.172$ ,  $p < .0001$ ,  $\omega^2 = .080$ ,  $\eta_p^2 = .095$ ), and brand extension congruity ( $F(2, 271) = 10.428$ ,  $p < .0001$ ,  $\omega^2 = .057$ ,  $\eta_p^2 = .071$ ).

### 6.3.5 Complementarity resolution

Similarly, the author expected that complementarity resolution would mediate the relationship between brand extension congruity and brand extension evaluations. The author used Hayes's (2013) Process SPSS Macro code for mediation and moderation analysis. With a sample size of 187 excluding the cases in the control condition, the results indicated that complementarity resolution was a significant mediating variable ( $F(2, 184) = 9.793$ ,  $p < .0001$ ,  $R^2 = .096$ ). Unstandardised indirect effect of complementarity resolution was .030 (95% CI = .002 and .077).<sup>37</sup> The proportion of mediation effect was .159 (95% CI = .001 and .493) which was lower than the recommended cutoff value of .80. Thus this model did not fulfil a full mediated relationship (Kenny, 2013, <http://davidakenny.net/cm/mediate.htm>). Sobel's (1982) value was 1.608 (se = .018,  $p = .108$ ) which showed non-significant partial mediation. Preacher

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<sup>37</sup> Hayes PROCESS SPSS macro calculates confidence intervals (CI) using bias-corrected bootstrap method.

and Kelley's (2011)  $\kappa^2$  was .044 (95% CI = .005 and .111), which indicated a medium effect size. Again, this was consistent with hypothesis H<sub>3</sub>.

Following study 2, the author tested sequential double mediation of congruity resolution and complementarity resolutions on brand extension evaluations. Similarly, complementarity resolution was posited to be a mediator after congruity resolution. Using Hayes (2013) Process SPSS Macro code on a sample size of 187, the sequential double mediation model was significant ( $F(3, 183) = 7.745, p < .0001, R^2 = .113$ ). Unstandardised indirect effect of both congruity and complementarity resolutions was .077 (95% CI = .011 and .157). The proportion of mediation effect was .414 (95% CI = .070 and 1.104), which was lower than the recommended cutoff value of .80. Thus, this model did not fulfil a full-mediated relationship (Kenny, 2013, <http://davidakenny.net/cm/mediate.htm>). Based on the change of  $R^2$  and the proportion of mediation, the analyses showed that double mediation model was a slightly better model than the single mediator model. In summary, results in study 3 replicated those in study 2. Both BPC and complementarity resolution significantly influenced brand extension evaluations.

### **6.3.6 Evaluations of Text- Versus Visual-based Ad Stimuli**

Hypothesis H<sub>2C</sub> predicts that text-based trait stimuli is more informative than those of visual-based thus, evaluations for extremely incongruent extension should be more favourable for study 2. The author combined study 2 and study 3 ( $n = 992$ ), and ran a 3 (congruity: congruent vs. moderate incongruent vs extremely incongruent)  $\times$  3 (BPC: control vs. high vs. low)  $\times$  2 (Study: 2 vs. 3) between-subjects design. Levene's test showed that homogeneity of error variances assumption was violated ( $F(17, 974) = 2.646, p < .0001$ ). However, ANOVA is known to be robust against normality for cell sample of

above 20 (Mardia, 1971). **Table 6.19** summarises the descriptive statistics of all conditions.

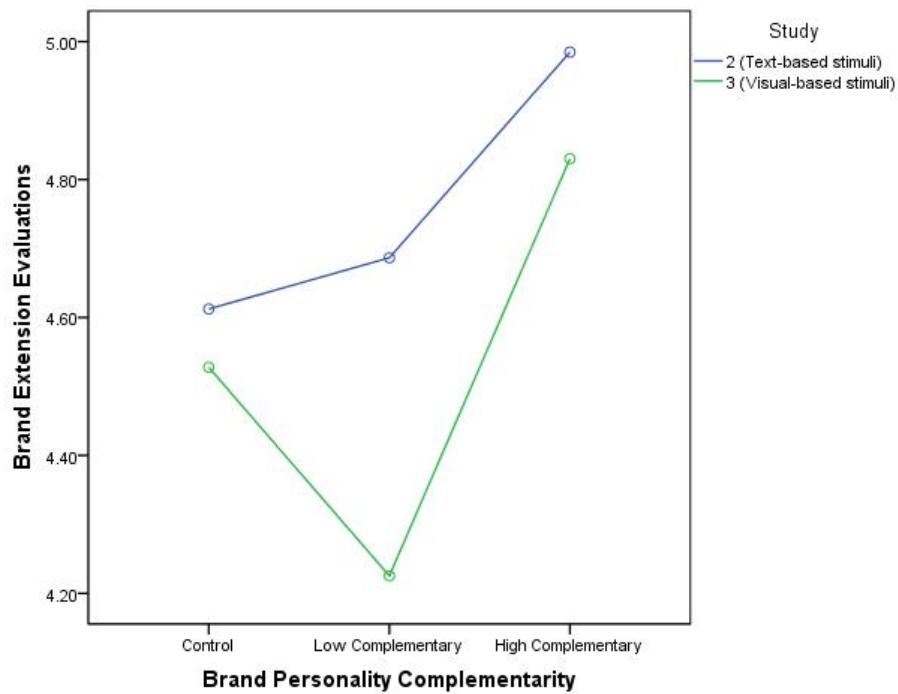
*Table 6.19 Descriptive Summary*

Brand Extension Congruity	Brand Personality Complementarity	Study	Mean	Std. Deviation	N
Congruent	Control	2	5.255	.741	62
		3	4.932	.950	27
	Low Complementary	2	5.057	.760	100
		3	4.247	.748	29
	High Complementary	2	5.219	.641	93
		3	5.177	.909	33
Moderately Incongruent	Control	2	4.605	.969	70
		3	4.583	.924	34
	Low Complementary	2	4.620	.838	92
		3	4.361	.648	30
	High Complementary	2	4.970	.872	106
		3	4.672	.648	34
Extremely Incongruent	Control	2	3.977	.832	65
		3	4.068	.639	32
	Low Complementary	2	4.383	.846	60
		3	4.068	.868	27
	High Complementary	2	4.766	.762	64
		3	4.642	.567	34

ANOVA results indicated a significant main effect of brand extension congruity ( $F(2, 974) = 43.750, p < .0001, \omega^2 = .071, \eta_p^2 = .082$ ), BPC ( $F(2, 974) = 23.618, p < .0001, \omega^2 = .037, \eta_p^2 = .046$ ), and type of ad stimuli ( $F(1, 974) = 16.813, p < .0001, \omega^2 = .013, \eta_p^2 = .017$ ). This was further qualified by two 2-way interactions of BPC  $\times$  brand extension congruity ( $F(4, 974) = 4.575, p < .005, \omega^2 = .012, \eta_p^2 = .018$ ), and BPC  $\times$  type of ad stimuli ( $F(2, 974) = 3.998, p < .051, \omega^2 = .008, \eta_p^2 = .017$ ). Although the 3-way interaction was non-significant ( $p = .14$ ), a significant interaction between BPC and type of ad stimuli demonstrated that hypothesis H<sub>2C</sub> was partially proven. In both studies, high BPC generated highest favourable extension evaluations as compared to low BPC and control conditions ( $ps < .05$ ). There was no difference in extension evaluation between control and low BPC in the text-based ad stimuli. However, extension evaluations felt below those of control condition in visual-based ad stimuli. Specifically, simple effect

analysis indicated this differences ( $M_{\text{Study 2}} = 4.687$  vs.  $M_{\text{Study 3}} = 4.225$ ;  $F(1, 974) = 21.027, p < .0001, \omega^2 = .017, \eta_p^2 = .021$ ) (see **Figure 6.12**). Furthermore, interaction contrast between text-based and visual-based ad stimuli revealed significant effect for low BPC ( $F(1, 986) = 22.495, p < .0001, \omega^2 = .020, \eta_p^2 = .022$ ).

*Figure 6.12 Interaction Effect of BPC and Type of Stimuli*



Next, the author ran Johnson-Neyman technique to identify the range of BPC for which the simple effect of the manipulation was significant (Spiller *et al.*, 2013). Using Hayes's (2013) Process SPSS Macro code, the analysis revealed that there was a significant negative effect of BPC values of  $\geq 3.093$  ( $B_{\text{JN}} = -.154, 95\% \text{ CI} = -.309 \text{ and } .000, \text{ SE} = .079, p = .05$ ).



### 6.3.7 Discussion

Examining BPC with only high involvement products reaffirms its effect on brand extension congruity. The author finds that model without covariate (brand name favourability) is significant. As expected, high BPC in general elicits most favourable evaluations in all brand extension congruity conditions and surpasses the evaluation for both control and low BPC conditions.

However, compared to the results in study 2, the influence of high BPC can only be observed for extremely incongruent extension and not for moderately incongruent extension. In other words, high BPC effect is only influential in extremely incongruent extension. Surprisingly, low BPC generate even worst evaluations to those of control condition. One possible reason is visual information in the ad stimuli provides additional cues other than trait information. When brand extension is incongruent, piecemeal processing is triggered for all available information describing the extension (Fiske *et al*, 1987). Rather than concentrating on trait cues, participant may have been focusing primarily on product category information. Since low BPC effect is less salient, participants may have only considered high BPC effect to overcome categorical incongruity.

Additional analysis by combining study 2 and study 3 revealed that individuals' perception of degree in BPC affect extension evaluations. More, favourable judgments are indicated when text-based ad stimuli were used. Text rather than visual cues seem to have different effect on evaluations regardless of extension congruity levels.

In general, participants in the control condition have better evaluations than those of low BPC, which is the opposite of what was observed in study 2 where low BPC elicits better evaluations than those for control condition. Similar to results in study 2, the evaluations

follow a linear decreasing function (e.g. Maoz & Tybout, 2002). Specifically, when extension is congruent, high BPC and control condition similarly elicit greater evaluations than those of low BPC. In the moderately incongruent condition, there were no significant differences amongst high BPC, low BPC and control condition. In contrast, only high BPC enhances evaluations of extremely incongruent extension, whereas low BPC and control condition similarly do not enhance the evaluations.

One probable explanation is that brand impressions of low BPC through visual cues reduce complementarity influence. One reason is visual information of brand personality is readily imaginable and distinctive, hence providing additional ‘incidental’ (e.g. kind of activities in the ads) features beyond the core brand personality impressions implied (Meyvis *et al.*, 2012). In other words, the choice of visual elements for brand personality impression cues maybe influencing how brand personality impression is formed. Similar brand personality valence and magnitude cued by different visual cues may moderate BPC. For example, MBP dimension of competence cued by a man in a suit running towards the finish line as the winner (cf. please refer to **Figure 6.9** ‘a man in a suit of top of the hill’). This is in line with Poor and colleagues (2013) who argue that ad images of people consuming food i.e. consummatory imagery [vs. non-consummatory] increase perception of taste.

Importantly, the influence of BPC is being supported by the interaction of BPC  $\times$  brand extension congruity. Similar to those results in study 2, this relationship is further mediated by participants’ ability to resolve both incongruity and complementarity. This further lends support to the author’s argument that humans’ ability to resolve trait incongruity as an influential mediator.

## 6.4 Conclusion

In summary, the above 3 main studies have proven that complementarity principle in the social psychology can be applied to brand personality. The author first explores the complementarity principle among brand personality dimensions, then accordingly applies this principle to brand extension context. In study 1, since prior operationalization of BPC is non-existence, the author examines the complementary strength of 6 MBP pairs. Depending on the pairing of MBP dimensions, BPC levels can range from low to high. Even after controlling for; 1) attitudes towards MBP pairs, and 2) participants' personality ratings, different pairs of BPC dimensions significantly affects complementarity ratings. Additionally, although trait dominance is hypothesized, it does not influence BPC ratings. Furthermore, MBP dimensions are viewed as neither dominant nor submissive. The outcome of the first study is the identification of various BPC levels depending on the MBP dimension pairs. However, only two pairs were used to test the effects of BPC on brand extension congruity; for high BPC, youth-competence pair was selected and for low BPC, youth-sincerity pair was selected.

In general, results in study 2 and 3 reveal the significant effect of BPC, which interacted with brand extension congruity, as strong predictors of brand extension evaluations. The author finds that evaluations ratings in study 2 are more favourable than those in study 3. This is consistent with hypothesis H<sub>2C</sub>. The author attributes this difference to how brand personality impressions are formed. In study 2, brand personality impressions are formed by using only brand claims (i.e. text-based ad stimuli). It is argued that brand personality impression formation cued by text is not bounded by particular context (Meyvis *et al.*, 2012). Thus, participants can freely associate meaning to the traits in the brand claims. Since trait information is high in image-provoking ability and readily diagnostic of

behaviours (Tausch *et al.*, 2007), more accurate mental representation of the MBP dimensions maybe observed.

On the other hand, ad stimuli in study 3 are visual-based, which is argued to be evoking imaginable and distinctive visual information (Meyvis *et al.*, 2012). However, the author suspects that type of behaviours and activities that form brand personality impressions may have been moderating BPC effect. Such argument is parallel to Poor and colleagues' (2013) arguments that find significant difference in taste perceptions using different consummatory visuals. Another probable reason is that activities or behaviours that are in the visual ad stimuli may have contributed to activation of other schemas, which may have attenuated BPC effects.

In the next chapter, the author will further discuss the theoretical and managerial contribution of the current studies in details. The following chapters will start with MBP scale development and its contributions, which is then followed by discussion on BPC's and its contributions.

# CHAPTER 7: Discussion of Findings and Contributions

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## 7.1 Introduction

The main contribution of this thesis is twofold; 1) to adopt the BPC principle to brand personality concept and establish its operationalization, and 2) to investigate the role of BPC within schema congruity theory. To address these two main theoretical contributions, this thesis is divided into three main parts. The first part involves the investigation on the degree of which the perception of brand personality dimensions and its traits are universal or culturally specific. In particular, the author examines if other existing brand personality structures are applicable to the Malaysian context, or does Malaysia has its own unique brand personality structure.

The second part of the study entails the adoption of the complementarity principle to brand personality concept. The complementarity principle is grounded from the personality trait, assortative mating and interpersonal theories. It has been used to explain how certain personality trait matching can have a positive effect on personal (Hochwalder, 1995) and relationship satisfaction (McCrae & Costa, 1996). The proponent of brand personality concept posits that brand personality can be the base for companies to differentiate their products from competitors and used by consumers to evaluate products (Aaker, 1997) and new product extension (Bhat & Reddy, 2001). The author extends the proposition made by Monga and Lau-Gesk (2007) who posit that complementary brand personality dimensions has higher probability on eliciting positive brand extension evaluations as oppose to similar brand personality dimension pairs. Therefore, the second part of the study revolves around the operationalization of brand personality complementarity (BPC) principle.

The final part of the study is the examination of the BPC effects on schema congruity theory especially on extremely incongruent extension. The author proposes a conceptual model to illustrate the relationship their relationship with extension evaluation. The main contribution of the conceptual framework is to expand the predictive value of schema congruity theory by adopting BPC principle. One major gap in the schema congruity theory is its inability to explain how certain extremely incongruent brand extension can still attain favourable evaluations (Jhang *et al.*, 2012). Recent study by Jhang and colleagues (2012) addresses this gap by looking at how individuals' cognitive flexibility facilitates their ability to make sense of extremely incongruent new product. Findings from a study by Monga and Lau-Gesk (2007) however strongly suggest that the extension evaluation can be more favourable if brand personalities of both parent brand and extension are complementary. Therefore, the BPC principle builds on Monga and Lau-Gesk's (2007) findings, and addresses the gap in Jhang *et al.*'s (2012) study.

The first three sections in this chapter are based on the abovementioned parts of the thesis. The following sections will be addressing all the theoretical, methodological and practical contributions of this thesis. This is then followed by section focusing on the limitations of the study, and conclusion.

## **7.2 Malaysian Brand Personality Scale**

Aaker and colleagues (2001) argue that because brands have the ability to communicate cultural meaning which resides in brand personalities to provide value-expressive and symbolic expression, the formation of brand personality impression will differ from one culture to another. Researchers highlight several limitations on the brand personality scale developed by Aaker (1997). The reasons are; 1) its loose definition of brand personality (Azoulay & Kapferer, 2003), 2) non-replicable across different cultures (Aaker *et al.*,

2003; Azoulay & Kapferer, 2003; Geuens *et al.*, 2009), and 3) non-generalizability of factor structure (Austin *et al.*, 2003; Geuens *et al.*, 2009). In this thesis, the author addresses only the last two limitations.

The two limitations are closely intertwined as the inability of the brand personality scale to be replicated across different cultures limits the generalizability of the scale. Studies in the brand personality literature have investigated whether some brand personality dimensions and its traits are universal or culturally embedded. Many studies have examined how brand personality dimensions and traits affect other variables (e.g. Aaker *et al.*, 2004). However, it is very important for a researcher to address the issue of universal versus cultural-specific brand personality dimensions and traits prior to testing its relationship with other variables in a conceptual framework. Some researchers find that some dimensions and traits are generalizable (e.g. Geuens *et al.*, 2009). Brand personality operates at a highly abstract level, thus the items that represents a factor are interchangeable (see Bao & Sweeney, 2009), and it will not add new information to the corresponding factor (Wherry, 1984). Nevertheless, Geuens and colleagues (2009) developed a universal brand personality scale that mirrors McCrae and Costa's (1997) Five Factor Model (FFM), and Goldberg's (1992) Big Five factor structure in human personality. They claim that their brand personality scale does not contain non-demographic items and further argue that researchers need refer back to the foundation of human personality. By doing so, the brand personality scale will be more generalizable and replicable to various cultures. In particular, their scale exhibits cross cultural validity between the U.S and the Europeans consumers. They further propagate to refer back to human personality theory as personality traits are 'relatively enduring styles of thinking, feeling and acting' (McCrae & Costa, 1997; p. 509), in which the Big Five provides a complete description of personality (e.g. John & Srivastava, 1999).

Despite the efforts of finding the generalizable brand personality dimensions and traits, majority studies uncover variations of unique brand personality scales based on different cultures and contexts, for example; 1) country (Aaker *et al.*, 2001; Bosnjak *et al.*, 2007; Rojas-Méndez *et al.*, 2013; Sung & Tinkham, 2005), 2) product-specific (Valette-Florence & De Barnier, 2013), 3) store (d'Astous & Lévesque, 2003; Willems *et al.*, 2012), 4) organisation (Chun & Davies, 2006; Slaughter *et al.*, 2004), 5) destination (Hosany *et al.*, 2006). Aaker and colleagues (2001) argue that the formation of brand personality impressions differ from one culture to another because brands have the ability to communicate cultural meaning, which resides in brand personalities to provide value-expressive and symbolic expressions.

In order to address the issue of generalizability and cultural-specificity, the author employs the scale development process as recommended by several researchers (e.g. Aaker *et al.*, 2001; Geuens *et al.*, 2009; Hinkin, 1998; 1995). Geuens and colleagues (2009) successfully address some of the limitations through rigorous methodological steps taken in their scale development process. Following their footsteps, the author also ensures that the newly developed Malaysian Brand Personality (MBP) scale covers all methodologies employed to attain higher level of rigor. This is important as the development of the brand personality complementarity (BPC) principle is highly dependent on the reliability and validity of MBP scale.

The scale development process is critical to ensure that the brand personality dimensions and traits used in addressing the main theoretical contribution are relevant, reliable and valid (see Hinkin, 1995). The scale development process is divided into three phase, 1) item generation, 2) scale development and 3) scale evaluations. Each phase is equally important as it all enhances the relevancy, reliability and validity of the MBP scale.



One key consideration in phase 1 is to ensure that the second half of the thesis will be using reliable brand personality scale. To do so, the author adopts the combined emic-etic approach to scale development (e.g. Aaker *et al.*, 2001). The first step is to conduct an extensive literature review of all the articles relating to brand personality (e.g. Geuens *et al.*, 2009; Slaughter *et al.*, 2004) to ensure that all traits from top-tier journal articles are included. This results in 188 brand personality traits and they serve as the initial trait pool.

The next step is to uncover cultural-specific traits in Malaysia. The author adopts the free association task method to identify indigenous brand personality traits in Malaysian cultural context (see Aaker, 1997; Aaker *et al.*, 2001). The free association task reveals 169 indigenous traits. They are refined through the removal of items that are redundant, ambiguous, and irrelevant (e.g. those that describe demographic profile rather than personality traits) (see Azoulay & Kapferer, 2003). The author removes a total of 80 traits, and the remaining 94 items are unique to the Malaysia cultural context.

Next, these 94 items are added into the existing trait pool of 188 traits from existing literature and are cross-referenced. From 94 items, 42 are similar to the existing literature thus, leaving 52 uniquely Malaysian traits. At this stage, this is where this thesis differs from those by Geuens and colleagues (2009). In their study, Geuens and colleagues (2009) only include brand personality traits from Aaker (1997) and none of the other traits from other brand personality literature. They instead include trait items from Costa and McCrae's (1992) Big Five since they argue that many brand personality scale development studies have moved away from the human personality trait foundation by adopting Aaker's loose definition of brand personality as the basis of scale development (see Caprara *et al.*, 2001). However, recently there have been counter arguments

highlighting that not all human personality traits are applicable to brands (e.g. Huang *et al.*, 2012). In order to ensure the rigor of the scale development process for this thesis, the author has decided to include all the items from every study on brand personality into the scale development process (see Slaughter *et al.*, 2004) and cross-referenced with 94 indigenous traits. In total, the author then examines 240 trait items for content validity (see Aaker 1997). In this step, the author removes trait items that do not perform well (mean score less than 5.50), by which the balance of 96 personality traits are to be further examined in the scale development phase.

In the scale development phase, the author uses exploratory factor analysis (EFA) and Horn's (1965) parallel analysis (PA) (e.g. Schmitt, 2011) to identify the underlying latent factor of MBP with the remaining 96 trait items. Initial results reveal MBP as a 6-factor structure comprises 90 trait items to be used in the scale validation phase.

In the scale validation phase, 90 trait items are evaluated using a totally different sample. The main purpose of this stage is to test of the reliability and validity (convergent and discriminant validity) MBP scale. The refinement of the scale led to reduction of the traits to 22 traits and identification of 4 brand personality dimensions; 1) sophistication, 2) sincerity, 3) competence and 4) youth. Majority of the traits in the scale are from previously developed western (10 traits), and Japanese (5 traits) brand personality scales while 7 traits are indigenous.

The author maintains the same 3 dimensions' names from Aaker's (1997) study because; 1) most of the traits in the dimensions are similar to Aaker's (1997) dimensions, 2) the semantic meaning of the higher-order trait dimensions is reflected in the corresponding items. Therefore, the three dimensions are; sophistication, sincerity and competence. The fourth dimension is label youth. The author does not label it excitement (e.g. 1997)

because the excitement dimension does not discriminate with other MBP dimensions, hence is removed though during scale validation process. Exciting is the only excitement item that loads into the youth dimension.

The author discovers that using emic-etic approach, certain brand personality dimensions and traits are universal, thus further supporting the evidence of brand personality dimensions and traits re-emerges in other cultures and contexts (e.g. Aaker *et al.*, 2001; Geuens *et al.*, 2009; Valette-Florence & De Barnier, 2013). However, this thesis also discovers indigenous traits and dimension in Malaysian cultural context, thus agreeing with Aaker and colleagues' (2001) arguments that some traits and dimensions are culturally-bound. This is expected as MPB operates at a highly abstract level, thus the items (traits) that represent a dimension are interchangeable (see Bao & Sweeney, 2009), and will not add new information to the corresponding factor (Wherry, 1984).

The author finds that the MBP scale consists of both etic (i.e. universal) and emic (i.e. cultural-specific) traits. It can be concluded that there are certain traits within the brand personality that are consistent across different cultures whilst other tend to be more specific towards a particular culture. One reason is that brands are symbols that carry and communicate cultural meaning (Douglas & Isherwood, 1979; McCracken, 1986; Richins, 1994). The phenomenon is even amplified when well-known brands become strongly associated with the country of its origin, for example, Samsung a brand that signals Korea's competencies in high-end consumer electronics. Evidently, most of the brands that participants recall during brand elicitation exercise (free task association) are global brands (please refer to chapter 4.2.1). These brands are strong exemplars for each of the listed product category, thus it is possible that participants strongly identify with the salient traits of those brands during the session.

Another reason is that although both Western and East Asian cultures may exhibit different values, these cultures may have similar characteristics that can be personified through brand personality dimensions (Sung & Tinkham, 2005).<sup>38</sup> In other words, some brand personality dimensions are consistent across culture although their trait items may show some variability. As a result, some culture-specific brand personality scales in the literature are represented by both culture-specific emic dimensions, and one or several etic dimensions of sophistication, sincerity, and excitement (see Aaker *et al.*, 2001; Bosnjak *et al.*, 2007; d'Astous & Lévesque, 2003; Sung & Tinkham, 2005; Willems *et al.*, 2012).

The findings are also consistent with several researchers' arguments that some Big Five factors (i.e. dimensions) could not be replicated for brands and that not all traits relevant to human personalities can be transferable to brands (Bao & Sweeney, 2009; Caprara *et al.*, 2001; Huang *et al.*, 2012; Milas & Mlačić's, 2007).<sup>39</sup> One possible reason is that trait information is processed differently for humans and brands, such that cognitive region responsible to process human traits does not process brand personality information (Yoon *et al.*, 2006). Thus, the formation for human traits differs from those of brands (Aaker, 1997). Another reason is human personality traits are inferred based on the person's behaviours, physical characteristics, attitudes and beliefs (Park, 1986). In contrast, brand personality traits are formed and influenced by any direct and indirect contact that a consumer has with the brand (Plummer, 1984). Specifically, brand personality is formed indirectly through product-related attributes, product category assimilation, brand name,

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<sup>38</sup> McCrae *et al.* (2005) argue that geographically and historically related cultures have higher tendency to exhibit similar human personality factors. Malaysia was a British colony since the early 19<sup>th</sup> century, and only received its independence in 1957. Thus, it is not surprising that some Western cultural symbols, values, attitudes, and norms are acculturated in the nation's cultures and practices.

<sup>39</sup> A recent study by Huang *et al.* (2012) revealed that brand personality can be described using Saucier's (1994) 40-item Big Five mini-markers. However, this was made possible after half of the items were deleted during item purification process using CFA. Furthermore, discriminant validity was not tested among the dimensions. There are also 3 items with factor loadings of .50 and below.

symbol or logo, advertising style, price, and distribution channel (Batra *et al.*, 1993). Another way a brand directly forms its personality is via brand endorser and user imagery associated with the brand (Aaker, 1997).

Therefore, this thesis uncovers different brand personality traits than those uncovered by Geuens and colleagues (2009). Despite their rigorous effort, the construction of their scale should have included all the previous scales that were developed prior to their study, there were 15 brand personality scales highlighted in their literature review.<sup>40</sup> They only incorporate Aaker (1997) brand personality scale and 3 other human personality scales (Costa & McCrae, 1992; Mervielde, 1992; Saucier, 1994) in their study. Due to the limited inclusion of other existing brand personality scales, it could be one of the reasons why their trait items do not emerge in MBP scale.

In developing MBP scale, the decision to include all traits from previous 11 brand personality scales of top journals is essential as suggested by Slaughter and colleagues (2004). This reduces weakness in the item generation phase since the initial item pool comprises all reliable and valid items from previous studies. This is the etic approach of data collection. Adoption of etic approach ensures generalizability of traits developed by other studies as they go through a battery of psychometric procedures. Additionally, the author also adopts the emic approach to further complement and strengthen the item generation stage by generating culture-specific trait descriptors. It ensures that all culturally-embedded trait descriptors are captured and delineated from the universal traits (Cheung *et al.*, 2011).<sup>41</sup> Moreover, human personality psychologists in cross-cultural

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<sup>40</sup> Later studies that developed brand personality scale either failed to incorporate previous developed scales (e.g. Caprara *et al.*, 2001; Rojas-Méndez *et al.*, 2013), or only included Aaker's (1997) scale in the item generation phase (e.g. d'Astous & Lévesque, 2003; Bosnjak *et al.*, 2007; Geuens *et al.*, 2009; Sung & Tinkham, 2005; Venable *et al.*, 2005).

<sup>41</sup> The combined etic-emic approach taken by Aaker *et al.* (2001) versus Slaughter *et al.* (2004) is slightly different. Aaker and colleagues (2001) combined the U.S scale when the respective culture-specific scale showed strong reliability. Thus, they pooled together traits from both culture-specific and the U.S brand

studies have consistently argued for the combined perspective to expand the understanding of the universality of Western personality constructs and identification of indigenous traits to provide ‘a richer and more integrated and balanced view’ (see Cheung *et al.*, 2011; Hui & Trendis, 1985). Berry and colleagues (2002) further argue that although most psychological constructs are universal, their manifestation may differ across cultures. Thus, it is empirically important to adopt this perspective in area of brand personality. To date, there are notably few studies that develop brand personality adopting this perspective (see e.g. Aaker *et al.*, 2001; d’Astous & Lévesque, 2003; Geuens *et al.*, 2009; Slaughter *et al.*, 2004; Sung & Tinkham, 2005; Venable *et al.*, 2005). Therefore it is important that the author address each of the brand personality dimensions individually. The discussions will then be able to lead into the development of the brand personality complementarity concept.

### **7.2.1 MBP Dimensions and Traits**

Following stringent scale development process (Hinkin 1995; 1998; Ramani and Kumar, 2008), MBP scale is reflected by 4 dimensions which are sophistication (6 items), sincerity (4 items), competence (6 items), and youth (6 items (refer to **Figure 17** in Chapter 4.5). The 4-factor MBP scale has shown significant reliabilities and validities, although it deviates slightly from the 5-factor solution of other brand personality scales (e.g. Geuens *et al.*, 2009; Aaker *et al.*, 2001; Valette-Florence & De Barnier, 2013). However, there are other studies which identify 3-factor (e.g. Hosany *et al.*, 2006; Rojas-Méndez *et al.*, 2013), 4-factor (e.g. Bosnjak *et al.*, 2007; Venable *et al.*, 2005), 6-factor (e.g. d’Astous & Boujbel, 2007; Madrigal & Boush, 2008), and 8-factor (e.g. Sung &

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personality scales, then removed duplication and tested the remaining items for factor structure, and convergent and discriminant validities. On the other hand, Slaughter and colleagues combined all previous traits together with culturally generated traits in the initial item pool. Then, they followed stringent scale development process. For this thesis, the author followed the steps taken by Slaughter *et al.* (2004) because 1) this would eliminate weak trait descriptors during content analysis, and 2) it was not the objective of the study to compare MBP structure with Aaker’s (1997) U.S. brand personality scale.

Tinkham, 2005) solutions. Such variations are expected as personality researchers have found that human personality can be represented by 3 to more than 5 factors (Goldberg, 1993).

Previous research has shown that brand personality relates to brands (Aaker, 1997; Johar *et al.*, 2005; Mathur *et al.*, 2012; Puzakova *et al.*, 2013), people (Batra & Homer, 2004), and situation (Aaker, 1999). The MBP is no exception. It shows strong reliability to measure both brand and human personality dispositions. By using factor analytic approach to scale development (i.e. EFA, PA, CFA, and SEM), the MBP scale consists of 4 first-order factors that represent a second-order MBP construct. Each dimension scale is a reliable and valid scale that achieved convergent, discriminant, and nomological validities. Every dimension can be used independently to measure 4 corresponding brand personality dimensions and have been shown in this thesis to predict consumers' behaviours (as shown in Chapter 4.4.9). The following sub-sections will discuss each MBP dimensions.

#### **7.2.1.1 Sophistication Dimension**

In Malaysia, sophistication is reflected by 6 items – luxurious, elite, stylish, elegant, proud, and charming. With the exception of charming which is from Aaker's (1997) study, the rest of the items are unique to Malaysian consumers. Obviously, Aaker's (1997) sophistication revolves around the ideals of a charming person having social status, looking good, and being glamorous and smooth. Similarly for typical Malaysian consumer, a sophisticated brand also portrays the societal ideals of being elite, stylish and charming. The difference is Malaysians consume sophisticated brands to proudly signal their life and social achievements. This is consistent with Han and colleagues' (2010) argument which states that the need of showing status is heightened when a person wears

a brand that prominently show its brand name or symbol. The propensity of buying luxury goods to signal wealth and social status is further intensified as a person's income increases (Dubois & Duquesne, 1993).<sup>42</sup> The act luxury splurges will signify a person's capacity to separate and elevate him- or herself from the have-nots.

The author maintains the label of sophistication dimension. Sophistication label is generally adopted by most researchers (see d'Astous & Lévesque, 2003; Sung & Tinkham, 2005; Valette-Florence & De Barnier, 2013; Willems *et al* 2012), although few researchers label sophistication dimension as chic (Chun & Davies, 2006), charm (Valette-Florence & De Barnier, 2013), and style (Slaughter *et al.*, 2004).

Consistent with most previous studies, sophistication is one of the dimensions that emerge from the scale development process. Studies which are done outside of the US such as in Spain (Aaker *et al.*, 2001), Japan (Aaker *et al.*, 2001), Canada (d'Astous & Lévesque, 2003), and Korea (Sung & Tinkham, 2005) reveal that the dimension of sophistication is highly descriptive of brands used in those studies. Sophistication represents aspirational associations desired by consumers (Aaker, 1997), and is strongly associated with the affective aspect of a brand characteristics Huang (2012). Consensus has emerged that symbolic and hedonic brands are more associated with sophistication dimension (e.g. Ang & Lim, 2006). Symbolic brands are carriers of important social meanings that are often used to enhance one's image in a social context (Solomon, 1983). As such, the ascribed meanings are often helpful in aiding the consumers who have lower self-esteem to gain desirable personality traits (Swaminathan *et al.*, 2009). These brands

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<sup>42</sup> Malaysia's Department of Statistics has recently revealed that the annual growth rate of the average monthly household income of Malaysia was 7.2% (2009 to 2012), as compared to 4.4% for the period of 2007 to 2009. The average monthly household incomes are RM5,000 in 2012, RM4,025 in 2009 and RM3,686 in 2007.



are mostly luxury and fashion brands (see DeRosia, 2011; Monga & Lau-Gesk, 2007; Willems *et al.*, 2012).

On the other hand, a person's sophisticated self can be enhanced when symbolic brands are consumed. Several studies observe a transfer effect of the salient brand personality trait to consumers' own personality perception (e.g. Fennis *et al.*, 2007; Park & John, 2010). For example, consumers perceive themselves to be more good-looking, feminine and glamorous after using a Victoria's Secret shopping bag (Park & John, 2010). Thus, it is possible to emulate this effect by cueing other brand personality dimensions. These findings are consistent with the previous works in impression formation (see Johar *et al.*, 2005; Srull & Wyer, 1980). However, the 'rubbing off' effect is dependent whether the consumers perceive themselves more positively after using the brand with appealing personality, such that this effect only occurs to consumers; 1) who strongly believe that their personality are fixed and cannot be improved through their own direct effort (Park & John, 2010), or 2) who viewed themselves having complex, multifaceted self (Monga & Lau-Gesk, 2007).<sup>43</sup> Another important factor is the 'singularity' of the brand personality dimension (Malär *et al.*, 2012). When a brand is salient on all of its brand personality dimensions, the brand personality profile is multifaceted and complex, thus having low singularity. Malär and colleagues (2012) further argue that when a brand is salient in one brand personality dimension (i.e. highly singular), the brand will create a lasting and strong impression, thus reducing the consumers' confusion on the intended brand personality.

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<sup>43</sup> Those who believe their personality is fixed [vs. malleable] endorsed the entity [vs. incremental] theory. These are sub-categories under the implicit self-theories (see Dweck 2000; Dweck and Leggett. 1988 for detailed discussions). Another competing self-theory is the complex self which views self as multifaceted, complex and dynamic. Thus, when self is multifaceted, a brand with multiple salient brand personalities will be evaluated more positively (Monga & Lau-Gesk, 2007). Please refer to Linville (1987) and Triandis (1989) for detailed discussions on complex self.

The predictive value of sophistication has been evaluated in several studies. In a study, Davies (2008) who labels sophistication dimension as chic and excitement as enterprise reveals that in conjunction with enterprise, chic significantly predicts perceived differentiation. Specifically, chic alone is a significant predictor for both perceived differentiation (Chun and Davies, 2006; Davies, 2008) and loyalty (Davies, 2008). In another study, Bao and Sweeney (2009) add that besides Aaker's (1997) competence, sophistication significantly predicts preference, trust, willingness to pay price premium, and attitude. However, the results are not surprising since the authors only use alcoholic beverages and especially cars which are known stimuli to signal prestige and luxury (see Monga & John, 2010). While some studies focus on predictive ability of sophistication, other researchers have used sophistication as stimuli in impression formation study (e.g. Wentzel, 2009), measurement of brand personality fit (Batra *et al.*, 2010; Chien *et al.*, 2011; Lau & Phau, 2007; Malär *et al.*, 2012), and as decision factor in holistic package design (Orth & Malkewitz, 2008). In the next sub-section, the author will discuss sincerity dimension.

#### **7.2.1.2 Sincerity Dimension**

Another dimension of MBP is sincerity which is reflected by 4 traits which are sincere, flexible, casual, and good-natured. The MBP's sincerity dimension has significantly lesser items than those of Aaker's (1997). Out of 4 traits, flexible and casual are items generated from this thesis, whereas the remaining two items (i.e. sincere and good-natured) originate from Aaker's (1997) study. It can be inferred that MBP sincerity trait composition reflects the laid-back and informal mannerism of typical Malaysians. It is argued that sincerity corresponds to Big Five's agreeableness, a trait that captures warmth, acceptance (Aaker, 1997) and garners relationship advantages (Aaker *et al.*, 2004). Trait psychologists mostly agree that agreeableness includes traits that foster

congenial relationships with others (e.g. Graziano & Eisenberg, 1997) and willingness to accommodate others' wishes (Caspi *et al.*, 2005). These traits positively relate to relationship strength (Buss, 1991; Robins *et al.*, 2000), and spark inferences of partner trustworthiness and dependability (Aaker, 1999).

Nonetheless, findings from previous studies are consistent with traits that represent sincerity although most of them label the dimension differently – amicableness (Rojas-Méndez *et al.*, 2013), responsibility (Geuens *et al.*, 2009), agreeableness (Chun & Davies, 2006), likeableness (Sung & Tinkham, 2005), boy scout (Slaughter *et al.*, 2004), and genuineness (d'Astous & Lévesque, 2003). Despite variations in naming sincerity dimension, the author still maintains the dimension's original name although its trait composition is slightly different. MBP sincerity dimension has shown strong reliabilities and predictive validity in the factor analytic study (refer to Chapter 4.4.9.4) and in the experimental studies (refer to Chapters 5.2.3 & 5.3.3).

In many studies, sincerity is able to predict consumer responses. Aaker and colleagues (2004) reveal that a sincere brand encourages stronger self-brand connection analogous to close friendship, unless an act of transgression such as service failure happens. The disruption to the self-brand relationship is non-reparable for sincere brand despite subsequent service recovery attempts. A recent study by Folse *et al.* (2013) also supports the effect of transgression on sincere brand in which a sincere brand is evaluated poorly when negative publicity information strongly aligns with sincerity traits. This is because negative trait-relevant information reduces brand trust, which has been known to be a strong effect of sincere brand (Aaker *et al.*, 2004; Sung & Kim, 2010). Self-brand relationship requires strong emotional investment such as trust from the consumer. Once the brand trust is broken, the self-brand relationship is totally disbanded. Furthermore,

the risk of pursuing deep consumer relationship based on trust is more prone to negative influences have been highlighted by Grayson and Ambler (1999). Another reason is that consumers have lower tolerance level for transgression when self-brand relationship is built with sincere brand. It is probably beyond customers' expectation that a sincere brand would be breaking the trust earned. Such explanations resonate with issues in human interpersonal relationship conflicts. Although sincere brand is trustworthy, attachment to such brand is also dependent on a person's attachment style. Sincere brand is found to create a more secure brand attachment for highly anxious but low avoidant persons (Swaminathan *et al.*, 2009). This is because they leverage on sincere brand to signal themselves as desirable individuals (Swaminathan *et al.*, 2009) who are interested in pursuing intimate and close relationships with them (Collins & Read, 1990; Hazan & Shaver, 1987).

#### **7.2.1.3 Competence Dimension**

The MBP dimension of competence is reflected by 6 traits. Two emic trait items are champion and productive. The remaining 4 traits are etic items - successful (Aaker, 1997), achievement-oriented (Chun & Davies, 2006), competitive and productive (Caprara *et al.*, 2001). MBP competence dimension is reflected by traits that signify competitive state, and propensity to strive for the best. This mirrors achievement motivation of conscientiousness – a tendency to strive for higher standards and pursue goals over time in a persistent and determined manner (Halverson *et al.*, 2003). Aaker (1997) argues that competence corresponds to Big Five's conscientiousness which encapsulates responsibility, dependability and security. Human personality psychologists agree that high conscientiousness individuals are responsible, attentive, careful, persistent, orderly and planful (Caspi *et al.*, 2005). Yet, another consensus equates

conscientiousness with self-control or constraint, an opposite tendency of being incautious, careless and impulsive (Halverson *et al.*, 2003; Kochanska *et al.*, 2000).

Although few studies label this dimension as competence (e.g. Sung & Tinkham, 2005), other studies label this dimension as conscientiousness (e.g. Bosnjak *et al.*, 2007; Geuens *et al.*, 2009), dominance (Slaughter *et al.*, 2004), solidity (d'Astous & Lévesque, 2003). Regardless of the various labels, the author maintains similar dimension label.

There are many studies which use competence dimension to predict consumer response. A competent brand has higher immunity towards publicity that communicate negative competent trait valence, as compared to a sincere brand that faces publicity which communicate negative sincere trait valence (Folse *et al.*, 2013). In other words, while matching of personality between the brand and consumers boosts evaluations, any negative new information regarding the brand personality hurt brand attitude, brand trusts and willingness to pay price premium (Folse *et al.*, 2013). These results are aligned with the findings from the study of Aaker *et al.* (2004) where sincere brand rather than exciting brand hurts the most in the act of transgressions. Competence is also argued to predict brand trust since it is related to consumers' perceptions of brand knowledge, expertise, and performance to complete a job and satisfy the consumer needs (Coulter & Coulter, 2002; Sung & Kim, 2010)

#### **7.2.1.4 Youth Dimension**

The stringent scale development process adopted ensures that weak trait items and dimensions are removed. One of the deleted dimensions is excitement in which the only remaining item (i.e. exciting) is reflected into youth dimension after another EFA. In the scale development phase, EFA identified two factors, labelled excitement and youth. A total of 20 items represent these 2 dimensions (please refer to **Table 4.12** in chapter

4.3.2). Further examination of these 20 traits reveals similarities of traits between these 2 dimensions. With such large amount of items to a dimension, it is not probable that sub-factors emerge. Labelling of youth dimension is supported by 2 reasons – 1) only one exciting trait survives the scale development process, and 2) excitement is built around qualities of energy and youthfulness (Aaker, 1997).

In general, the traits in the MBP youth dimension are traits that represent excitement which Aaker and colleagues (2001) argue it as one of the dimensions that capture relatively basic human and brand tendencies. The final 6 items of youth are youthful, exciting, outgoing, positive, enjoyable, and happy. In personality literature, excitement is akin to Big Five extraversion (Aaker, 1997). Personality researchers agree that there are 3 possible central features of an extraverted individuals: the tendency to experience frequent positive moods (Fleeson *et al.*, 2002), sensitivity to potential rewards (Lucas *et al.*, 2000), and the tendency to evoke and enjoy social attention (Ashton *et al.*, 2002).

In the brand personality literature, excitement dimension is known to significantly influence brand affect evaluation since it is more closely associated with the affective aspect of brand characteristics (Sung & Kim, 2010). Exciting brands show signs of reinvigoration in the aftermath of transgression behaviours (e.g. service failure). Moreover, adopting the attachment model (Bartholomew and Horowitz, 1991), individuals who are both highly anxious and avoidant attached strongly to exciting brands since they help enhance individuals' ideal self-image and to be attractive (Swaminathan *et al.*, 2009).

### 7.2.2 MBP as Second Higher-Order Construct

Some scale development literature have included another layer of analysis, where all first higher-order factors are tested for a second higher-order factor (see Ramani & Kumar, 2008). A second higher-order construct is a multidimensional construct that has a higher abstraction level than its dimension (Cheung, 2008). The analysis of the structural development of the scale entails the identification if the brand personality dimensions actually represent a second higher-order construct (brand personality). Similarly, recent development in Big Five indicate two second higher-order representation of the five factors labelled different by different researchers;  $\alpha$  and  $\beta$  (Digman, 1997), or substance and artifact (McCrae *et al.*, 2008), or stability and plasticity (Change *et al.*, 2011; DeYoung *et al.*, 2002).

Recent studies in brand personality scale development also demonstrate the existence of second higher-order construct (e.g. Brakus *et al.*, 2009; Rojas-Méndez *et al.*, 2013; Valette-Florence *et al.*, 2011). The author conducted the second higher-order test using CFA to identify if the 4 brand personality dimensions can be represented by a second higher-order construct. The second higher-order model demonstrates better fit statistics as compared to first higher-order model (e.g. Ramani & Kumar, 2008). The second higher-order construct is called the Malaysia Brand Personality (MBP) construct. This construct is reflected by 4 dimensions; sophistication, sincerity, competence, and youth.

Once the second higher-order has been determined, the MBP should be tested for criterion-related or nomological validity (Hinkin, 1995). To achieve nomological validity, the newly developed MBP scale has to demonstrate predictive validity. Therefore, the study analyses the relationship between MBP, self-brand connection, and purchase intention. The structural model demonstrates that it achieves good fit statistics, and

proves the relationship between MBP and purchase intention mediated by self-brand connection. This conceptualisation will enable parsimonious model when MBP is included into structural equation models in future studies. The rigorous development of the MBP scale is a very important step. It serves as the basis for the operationalization of the brand personality complementarity (BPC) principle. The next section will discuss on BPC principle building on from MBP scale development.

### **7.3 Brand Personality Complementarity (BPC)**

This thesis establishes the BPC principle, a concept adopted from the personality and social psychology literature. The complementarity principle, a major determinant factor in assortative mating and interpersonal theories explains how dissimilar but yet complementary traits between couple can result in more positive relationship outcomes (e.g. Dyrenforth *et al.*, 2010; Luo & Klohnen, 2005; Zentner, 2005). Complementarity fit occurs when the characteristics or personality traits which are dissimilar are able to satisfy the need and desires of the persona evaluating the relationship (Kristof, 1996). The evaluation is directed at the desire to poses characteristics, which the individual perceives as necessary for his/her self-concept or his/her social and general life (Cattell & Nesselrode, 1967).

In the brand personality literature, a few studies have investigated the influence of brand personality fit (i.e. similarity) (see Batra *et al.*, 2010; Chien *et al.*, 2011; Lau & Phau, 2007; Malär *et al.*, 2012; Monga and Lau-Gesk, 2007; Yang *et al.*, 2014) and brand personality imagery fit (Batra *et al.*, 2010). Insofar, two studies which investigate the influence of (dis)similar brand personality pairs, have found that two dissimilar traits predict better evaluations. The first study is by Monga and Lau-Gesk (2007). They investigate the effects of two different brand personality impressions on two different



brands that are collaborating with each other. They find that the cobranding generates more favourable evaluations for dissimilar brand personalities than similar brand personalities. The reason is these dissimilar brand personalities (i.e. sophistication and excitement are presumably to be complementary to each other. They however did not test for the complementarity effects between the two dimensions. In the second study, Yang and colleagues (2014) indicate that two different brand personalities enhance purchase interest of a pair of unrelated product category. The pair of unrelated products is perceived to be more distinctive and promote higher individuals' desire to use the products to express positive traits about themselves.

These two studies significantly indicate that pairings of dissimilar brand personality dimensions can generate more favourable evaluations, thus leading to the possibility that certain a pair of brand personality dimension is perceived as complementary. However, study has yet to determine the degree of which two dissimilar brand personality dimensions are complementary and operationalize complementarity principle in the context of brand personality. Monga and Lau-Gesk (2007) recommend that future research should delve deeper into the notion of complementarity between brand personality dimensions, and explain how it can be adopted further enhance customer evaluation of new product extensions. This brings us to the main research questions of this thesis; 1) what are the complementary levels of different brand personality pairs, and 2) can BPC principle improves brand extension evaluations.

To investigate BPC, prior development of MBP is required as brand personality scale tends to be culturally-driven. This has been shown by the burgeoning growth of brand personality scales in the literature to date. There is empirical evidence in the personality and social psychology literature that stressed on cultural value of traits as a determining

factor in complementarity evaluations, since individuals are attracted to others who possess traits that are viewed favourable (Marks *et al.*, 1981). Thus, MBP scale allows the author to examine BPC according to brand personality dimensions which are valid and reliable to Malaysian cultural context.

The author has employed experimental method as a way to operationalize the BPC principle. The MBP dimensions serves as the basis of the operationalization where all four MBP dimensions (sophistication, youth, competence and sincerity) are paired together, thus creating 6 possible BPC pairs - sophistication-youth, sophistication-competence, sophistication-sincerity, youth-competence, youth-sincerity, and competence-sincerity.

The author conducts two pretests prior to the main experiment (i.e. study 1) that operationalize BPC principle. The first pretest is the brand elicitation task, where the author asks the participants to recall their top-of-mind brands based on different personality dimensions. The second pretest validates the findings from the first pretest, in which Prada, Xbox, Toyota, and Dettol scores high on sophistication, youth, competence, and sincerity respectively. The author ensures that these brands are salient only in one MBP dimension as singularity of brand personalities will influence the operationalization of BPC (see Malär *et al.*, 2012).

Study 1 is meant to uncover BPC levels amongst the 6 MBP dimension pairs (i.e. Prada-Xbox, Prada-Toyota, Prada-Dettol, Xbox-Toyota, Xbox-Dettol, and Toyota-Dettol). Participants assess the complementary ratings of those dimension pairs measured using 3 items adopted from Monga and Lau-Gesk (2007) and Mao *et al.* (2012). Furthermore, past literature has suggested other assessments to control for; 1) attitudes towards these pairs (see Monga & Lau-Gesk, 2007), 2) trait dominance (see Tiedens *et al.*, 2007), and

3) participants personality using 22-item MBP scale (see Powell & Juhnke, 1983). Findings from Study 1 reveal several BPC levels from high to low. Specifically, MBP pairs of youth-competence and competence-sincerity have high BPC level, while the pairs of sophistication-youth and youth-sincerity indicate low BPC level. Moderate level of BPC is observed for MBP pairs of sophistication-competence and sophistication-sincerity (please refer to **Figure 5.1**).

Why do certain combinations of MBP pairs elicit different BPC ratings? Looking at Big Five dimensions individually, these dimensions in general promote positive relationship outcomes (with the exception of neuroticism). Most studies agree that agreeableness reduces conflict, conscientiousness increases relationship contact frequency, while extraversion overall increases couple's interaction (e.g. Asendorpf & Wilpers, 1998; Gattis *et al.*, 2004). Comparatively, studies in the brand personality literature also reveal the influence of excitement, sincerity and competence in maintaining long lasting brand relationship (Aaker *et al.*, 2004; Folse *et al.*, 2013; Swaminathan *et al.*, 2009). However, interpersonal literature argues that relationship is concerned on the individuals search for optimal trait combinations (Zentner, 2005). One principle that individuals may refer to is the complementarity principle which proposes that the differences, sometimes opposites, in needs and personality characteristics drive mating and satisfaction (Hinde, 1997; Winch, 1958; Zentner, 2005). In particular, recent studies in social psychology (i.e. assortative mating literature) suggest that individuals' choice of lifetime partner is determined by the personality traits held in their ideal self-concept, hence selection of partner depends whether he/she possess these traits (Klohnen & Mendelsohn, 1998; Zentner, 2005). It is probable that highly complementary MBP dimension pairs are personality patterns that the individuals desire, value, and seek out (see Zentner, 2005).

Thus, the pairs of youth-competence and competence-sincerity are perceived to be ideal complementary traits, hence evaluated highly on BPC measures.

Another theory that may explain the findings is implicit personality theory (e.g. Asch & Zukier, 1984; Hampson, 1998). According to the theory, individuals assume inferential relationships among traits even when they are incongruent (Casselden & Hampson, 1990; Hampson, 1998). Judgment of incongruity between traits depends on two components of trait meanings – descriptive and evaluative (Hampson, 1998). Two traits are descriptively similar when their semantic meaning infer similar trait behaviours. For example, trait pair of generous-extravagant is descriptively consistent compared to generous-thrifty since semantically it represents the act of giving (Hampson, 1998). In contrast, evaluative similarity represents traits that are desired for example, generous-thrifty is more desirable than extravagant-stingy trait pair. Evidently, an incongruent trait pair is reconciled because they represent descriptively consistent trait meaning, although they may or may not be evaluatively consistent (e.g. Hampson, 1998).

This implies that a set of traits that are descriptively similar is more preferred to those which are evaluatively similar. Most empirical studies in this area of interest have found that individuals have greater tendency to choose descriptively congruent trait meaning as personality descriptors (e.g. Borkenau & Ostendorf, 1989; Hampson, 1998; Peabody, 1967; Wyer & Gordon, 1982). Thus, it is highly likely that the MBP dimension pairs of youth-competence and competence-sincerity are perceived to be congruent in descriptive trait meaning, which then lead the participants to rate them high on BPC. In contrast, MBP dimension pairs of sophistication-youth and youth-sincerity maybe perceived to be incongruent in descriptive trait meanings, thus participants evaluate them to be low on BPC. Nevertheless, the effect of trait evaluative component is controlled via attitudinal

measures towards MBP dimension pairs. Examining this closely, mean attitude<sub>MBP Pairs</sub> ratings are above the scale midpoint indicating strong favourable evaluations towards MBP dimensions, an indication that all pairs are desirable.

Other researchers in both interpersonal complementarity and implicit personality literatures suggest that trait dominance may influence BPC evaluations (Asch & Zukier, 1984; Tiedens *et al.*, 2007; Wiggins, 1979). Asch and Zukier (1984) suggest that in the process of resolving a pair of incongruent trait, individuals may assign one trait to be dominant over the other. Evidently, findings from the study 1 reveal that trait dominance does not influence BPC ratings. All 6 MBP pairs indicate index ratings of near scale midpoint using Wiggins' (1979) dominant scale. In other words, individuals neither view MBP dimensions to be dominant nor submissive. One probable reason is brand personality impressions are formed from direct and indirect contact with the brand communication elements which rarely positioned as being dominant. Another reason, possibly the appeal to dominance can be seen only in task-oriented inter-individual relationship (Tiedens *et al.*, 2007). In contrast, appeals to brand personalities signify individuals' outlets for self-expression and symbolic consumption purposes (Aaker, 1997; Swaminathan *et al.*, 2009).

In sum, the author only chooses two BPC pairs to be used; 1) youth- competence pair which has the highest BPC ratings and 2) youth-sincerity pair which shows the lowest BPC ratings.

#### **7.4 Conceptual Framework and Hypothesis Testing**

The main objective of this thesis is to use BPC concept to address a gap in the schema congruity theory (see Mandler, 1982), where it is posited to enhance the evaluations of extremely incongruent extensions. The conceptual framework in **Figure 7.1** addresses

the theoretical implications of BPC principle in the schema congruity theory. The investigations in study 2 and 3 follow this conceptual framework. The following **Table 7.1** summarises the results of the hypotheses testing.

*Figure 7.1 Conceptual Framework*



*Table 7.1 Summary of Hypotheses Testing*

Hypotheses	Proven / Not Proven
H <sub>1A</sub> : Favourable brand personality dimension pairs will elicit higher rating of BPC evaluations.	Yes
H <sub>1B</sub> : Brand personality dimension pairs will elicit higher rating of BPC evaluation if one of the traits is perceived to be dominant over the other.	No
H <sub>1C</sub> : BPC evaluations are moderated by the traits of the participants.	Partially
H <sub>2A</sub> : Evaluations of extremely incongruent brand extension is more [vs. less] favourable when BPC level is high [vs. low].	Yes
H <sub>2B</sub> : Evaluations of extremely incongruent high involvement extension are more favourable compared to those of extremely incongruent low involvement extension.	Partially
H <sub>2C</sub> : Evaluations of extremely incongruent brand extension using visual-based ad [vs. text-based] stimuli for low BPC trait pairs will generate low [vs. high] evaluations compare to those using text-based ad stimuli.	Partially
H <sub>3</sub> : Complementarity resolution mediates the relationship between BPC and extension evaluations.	Yes

In study 2 and 3, the author further examines the influence of BPC on brand extension evaluations. Within schema congruity theory framework, extremely incongruent brand extensions do not evoke favourable evaluations (e.g. Mandler, 1982; Noseworthy & Trudel, 2011). This is because schematic processing of extremely incongruent brand extension does not activate existing category structure, thus it always ends in frustration resulting in negative evaluations (e.g. Jhang *et al.*, 2012).

Prior to examining the BPC effect, the author identifies several determinant factors in brand personality impression formation that may limit BPC principle generalizability. First, recent studies have either used brand claims (i.e. text-based stimuli) (e.g. Monga & Lau-Gesk, 2007) or pictures (i.e. visual-based stimuli) (e.g. Swaminathan *et al.*, 2009) to form a particular brand personality impression. To increase generalizability of findings, the author uses text-based stimuli for study 2, while study 3 uses visual-based stimuli to form brand personality impressions. Second, the author also control for the effect of brand name by not disclosing parent brand name in study 2 (i.e. Brand X), and using fictitious brand name (i.e. Astra, adopted from Swaminathan *et al.*, 2009) in study 3. Finally, the author manipulates product involvement in study 2 to ensure that the findings are not confounded within this factor.

In general, findings from both studies indicate significant influence of BPC on brand extension evaluation, which is further supported by the interaction between BPC and brand extension congruity. BPC is found to be a significant moderating factor to brand extension congruity. The results are aligned with complementarity principle which predicts positive outcomes for complementary traits (e.g. Zentner, 2005). Its adoption into BPC principle further extends the findings from Monga and Lau-Gesk's (2007) study, which argue for dual brand personalities to improve brand evaluations. More

importantly, complementarity resolution as expected mediates the relationship between brand extension congruity and brand extension evaluations. Recent study by Jhang and colleagues (2012) argue that cognitive flexibility operationalised through positive affect is proven to be a mediating factor. The author extends their findings by conceptualising complementarity resolution as another mediating factor, and further demonstrates a sequential mediation effect in both study 2 and 3. Finding from study 2 and 3 reveal that complementarity resolution is a significant mediator.

Study 3 is intended to accomplish the same objective, which is to replicate BPC effect by using different ad stimuli. While study 2 uses text-based (i.e. brand personality claims) ad stimuli, study 3 uses visual-based (i.e. picture and a tagline) ad stimuli to form brand personality impressions for both parent brand and brand extension (e.g. Johar *et al.*, 2004; Swaminathan *et al.*, 2009). Text-based ad stimuli in study 2 use trait adjectives that are highly diagnostics of trait behaviours and their conceptual categories (Srull & Wyer, 1979; Tausch *et al.*, 2007) i.e. are high in 'imagery values' (LaBarbera *et al.*, 1998; Rossiter & Percy, 1980; Unnava & Burnkrant, 1991). In contrast, visual-based ad stimuli in study 3 are more abstract, contextual and may activate incidental and multiple cues (e.g. place or gender information) beyond the core central features (Meyvis *et al.*, 2012; Paivio, 1986). Although using different ad stimuli types, the interaction effect between brand extension congruity and BPC is significant in both study 2 and 3.

As expected, most favourable evaluations are observed when BPC is highly complementary. Extremely incongruent brand extension evaluations are enhanced when BPC is high as compared to those of low BPC or without brand personality impression (i.e. control condition). Whereas in the condition where BPC is low, evaluations of extremely incongruent brand extension are enhanced when participants are cued with



text-based [vs. visual-based] ad stimuli. Low BPC formed using visual cues does not enhance evaluations of extremely incongruent brand extensions probably because text-based ad-stimuli provide sufficient trait information to resolve trait complementarity. Another possible reason is that visual-based ad stimuli used in study 3 comprise only one image whereas previous studies have been using multiple images which may have provided individuals with additional trait information (e.g. Aaker *et al.*, 2004; Swaminathan *et al.*, 2009). It is also probable that MBP competence cued by ‘a man in a suit running towards the finish line as the winner’ (cf. **Figure 6.9** ‘a man in a suit of top of the hill’) may have different effect on evaluations. This is in line with Poor and colleagues’ (2013) arguments which prove that consummatory [vs. non-consummatory] ad images i.e. advertisement that shows people consuming [vs. non-consuming] food increase perception of taste.

Though both high and low BPC improve the evaluations of extremely incongruent brand extension, slight variations are observed for moderately incongruent extensions. Text-based ad stimuli only enhance the evaluation of moderately incongruent extension when BPC is high. The effect is not observed when BPC is low. Furthermore, when using visual-based ad stimuli, there is no significant difference between these two BPC levels and having no brand personality impression.

Interestingly, almost across 3 brand extension congruity levels (i.e. congruent, moderately incongruent, and extremely incongruent), control condition generates most favourable brand extension evaluations for both study 2 and 3. However, slight different results are observed for condition of low BPC and those without any brand personality impression. When brand personality impressions are cued by text, the lowest brand extension evaluations are observed in the condition without brand personality impression.

Conversely, the opposite is true when brand personality impression is triggered by visual. In other words, low BPC elicit worse brand extension evaluations than those without brand personality impressions when visual-based ads are presented. All of which implying that it is better not to have any brand personality impressions rather than having brand personalities that do not complement each other when extending to other product category.

Why does low BPC cued by visual-based ad stimuli elicit lowest evaluations? Individuals may feel that simultaneous resolutions of both brand extension congruity and trait complementarity using visuals takes a lot of their cognitive resources while accessibility to other diagnostic information such as product attributes is not provided. Without attribute-level information, the possibility for individuals to engage in a piecemeal schematic process decreases, or totally eliminated (see Fiske & Pavelchak, 1986; Nan 2006). Confusion and frustration build up as incongruity could not be resolved since individuals are unable move down the category hierarchical structure as proposed by Meyers-Levy and Tybout (1989). It is further worsened by low trait complementarity which negates trait reconciliation (Hampson, 1998). Faced with this double resolution issue in schematic processing, individuals terminate this schematic processing which then result in low evaluations. To prove this, the author runs an ancillary sequential double mediation analysis using Hayes's (2013) SPSS Process macro on study 3 data inclusive only of participants in extremely incongruent brand extension with low BPC level condition. The results confirm the author's reasoning such that unstandardised indirect effect is .001 in which 95 percent confidence interval includes

zero (CI = -.021 and .076), an indication of non-significant mediation of congruity and complementarity resolutions.<sup>44</sup>

Additional findings from study 2 also reveal that influence of BPC is only significant for high involvement products. This is probably because individuals have greater tendency to scrutinize available diagnostic information for high involvement products (Chen & Chaikin, 1999; Howard & Kerin, 2006). Since high BPC represents an ideal MBP dimension pair and is highly diagnostic, high involvement brand extensions receive favourable evaluations. Conversely, low BPC does not improve brand extension evaluation since it may be perceived as an incongruent trait pair that cannot be reconciled (see Hampson 1998). Since BPC does not influence low involvement product, study 3 only examines high involvement products. This is further supported by the interaction contrasts results for brand extension congruity and product involvement which do not indicate significant difference in evaluations of congruent and extremely incongruent brand extensions for both high and low involvement products.

## **7.5 Conclusion**

This chapter has discussed and consolidated all the empirical findings from chapter 4 and 5. First, the author discusses the development of a brand personality scale that is relevant, reliable and valid to the Malaysian context. The author also wants to highlight that the utilization of the MBP in all three experimental studies further proves the reliability and validity of the MBP scale as a measure of brand personality in Malaysia for both brands and humans.

Second, the author establishes the operationalization of BPC as there is a call in the brand personality literature in regards to the level of trait complementarity between 2 different

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<sup>44</sup> Hayes PROCESS SPSS macro calculates confidence intervals (CI) using bias-corrected bootstrap method.

brand personality dimensions. As far as the author concern, there are only two previous studies which investigate attitudinal consequences from pairing of 2 dissimilar brand personality dimensions (see Monga & Lau-Gesk, 2007; Yang *et al.*, 2014). Specifically, this thesis is a response to their call on investigating complementarity effect of brand personality dimension pairs. Findings reveal that, BPC can range from low, moderate and high. MBP pairs of youth-competence and competence-sincerity represent high BPC level, while the pairs of sophistication-youth and youth-sincerity indicate low BPC level. Moderate level of BPC is observed for sophistication-competence and sophistication-sincerity pairs (please refer to **Figure 6.1**).

Finally, the author investigates two BPC levels (i.e. high and low) within the theoretical lenses of schema congruity theory. The author is interested whether BPC moderates brand extension congruity. In particular, this thesis examines the effect of high and low BPC ratings on 3 different levels of congruity – congruent, moderately incongruent, and extremely incongruent. As expected, BPC moderates brand extension incongruity and in particular, enhances the evaluations of extremely incongruent brand extension. This is further supported by the interaction effect between these 2 factors. Additionally, the author demonstrates that evaluations of brand extension congruity are further mediated by the ease of resolving both congruity and trait complementarity. In the next chapter, the author will be addressing each of the theoretical contributions mentioned in chapter 1 and highlights the limitations of the research. Furthermore, the author will also suggest directions of future research before concluding the whole thesis.

# CHAPTER 8: Conclusion, Limitations, and Future Studies

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## 8.1 Introduction

Brand extension has been one of the key strategies adopted by organisation in the hopes of increasing its competitiveness (Carter & Curry, 2013). The main aim of this strategy is to leverage on the parent brand to generate favourable evaluations for the new brand extension, which may cut advertising expenditures (Fedorikhin *et al.*, 2008). Literature has used various theoretical frameworks and one of the prominent theories is the schema congruity theory. The theory posits that customer's evaluation is most favourable when the parent brand and brand extension are moderately incongruent (Galbarino & Edell, 1997). However one of the main gaps in the theory is that it was unable to explain how extremely incongruent brand extension is able to garner favourable evaluations and market success. The author posits that brand personality complementarity (BPC) principle help explain this phenomenon.

Recent studies in the brand personality literature (e.g. Monga & Lau-Gesk, 2007; Yang *et al.*, 2014) have started to examine the effects of pairing of different brand personalities. Extending their works, the author posits that BPC principle may provide one avenue to overcome low evaluations of extreme incongruity through the use of complementary brand personality dimensions. However, prior to establishing this assertion, the author develops a brand personality scale that is reliable and relevant to the Malaysian culture and context. The newly developed MBP is reflected by 4 dimensions comprises 22 universal and indigenous trait items.

MBP scale enables the operationalization of BPC principle in which findings reveal differences in BPC levels for different MBP dimension pairs. The investigation on the

effects of BPC within schema congruity theoretical framework is conducted using the highest BPC pair and the lowest BPC pair. Furthermore, the author also examines and control for product involvement, stimuli types and brand name. The next section will discuss the contributions of this thesis, followed by the study's limitations and direction for future research.

## **8.2 Theoretical Contributions**

The author classifies the theoretical contributions into 3 parts; 1) development of the MBP, 2) operationalization of BPC and 3) BPC contribution to address gaps in schema congruity theory. The main theoretical contribution of this thesis is the adoption of the BPC concept into the schema congruity theory to explain how extremely incongruent brand extension can still elicit favourable brand extension evaluations. However, prior to testing the hypotheses, the author ensures that brand personality dimensions used are relevant, reliable and valid to current cultural context. In turn, this enhances the findings of the conceptual model. Therefore, the author will first explain the theoretical contributions based on the sequence of the study, and conclude with the main theoretical contributions.

### **8.2.1 Development of MBP**

The first theoretical contribution is the development of the MBP scale. This contribution is important as it serves as the foundation for the main theoretical contribution, which is the operationalization of the BPC and the investigation on how the BPC can help address the gap in schema congruity theory. The findings on scale development confirm that MBP comprises both universal and culture-specific trait items. The final MBP scale consists of 4 dimensions – sophistication, sincerity, competence, and youth. Majority of the traits are from previously developed western (10 items), and Japanese (3 items) brand

personality scales. Out of the 22-item MBP scale, 10 traits are from Aaker's (1997) and Aaker *et al.*'s (2001) studies. From the balance of 12 traits, 7 traits are uniquely generated from this thesis, of which 3 of them describe MBP sophistication dimension. Furthermore, the author maintains the same 3 dimension names from Aaker's seminal study because; 1) most items are similar and represent the same first higher-order dimensions, and 2) the dimension characteristic are reflected in the items. In contrast, excitement is not use to name MBP youth dimension because during the scale validation stage, excitement dimension was removed from the scale in which its one remaining item i.e. exciting was reflected in the MBP youth dimension after exploratory factor analysis (EFA).

Depending on the salience of trait items in certain cultures, past studies have shown that brand personality scales may differ from one culture to another (e.g. Aaker *et al.*, 2001). This is expected as MBP operates at a highly abstract level, thus the items that represent a factor are interchangeable (see Bao & Sweeney, 2009), and will not add new information to the corresponding factor (Wherry, 1984). Nevertheless, Geuens and colleagues (2009) develop a universal brand personality scale that mirrors McCrae and Costa's (1997) Five-Factor Model (FFM), and Goldberg's (1992) Big-Five factor structure of human personality. Traits from their scale however did not survive the MBP scale development process. Past studies have indicated that the Big Five structure could not be replicated for brands (see Caprara *et al.*, 2001; Milas & Mlačić, 2007), and not all traits relevant to human personality applicable to brand personality (Bao & Sweeney, 2009; Huang *et al.*, 2012).<sup>45</sup> One possible reason is that trait information is processed differently for humans and brands, such that cognitive region responsible to process human traits does not

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<sup>45</sup> A recent study by Huang *et al.* (2012) revealed that brand personality can be described using Saucier's (1994) 40-item Big-Five mini-markers. However, this was made possible after half of the items were deleted during item purification process using CFA. Furthermore, discriminant validity was not tested among the dimensions. There are also 3 items with factor loadings of .50 and below.

process brand personality information (Yoon *et al.*, 2006). Thus, the formation for human traits differs from those of brands (Aaker, 1997). Another reason is human personality traits are inferred based on a person's behaviours, physical characteristics, attitudes and beliefs (Park, 1986). In contrast, brand personality traits are formed and influenced by any direct and indirect contact that a consumer has with the brand (Aaker, 1997; Plummer, 1984). Specifically, brand personality is formed indirectly through product-related attributes, product category associations, brand name, symbol or logo, advertising style, price, and distribution channel (Batra *et al.*, 1993). Another way a brand directly forms its personality is via brand endorser and user imagery associated with brand (Aaker, 1997).

Like other brand personality scale development studies, Geuens and colleagues (2009) argue that Aaker's (1997) original scale is flawed because of; 1) its loose definition of brand personality (see Azoulay & Kapferer, 2003); 2) non-generalizability of factor structure at respondent level (see Austin *et al.*, 2003); and 3) non-replicability of factor structure across culture (see Aaker *et al.*, 2001; Azoulay & Kapferer, 2003). They successfully address these issues through the methodological steps taken. Despite their rigorous effort, the construction of their new scale should have included all previous scales developed following stringent psychometric procedures. Geuens and colleagues' (2009) initial items only comprise traits from Aaker's (1997) scale, and 3 other human personality scales i.e. Costa and McCrae's (1992) Big Five, Mervielde's (1992) Dutch Big Five version, and Saucier's (1994) brief version of Goldberg's Big Five Marker. Their initial trait lists do not include trait items from the previous 15 brand personality scales in their literature review.<sup>46</sup> In fact, the inclusion of Aaker's (1997) scale maybe

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<sup>46</sup> Later studies that developed brand personality scale either failed to incorporate previous developed scales (e.g. Caprara *et al.*, 2001; Rojas-Méndez *et al.*, 2013), or only included Aaker's (1997) scale in the item



inappropriate since their main objective is to replicate human personality scale and its structure to brands (see Caprara *et al.*, 2001). Additionally, since Geuens *et al.*'s (2009) scale deviates from the Big Five, the predictive power of their scale on consumers' brand attitude maybe compromise (p. 10). Nevertheless, the revised scale exhibits cross-cultural validity between the U.S. and the European consumers.

Aaker (1997) postulates that not all of the U.S. brand personality items are universal (Rojas-Méndez *et al.*, 2013). Thus, it is expected that the MBP scale consists of both etic (i.e. universal) and emic (i.e. culture-specific) trait items. One reason is brands are symbols that carry and communicate cultural meaning (Douglas & Isherwood, 1979; McCracken, 1986; Richins, 1994). The phenomenon is even amplified when well-known brands become strongly associated with the country of its origin, for example Samsung, a brand that signals Korea's competencies in high-end consumer electronics. Evidently, most of the brands that the participants recall during brand elicitation exercise (refer to Chapter 4.2.1) are global brands. These brands are strong exemplars for each of the listed product category, thus it is possible that participants strongly identify salient traits of those brands. Another reason is that although both Western and East Asian cultures may exhibit different values, these cultures may have similar characteristics that can be personified through brand personality dimensions (Sung & Tinkham, 2005).<sup>47</sup> In other words, some brand personality dimensions are consistent across culture although their trait items may show some variability. As a result, some culture-specific brand personality scales in the literature are represented by both culture-specific emic dimensions, and one or several etic dimensions of sophistication, sincerity, and

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generation phase (e.g. d'Astous & Lévesque, 2003; Bosnjak *et al.*, 2007; Geuens *et al.*, 2009; Sung & Tinkham, 2005; Venable *et al.*, 2005).

<sup>47</sup> McCrae *et al.* (2005) argue that geographically and historically related cultures have higher tendency to exhibit similar human personality factors. Malaysia was a British colony since the early 19<sup>th</sup> century, and only received its independence in 1957. Thus, it is not surprising that some Western cultural symbols, values, attitudes, and norms are acculturated in the nation's cultures and practices.

excitement (see Aaker *et al.*, 2001; Bosnjak *et al.*, 2007; d'Astous & Lévesque, 2003; Sung & Tinkham, 2005; Willems *et al.*, 2012).

In developing MBP scale, the decision to include all traits from previous 11 brand personality scales of top journals is essential as suggested by Slaughter and colleagues (2004). This eliminates weakness in the item generation phase since the initial item pool comprises all reliable and valid items from previous studies. This is the etic approach of data collection. Adoption of etic approach ensures generalizability of traits developed by other studies as they go through a battery of psychometric procedures. Additionally, the author also adopts the emic approach to further complement and strengthen the item generation stage by generating culture-specific trait descriptors. It ensures that all culturally-embedded trait descriptors are captured and delineated from the universal traits (Cheung *et al.*, 2011).<sup>48</sup> Moreover, human personality psychologists in cross-cultural studies have consistently argued for the combined perspective to expand the understanding of the universality of Western personality constructs and identification of indigenous traits to provide 'a richer and more integrated and balanced view' (see Cheung *et al.*, 2011; Hui & Trendis, 1985). Berry and colleagues (2002) further argue that although most psychological constructs are universal, their manifestation may differ across cultures. Thus, it is empirically important to adopt this perspective in area of brand personality. To date, there are notably two studies that develop brand personality adopting this perspective (see Aaker *et al.*, 2001; Slaughter *et al.*, 2004).

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<sup>48</sup> The combined etic-emic approach taken by Aaker *et al.* (2001) versus Slaughter *et al.* (2004) is slightly different. Aaker and colleagues (2001) combined the U.S scale when the respective culture-specific scale showed strong reliability. Thus, they pooled together traits from both culture-specific and the U.S brand personality scales, then removed duplication and tested the remaining items for factor structure, and convergent and discriminant validities. On the other hand, Slaughter and colleagues combined all previous traits together with culturally generated traits in the initial item pool. Then, they followed stringent scale development process. For this thesis, the author followed the steps taken by Slaughter *et al.* (2004) because 1) this would eliminate weak trait descriptors during content analysis, and 2) it was not the objective of the study to compare MBP structure with Aaker's (1997) U.S. brand personality scale.

### **8.2.2 Operationalization of BPC**

The second theoretical contribution of this thesis is the operationalization of the complementarity concept between the brand personality dimensions. The author builds on the proposition made by Monga and Lau-Gesk (2007) for future study to study the complementarity of brand personality dimensions and to uncover its effects on brand extensions evaluations. The BPC scale is adopted from the studies of Monga and Lau-Gesk (2007) and Mao *et al.* (2012). The two studies uncover the level of similarity and complementarity between brand personality dimensions, however they do not test the complementarity effects between all the brand personality dimensions. In order to fully address the effects of BPC principle, the author analyses all possible BPC pairs. It is found different pairs exhibit different BPC levels.

### **8.2.3 BPC Implications on Schema Congruity Theory**

The results from Study 2 and 3 are supportive of the author's assertion on the role of BPC in mitigating low evaluations of extremely incongruent brand extension. It is important to point out that within the theoretical boundary of schema congruity (e.g. Mandler, 1982; Meyers-Levy & Tybout, 1989), an inverted-u or nonmonotonic relationship should be observed. In other words, moderate incongruity is interesting and can be resolved resulting in the most favourable evaluations. Most studies adopting Mandler's (1982) theoretical perspective has been examining moderate incongruity (i.e. congruity-based affect). Since then, several studies begin to investigate factors that moderate the congruity-based affect. Consequently, researchers have identified the contextual factors that attenuate or boost the evaluations of moderate incongruity such as; 1) product positioning (Noseworthy & Trudel, 2011), 2) thematic processing (Noseworthy *et al.*, 2010), 3) product involvement (Maoz & Tybout, 2002), 4) perceived risk (Campbell & Goodstein, 2001), 5) prior knowledge processing goals (Goodstein, 1993), and 6)

dogmatism (Meyers-Levy & Tybout, 1989). Most studies however have not focused on enhancing extreme incongruity with the exception of one study by Jhang and colleagues (2012). They demonstrate that evaluations of extreme incongruity can be enhanced by priming individuals' cognitive flexibility, operationalised by affect. When individuals are triggered with positive affects, individuals are able to evaluate extremely incongruent brand extension more favourably as compared to those of moderately incongruent. Meanwhile, a development in brand personality literature led by Monga and Lau-Gesk (2007) find that 2 dissimilar brand personality dimensions increase evaluations, presumably because these dimensions are complementary. Thus, inspired by from both areas of studies, it prompts the author to look at complementarity principle as potential moderating factors operationalised by brand personality complementarity (BPC).

In this thesis, the author proposes a moderating factor that increases evaluations of extremely incongruent product. The BPC principle arises especially from development in personality and social psychology literature, the areas in which brand personality borrows heavily from. In developing BPC, the author focuses on specific areas of the literature such as personality trait, interpersonal relationship and assortative mating. The BPC principle proposes that complementarity of traits in the dimension level will elevate the evaluations of extremely incongruent brand extension. The results from Study 2 and 3 give the evidence needed to the author's proposition.

However, findings from both studies demonstrate that brand extension evaluations decreases as brand extensions become extremely incongruent. In other words, the results do not confirm Mandler's (1982) schema congruity theory. The literature however has identified several reasons why the deviation exists. First, Peracchio and Tybout (1996) find that evaluations of individuals on incongruity will not follow congruity-based affect

(i.e. Mandler's schema congruity theory) for individuals with prior and elaborated product category knowledge. Instead, they will leverage on inference-based affect where attitude of an existing schema is transferred to the new incongruent stimuli (see Fiske, 1982). A confounding checks (Purdue & Summers, 1986) confirms that individuals are familiar and knowledgeable about product categories used in Study 2 and 3.<sup>49</sup> The process of schematic inference eventually reduces cognitive resources and the amount of time spent on incongruent stimuli (Peracchio & Tybout, 1996; von Hippel *et al.*, 1993). Hence, this causes the evaluations of moderately incongruent brand extensions to be less favourable than those of congruent brand extensions, and extremely incongruent brand extensions having the least favourable evaluations for both Study 2 and 3.

Second, a recent study by Noseworthy and Trudel (2011) find that extension evaluations follow the nonmonotonic relationship when moderately incongruent brand extension is positioned functionally [vs. experientially]. This is because new extension needs to fulfil conformant product attributes and functions before individuals move to hedonic consumptions (Chitturi *et al.*, 2007). In this thesis, both text- and visual-based stimuli only provide diagnostic information regarding; 1) product category of the parent brand, 2) product category of the brand extensions, 3) parent brand personality impression, and 4) brand extension personality impression. Brand personality has always been akin to value-expressive and symbolic gratifications (Aaker, 1997; Rossiter & Percy 1985, 1987). Furthermore, accessibility to any specific brand schema in the market is controlled using undisclosed brand name, and a fictitious brand name. Hence, evaluations follow a linear decreasing function (see Maoz & Tybout, 2002). Along the same argument, it is argued

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<sup>49</sup> Randomly selected undergraduates who took part voluntarily, (n=19; 42.1% female;  $M_{Age} = 19.5$ ) indicated their familiarity (Cronbach's  $\alpha = .967$ ) with the product categories measured using 3 items ("unfamiliar/familiar," "inexperienced/experienced," and "not knowledgeable/knowledgeable") on a 7-point scale adopted from Kent and Allen (1994). Single index ratings of familiarity for all products are above scale midpoints with the exception of baby stroller ( $M = 3.579$ )

that new high involvement extension does not respond well to experiential or thematic positioning (Noseworthy *et al.*, 2010; Samuelsen & Olsen, 2010). Cueing only brand personality does not generate congruity-based affect because such positioning is akin to experiential and symbolic positioning. When individuals are exposed to new high involvement product, available information will follow the *central route* often characterise as a cognitive process that requires product-relevant information (see Petty *et al.*, 1985). Thus, providing only brand personality information is insufficient.

Third, apart from experiential positioning, Campbell and Goodstein (2001) identify another factor that prevents congruity-based affect is perceived risk. Brand extension that is high on perceived risk will cause individuals to becoming wary and aversive hence, individuals tend to choose familiar or congruent options rather than moderately incongruent alternatives (Campbell & Goodstein, 2001). In other words, brand extensions which are perceived to be risky does not follow Mandler's (1982) proposition. The authors also argue that products inherently carry risk perception within them for example, product such as soft drinks (e.g. Meyers-Levy & Tybout, 1989; Stayman *et al.*, 1992) have low inherent risk. Re-examining the product list used Study 2 and 3, product like laptop, TV, fragrance, video game console, radio-controlled toy, and stroller can be presumably high in perceived risks such as financial, product performance, social, psychological, and physical (e.g. Kaplan *et al.*, 1974). As a consequence, congruent brand extensions receive most favourable evaluations.

### **8.3 Methodological Contribution**

Insofar, previous studies that focus on brand personality scale development have not yet adopted Horn's (1965) parallel analysis (PA) to determine number of factors that should be retained during exploratory factor analysis (EFA). It is argued that PA is proven to be

the most accurate method determining number of factors to retain (Fabrigar *et al.*, 1999; Schmitt, 2011). PA is based on the assumption that “some of the eigenvalues from real data with a valid underlying factor structure should be substantially larger than eigenvalues from random data where there are no underlying factors” (Humphreys & Montanelli, 1974). It involves generation of data sets on the basis of the same number of items and persons as in real data matrix (Reise *et al.*, 2000). The author adopts PA in the second phase of the scale development process by which 6 factors are retained. Confirmatory factor analysis (CFA) further reduces the factors to 4 which are later confirmed by convergent, discriminant and nomological steps.

## **8.4 Practical Contribution**

### **8.4.1 Malaysia Brand Personality Scale**

Empirical studies have shown that brand personality scale is culturally driven. However, most of these scales are western inclined. This can't be blamed since most global brands are dominated by western brands with the exception of few strong brands from Japan, South Korea, China, and Taiwan which has built a strong brand in high technology and automotive industries. Using etic and emic approach to scale development, MBP is reflected by 4 trait dimensions of sophistication, youth, competence, and sincerity. All of which confirms the generalizability of most Aaker's (1997) brand personality dimension (e.g. Aaker *et al.*, 2001). Although the dimensions extracted are similar, the composition of traits all 4 MBP dimensions are different. Thus, marketers who are interested in bolstering or repositioning their corporate or product brand personality in Malaysia should be able to do so by refer to the MBP scale. Though some traits items are similar to those of other western developed scales, MBP comprises some uniquely culturally embedded traits such as stylish, elegant, casual, and champion. The author proposes that global and local brands in Malaysia are able to create strong brand personality impression

if marketers focus on these 4 MBP dimensions. Particularly, the author agrees that a brand that focuses singularly on a specific brand personality impression drives more favourable consumer behaviours (see Malär *et al.*, 2012). Thus, marketers will be able to achieve this objective in Malaysia by using on MBP scale which has identified 4 factor structures.

In addition, the alluring usefulness of brand personality to create stable and enduring brand impressions should be capitalised by charity and non-profit organisations. Madrigal and Boush (2008) prove that imbuing social responsible traits to a brand increases the individuals' willingness to give rewards. Venable and colleagues (2005) also find that nurturance traits significantly predict individuals' likelihood to contribute. By imbuing a non-profit organisation with warmth traits, Aaker and colleagues (2010) are able to increase individuals' willingness to purchase. These empirical findings strongly suggest that non-profits organisations should have a brand personality impression that fit well with its purpose and social cause. Examining the MBP dimensions, the author feels that sincerity and competence could further make these organisations more appealing to the public. Furthermore, sincere brand are argued to imply strong brand trustworthiness (Aaker *et al.*, 2004). In the next sub-section, the author will discuss traits composition and dimensions of MBP scale in detailed.

#### **8.4.2 Brand Personality Complementarity (BPC)**

The concept of a brand having personality has been around since the 1980s (Ogilvy, 1983; Plummer, 1984). It has been used by marketers to position a brand in the market and differentiate itself from the competitors. When a brand has established a foothold in a product category, the brand tends to expand itself in other product categories. Brand likes Samsung, which starts with computer monitor has successful positioned itself as the



dominant player in consumer electronics and mobile communications. Empirical studies have shown that a brand that leverage on its abstract brand concept gain significant advantage and flexibility to extend beyond its flagship product (Monga & John, 2010). Using brand personality may facilitate the move to expand to other product categories.

The author proposes that marketers adopt BPC principle to facilitate the brand expansion towards different (i.e. incongruent) product categories, particularly when the categories are extremely incongruent. Extremely incongruent brand extensions are novel and are unexpected by the brand customers, an example is when Apple expands its product category to mobile phone in 2007. The author empirically demonstrates that evaluations of extremely incongruent brand extensions can be improved if personality impressions of the brand extension complements with those of the parent brand. To do so, marketers need to identify brand personality dimension pairs that highly complement each other. In regards with MBP scale, these trait pairs are youth-competence, and competence-sincerity. BPC fit between brands may further promote a synergistic relationship between the parent brand and extension. The market has always been producing product categories that complement each other, e.g. laptop and printer. This functional complementarity puts a limit to brand extendibility. Shifting the focus to brand personality complementarity may imbue the parent brand with more extension elasticity, thus giving the parent brand more opportunities to enter new markets.

In addition, the adoption of BPC principle by charity and non-profit organisations could generate more awareness, and appeal to the public consciousness. Social causes attach strongly to one's psyche, particularly when someone close is suffering or surviving the ordeal. Though most non-profit organisations depict themselves strongly as a socially responsible entity, forming complementary personality impression should further their

cause, and attract more attention and sympathy from the public. Aaker and colleagues (2010) demonstrate that a non-profit, which is seen as having both warmth and competence traits can increase individuals' willingness to contribute for a social cause. Though Aaker and colleagues (2010) did not test for complementarity, a quick intuition should tell us that these traits are highly complementary.

In implementing BPC, marketers need to be aware of several requirements. First, implementation should start with identification of brand personality scale that is valid and relevant in the specific market. This is because unreliable scale may result in pairing of traits that are low in complementarity. Second, as argued by (Malär *et al.*, 2012), both parent brand and brand extension should focus on a singular brand personality dimension. It would be difficult and confusing to consumers if both are strong in several brand personality dimensions. Lastly, following Hampson's (1998) argument, pairing of traits should semantically (i.e. descriptively) similar, and desirable. BPC level will be low if marketers do not examine similarity in trait meanings.

## **8.5 Study Limitations**

The author divides study limitations into two parts – scale development and BPC. The discussion of limitations will start with MBP scale development process followed by conceptualisation of BPC.

### **8.5.1 Malaysian Brand Personality (MBP) Scale**

The author has found several limitations to the MBP scale, which includes; 1) utilization of student sample, 2) sample size, and 3) common method variance.

Although the author has followed the scale development process recommended by Hinkin (1998; 1995), one limitation is that the author uses student samples during item

generation and content validity stage (phase 1), and scale development stage (phase 2). Non-student samples are only used in the scale purification stage (phase 3). Few studies which develop brand personality scales have sampled the general public (e.g. Aaker, 1997; Geuens *et al.*, 2009). This is to ensure generalizability of the scale. However, the author identifies 4 recent studies which use students in all 3 phases of scale development process from generating initial trait pool to scale purification process (see Grohmann, 2009; Rojaz-Méndez *et al.*, 2013; Slaughter *et al.*, 2004; Sung and Tinkham, 2005). These studies provide further justifications on using student samples to develop brand personality scale. Furthermore, 2010 census estimated that about 21.6 percent (6.1 millions) of Malaysians (28.3 millions) aged 20 years and above are with higher education qualifications (Ministry of Higher Education Malaysia, 2010). From that percentage, about 1.1 million students were actively pursuing tertiary education in Malaysia during the census period. Thus, undergraduates are significant representative samples of Malaysian population.

Another limitation is the author did not control for common methods bias during the scale development process. Common method bias (CMB) arises when a questionnaire is used to collect responses from a single setting (Malhotra *et al.*, 2006). Factor analytics studies can detect common method variance (CMV) (i.e. the measure of common method bias) using Harman's one-factor test in which all factors in the conceptual model are entered in an EFA using PAF method without any rotation (Podsakoff & Organ, 1986). CMB is a problem if one factor represents majority of the total variance extracted. Examination from existing data used in scale validation stage (i.e. nomological validity in phase 3) reveals that the largest factor captures only 38.4 percent of the variance extracted. Therefore, CMB is not a threat.

### 8.5.2 Brand Personality Complementarity (BPC)

There are several limitations in the conceptualisation and testing of BPC. 1) examine only 2 pairs of BPC, 2) the use of highly involved products, 3) 3 item complementarity scale, 4) did not measure for similar trait pair (should be use as a control group) and 5) the culturally-specific nature of brand personality dimensions can result in different complementarity pairs within other cultures.

First, the author only examines 2 BPC pairs, which are youth-competence (i.e. high BPC) and youth-sincerity (i.e. low BPC). The remaining 4 BPC pairs (i.e. competence-sincerity, sophistication-youth, sophistication-sincerity, and sophistication-competence) are not examined. However, the author presumes that all 3 BPC pairs of sophistication-youth, sophistication-sincerity, and sophistication-competence should have similar low BPC effect of youth-sincerity as planned contrasts do not indicate any significant difference amongst the pairs (please refer to **Table 6.5** in chapter 6). Conversely, BPC pairs of competence-sincerity should assume similar high BPC effect shown by youth-competence pair since planned contrasts does not indicate significant difference. However, this is yet to be confirmed since trait descriptive meanings may influence the anticipated results.

Second, the author uses smartphone as the parent brand which is rated high on product involvement. There could be difference in findings if low involvement product was used as parent brand. The reason is low involvement product does not motivate individuals to process information provided elaborately (Maoz & Tybout, 2002; Petty & Cacioppo, 1984). Thus, individuals may not evaluate low BPC and high BPC differently. This is parallel with the findings from Samuelsen and Olsen's (2010) study which reveals similar evaluations for experientially and functionally positioned product in low involvement

condition. Additional study could commence to confirm the influence of low involvement parent brand.

Third, the author uses 3-item complementarity scale to measure BPC level for personality dimensions pairs. In social psychology and recently in brand personality literature, other than similarity measures (e.g. Reimann & Angleitner, 1993), researchers use correlation and Euclidean distance to measure complementarity (i.e. dissimilarity) between traits (e.g. Barelds & Barelds-Dijkstra, 2007; Furler *et al.*, 2013). Correlation captures the degree of similarity between traits and can range from -1 to 1 just like other correlation coefficient (Luo & Klohnen, 2005). Positive correlation values indicate similarity and vice versa. Conversely, Euclidean distance which measures distance between traits is also used as one of the similarity measures. Greater Euclidean distance values indicate how far (i.e. dissimilar) a pair of trait is. Although the author did not use this method to classify BPC complementarity levels, post analysis using both Euclidean distance and correlation shows that in all Study 1, 2, and 3; 1) Euclidean distance for youth-competence pair is consistently smaller than those of youth-sincerity pair, and 2) correlation values for youth-competence is larger than those of youth-sincerity pair. Findings are further supported by examining the difference between two independent correlation coefficients using Fisher's *r*-to-*z* transformation of Study 1,2 and 3 (Preacher, 2002). In other words, correlations of youth-competence in all studies are compared. The results reveal that all *p*-values are non-significant, an indication that the correlation of the same trait pair is similar across 3 studies.

Fourth, the author did not examine BPC effect of similar trait pair, for example youth-youth pair for parent brand and brand extension. A notable study by Lau and Phau (2007) measures brand personality fit of parent brand and brand extension using Aaker's (1997)

5-factor brand personality scale. They find that although personality profiles of both are moderately incongruent, they are still perceived to be similar. Assuming that brand personality singularity is controlled, a similar trait pair may reduce the mediating effect of complementarity resolution since both parent brand and brand extension have similar brand personality. This requires further investigation.

Finally, there is a possibility that there might be different complementarity pairs for different culture. This is mainly due to the fact that the author reveals several dimensions and traits that are universal across cultures and yet there are some dimensions and traits that are culturally-specific. The author did not test the BPC on other culture therefore, there is a limitation on the generalizability of the BPC concept to other cultures.

## **8.6. Future Studies**

The above discussion and those at the end of chapter 6 have suggested several future studies to further strengthen BPC principle. First, in regards with MBP scale, researcher may want to replicate the methodology used by Aaker *et al.* (2001) to evaluate the overall content overlap or specificity between MBP and US brand personality scale. Here, both US brand personality scale and the indigenous scales are analysed through confirmatory joint factor analysis (CFA). For example, Aaker and colleagues (2001) examine the model fit of 6 latent factors, combining 4 overlapping dimensions between US and Japanese brand personality scale, and 2 indigenous dimensions. The next step is to compare the model fit of hypothesized 6-factor model against the 4-factor model of overlapped dimensions which does not include the 2 indigenous dimensions. The results should support a better model fit for 6-factor brand personality scale.

Second, future studies may want to investigate the influence of different visual ad elements used to form brand personality impression, in particular actions or trait

behaviours depicting brand personality dimension. For example, one might expect that visual ad stimuli of ‘a man in a suit standing on top of the hill’ versus ‘a man in a suit running in the first position with several other to end of the line’ may score high on competence. However, parallel with consummatory image (Poor *et al.*, 2013) and visual imagery fluency effect (Mikhailitchenko *et al.*, 2009; LaBarbera *et al.*, 1998; Lutz & Lutz, 1977; Petrova & Cialdini, 2005) hypotheses, text or visual that suggests actions favourably affect individuals’ attitudes, hence suggesting a mediating variable. Within the same argument, researcher may want to investigate the moderating factor of using one versus multiple images in forming brand personality impressions. Chowdhury and colleagues’ (2011) find that additional visuals do not change the evaluations unless they depict different product benefits. Following the same argument, researcher may want to investigate the moderating effect of using multiple visuals representing each trait item in the dimension scale, as opposed to using a single visual which represent all trait items of a dimension. This warrants future investigation.

Third, the examination of BPC principle requires the examination of trait meaning components – descriptive overlap (i.e. whether trait pair represents the same behavioural acts) and evaluative balance (i.e. whether trait pairs are desirable) (see Hampson, 1998). The focus of this thesis focuses on trait pairs that are desirable. Future study on BPC principle may want to examine traits pairs that are not desirable. In addition, future studies may want to examine similar trait pairing.

Lastly, the author also proposes that future research should investigate BPC using other MBP dimension pairs (as discussed above). Results from planned contrasts indicate non-significant difference among BPC pairs of 1) youth-sincerity with sophistication-youth, sophistication-sincerity, and sophistication-competence, and 2) youth-competence with

competence-sincerity. However, the author anticipates that both components of trait meaning may interact with complementarity resolution.

## **8.7 Conclusion**

Despite the limitations above, the 22-item MBP scale and the BPC principle should be able to improve brand communication in Malaysia. Following 3-step scale development process recommended by Hinkin (1998; 1995), MBP is proven to be a reliable and valid scale to measure personality of both brands and consumers in Malaysia. Though MBP mirrors Aaker's (1997) western brand personality scale, ruggedness dimension does not emerge from factor analytic methodology used. Although the influence of western cultural artefacts is strongly embedded, such as English language as Malaysian second formal language, the organisation of brand personality structure in Malaysia does not include ruggedness dimension. Overall, the development of MBP scale underscores the need to capture indigenous brand personality dimensions and trait items. Thus, the results of MBP scale supports the development of either universal (Geuens *et al.*, 2009), or culture-specific (Aaker *et al.*, 2001; Bosnjak *et al.*, 2007; Rojas-Méndez *et al.*, 2013; Sung & Tinkham, 2005), or product-specific (Valette-Florence & De Barnier, 2013), or store (d'Astous & Lévesque, 2003; Willems *et al.*, 2012) or organisation (Chun & Davies, 2006; Slaughter *et al.*, 2004), or destination (Hosany *et al.*, 2006) brand personality scales.

With the development of reliable and valid indigenous MBP scale, the second part of this thesis establishes the brand personality complementarity (BPC) principle, and adopts it into the schema congruity theory within the brand extension literature. The development of BPC principle is to answer the call for future research made by Monga and Lau-Gesk (2007) who suggest examining other pairs of brand personality dimension. Together with



the development of a study by Jhang and colleagues (2012) who examine individuals' cognitive flexibility as a moderating factor to boost the evaluations of extremely incongruent brand extensions, the author hypothesizes that BPC will also interact with brand extension congruity such that evaluations of extremely congruent brand extension can also be elevated. The author strongly suggests that the operationalization of BPC requires researchers to find brand personality scale that is reflective of the contextual factors (e.g. brand personality scale of nation, organisation, place, etc.). In sum, BPC has the potential to uncover the ideal complementary brand personalities that will enhance both parent brand and its extensions.

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# Appendixes

## Appendix A – Literature Review Taxonomy

Author(s)	Publication	Relationship tested	Methods	Findings
<b>Brands and Brand Image</b>				
Poor <i>et al.</i> (2013)	JM	DV: Taste evaluation; positive thoughts; desire for more; likelihood to purchase; likelihood to recommend to friends IV I: Food type (healthy vs. unhealthy) IV II: Image type (food image vs. consummatory image vs. person and food image vs. perso alone image) covariate: current hunger Mediator I: net positive thoughts Mediator II: Conflict index	Experiments	Exposure to consummatory images of unhealthy foods increases taste perceptions relative to food images
Kotler & Armstrong (2011)	Textbook	Textbook on marketing and branding	n/a	Textbook discussions on theories and concept in marketing
Sonnier & Ainslie (2011)	JMR	DV: Willingness to pay  IV I: Car make and model (5 levels) IV II: Engine (4 levels) IV III: Audio and navigation (3 levels) IV IV: Antilock brakes (2 levels) IV V: Side door/window curtain airbags (2 levels) IV VI: Vehicle skid control (2 levels) IV VII: Price (7 levels)	Bayesian model	The authors find that brand ratings of specific items are influenced by general brand image effects.

Batra <i>et al.</i> (2010)	JMR	DV: Atypicality and fit measures  IV I: Brand personality (appropriateness vs. novelty) Control: Prior brand attitudes	Bayesian SEM; multicariate regression	Favourable extension evaluation increases when they possess imagery that fits well with the category personality.
Batra & Homer (2004)	JCP	DV: Brand image beliefs (class; fun); brand attitude; purchase intention  IV I: Product category (cookies vs. potato chips) IV II: Product endorser (positive celebrity vs. irrelevant positive celebrity vs. no endorser) Mediator: Brand image beliefs	Experiments	Personality of the endorser can be transferred to brands even when the personality positioning is not communicated verbally and explicitly.
Broniarczyk & Alba (1994)	JMR	DV: Brand extensio evaluation; extension success IV I: Brand affect (less preferred focal brand vs. more preferred comparison brand) IV II: Relevance of brand specific association (yes vs. no) IV III: Product category (toothpaste vs. cereal vs. soap vs. computer vs. beer) IV IV: Brand-specific association IV V: Similarity (line extension vs. similar extension vs. two dissimilar extensions) IV VI: Brand knowledge (expert vs. novice) Covariate: Brand familiarity	Experiments	A variety of brand-specific association moderate the effect of brand affect and product category similarity across several product categories.

Reddy <i>et al.</i> (1994)	JMR	DV: Extension success  IV I: Parent brand characteristics IV II: Extension characteristics IV III: Firm characteristics	Econometric model	Line extension of symbolic brands enjoys greater market success than those of less symbolic brands.
Richins (1994)	JCR	Theoretical development of public and private meaning of possessions	Content analysis; MDS	The authors find that although possessions can be classified to those that are consumed in public versus in private distinctively, they are related entities.
Keller (1993)	JM	Theoretical discussion of customer-based brand equity	Theoretical discussions	The author provide a conceptual framework of managing and measuring brand equity
McCracken (1986)	JCR	Theoretical discussions of the structure and movement of cultural meaning of consumer goods	Theoretical development	The author identifies factors that are responsible for the movement of cultural meaning in consumer goods: advertising, fashion system, and four consumption rituals.
Park <i>et al.</i> (1986)	JM	Theoretical development of strategic brand concept-image management	Theoretical development	The authors provide a framework of managing brand image.
Lutz & Lutz (1977)	J Applied Psy	DV: Recall  IV I: Imagery group (interactive vs. noninteractive vs. control)  IV II: Imagery types (picture interaction vs. letter accentuation vs. brand imagery vs. product imagery vs. control)	Experiments	The use of interactive imagery is implied for effectively promoting the association of a brand name with its product or service.

Author(s)	Publication	Relationship tested	Methods	Findings
<b>Brand Extension</b>				
Carter & Curry (2013)	JAMS	DV: Extension unit sales (000's) for brand $i$ in city $j$ in week $t$ IV I: Lagged extension sales IV II: Extension advertising (000's) IV III: Extension ACV distribution (%) IV IV: Extension feature ads (%) IV V: Extension price (\$) IV VI: Extension TPR (%) IV VII: Parent brand quality IV VIII: Image fit IV IX: Functional fit Control I: City pop (centered) Control II: Parent brand concentration	Hierarchical regression	The effect of parent brand quality on extension sales is not uniformly positive. There is high extension sales when image fit is high with low functional similarities.
Mao <i>et al.</i> (2012)	Marketing Letters	DV: Brand extension evaluation IV I: Product class (complements vs. substitute) IV II: Manufacturing transferability (high vs. low) Mediator: Thought concreteness IV III: Perceived manufacturing transferability IV IV: Product complementarity IV V: Product substitutability Control: Brand quality	Experiments; econometric model	The effect of consumption-based extension fit (complements or substitute) on extension evaluations is moderated by production-based fit (manufacturing transferability)

Torelli & Ahluwalia (2012)	JCR	DV: Pleasantness ratings; extension evaluation; thought listings; processing fluency; purchase intention IV I: Cultural congruity pairs (congruent vs. incongruent vs. baseline) IV II: Type of prime (brand vs. product) IV III: Target culture (British vs. Italian vs. Japanese) IV IV: Extension fit (moderate vs. low) IV V: Brand (Burberry vs. Giorgio Armani) IV VI: Product extension (tea kettle vs. cappuccino vs. toaster oven)	Experiments	Cultural congruent brand and extension product increases extension evaluation especially when they are culturally symbolic.
Van Horen & Pieters (2012)	JMR	DV: Extension evaluation IV I: Similarity (low vs. moderate vs. high) IV II: Brand presence (present vs. absence) IV III: Mode (comparative vs. noncomparative) IV IV: Product (chocolate spread vs. French cream cheese)	Experiments	Liking for copycat increases with higher degree of similarity depending on presence of comparison mode.
Singh <i>et al.</i> (2012)	JAR	DV: Brand-performance measure; market performance IV I: Brand extension group (rising vs. falling)	GLM	New extension needs to develop levels of both penetration and repeat purchase similar to existing brands of comparable size to be successful.
Bambauer-Sachse <i>et al.</i> (2011)	Psy & Mar	DV: Brand extension evaluation; core brand evaluation IV I: Fit (moderate vs. poor) IV II: Fit prime (present vs. absent)	GLM	Moderately incongruent extension can be accepted if the advertisements of the products highlights the fit to the parent brand.

Heath <i>et al.</i> (2011)	JM	<p>DV: Brand attitude; brand prestige; brand expertise; brand innovativeness; process measures</p> <p>IV I: Brand quality (7 levels)</p> <p>IV II: Product category (pasta sauce vs. cd players)</p> <p>Mediator I: Brand prestige</p> <p>Mediator II: Brand expertise</p> <p>Mediator III: Brand innovativeness</p> <p>IV III: Line extension condition (middle quality vs. middle quality plus lower quality vs. middle quality plus higher quality)</p> <p>IV IV: Brand personableness</p> <p>Moderator: Regulatory focus (promotion vs. prevention)</p> <p>IV V: Brand (H&amp;M vs. Heineken)</p>	Experiments	<p>A robust line-extension asymmetry in which higher-quality extension improve overall brand perception and evaluation more than lower-quality extensions damage them.</p>
Monga & John (2010)	JM	<p>DV: Brand extension evaluation; brand extension fit; brand extension thoughts</p> <p>IV I: Style of thinking (analytic vs. holistic)</p> <p>IV II: Parent brand concept (prestige vs. functional)</p> <p>IV III: Brand architecture (direct vs. subbrand)</p> <p>IV IV: Communication type (no information vs. elaborational)</p> <p>IV V: Framing (adjectives vs. verbs)</p>	Experiments	<p>Parent brand elasticity is jointly determined by parent brand concept and consumer styles of thinking (analytic vs. holistic), such that holistic thinkers evaluate distant brand extension favourably when it is functional.</p>

Yorkston <i>et al.</i> (2010)	JM	DV: Brand extension acceptability; perceived fit IV I: Implicit theory (entity vs. incremental) IV II: Product category (Dreyer's ice cream vs. OshKosh B'Gosh children's clothing vs. Sketchers sneakers vs. Nokia cell phones vs. Paper Mate pens) IV III: Physicality congruence (yes vs. no) IV IV: Personality congruence (yes vs. no) iV V: Brand stretch (near vs. moderate vs. extreme)	Experiments	Individuals who believe that brand traits are malleable are more accepting of brand extensions.
Alexander <i>et al.</i> (2008)	JMR	DV: Purchase intention; actual purchase; timing of acquisition; abstractness ratings  IV I: Perceived newness IV II: Activity description (low-level vs. high-level)	Binary logit model	Consumers are less likely to purchase really new product which worsen as time passes by. This is opposite for incrementally new product.
Shine <i>et al.</i> (2007)	JMR	DV: Brand extension evaluations; purchase intention; ad evaluation IV I: Parent-extension similarity (complementary extension vs. single extension) IV II: Ad type (single vs. complementary vs. unrelated vs. same) IV III: Parent brand (Xerox vs. BMW)	Experiments	The synergistic impact of extensions is independent of parent-extension similarity, and it is only evident when individuals are promotion focused.
Gourville (2006)	HBR	Reviews and discussions of new product adoptions	n/a	Innovative products need to outweigh it losses of comparative products for consumers to adopt them.



Mao & Krishnan (2006)	JCR	DV: Brand extension evaluations IV I: Prototype fit (high vs. low) IV II: Exemplar fit (high vs. low) IV III: Resources (high vs. low) IV IV: Accessibility (accessible prototype vs. accessible exemplar) IV V: Fit (prototype vs. exemplar) Covariate I: Need for cognition Covariate II: Brand attitude Covariate III: Product category attitude	Experiments	Both prototype and exemplar fit drives favourable extension evaluations, such that prototype fit leads to favourable evaluations when the brand prototype is positive.
Nan (2006)	Psy & Mar	DV: Brand extension evaluations IV I: Congruity (highly congruent vs. moderately congruent vs. highly incongruent) IV II: Parent brand attitude (positive vs. negative) IV III: Replicate IV IV: Need for cognition (high vs. low) Moderator: Need for cognition	Experiments	As incongruity of extension increases, attitude towards extension ads has greater impact.
Völckner & Sattler (2006)	JM	DV: Brand extension success  IV I: Parent brand characteristics IV II: Brand extension marketing context IV III: Relationship between parent brand and brand extension IV IV: Brand extension's product category characteristics Mediator I: Retailer acceptance Mediator II: Parent brand conviction	SEM	Fit between parent brand and extension product, marketing support, parent-brand conviction, retailer acceptance, and parent-brand experience are major contributors in driving extension success.

		<p>Mediator III: Fit</p> <p>Mediator IV: Parent brand quality</p> <p>Mediator V: Consumer innovativeness</p> <p>Moderator I: Fit</p> <p>Moderator II: History of previous brand extension</p> <p>Moderator III: Parent brand conviction</p> <p>Moderator IV: Retailer acceptance</p>		
Martin <i>et al.</i> (2005)	JAMS	<p>DV: Overall perceived similarity; manufacturing similarity; usage similarity; Attitude towards parent brand; goodness-of-fit; ideal attributes; attitude towards the extension; purchase intention; reaction time</p> <p>IV I: Goal congruency (congruent vs. incongruent)</p> <p>IV II: Brand (Reebok vs. Benetton)</p> <p>IV III: Message (congruent vs. goal-incongruent vs. no message)</p> <p>Covariate: Familiarity &amp; experience</p>	Experiments	Goal congruency is associated with greater accessibility of knowledge and affect, and therefore a greater likelihood of consumers transferring those to extension facilitated by marketing communications.
Swaminathan (2003)	JBR	<p>DV: Brand extension trial</p> <p>IV I: Parent brand loyalty</p> <p>IV II: Variety-seeking behavior</p> <p>IV III: Coupon proneness</p> <p>IV IV: Category experience</p> <p>IV V: Experience with the intervening extension</p>	Econometric model	Experience with the parent brand and intervening extension has an impact on purchase behavior of a subsequent brand extension particularly among those with a lower level of loyalty towards the parent brand and among those who try the intervening extension more than once.

Martin & Stewart (2001)	JMR	DV: Purchase intention IV I: Brand meaning IV II: Goal congruence (goal-congruent vs. moderately goal-incongruent vs. extremely goal-incngruent) Mediator: Extension attitude	SEM	The role of similarity in transfer of attitude is mediated by goal-derived categorisation, such that it has stronger influence on attitude and purchase intention when the extension is goal congruent.
Gürhan-Canli & Maheswaran (1998)	JMR	DV: Brand extension evaluation; cognitive responses IV I: Family brand name valence (positive vs. negative) IV II: Motivation (high vs. low) IV III: Message valence (high vs. low) IV IV: Typicality (high vs. low)	Experiments	When motivation is high, brand perception change according to bookkeeping model. Whereas, brand perception change follows subtyping model
John <i>et al.</i> (1998)	JM	DV: Brand extension consistency; parent brand beliefs; flagship product beliefs IV I: Extension product (bath oil vs. bath powder) IV II: Presentation of attribute belief (first vs. later) IV III: Seven existing parent brands' product	Experiments	Although overall parent brand beliefs can be diluted, beliefs about flagship product could be immune to dilution. It could be diluted if line extension is highly similar with flagship product
Gentner & Markman (1997)	Am Psy	Theoretical discussion of analogy and similarity	Theoretical discussions	The authors discuss the structure-mapping process of analogy and how it is extended to similarity.
Herr <i>et al.</i> (1996)	JCP	DV: Response latency; recall IV I: Category dominance (strong vs. weak) IV II: Intercategory relatedness (parent brand vs. close vs. distant)	Experiments	Learning new association of brand extension is easier when it is closely related to parent brand category which has category dominant.

Huffman & Houston (1993)	JCR	DV: Recall; information relevancy; feature importance; recall clustering; brand sorting; goal fulfillment ratings; choice appropriateness; feature importance ratings IV I: Efficiency type (versatility vs. comfort) IV II: Goal type (comfort vs. versatility vs. both) IV III: Knowledge types (feature vs. brand vs. functional) IV IV: Trials (4 times)	Experiments	Goal-oriented categorisation is possible eventhough there is no prior knowledge.
Loken & John (1993)	JM	DV: Typicality; brand beliefs IV I: Type of information (low gentleness-low quality vs. low gentleness-high quality vs. high gentleness-high quality) IV II: Product type (shampoo vs. facial tissue) IV III: Order of DV measures (brand beliefs vs. typicality)	Experiments	Salience of the extension attributes information led to revision of corresponding beliefs about the parent brand. Whereas, salience of the parent brand beliefs, dilution is limited to certain types of extensions and beliefs.
Boush & Loken (1991)	JMR	DV: Typicality; brand extension evaluation; response time IV I: Brand (narrow vs. broad) IV II: Brand extension breadth (5 products)	Experiments	Brand extension typicality and brand breadth have significant effects in extension evaluations such that atypical extension is viewed negatively.

Chakravarti <i>et al.</i> (1991)	Advances in Consumer Res	DV: Similarity rating; cueing  IV I: Salient dimension (similar vs. dissimilar) IV II: Nonsalient dimension (similar vs. dissimilar) IV III: Cueing (present vs. absent)	Experiments	In the absence of cueing, physical and usage similarity drive fit judgment. While, the presence of cue seems to intensify the impact of the physical feature/usage similarity.
Park <i>et al.</i> (1991)	JCR	DV: Brand extension evaluation IV I: Brand name (Timex vs. Rolex vs. ABC watch company) IV II: Feature similarity (high vs. low) IV III: Concept dominance (function-oriented vs. prestige oriented)	Experiments	Perceived fit based on product feature similarity and brand concept consistency influences the evaluations of extension.
Aaker & Keller (1990)	JM	DV: Extension attitude  IV I: Quality IV II: Transfer IV III: Complement IV IV: Substitute IV V: Parent brand quality cue (present vs. absent) IV VI: Brand extension attribute elaboration (present vs. absent)	Regressions; experiments	Inferred attribute beliefs of parent brand both enhance and harm the evaluations of brand extension depending on extension category similarity with parent brand.

Johnson (1988)	JCR	DV: Attribute abstraction; type of processing IV I: Type of operation (combination vs. comparison) IV II: Comparability (3 levels) IV III: Choice set size (3 levels)	Experiments	Consumers use attribute-based processing on relatively abstract attributes and alternative-based processing on relatively concrete attributes to compare noncomparable alternatives.
Ries & Trout (1981)	Book	Discussions on positioning and its implication for brands	n/a	The authors state that effective positioning depends on identifying and communicating brand's uniqueness, differentiation, and values.

Author(s)	Publication	Relationship tested	Methods	Findings
<b>Human Personality</b>				
Cheung <i>et al.</i> (2011)	Am Psy	Discussion on 3 approaches to scale development in cross-cultural context	Theoretical & empirical finding discussion	The authors discuss few studies which investigate the factor structure of Big Five. It is found that only few dimensions are universal in their case, emotionality and extraversion.
Church (2009)	Eu J of Personality	Theoretical discussions and propositions	Theoretical discussions	The author suggests an integrative approach of study personality by combining trait and cultural concepts.
Cuperman & Ickes (2009)	JPSP	DV: Perception of interaction; behavioural measures IV I: BFI IV II: Gender (male vs. female)	Correlations	The Big Five traits predict behaviour and perceptions in initial dyadic interactions not just in the form of actor and partner "main effects" but also in the form of Actor x Partner interactions.
Barelds & Barelds-Dijkstra (2007)	J Soc & Personal Rel	DV: Relationship onset; relationship quality; love; love styles  IV I: Five-Factor Personality Inventory	Similarity scores; MANOVA	Partner similarity with regard to emotional stability, extraversion, and autonomy is strongly associated with favourable relationship quality.
McCrae <i>et al.</i> (2005)	JPSP	NEO-PI-R factor structure across 50 cultures of both self-reports and observer ratings  Covariate: Gender (male vs. female)	Intercorrelations; factor analysis	The authors confirm the universality in trait psychology using NEO-PI-R instruments. In particular, it provides cross-cultural evidence of gender differences in person perception.
Halverson <i>et al.</i> (2003)	J Per	Development of cross-cultural mid-level personality scale in youth	Factor analysis	ICID scale comprises five dimensions which are extraversion, agreeableness, conscientiousness, neuroticism, and intellect.

John & Srivastava (1999)	Book	Discussions on 3 Big Five instruments	Factor analysis	Although the Big Five provides a descriptive taxonomy to describe a person, it does not provide a complete theory of personality. A more comprehensive refinement of the trait theory is needed.
McCrae & Costa (1997)	Am Psy	Examining replicability of NEO-PI-R in 7 cultures	Factor analysis	Big Five structure is replicable in these cultures thus suggesting Big Five is a robust instrument that can be used cross culturally.
Goldberg (1992)	Psy Assessment	Scale development of Big Five markers	Factor analysis	The Big Five dimensions are surgency, agreeableness, conscientiousness, emotional stability, and intellect.
Hui and Triandis (1985)	J Cross Cultural Psy	Reviews of equivalence in cross-cultural measurement	Methodological reviews	The authors suggest a multi approach to study cross-cultural psychology constructs.
Douglas & Isherwood (1978)	Book	Theoretical discussions of consumptions rituals	Theoretical discussions	The authors explain consumption behaviours and rituals by looking through the lens of both economic and anthropology perspectives.
Lazarus (1971)	Book	Discussion and reviews of trait theory in personality	Theoretical reviews	Inter-individual differences can be describe using trait adjectives.
Allport (1937)	Book	Theoretical development of trait theory	Theoretical development	The author classifies traits into 3 levels; cardinal traits, central trait, and secondary trait.
Allport & Odbert (1936)	Psy Monographs	Exploratory findings of personality theory using psycholexical approach to trait concept	Theoretical development	The authors identify adjectives in the English language that can be used to describe human personality.
Baumgarten (1933)	Book	The author proposes the use of traits as a concept in personality	Theoretical development	The author identifies trait taxonomic to define personality sphere.
Klages (1926)	Book	Theoretical discussions on using traits as the basis of personality structures	Theoretical development	The author lists traits that can be used to describe a culture.



Author(s)	Publication	Relationship tested	Methods	Findings
<b>Brand Personality Scales</b>				
Valette-Florence & De Barnier (2013)	JBR	Micro and macro approaches to brand personality scale development in French context	Factor analysis	It confirms the possibility of characterizing print media publication by specific traits and dimensions (5 dimensions).
Rojas-Méndez <i>et al.</i> (2013)	JBR	Sino perspective of the U.S. brand personality	Factor analysis	A second-order nation brand personality scale (NBPS) is reflected by 3 first-order personality constructs.
Willems <i>et al.</i> (2012)	JBR	Fashion store personality scale	Factor analysis & cluster analysis	Fashion store personality (FSP) consists of 5 dimensions. Three clusters of patrons types are identified using FSP's 5 dimensions.
Huang <i>et al.</i> (2012)	Psy & Mktg	Adopting human personality inventory (i.e. Big Five) to brands	Factor analysis	Adoption is only possible when 20 traits are deleted from Big Five's 40-item trait inventory.
Valette-Florence <i>et al.</i> (2011)	JBR	DV: Brand equity IV I: Brand personality in French context IV II: Sales promotion intensity	PLS	Brand personality and the perception of promotion intensity explain 26% of the overall brand equity construct.
Geuens <i>et al.</i> (2009)	IJRM	New brand personality scale	Factor analysis	New brand personality scale addresses 3 limitations in Aaker's (1997) scale (loose definition, non-generalizability for analyses at respondent level, and non-replicability of the its 5 factor across culture)
Grohmann	JMR	Gender dimensions of brand personality	Factor analysis	Masculine and femine dimensions brand personality scale.
Aggarwal <i>et al.</i> (2009)	J Retailing	Adopting Aaker (1997) BPS to online retailers through google search engine	Raw scores	Mining of trait adjectives using Google search engine yields valuable insight into online brand representations.

Bao & Sweeney (2009)	Psy & Mar	Adopting circumplex model to brand personality	Discriminant analysis	Mapping of Aaker's (1997) dimensions using discriminant functions
Madrigal & Boush (2008)	Psy & Mar	Social Responsibility as a dimension of brand personality	Factor analysis	Social responsibility achieves convergent and discriminant validities.
d'Astous & Boujbel (2007)	JBR	Country brand personality in French-speaking Canadian context	Factor analysis	Six dimensions represent country brand personality.
Bosnjak <i>et al.</i> (2007)	Soc Beh & Per	Brand personality in German context	Factor analysis	Six dimensions German brand personality.
Milas & Mlačić (2007)	JBR	Croatian brand personality by adopting human personality inventory (AB5C model)	Factor analysis	Structure obtained does not resemble Big Five model or Aaker's (1997) and Caprara <i>et al.</i> (2001).
Hosany <i>et al.</i> (2006)	JBR	Relationship between destination image and destination personality	Canonical correlation	At least two destination image dimensions (affective and accessibility) are significantly related to 3 destination personality dimensions.
Chun & Davies (2006)	JAMS	DV: satisfaction IV: 5 dimensions or corporate characters Mediator: Differentiation	SEM	Corporate character scale appeals differently to customers and employees.
Venable <i>et al.</i> (2005)	JAMS	Nonprofit organisation brand personality	Factor analysis	Four-factor structure for nonprofit organisation brand personality.
Sung & Tinkham (2005)	JCP	Common and unique structure of Korea brand personality	Factor analysis	Eight-factor structure for Korean brand personality scale in which some dimensions have similar meanings in both Korea and U.S.
Slaughter <i>et al.</i> (2004)	JAP	Organisation personality	Factor analysis	Five-factor structure for organisation personality perception.
d'Astous & Lévesque (2003)	Psy & Mktg	Store personality scale	Factor analysis	Five-factor structure of store personality scale

Aaker <i>et al.</i> (2001)	JPSP	Common and cultural specific dimension of U.S., Japanese, and Spanish brand personality	Factor analysis	Five-factor structure is robust across 3 different countries; however the dimensions are not the same. Common dimensions across countries are only sincerity, excitement, and sophistication.
Caprara <i>et al.</i> (2001)	J of Econ Psy	Adopting human personality inventory (i.e. Big Five) to brands	Factor analysis	Big Five structure is not replicable for brands. It is replicable for humans.
Aaker (1997)	JMR	Brand personality scale	Factor analysis	Brand personality scale is reflected by 5 factors (sincerity, sophistication, competence, excitement, and ruggedness).

Author(s)	Publication	Relationship tested	Methods	Findings
<b>Brand Personality and Brand Relationship</b>				
Puzakova <i>et al.</i> (2013)	JA	DV: Unobservable brand personality; brand attitude IV I: Absolute difference between excitement & sincerity IV II: Absolute difference between excitement & competence IV III: Brand sincerity IV IV: Brand competence IV V: Time (time 1 vs. time 2) Covariate: Geogrpahy-of-self scores	Experiments	Consumers tend to infer unobservable brand traits by relying of their own geography of self through the mechanism of egocentric pattern projection.
Malär <i>et al.</i> (2012)	JAMS	DV: Market share IV I: Brand personality singularity IV II: Competitive differentiation IV III: Credibility of brand-related communication IV IV: Product involvement IV V: Consumers' prior brand attitude Mediator I; Fit between intended brand personality and realized brand personality Mediator II: Brand loyalty Control: Competitive intensity	SEM	The combination of dimensions in a personality profile is relevant, that is a singular brand personality profile can enhance the success of brand personality implementation

Mathur <i>et al.</i> (2012)	JCP	DV: Brand personality; perceived effort and difficulty of making extension; parent brand evaluation; brand extension evaluation; thought listing IV I: Implicit theory (incremental vs. entity) IV II: Brand extension fit (good vs. poor) IV III: Time of measuring parent brand measures (pre-brand extension vs. post-brand extension) Mediator: Perceived effort IV IV: Brand personality salience (high vs. low)	Experiments	Parent brand personality is influenced by consumers' implicit theories of personality in the context of brand extension, particularly influencing incremental theorists.
Chernev <i>et al.</i> (2011)	JM	DV: Brand listing task; self-expression task; brand evaluations; similarity ratings; willingness to pay; personal relevance; premium willing to pay; perceived similarity IV I: Self-expression (high vs. low) IV II: Product categories (4 types) IV III: Brand type (symbolic vs. utilitarian vs. combined) Moderator: Need of self-expression	Experiments	The authors find that a person's need for self-expression is finite and the preference for self-expressive brands is contingent on the availability of alternative means of self-expression.
Machle & Supphellen (2011)	IJMR	DV: Brand personality; Reasons why brand personality is important  IV I: Sources of brand personality (14 types)	GLM	Brand personality dimensions are divided into 3 groups when sources of brand personality are concerned. The sources are company-level (sincerity and competence), consumer-based (sophistication and ruggedness), and symbolic sources (excitement).

Park & John (2010)	JCR	DV: Self perception; pen evaluation; pen usage; psychological discomfort; shopping bag evaluation; brand signaling IV I: Implicit self theory (entity vs. incremental) IV II: Brand experience (present vs. absent)	Experiments	Brand personalities of products do rub off on consumers especially for entity theorists.
Berthon <i>et al.</i> (2009)	JBR	Theoretical propositions of gaps in communication for co-creation of brand meaning between stakeholders and its customers	Theoretical proposition	Brand meaning needs to be co-created between sender and the recipients from stimuli that are compatible with recipients' knowledge. Thus, when external stimuli are complex, recipients rely even more strongly on their prior beliefs to make sense of the ambiguities.
Gao <i>et al.</i> (2009)	JCR	DV: Choice  IV I: Handwriting (dominant hand vs. non-dominant hand) IV II: Opportunity for self-recovery (yes vs. no) Covariate I: PANAS mood scale Covariate II: Self-esteem scale IV III: Confidence prime (confidence vs. doubt) IV IV: self-view activated (exciting vs. competent)	Logistic regression	Self perception of confidence can be shakened momentarily which in turn lead them to choose self-view-bolstering products.

Swaminathan <i>et al.</i> (2009)	JCR	DV: Brand attachment; process measures IV I: Brand personality (sincere vs. exciting) IV II: Attachment anxiety (high vs. low) IV III: Attachment avoidance (high vs. low) IV IV: Consumption context (public vs. private) IV V: Relationship expectation (high vs. low) Mediator: Ideal self-concept connection	Experiments	High anxiety individuals who tend to avoid relationships are likely to prefer exciting brands, whereas high anxiety individuals who are low in relationship avoidance are attracted to sincere brands
Bosnjak & Rudolph (2008)	Eu JM	DV: Attitude; intention  IV I: Actual congruity IV II: Ideal congruity IV III: Undesired congruity IV IV: Past behaviours	Hierarchical regression	Undesired congruity proves its substantial and incremental value in predicting consumption-related attitudes, but does not directly influence purchase intentions.
Breivik & Thorbjørnsen (2008)	JAMS	DV: Relationship outcomes; repurchase likelihood; brand support  IV I: Satisfaction IV II: Quality of alternatives IV III: Relationship investment Mediator: Personal commitment IV IV: Behavioral frequency	SEM	The authors extend the BRQ model to include mediators to explain strong and weak consumer-brand relationship.

Fitzsimons <i>et al.</i> (2008)	JCR	DV: Number of product uses; creativity ratings; IV I: Brands (Apple vs. IBM) IV II: Delay (delay vs. no delay) IV III: Goal-progress condition (control vs. low progress vs. high progress) Covariate: Social desirability scale	Experiments	Brand exposure elicits automatic effects on behaviours especially goal-oriented action. In other words, individuals response to brands by behaving in line with the brand's characteristics and does it unconsciously.
Ang & Lim (2006)	JA	DV: Brand personality perception; attitude towards brand; attitude towards ads; purchase intention  IV I: Product type (symbolic vs. utilitarian) IV II: Headline type (metaphoric vs. nonmetaphoric) IV III: Picture type (metaphoric vs. nonmetaphoric) IV IV: Replicate	Experiments	Brands using metaphors in ads are perceived to be more sophisticated and exciting, but less sincere and competent than those using literal headlines or pictures.
Diamantopoulus <i>et al.</i> (2005)	Eu JM	DV: Brand personality  IV I: Perceived fit IV II: Perceived quality of parent brand IV III: Fit x quality Covariate: Brand familiarity	GLM	Irrespective of fit, brand personalities of core brand is resilient to change.
Johar <i>et al.</i> (2005)	JMR	DV: Brand personality IV I: Chronicity (nonchronics vs. chronic) IV II: Time of measure (time 1 vs. time 2) IV III: Evaluation (positive vs. negative) IV IV: Chronic trait accessibility (high vs. low)	Experiments	Chronics lower their initially positive personalit ratings only when they are exposed to information containing negative trait associations (i.e. trait-related inferences).



Aaker <i>et al.</i> (2004)	JMR	DV: Relationship strength IV I: Brand personality (sincere vs. exciting) IV II: Transgression (present vs. absent) IV III: Time interval (1 vs. 2 vs. 3) Mediator: Partner quality	Experiments	Transgression is damaging to sincere brand which shows no signs of recovery despite subsequent reparation attempts. In contrast, exciting brands transgression recovery is possible.
Austin <i>et al.</i> (2003)	J Str Mar	DV: Brand personality IV I: Restaurant brands (9 types)	Factor analysis	Aaker's (1997) brand personality scale is not replicable at the individual brand level, since CFA fits the data poorly.
Azoulay & Kapferer (2003)	J Brand Management	Discussion on Aaker's (1997) brand personality scale	Discussions	The authors argue for more appropriate definition of brand personality construct, and a stricter items measurement which exclude intellectual abilities, gender and social class from personality definitions and scales.
Escalas & Bettman (2003)	JCP	DV: Self-brand connection IV I: Type uses (yes vs. no) IV II: Member group fit (yes vs. no) IV III: Aspiration group fit (yes vs. no) IV IV: Self-motive (Self-enhancement vs. self-verification)	Experiments	Strong connection between the reference group and consumers' self-concept requires strong usage situation of the reference group and the brand. When this exist, consumer may appropriate user imagery to be self-motive.
Aaker (1999)	JMR	DV: Attitude index IV I: Self schema (aschematic vs. schematic) IV II: Salience of situational cue (low vs. high) IV III: Self-monitoring (low vs. high) Covariate I: Frequency of product usage Covariate II: Product encounter situation	Experiments	Brand personality affects consumer preference of malleable self. Self congruity is enhanced for low self-monitoring individuals, whereas situation congruity is enhanced for high self-monitoring individuals.

Fournier (1998)	JCR	Theoretical development of consumer-brand relationship	Theoretical development	Consumer-brand relationship are more a matter of perceived goal compatability than congruence between discreet product attributes and personality trait images.
Sirgy <i>et al.</i> (1997)	JAMS	DV: Brand preference; clothing style preference; consumer satisfaction; brand attitude; choice  IV I: Self-image congruence IV II: Methods (1 vs. 2)	Experiments	New method of measuring self-image congruence provides a better predictive validity of consumers' attitude and behaviours.
Batra <i>et al.</i> (1993)	Book	DV: Brand extension attitude IV I: Category similarity IV II: Utilitarian/hedonic measures IV III: Transferability IV IV: Brand personality image distance IV V: Attribute distance	Regression	Brand goodwill transferability is strongly influenced by the perceived technological transferability, and by the similarity im image of two product categories.
Blackston (1992)	J Ad Res	Conceptual discusion on brand relationship	Conceptual discussion	Relationship is perceived by the consumers through brand personality traits, influenced by what they think about the brand's attitude towards them.
Malhotra (1988)	J Econ Psy	Dv: Choice IV I: House profiles (9 types) IV II: Self-concept (actual vs. ideal vs. social) IV III: Similarity of house profile with ideal self IV IV: Cognitive differentiation (simple vs. complex)	Choice model	Consumers have greater preference for brands/products which are more congruent with their self-concepts in which cognitively complex individuals achieve better match.

Plummer (1984)	J Ad Res	Brand personality conceptual discussions	n/a	The author proposes of leveraging on brand personality construct to profile the customers, and match them with congruent brand personality statements in advertisements.
Ogilvy (1983)	Book	Dicussion on principles of advertising and brand image	n/a	The author states that part of brand image building is to identify and build upon a unique personality that differentiate the brand from its competitor.
Sirgy (1982)	JCR	Theoretical discussions of self-concept and its measurement in marketing research.	Theoretical discussions	The author reviews self-concept research in marketing through its various conceptualisation, theories, and models.
Kassarjian (1971)	JMR	Theoretical discussion on personality and marketing applications	n/a	The author discusses and reviews several human personality measurements, and how they can be used to investigate and apply self-concept theories to consumer research
Dolich (1969)	JMR	DV: Congruence scores  IV I: Products (4 types) IV II: Brands (most preferred vs. least preferred) IV III: Self-images (real vs. ideal)	Experiments	Individuals tend to relate the brand symbol to self concepts particularly for most preferred brands.

Author(s)	Publication	Relationship tested	Methods	Findings
<b>Brand Personality Complementarity</b>				
Yang <i>et al.</i> (2014)	JCR	DV: Brand recall; brand choice; willingness to buy IV I: Context brand (similar vs. dissimilar) IV II: Evaluation brand (similar vs. dissimilar) Mediator: Perceived distinctiveness Moderator I: Elaboration setting (low vs. high) Moderator II: Need for uniqueness Covariates: Self-reported attention; brand recognition	Experiments	Dissimilarity between brand personalities enhances preferences for the focal brand
Monga & Lau-Gesk (2007)	JMR	DV: Ad evaluation; cobrand evaluation; total thoughts; degree to which participants view themselves as sophisticated or excited; cobrand fit IV: Cobranding personality type (excitement-excitement vs. sophistication-sophistication vs. excitement-sophistication) Moderator I: Self-referencing (low vs. high) Moderator II: Self prime (independent vs. interdependent) Mediator: Self-related thoughts Moderator III: cognitive load (low vs. high)	Experiments	Self complexity increases the preference for dual-personality cobrands as cognitive load increases due to the motivation of self-express through brands.

Author(s)	Publication	Relationship tested	Methods	Findings
<b>Assortative Mating</b>				
Dyrenforth <i>et al.</i> (2010)	JPSP	DV: Relationship; life satisfaction IV I: Gender IV II: Self-reported Big Five Scores IV III: Partner's Big Five Scores Interaction I: Gender x self-reported Big Five scores Interactiion II: Gender x partner's Big Five scores	Multilevel modeling	Similarity in personality traits does not predict an individual's relationship and life satisfaction.
Sherman <i>et al.</i> (2010)	JPSP	DV: Situational ratings IV I: Big Five Inventory IV II: CAQ IV III: RSQ IV IV: RBQ	Q-Sort	Personality still has a marked relationship with behavioural consistency even when situational similarity was statistically controlled.
Cuperman & Ickes (2009)	JPSP	DV: Observer-coded behavior; self-reported perception IV: Big Five Inventory	Regression	Dyads with both low agreeableness scores interact the least pleasant.
Shiota & Levensom (2007)	Psy & Aging	DV: Marital adjustment test; marital relationship inventory IV: Big Five Inventory (through ACL checklist)	Regression	Similarity in Big Five does relate to marital satisfaction.
Zentner (2005)	JPSP	Profiling ideal mate personality concepts DV: Dyadic adjustment scale IV: NEO-PI-R	Q-Sort; correlation; cross-lagged regressions	Complementarity seekers are those individuals who are high on neuroticism and low on openness.

Luo & Klohnen (2005)	JPSP	DV: Marital satisfaction; observer-based satisfaction; LWMAT; sexual satisfaction; conflict; disagreement; composite self-report satisfaction IV I: Big Five IV II: Affectivity IV III: Emotional expression IV IV: Adult attachment IV V: Attachment-based self-representation IV VI: Ego resilient IV VII: Disinhibition IV VIII: Religiosity IV IX: Political attitude IV XI: Values	Correlation	No similarity on personality-related domains such as the Big Five, affectivity, and attachment. No evidence of similarity convergence of spouses over time.
Gattis <i>et al.</i> (2004)	J Family Psy	DV: Marital adjustment test; marital satisfaction inventory; Global distress scale; dyadic adjustment scale IV I: NEO-Five-Factor inventory IV II: Personal attributes questionnaire	MANOVA; ANOVA; Multiple regression	Satisfied marital couples are not similar on Big Five personality factors or positive expressivity.
Olver & Mooradin (2003)	Personality & Ind. Difference	DV: Schwartz value survey IV I: NEO-Five-Factor inventory IV II: Saucier's mini markers	Correlations	Personality traits contributes to the selection of values that individuals adhere to.
Robins <i>et al.</i> (2002)	J of Personality	DV: Relationship quality; conflict; abuse IV I: Multidimensional personality questionnaire	Correlations	Relationship satisfaction is partly contributed by individuals difference in personality

Neyer & Asendorpf (2001)	JPSP	DV: Social relationship inventory; relationship quality  IV I: NEO-FFI	Hierarchical regression; Rank order stability	Personality traits predict changes in various aspects of social relationship, and that personality maturity occurs in early adulthood.
Robins <i>et al.</i> (2000)	JPSP	DV: Relationship quality; relationship satisfaction IV: Multidimensional personality questionnaire	Correlations; multiple regressions	Personality traits of couples make unique contribution to relationship outcomes.
Asendorpf & Wilpers (1998)	JPSP	DV: Contact frequency; perceived available support; conflict; falling in love  IV I: Big Five	Correlations; survival analysis, growth curve	Relationship change in young adults has no relation to their personality change. Personality traits are stable across time
Kristof (1996)	Personnel Psy	Conceptualization and operationalization of person-organisation fit	None	Several propositions are laid for future empirical testing in regards to person-organisation fit
Pietromonaco & Carnelly (1994)	Personal Rel	DV: Positive & negative reactions; Texas Social Behaviour Inventory; general optimism; specific optimism; likelihood of imagined relationship; IV I: Attachment models IV II: Partner's attachment behaviour IV III: Gender	Experiments	Findings reveal that avoidant individuals are more likely to seek complementary preoccupied partner.

Author(s)	Publication	Relationship tested	Methods	Findings
<b>Covariations of Personality Traits</b>				
Puzakova <i>et al.</i> (2013)	JA	DV: Brand personality (competence & sincerity); brand attitude; brand trust; purchase likelihood Control: Participants' Personality Scores IV I: Geography of self I IV II: Geography of self II IV III: Brand sincerity IV IV: Brand competence	Experiments	Consumers infer unobservable brand traits by relying on their own geography of self.
Malär <i>et al.</i> (2012)	JAMS	DV: Market share IV I: Singularity of brand personality profile IV II: Competitive differentiation of brand IV III: Credibility of brand-related communication IV IV: Consumer's product involvement IV V: Consumer's prior brand attitude Mediator I: Fit between intended and realized brand personality Mediator II: Brand loyalty Control: Competitive intensity	SEM	Successful implementation of an intended brand personality has positive performance implications for the firm; such that the combination of a high value singular brand profile with low values other brand profiles can enhance the success of brand personality implementation.
Critcher & Dunning (2009)	JPSP	DV: Implicit personality theories scores  IV: 11 neutral traits from Anderson (1968) IV II: Myers-Briggs Type Indicator IV III: Feedback pairing	Correlations; experiments	Individuals use patterning of traits within self to guide their inferences about the geography of personality in general.



Tausch <i>et al.</i> (2007)	JPSP	DV I: Favourability; instances confirming; instances disconfirming; imaginability, occasions and population frequency DV II: Difficulty pretending; difficulty hiding; diagnosticity; potential harm; self-desirability IV I: Trait valence (positive vs. negative) IV II: Trait content (warmth vs. competence)	ANOVA; Correlation	Trait-related behaviour is determined by specific characteristics of a trait such as its abstractness or level of generality and whether it implies clear behavioral referents of whether behavioral exemplars are accessible in memory.
Asch & Zukier (1984)	JPSP	Resolution of incongruous trait pairs	Thoughts protocol	Discordance traits can be resolved and perceived as congruous. The authors lay down several modes of resolutions.
Wyer & Gordon (1982)	J Exp Soc Psy	DV: Recall of traits, number of behaviours, and types of behaviors IV I: Traits (single vs. pairs) IV II: Time delay (short vs. long) IV III: Instruction to form impression (Not given vs. given)	Thoughts protocol	Behaviours that are evaluatively inconsistent with traits of a person impression are recalled better, whereas such that unfavourable behaviours are recalled better under person impression.

Author(s)	Publication	Relationship tested	Methods	Findings
<b>Trait Semantic and Evaluative Meaning</b>				
Hampson (1998)	JPSP	DV: Peabody trait sets IV I: Target (self vs.others) IV II: Type of inconsistency (descriptively vs. evaluatively vs. both descriptively and evaluative)	Experiments	Self is described with more desirable trait inconsistencies than other target.
Hampson (1997)	J Personality	DV: Big Five Inventory IV: Condition (familiarity vs. liking)	Experiments	Individuals describe themselves with more descriptively and evaluatively inconsistent traits that they use in descriptions of others.
Borkenau (1992)	J Personality	Big Five as a useful a useful paradigm for personality measurement and research	Theoretical discussions	Semantic relations among personality-descriptive terms reflect the covariation of behaviour.
Casselden & Hampson (1990)	JPSP	DV: Trait imaginability; frequency of co-occurrence; response latency  IV I: Trait congruence (similar vs. dissimilar)	Experiments	Less semantically similar trait pairs are less imaginable and less frequently co-occurring. Trait pairs that are descriptively and evaluatively incongruent are more difficult to reconcile yet may exist when ascribing traits to target.
Borkenau & Ostendorf (1989)	Eu J of Personality	DV: NEO-PI  Control: Social desirability	Cross tabs; correlations	Pronounced descriptives trait inconsistencies occur in judgement about actual people such that they prefer descriptive consistency to evaluative consistency.
Skowronski & Carlston (1989)	Psy Bul	Conceptual building of category diagnosticity approach to the integration of negative and extreme bias	Conceptual	The authors postulate that extreme or negative behaviors are generally perceived as more diagnostics than moderate or positive behaviours.

Author(s)	Publication	Relationship tested	Methods	Findings
<b>Interpersonal Circumplex Theory</b>				
Tiedens <i>et al.</i> (2007)	JPSP	DV: Trait dominance; trait affiliation IV I: Gender IV II: Self-perceived affiliation IV III: Self-perceived dominance IV IV: Goal prioritization (yes vs. no) IV V: Self perception (yes vs. no) Moderator I: Work expectation (alone vs. in group) Moderator II: Motivation	Correlation	Individuals have the tendency to view others as complementary (similar in affiliation dimension while different in terms of dominance) when a successful task relationship is expected or required.
Glomb & Welsh (2005)	J App Psy	DV: Organization Citizenship Behaviour  IV: California Psychological Inventory IV: Job Descriptive Index	Polynomial regressions	Subordinate satisfaction with the supervisor is generally higher when supervisors were dissimilar from their subordinates.
Sadler & Woody (2003)	JPSP	DV: Male and female trait dominance and affiliation IV I: Male trait dominance / affiliation IV II: Female trait dominance / affiliation	SEM	Trait affiliation and dominance each have an impact on situational behaviour, and that the interaction partners' behaviours influences each other.
Gurtman (2001)	J Coun Psy	Plotting SASB and IPC models using new method	Linear transformation of angular discrepancy	The new method yields a measure of complementarity at the level of the individual dyad.

Dryer & Horowitz (1997)	JPSP	DV: Satisfaction; confederate's interaction style IV I: Confederate's role IV II: Participant's style IV III: Participant's dominance (high vs. low) Control: BSRI; Big Five;	Experiments	Individuals prefer to interact with a partner who is complementary with respect to dominance.
Tracey (1994)	JPSP	Plotting various interpersonal model using new method	Correspondence Analysis	The new method reproduces the 3 interpersonal models quite faithfully.
Bluhm <i>et al.</i> (1990)	JPSP	DV: Impact message inventory scale IV: Confedarate's trait (friendly vs. hostile vs. dominant vs. submissive)	Experiments	Complementary only occurs on the basis of correspondence to affiliation (not dominance).
Sttrong <i>et al.</i> (1988)	JPSP	DV: Impact message inventory scale IV I: Confederate's role (leading vs. enhancing vs. critical vs. distrustful vs. effacing vs. docile vs. cooperative vs. nurturant)	Experiments	Support the validity and pragmatic usefulness of principles of complementarity and anticomplementarity.
Orford (1986)	Psy Rev	Theoretical reviews of various circumplex models	Theoretical development	Friendly-dominant and friendly submissive behaviours are complementary.
Kiesler (1983)	Psy Rev	Integrating previous theories on interpersonal complementarity.	Theoretical development	The author lays down 11 propositions to solidify the theoretical foundations of interpersonal circumplex model.
Wiggins (1979)	JPSP	Development of a psychological taxonomy of interpersonal traits	Correlations	The author develop a circumplex structure from 16 interpersonal categories.

Author(s)	Publication	Relationship tested	Methods	Findings
<b>Implicit Personality Theory</b>				
Ford & Stangor (1992)	JPSP	DV: Intelligence; friendliness; recall; thoughts listing IV I: Groups (A vs B) IV II: Generated attributes IV III: Variability condition IV IV: Attribute dimension	Experiments	When forming impressions of social groups, individuals form group stereotypes by using central tendency and variability of different attribute dimensions as criteria for determining which dimensions are most diagnostics.
Forgas (1992)	JPSP	DV: Impression formation traits; recall; reading latencies IV I: Mood (positive vs. neutral vs. negative) IV II: Target (prototypical vs. intermediate vs. atypical)	Experiments	Mood has a significant effect on person judgment such that it is context sensitive and largely depend on what kind of processing strategy is adopted. Atypical people are more likely to be influenced by affective biases.
Schneider & Blankmeyer	JPSP	DV: Trait implication IV I: Trait salient (extroversion salient vs. introversion salient vs. no-saliency) IV II: Trait stimuli (extroversion vs. introversion) IV III: Implication stimuli (traits vs. abstract behaviours vs. concrete behaviours) IV IV: Implied stimuli (traits vs. abstract behaviours vs. concrete behaviours) IV V: Trait pair (mature-mature vs. immature-immature) IV VI: Trait salience (mature vs, immature)	Experiments	Cognitive structures may have an additional and important role in processing informatio about others.

		IV VII: Trait rating (trait rating vs. impression salience) IV VIII: Task order		
Powell & Juhnke (1983)	JPSP	DV: Congruence coefficient; canonical correlation; proportion of best matches; Pearson chi-square. IV: 20 traits	Factor analysis; cluster analysis; MDS	Cluster analysis model produces groups of traits and persons that are more congruent with trait and person groups directly generated by subjects.
Marks <i>et al.</i> (1981)	JPSP	DV: Absolute difference scores IV I: Attractiveness of target IV II: Favourability of trait category IV III: Gender of subject	Experiments	Individuals assume that others who possess culturally desirable characteristics are similar to themselves especially when others are attractive.
Strull & Wyer (1980)	JPSP	DV: Rating of target person; Ratings of individual behaviors IV I: Number of trait (15 vs. 35) IV II: Type of delay (between priming and stimulus presentation vs. between stimulus presentation and judgment) IV III: Length of delay (no delay vs. 24 hours vs. 1 week) IV IV: Type of judgments	Experiments	Increasing the accessibility of a trait category in memory increases the likelihood that this category will be used to interpret subsequent behavioural information to which it is potentially applicable.
Hastie & Kumar (1979)	JPSP	DV: Recall; Trait ratings IV I: Baseline characters (6 types) IV II: Behaviour congruity (congruent vs. neutral vs. incongruent) IV III: Numbers of congruity items (12 vs. 11 vs. 9 vs. 6)	Experiments	Incongruent acts with reference to a person's general impression are well remembered.

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Strull & Wyer (1979)	JPSP	DV: Rating of target person IV I: Number of trait items (30 vs 60) IV II: hostility (20% vs. 80%) IV III: Delay (none vs. 1 hour vs. 24 hours) IV IV: Target behaviours (hostile vs. ambiguous vs. nonhostile)	Experiments	Accessibility to trait concept or schema increases the likelihood of it being used to form an impression of a target person.
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Author(s)	Publication	Relationship tested	Methods	Findings
<b>Schema Congruity Theory</b>				
Jhang <i>et al.</i> (2012)	JMR	DV: Brand extension evaluation IV: Incongruity (congruent vs. moderately incongruent vs. extremely incongruent) Moderator I: Cognitive Flexibility (i.e affects: positive vs. neutral) Moderator II: Temporal frame (past vs. future) Moderator III: Benefit rationale (present vs. absent) Mediator: Congruity resolution	Experiments	Cognitive flexibility, temporal frame, and benefit rationale resolve extreme incongruity thus generate more favourable evaluations.
Noseworthy <i>et al.</i> (2011)	JCR	DV: Thought listings; brand extension evaluation; ad claim recall IV: Incongruity (congruent vs. moderately incongruent vs. extremely incongruent) Moderator I: Advertising context (unrelated vs. competing) Moderator II: Gender (male vs. female) Moderator III: Working memory constraint (constrained vs. unconstrained)	Experiments	Women can identify an extremely incongruent product as long as it is promoted among competing products. This driven by dissimilarity-focused relational elaboration through the disruption on verbal processing.
Noseworthy & Trudel (2011)	JMR	DV: Brand extension evaluation IV: Incongruity (congruent vs. moderately incongruent vs. extremely incongruent) Moderator I: Product positioning (functional brand vs. experiential brand)	Experiments	When product is positioned on functional (vs. experiential) dimensions, consumers prefer moderate incongruity (vs. congruity).



Shen <i>et al.</i> (2011)	Psy & Mktg	DV: Brand extension evaluation; perceived fit IV: Incongruity (congruent vs. moderately incongruent vs. extremely incongruent) Moderator I: Case brand reminding (yes vs. no) Moderator II: Product association (prestige vs. neutral)	Experiments	Brand-to-brand similarities increase evaluation and perceived fit particularly for prestige brand.
Noseworthy <i>et al.</i> (2010)	Psy & Mktg	DV: Similarity judgment; Ratio of relational to attributional features; typicality of third exemplar IV: Product positioning (taxonomic vs. thematic) Moderator I: Product category context (present vs. absent) Moderator II: Product information (abstract vs. concrete) Moderator III: Incongruity (congruent vs. moderately incongruent)	Experiments	Taxonomic positioning is context independent and attributional thus, highly resilient to imposed incongruity or abstractivity.
Walchli (2007)	Psy & Mktg	DV: Brand extension evaluation; spontaneous thoughts; recall task IV: Incongruity (congruent vs. moderately incongruent vs. extremely incongruent) Moderator I: Involvement (high vs. low)	Experiments	High involvement extension follows schema congruity theory's nonmonotonic congruity-evaluation relationship.
Aggarwal & McGill (2007)	JCR	DV: Brand evaluation, thought protocols IV: Schema prime (human vs. object) Moderator I: Facial feature (smile vs. frown) Control: Affect (positive & negative) Mediator: Perceived as human Moderator II: Bottle size (same vs. different)	Experiments	Individuals are more likely to anthropomorphize the product when its features were congruent with human schema particularly when the type of person brought to mind is associated with positive feelings.

Campbell & Goodstein (2001)	JCR	DV: Brand extension evaluation IV: Incongruity (congruent vs. moderately incongruent) Moderator I: Perceived risk (no risk vs. low vs. high) Covariates: Product purchase and use	Experiments	Evaluations of moderately incongruent products are dependent upon the risk associated with the product.
Peracchio & Tybout (1996)	JCR	DV: Thought listings; recall; product evaluation IV: Incongruity (congruent vs. moderately incongruent vs. extremely incongruent) Moderator I: Prior knowledge (absent vs. elaborated)	Experiments	Congruity-based affect is observed for individuals who are lack elaborate knowledge.
Meyers-Levy <i>et al.</i> (1994)	JAP	DV: Brand extension evaluation IV: Incongruity (congruent vs. moderately incongruent vs. extremely incongruent) Moderator I: Product description Moderator II: Brand name Moderator III: Type of product	Experiments	Moderately incongruent brand name is evaluated more favourably since it is processed more extensively.
Goodstein (1993)	JCR	DV: Viewing time; cognitive responses; attitudes towards the Ads; attitudes towards the advertised brands; ad claim recognition IV I: Ad typicality (typical vs. atypical) IV II: Processing goal (brand quality vs. ad entertainment quality) IV III: Prior affects toward ads in the product category Control: Brand familiarity; prior brand attitudes	Experiments	Category-based prediction is moderated by extremity of individuals' prior ad category affect.

Stayman <i>et al.</i> (1992)	JCR	DV: Thought-listing task; recall measure; evaluative measures IV I: Drink expected IV II: Drink tasted Covariate: Need for cognition	Experiments	Schema switching occurs when a product is sufficiently discrepant (i.e. moderately incongruent) from the initially activated schema as individuals engaged piecemeal processing.
Ozanne <i>et al.</i> (1992)	JCR	DV: Attribute examined; processing time; search probe; total search; time; type of information requested; perceptions of categorization uncertainty IV I: Discrepancy factor IV II: Category type	Experiments	Individuals increase depth of search by spending more time and effort processing for moderately incongruent objects.
Meyers-Levy & Tybout (1989)	JCR	DV: Evaluative measures IV I: Schema activated (beverage vs. soft drink) IV II: Target attribute (high preservative vs. all natural) Moderator: Dogmatism (dogmatics vs. non-dogmatics) Mediator: Cognitive responses and recall Covariate: Need for cognition	Experiments	Schema incongruent object elicit the most favourable evaluations than either congruent or extremely incongruent objects.
Mandler (1982)	Affect & Cognition	Conceptualisation of congruity-based affects and identification of 3 levels of incongruity (congruent, moderately incongruent, and extremely incongruent)	Exploratory	The process of responding to different levels of schema congruity can itself influence the valence and the extremity of affective responses.

Author(s)	Publication	Relationship tested	Methods	Findings
<b>Schema Theory</b>				
Puligadda <i>et al.</i> , (2012)	JMR	Scale development of brand schematicity  DV: Brand extension evaluation IV I: Brand concept consistency Covariate: Brand schematicity	Factor analysis; experiment	The authors construct a strong psychometric scale to measure brand schematicity. Brand schematicity moderates brand concept consistency.
Martin & Stewart (2001)	JMR	DV: Purchase intention IV I: Brand meaning Mediator: Attitude towards extension	SEM	Consistency with goal-derived categorisation, the relationships among measures of brand similarity vary depending on the degree of shared goal congruency mediated by attitude towards extension.
von Hippel <i>et al.</i> (2001)	JPSP	DV: Self-schematicity; Behavioral index  IV I: Self-rating IV II: Trait importance IV III: Reaction time IV IV: Race IV V: GPA scores IV VI: Gender	Regression; correlation; meta-analysis	People are more likely to for self-schemas around their distinctive abilities, regardless of the absolute level of the abilities themselves.

Wanke <i>et al.</i> (1998)	JCP	DV: Brand extension evaluation IV I: Sports-car typicality (typical vs. atypical) IV II: Name continuation (continuation vs. discontinuation vs. control)) IV III: Expertise (expert vs nonexpert)	Experiments	Discontinuation of previous brand name for the extension results in less favourable evaluation for the extension, particularly when individual have no relevant new information, or when there is no relevant information given about the extension.
Kunda & Oleson (1997)	JPSP	DV: Target extraversion index; Target assertiveness index; target normality IV I: Extraversion congruity (control vs. moderate vs. extreme)	Experiments	Extremely incongruent examples provoke less stereotype assimilation that does moderately incongruent examples.
Lambert (1995)	JPSP	DV: Estimation of number of group member; targets' typicality ratings; typicality response time IV I: Group variability IV II: Subject gender IV III: Target gender	Experiments	Participants are more likely to use their group as a basis of judging atypical targets when the group is heterogeneous.
Baldwin (1992)	Psy Bul	Theoretical-driven discussion on relational-schema	Theoretical discussion	The author proposes future direction on the investigation of relational-schema.
Srull and Wyer (1989)	Psy Rev	Theoretical development of person memory model	Theoretical development	Theoretical model development of person memory that incorporates person's manifested behaviours and personality dispositions or behavioural tendencies.

Sujan & Bettman (1989)	JMR	DV: Recall; inferences; brand evaluation; importance of attributes; variability of attributes; perceptions of brand differentiation; perceptions of brand subtyping; perceptions of submarkets in the product category IV I: Product attribute congruency (congruent vs. moderately incongruent vs. extremely incongruent vs. control) IV II: Attribute dispersion in ads (clustered vs. dispersed) IV III: Response time (delayed vs. immediate)	Experiments	Perception of extreme incongruency leads to subtyping, whereas perceptions of moderate discrepancy lead to brand differentiation
Manis <i>et al.</i> (1988)	JPSP	DV: Discrepancy ratings IV I: Extremity levels (4 hospital levels) IV II: Location (central vs. metropolitan) IV III: Pathological definition pairs (low vs. midscale vs. high)	Experiments	Moderate stereotypes resulted in assimilation effect, whereas extreme stereotypes yielded contrast effect.
Fiske <i>et al.</i> (1987)	J Exp Soc Psy	DV: Typicality; possibility; likability ratings and verbalization IV I: Category conditions (consistent vs. label-focus vs. inconsistent vs. attribute-focus)	Experiments	Individuals consider both the category and typicality whenever a meaningful category label was given, but they focus substantially more on the attributes when categorisation is most difficult.
Markus & Kunda (1986)	JPSP	DV: Similarity ratings; self-categorisation judgments; word association IV I: Conditions (uniqueness vs. similarity subjects) IV II: Word (uniqueness vs. similarity) IV III: Response	Experiments	Subjects made to feel unique recruited conceptions of themselves as similar to others, whereas subjects made to feel similar to others recruited conceptions of themselves as unique.

Fiske & Pavelchak (1986)	Book	Theoretical discussions on schema theory and the proposition on affect-transfer model	Theoretical discussions	Integration of social cognition and classic model of interpersonal evaluation to schema theory
Herr (1986)	JPSP	DV: Target's hostility; target's friendliness; target's kindness; inclination to know IV I: Typicality (moderate vs. extreme) IV II: Category (hostile vs. nonhostile) IV III: Trait listing (present vs. absent)	Experiments	Subjects primed with exemplars of moderate category evaluate an ambiguously described target with those category, whereas subjects exposed to extreme categories evaluate the same ambiguously target in the opposite direction from the activated category.
Sujan (1985)	JCR	DV: Number of thoughts; types of thoughts; categorisation thoughts; subtyping thoughts; discrepancy thoughts; response time; evaluations IV I: Expertise (novice vs. expert) IV II: Category match (match vs. mismatch) IV III: Description (match vs. mismatch)	Experiments	Knowledgeable consumers rapidly reach final impressions and evaluations and generate more thoughts related to the product category (vs. product's attributes)
Fiske & Dryer (1985)	JPSP	DV: Learning effects IV I: Skills and trait profiles (P1 vs. P2)	Experiments	Transfer-of-learning effects might be generalized to the learning of a new schema that partly overlaps an existing schema.
Burke <i>et al.</i> (1984)	JPSP	IV I: Trait levels IV II: Self-schemata IV III: Cross-situational consistency	Correlations	The concept of trait levels accounts for the evidence about individual differences in the speed, confidence, and richness of self-descriptions, without appeal to schema.
Fiske & Taylor (1984)	Book	Theoretical development of social cognition	Theoretical discussions & reviews	The authors lay down the foundations of social cognition and its theoretical concepts.

O'Sullivan & Durso (1984)	JPSP	DV: Recall IV I: Congruity (congruent vs. incongruent) IV II: Category (core vs. peripheral) IV III: Retention interval (immediate vs. delayed)	Experiments	The introduction of highly relevant but incongruent information instigates retrieval of previous schematic information, thus conforming Hastie's (1980) network model).
Alba & Hasher (1983)	Psy Bul	Theoretical discussions on prototypical schema theory	Theoretical discussions	Schema theories share a belief in one or more of four basic memory encoding processes: selection, abstraction, interpretation, and integration.
Weber & Crocker (1983)	JPSP	DV: Trait ratings; sorting; % of group members expected to exhibit traits)  IV I: Occupation (librarian vs. lawyer) IV II: Pattern (concentrated vs. dispersed vs. control) IV III: Sample size (6 vs. 30) IV IV: Category representativeness (low vs. high)	Experiments	Schema change follows subtyping and bookkeeping processes. Atypical information is subtyped (vs. updated) especially when it is concentrated (vs. dispersed) within few (vs. many) instances.
Herr <i>et al.</i> (1983)	J Exp Soc Psy	DV: Ferocity; likelihood to harm; seriousness of harm IV I: Order of rating (real vs. unreal animals) IV II: Extremity of exemplars of category primed (extreme vs. moderate) IV III: Ferocity of the primed animal (real vs. unreal) IV IV: Type of animal rated (real vs. unreal) IV V: Size (small vs. large)	Experiments	The ambiguity of a target determines whether assimilation or contrast effects occur, and it is determined by the activation of prior category. Contrast effect occurs when extreme category is primed, while moderately extreme category produces assimilation effects.



Fiske (1982)	Book	DV: Princeton personality inventory; recall; affective response  IV I: Personality match (yes vs. no) IV II: Appearance match (yes vs. no) IV III: Politician (typical vs. atypical) IV IV: Expertise (novice vs. experts)	Experiments	When there is a schematic match, affective response of the existing category is transferred to the object of evaluations.
Srull (1981)	J Exp Psy: HL&M	DV: Recall; recognition  IV I: Types of target (individual vs. meaningful group vs. nonmeaningful group) IV II: Set size (equal numbers of congruent and incongruent traits vs. more congruent traits vs. less congruent traits) IV III: Learning conditions (memory set vs. impressive set)	Experiments	Individuals tend to recall (but not necessarily recognize) a reliably greater proportion of behaviors that are incongruent than congruent with a prior expectancy.
Smith and Graesser (1981)	Memory & Cognition	DV: Recall; recognition  IV I: Schema (typical vs. atypical)	Experiments	Atypical objects are represented in a distinctive way and easily accessed by virtue of schema tags, such that recall and recognition are highest when guessing is partialled out in a memory task.
Taylor & Crocker (1981)	Book	Theoretical development of schema theory	Theoretical development	Theoretical discussions on characteristics of schema, its hierarchical nature, and how it resolves congruent and incongruent new information.

Fiske (1980)	JPSP	DV: Likability; looking time  IV I: Dimension (sociability vs. activism) IV II: Level (- & - vs. - vs. + vs. - & +) IV III: Sociability (4 levels) IV IV: Activism (4 levels) IV V: Sequence (sociability vs. activism first)	Experiments	Perceivers give relatively high weight to cues that deviated from the modal position (unusual or extreme cues) and to cues whose evaluations fell below the midpoint (negative cues).
Graesser <i>et al.</i> (1980)	J of Exp Psy: Human Learning and Memory	DV: Recognition; 2AFC test  IV I: Scripted stories (A vs. B) IV II: Typicality (typical vs. atypical)	Experiments	Memory discrimination increases as behaviours become less typical, such that it improves recognition and recall of atypical behaviours.
Sherman & Gorkin (1980)	J of Exp Soc Psy	DV: Verdict; judgment of justification; attitude IV I: Problem types (sex-role vs. dot-connecting problems)	Experiments	Incongruent behaviour on self image is assimilated by converting the existing self schema to accommodate that behaviour.

Hastie (1980)	Book	DV: Trait ratings; recall IV I: Stimuli presentation (verbal vs. visual) IV II: Behavior congruity (congruent vs. incongruent) IV III: Trait types (positive vs. negative) IV IV: Trait set size	Experiments	Incongruent trait information is recalled better as the trait items in a group decrease.
Graesser <i>et al.</i> (1979)	J of Verbal Learning and Verbal Behavior	DV: Recognition  IV I: Scripted stories (prototype vs. prototype + related vs. prototype + unrelated vs. prototype + typical(a) vs. prototype + typical(b)) IV II: Embedded scripts (interruption vs. sequential)	Experiments	Atypical action will be tagged if it deviates of a small degree from the script prototype.
Schank & Abelson (1977)	Book	Theoretical development on script plus tag theory	Theoretical development	Theoretical discussions on the development of script plus tag theory
Tversky (1977)	Psy Rev	Theoretical development of the diagnosticity principle of similarity.	Theoretical development	Similarity is described as a feature-matching process in which common and distinctive features of two objects are contrasted.
Bransford & Johnson (1973)	Book	The authors discussed several studies to investigate individuals' ability to understand linguistic symbols in relation to their general schema	Experiments	Linguistic information processing requires information derived from non-linguistic information and past experience or schema.
Osgood & Tannenbaum (1955)	Psy Bul	DV: pretest & post-test attitude scores	Experiments	Extreme incongruent object creates a contrast effect, while moderate incongruent object is assimilated.

Vernon (1955)	Psy Rev	Theoretical discussions on the development of schemata	Theoretical discussions	Perceptions from sensory data form schematic categorisations which are consistent, yet may differ from one individual to another.
Piaget (1952)	Book	Theoretical development of children's schema from a longitudinal observational data of children.	Theoretical development	Children's intelligence growth can be divided into 6 stages of which sensory data is assimilated and accomodated into existing schema.
Bartlett (1932)	Book	The author experimented with an unfamiliar story to investigate how it was recalled.	Theoretical development	Incongruent data are assimilated into one's schema following three routes: assimilation, leveling, and sharpening.

Author(s)	Publication	Relationship tested	Methods	Findings
<b>Associative Network Theory</b>				
Morrin (1999)	JMR	DV: Reaction time; recall; recognition IV I: Parent type (dominant vs. nondominant) IV II: Extension fit (high vs. low) IV III: Extension number (1 vs. 2 vs. 5)	Experiments	Nondominant brand benefits more from extension activity in term of brand accessibility, by introducing high fit extensions.
von Hippel <i>et al.</i> (1993)	JPSP	DV: Word choice IV I: Schema (present vs. absent) IV II: Memory tasks (perceptual identification vs. word-fragment completion vs. recal vs. recognition)	Experiments	The presence of schematic information inhibits further perceptual encoding
Scull (1981)	J Experimental Psy: Human Learning and Memory	DV: Recall  IV I: Type of target (individual vs. meaningful group vs. nonmeaningful group) IV II: Set size (equal congruent-incongruent items vs. more congruent than incongruent items vs. fewer congruent vs. incongruent items) IV III: Learning conditions (memory set vs. impression set) IV IV: Recall delay (immediate vs. 48 hours)	Experiments	Individuals tend to recall items that are incongruous with existing schema information.

Hastie (1980)	Book	DV: Recall IV I: Act congruity (congruent vs. moderately incongruent vs. highly incongruent) IV II: trait relevance (relevant vs. neutral vs. uninformative)	Experiments	Information incongruent with a prior expectancy is better remembered because incongruent information stimulates more elaborate information processing due to the novelty and unexpectedness of the information.
Hastie & Kumar (1979)	JPSP	DV: Recall IV I: Behaviour congruity (congruent vs. neutral vs. incongruent) IV II: Input serial position IV III: List type	Experiments	Unexpected incongruent items with reference to the existing schema are more likely to be remembered and recall later.
Hamilton and Gifford (1976)	J Exp Soc Psy	DV: Trait inference, recall, & frequency estimates IV I: Trait desirability (desirable vs. undesirable) IV II: Group (A vs. B)	Experiments	Inference of a minority group is influenced by the co-occurrence of distinctive information shared by the dominant group, such that individuals overattribute both desirable and undesirable to the minority group.
Collins & Loftus (1975)	Psy Rev	Reviews of several papers on Quillian's (1966) theory of semantic memory search	Theoretical discussions	Semantic memory search are arguably influenced by the degree of feature overlaps between the prototypical categories and their exemplars.
Greenwald and Sakura (1967)	JPSP	DV: Prior familiarity; information acceptability; recall IV I: Statements (pro- vs. anti-involvement)	Experiments	Incongruent objects are novel, thus facilitate better recall.

Author(s)	Publication	Relationship tested	Methods	Findings
<b>Categorisation Theory</b>				
DeRosia (2011)	Psy & Mktg	DV: Product involvement IV I: Need for cognition IV II: Source confusion	Experiments	Brand extension by the competitor's parent band into the extension category will increase consumers' confusion.
Loken <i>et al.</i> (2008)	Handbook of Con Psy	Theoretical discussions of categorisation theory and future direction in consumer studies	Theoretical discussion	The authors discuss past studies, current and future theoretical development of categorisation theory.
Ratneshwar <i>et al.</i> (2001)	JCP	DV: Similarity ratings IV I: Pair type (personal vs. situational) IV II: Surface resemblance (high vs. low) IV III: Situational goal (convenience vs. temperature)	Experiments	Similarity judgments are influenced not only by surface-level resemblance but also by product aspects related to salient personal and situational goals.
Dhar & Sherman (1996)	1996	DV: 4 conditions (vacation spot vs. apartment vs. blind date vs. same sex work partner)	Choice experiments	Focus on the features that are unique to the alternatives has effects on choice and rejected alternatives.
Basu (1993)	JCP	DV: Category judgment; verification; self-reports IV I: Group (prototype vs. exemplar models) IV II: Test instance	Experiments	Categorisation of an object follows both prototype and exemplars models of categorisation in which prototype model judgment is faster.
Barsalou (1989)	Book	Theoretical review and development of categorisation theory, and development of goal-derived categorisation theory	Theoretical discussion	Goal-derived categorisation suggests that categorisation can be based on common goals rather than the graded structure of categories.

Johnson (1988)	JCR	DV: Categorisation of product attributes; concreteness-abstractness of attributes; existence of product hierarchy IV I: Type of operation IV II: Comparability IV III: Choice set size	Experiments	Individuals use attribute-based processing on relatively abstract attributes, and concrete attributes to compare noncomparable alternatives
Murphy & Medin (1985)	Psy Rev	Theoretical development of conceptual coherence and discussions on various theories on categorisation	Theoretical discussions	There are two components of conceptual coherence; internal structure of a concept, and position of concept in the complete knowledge base.
Sujan (1985)	JCR	DV: Cognitive responses; response times IV I: Category (match vs. mismatch) IV II: Product description (camera a vs b) Moderator: Expertise (expert vs. non-expert)	Experiment	When information matches category-based knowledge, expert consumers rapidly reach final impressions and evaluations and generate more thoughts related to the product category and fewer thoughts related to product attributes.
Mervis & Rosch (1981)	Annual Rev of Psy	Theoretical discussion on the development of categorisation theory	Theoretical discussion	Categories are internally structured by gradients of representativeness in which the boundaries are not necessary definite taking the account of shared attributes amongst categories.
Rosch (1978)	Book	Theoretical development of categorisation theory	Theoretical development	The author discusses the principles of categorisation and its three-level taxonomic structure.



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Rocsh & Mervis (1975)	Cog Psy	<p>DV: Prototypicality; category dominance ratings; attribute listings; number of errors; reaction time'</p> <p>IV I: Category types (furniture vs. vehicle vs. fruit vs. weapon vs. vegetable vs. clothing)</p> <p>IV II: Stimulus type (symmetric vs. asymmetric vs. control)</p> <p>IV III: Degree of overlap (low vs. medium vs. high)</p>	Experimental	<p>Most prototypical members of common superordinate, basic level, and artificial categories are those bear the greatest family resemblance to other members of their own category and have the least overlap with other categories.</p>
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## Appendix B – Scale Development and Experiments

Table 4.8 Test of Univariate Normality

Item	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	d.f.	Sig.	Statistic	d.f.	Sig.
Relaxed	.223	460	.000	.923	460	.000
Adventurous	.175	460	.000	.942	460	.000
Concerned	.194	460	.000	.931	460	.000
Welcoming	.189	460	.000	.927	460	.000
Good looking	.153	460	.000	.938	460	.000
Honest	.179	460	.000	.926	460	.000
Faithful	.192	460	.000	.929	460	.000
Exciting	.190	460	.000	.935	460	.000
Lively	.182	460	.000	.928	460	.000
Dynamic	.175	460	.000	.940	460	.000
Cool	.190	460	.000	.932	460	.000
Innovative	.180	460	.000	.934	460	.000
Creative	.160	460	.000	.939	460	.000
Hard working	.194	460	.000	.935	460	.000
Champion	.176	460	.000	.939	460	.000
Consistent	.156	460	.000	.940	460	.000
Real	.194	460	.000	.920	460	.000
Intelligent	.203	460	.000	.930	460	.000
Versatile	.184	460	.000	.936	460	.000
Vibrant	.158	460	.000	.944	460	.000
Satisfying	.202	460	.000	.928	460	.000
Up-to-date	.196	460	.000	.925	460	.000
Sincere	.209	460	.000	.913	460	.000
Competitive	.218	460	.000	.920	460	.000
Youthful	.190	460	.000	.931	460	.000
Well-organised	.219	460	.000	.927	460	.000
Simple	.189	460	.000	.934	460	.000
Well-made	.195	460	.000	.924	460	.000
Established	.196	460	.000	.930	460	.000
Achievement-oriented	.213	460	.000	.928	460	.000
Luxurious	.148	460	.000	.924	460	.000
Cute	.136	460	.000	.950	460	.000
Upper class	.148	460	.000	.921	460	.000
Feminine	.149	460	.000	.946	460	.000
Futurist	.166	460	.000	.939	460	.000
Original	.186	460	.000	.920	460	.000
Social Responsible	.210	460	.000	.924	460	.000

Item	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	d.f.	Sig.	Statistic	d.f.	Sig.
Easy going	.218	460	.000	.917	460	.000
Flexible	.214	460	.000	.911	460	.000
Extravagant	.161	460	.000	.934	460	.000
Supportive	.195	460	.000	.926	460	.000
Glamorous	.171	460	.000	.931	460	.000
Active	.185	460	.000	.927	460	.000
True	.188	460	.000	.937	460	.000
Urban	.154	460	.000	.941	460	.000
Fashionable	.159	460	.000	.936	460	.000
Kind	.189	460	.000	.933	460	.000
Unique	.179	460	.000	.938	460	.000
Generous	.194	460	.000	.936	460	.000
Reliable	.171	460	.000	.938	460	.000
Interesting	.180	460	.000	.931	460	.000
Nice	.195	460	.000	.924	460	.000
Open-minded	.207	460	.000	.923	460	.000
Leader	.173	460	.000	.941	460	.000
Confident	.191	460	.000	.934	460	.000
Reasonable	.177	460	.000	.927	460	.000
Informative	.168	460	.000	.925	460	.000
Efficient	.160	460	.000	.935	460	.000
Elite	.168	460	.000	.922	460	.000
Successful	.172	460	.000	.937	460	.000
Trustworthy	.186	460	.000	.924	460	.000
Stylish	.163	460	.000	.931	460	.000
Professional	.183	460	.000	.935	460	.000
Friendly	.195	460	.000	.920	460	.000
Casual	.191	460	.000	.931	460	.000
Modern	.179	460	.000	.931	460	.000
Purposeful	.192	460	.000	.921	460	.000
Outgoing	.164	460	.000	.929	460	.000
Cheerful	.190	460	.000	.928	460	.000
Prestigious	.137	460	.000	.929	460	.000
Gentle	.172	460	.000	.944	460	.000
Positive	.180	460	.000	.920	460	.000
Clever	.170	460	.000	.940	460	.000
Smooth	.167	460	.000	.938	460	.000
Elegant	.143	460	.000	.926	460	.000
Trendy	.171	460	.000	.933	460	.000
Proud	.152	460	.000	.933	460	.000
Passionate	.166	460	.000	.941	460	.000
Free	.189	460	.000	.936	460	.000
Good-natured	.164	460	.000	.934	460	.000
Homely	.174	460	.000	.939	460	.000

Item	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	d.f.	Sig.	Statistic	d.f.	Sig.
Selective	.118	460	.000	.945	460	.000
Enjoyable	.191	460	.000	.927	460	.000
Universal	.182	460	.000	.930	460	.000
Strong	.181	460	.000	.938	460	.000
Precise	.186	460	.000	.932	460	.000
Likeable	.188	460	.000	.925	460	.000
Productive	.169	460	.000	.934	460	.000
Reassuring	.200	460	.000	.926	460	.000
Happy	.186	460	.000	.927	460	.000
Charming	.180	460	.000	.941	460	.000
Loyal	.181	460	.000	.937	460	.000
Pleasant	.187	460	.000	.925	460	.000
Smart	.194	460	.000	.937	460	.000
International	.167	460	.000	.927	460	.000
Determined	.183	460	.000	.934	460	.000

Table 4.7 Skewness and Kurtosis

Item	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Relaxed	485	6.00	1.00	7.00	2177.00	4.489	.064	1.403	1.969	-.495	.111	-.253	.221
Adventurous	485	6.00	1.00	7.00	2094.00	4.318	.067	1.479	2.188	-.373	.111	-.313	.221
Concerned	485	6.00	1.00	7.00	2291.00	4.724	.055	1.217	1.481	-.211	.111	-.418	.221
Welcoming	485	5.00	2.00	7.00	2402.00	4.953	.054	1.187	1.409	-.295	.111	-.333	.221
Good looking	485	6.00	1.00	7.00	2179.00	4.493	.070	1.541	2.374	-.272	.111	-.741	.221
Honest	485	6.00	1.00	7.00	2329.00	4.802	.056	1.232	1.519	-.377	.111	-.167	.221
Faithful	485	6.00	1.00	7.00	2285.00	4.711	.054	1.199	1.437	-.238	.111	-.235	.221
Exciting	485	6.00	1.00	7.00	2321.00	4.786	.063	1.398	1.954	-.388	.111	-.281	.221
Lively	485	6.00	1.00	7.00	2341.00	4.827	.058	1.287	1.656	-.422	.111	-.319	.221
Dynamic	485	6.00	1.00	7.00	2253.00	4.645	.060	1.332	1.775	-.272	.111	-.354	.221
Cool	485	6.00	1.00	7.00	2307.00	4.757	.065	1.422	2.023	-.447	.111	-.342	.221
Innovative	485	6.00	1.00	7.00	2336.00	4.816	.062	1.375	1.890	-.404	.111	-.326	.221
Creative	485	6.00	1.00	7.00	2286.00	4.713	.065	1.432	2.052	-.343	.111	-.404	.221
Hard working	485	6.00	1.00	7.00	2270.00	4.680	.057	1.248	1.557	-.261	.111	-.140	.221
Champion	485	6.00	1.00	7.00	2237.00	4.612	.059	1.296	1.680	-.246	.111	-.044	.221
Consistent	485	6.00	1.00	7.00	2237.00	4.612	.060	1.329	1.767	-.196	.111	-.143	.221
Real	485	6.00	1.00	7.00	2420.00	4.990	.057	1.264	1.597	-.554	.111	.166	.221
Intelligent	485	6.00	1.00	7.00	2243.00	4.625	.061	1.337	1.789	-.331	.111	-.474	.221
Versatile	485	6.00	1.00	7.00	2299.00	4.740	.058	1.288	1.660	-.275	.111	-.286	.221
Vibrant	485	6.00	1.00	7.00	2074.00	4.276	.070	1.539	2.370	-.170	.111	-.801	.221
Satisfying	485	6.00	1.00	7.00	2342.00	4.829	.056	1.227	1.506	-.277	.111	-.260	.221
Up-to-date	485	6.00	1.00	7.00	2408.00	4.965	.061	1.346	1.811	-.523	.111	.077	.221
Sincere	485	6.00	1.00	7.00	2399.00	4.946	.057	1.254	1.572	-.619	.111	.172	.221
Competitive	485	6.00	1.00	7.00	2340.00	4.825	.060	1.327	1.761	-.571	.111	.007	.221

Item	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Youthful	485	6.00	1.00	7.00	2356.00	4.858	.060	1.332	1.775	-.474	.111	-.135	.221
Well-organised	485	6.00	1.00	7.00	2233.00	4.604	.061	1.350	1.822	-.377	.111	-.457	.221
Simple	485	6.00	1.00	7.00	2209.00	4.555	.063	1.377	1.896	-.350	.111	-.496	.221
Well-made	485	5.00	2.00	7.00	2361.00	4.868	.052	1.150	1.321	-.273	.111	-.307	.221
Established	485	6.00	1.00	7.00	2383.00	4.913	.060	1.318	1.736	-.378	.111	-.253	.221
Achievement-oriented	485	6.00	1.00	7.00	2326.00	4.796	.058	1.272	1.617	-.423	.111	.110	.221
Luxurious	485	6.00	1.00	7.00	2031.00	4.188	.085	1.867	3.487	-.135	.111	-1.170	.221
Cute	485	6.00	1.00	7.00	1792.00	3.695	.069	1.529	2.336	.116	.111	-.654	.221
Upper class	485	6.00	1.00	7.00	2017.00	4.159	.088	1.944	3.778	-.116	.111	-1.211	.221
Feminine	485	6.00	1.00	7.00	1959.00	4.039	.070	1.548	2.397	-.109	.111	-.732	.221
Futurist	485	6.00	1.00	7.00	1962.00	4.045	.076	1.665	2.771	-.150	.111	-.931	.221
Original	485	6.00	1.00	7.00	2429.00	5.008	.061	1.350	1.822	-.658	.111	.206	.221
Social Responsible	485	5.00	2.00	7.00	2394.00	4.936	.055	1.215	1.477	-.279	.111	-.429	.221
Easy going	485	6.00	1.00	7.00	2384.00	4.915	.058	1.277	1.631	-.498	.111	.068	.221
Flexible	485	6.00	1.00	7.00	2391.00	4.930	.058	1.279	1.636	-.702	.111	.375	.221
Extravagant	485	6.00	1.00	7.00	2024.00	4.173	.078	1.717	2.949	-.140	.111	-1.052	.221
Supportive	485	5.00	2.00	7.00	2389.00	4.926	.053	1.165	1.358	-.295	.111	-.329	.221
Glamorous	485	6.00	1.00	7.00	2081.00	4.291	.081	1.790	3.202	-.165	.111	-1.063	.221
Active	485	6.00	1.00	7.00	2391.00	4.930	.059	1.292	1.669	-.458	.111	-.112	.221
True	485	6.00	1.00	7.00	2235.00	4.608	.058	1.276	1.627	-.315	.111	-.105	.221
Urban	485	6.00	1.00	7.00	2044.00	4.214	.070	1.552	2.408	-.265	.111	-.720	.221
Fashionable	485	6.00	1.00	7.00	2066.00	4.260	.078	1.726	2.978	-.152	.111	-1.027	.221
Kind	485	6.00	1.00	7.00	2279.00	4.699	.056	1.243	1.546	-.204	.111	-.467	.221
Unique	485	6.00	1.00	7.00	2297.00	4.736	.061	1.336	1.786	-.281	.111	-.435	.221
Generous	485	6.00	1.00	7.00	2149.00	4.431	.060	1.321	1.746	-.268	.111	-.474	.221

Item	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Reliable	485	6.00	1.00	7.00	2278.00	4.697	.058	1.283	1.646	-.198	.111	-.415	.221
Interesting	485	6.00	1.00	7.00	2333.00	4.810	.061	1.337	1.786	-.458	.111	.031	.221
Nice	485	6.00	1.00	7.00	2397.00	4.942	.063	1.377	1.897	-.525	.111	-.143	.221
Open-minded	485	6.00	1.00	7.00	2329.00	4.802	.058	1.282	1.643	-.530	.111	.198	.221
Leader	485	6.00	1.00	7.00	2250.00	4.639	.060	1.311	1.719	-.184	.111	-.421	.221
Confident	485	6.00	1.00	7.00	2321.00	4.786	.058	1.287	1.656	-.342	.111	-.265	.221
Reasonable	485	5.00	2.00	7.00	2397.00	4.942	.055	1.201	1.443	-.255	.111	-.558	.221
Informative	485	5.00	2.00	7.00	2414.00	4.977	.053	1.172	1.373	-.265	.111	-.361	.221
Efficient	485	6.00	1.00	7.00	2328.00	4.800	.058	1.287	1.656	-.288	.111	-.323	.221
Elite	485	6.00	1.00	7.00	2041.00	4.208	.084	1.860	3.459	-.202	.111	-1.167	.221
Successful	485	6.00	1.00	7.00	2275.00	4.691	.063	1.384	1.917	-.404	.111	-.216	.221
Trustworthy	485	5.00	2.00	7.00	2453.00	5.058	.055	1.206	1.455	-.317	.111	-.461	.221
Stylish	485	6.00	1.00	7.00	2090.00	4.309	.079	1.741	3.032	-.166	.111	-1.077	.221
Professional	485	6.00	1.00	7.00	2313.00	4.769	.059	1.292	1.670	-.377	.111	-.114	.221
Friendly	485	6.00	1.00	7.00	2464.00	5.080	.056	1.226	1.504	-.552	.111	.297	.221
Casual	485	6.00	1.00	7.00	2371.00	4.889	.060	1.319	1.740	-.440	.111	-.029	.221
Modern	485	6.00	1.00	7.00	2124.00	4.379	.075	1.644	2.703	-.316	.111	-.866	.221
Purposeful	485	5.00	2.00	7.00	2452.00	5.056	.053	1.171	1.371	-.302	.111	-.484	.221
Outgoing	485	6.00	1.00	7.00	2377.00	4.901	.056	1.233	1.519	-.303	.111	-.266	.221
Cheerful	485	6.00	1.00	7.00	2349.00	4.843	.063	1.382	1.909	-.453	.111	-.274	.221
Prestigious	485	6.00	1.00	7.00	2083.00	4.295	.084	1.845	3.403	-.210	.111	-1.036	.221
Gentle	485	6.00	1.00	7.00	2044.00	4.214	.063	1.387	1.925	-.141	.111	-.621	.221
Positive	485	5.00	2.00	7.00	2451.00	5.054	.053	1.158	1.340	-.265	.111	-.520	.221
Clever	485	6.00	1.00	7.00	2203.00	4.542	.057	1.265	1.600	-.074	.111	-.458	.221
Smooth	485	6.00	1.00	7.00	2082.00	4.293	.072	1.593	2.538	-.182	.111	-.904	.221
Elegant	485	6.00	1.00	7.00	2069.00	4.266	.085	1.880	3.534	-.140	.111	-1.163	.221

Item	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Trendy	485	6.00	1.00	7.00	2295.00	4.732	.070	1.548	2.395	-.490	.111	-.286	.221
Proud	485	6.00	1.00	7.00	2121.00	4.373	.080	1.766	3.119	-.273	.111	-.942	.221
Passionate	485	6.00	1.00	7.00	2190.00	4.515	.064	1.405	1.973	-.178	.111	-.496	.221
Free	485	6.00	1.00	7.00	2253.00	4.645	.063	1.385	1.919	-.343	.111	-.386	.221
Good-natured	485	6.00	1.00	7.00	2307.00	4.757	.058	1.272	1.618	-.165	.111	-.478	.221
Homely	485	6.00	1.00	7.00	2156.00	4.445	.064	1.405	1.975	-.309	.111	-.162	.221
Selective	485	6.00	1.00	7.00	1988.00	4.099	.076	1.663	2.767	-.066	.111	-.874	.221
Enjoyable	485	6.00	1.00	7.00	2375.00	4.897	.057	1.264	1.597	-.459	.111	-.091	.221
Universal	485	6.00	1.00	7.00	2285.00	4.711	.058	1.276	1.627	-.322	.111	-.451	.221
Strong	485	6.00	1.00	7.00	2263.00	4.666	.061	1.342	1.801	-.301	.111	-.319	.221
Precise	485	6.00	1.00	7.00	2281.00	4.703	.055	1.211	1.465	-.187	.111	-.128	.221
Likeable	485	6.00	1.00	7.00	2402.00	4.953	.059	1.305	1.702	-.562	.111	.155	.221
Productive	485	6.00	1.00	7.00	2290.00	4.722	.059	1.295	1.676	-.194	.111	-.623	.221
Reassuring	485	5.00	2.00	7.00	2341.00	4.827	.055	1.200	1.441	-.203	.111	-.552	.221
Happy	485	6.00	1.00	7.00	2387.00	4.922	.057	1.252	1.568	-.371	.111	-.263	.221
Charming	485	6.00	1.00	7.00	2108.00	4.346	.071	1.563	2.442	-.232	.111	-.787	.221
Loyal	485	6.00	1.00	7.00	2204.00	4.544	.059	1.291	1.666	-.310	.111	-.130	.221
Pleasant	485	5.00	2.00	7.00	2375.00	4.897	.060	1.321	1.746	-.387	.111	-.427	.221
Smart	485	6.00	1.00	7.00	2224.00	4.586	.061	1.334	1.780	-.268	.111	-.460	.221
International	485	6.00	1.00	7.00	2410.00	4.969	.065	1.441	2.075	-.329	.111	-.616	.221
Determined	485	6.00	1.00	7.00	2275.00	4.691	.059	1.289	1.660	-.293	.111	-.133	.221
Valid N (listwise)	485												



Table 4.12 Pattern Matrix – PAF with Oblimin Rotation

Item	Factor					
	1	2	3	4	5	6
Established	.887					
Leader	.795					
Competitive	.792					
Achievement-oriented	.774					
Precise	.768					
Confident	.765					
Professional	.755					
International	.731					
Hard-working	.711					
Champion	.696					
Productive	.690					
Efficient	.686					
Determined	.686					
Successful	.683					
Reliable	.681					
Consistent	.676					
Universal	.655					
Satisfying	.628					
Well-made	.626					
Strong	.505					
<b>*Smart</b>	<b>.491</b>					
<b>*Clever</b>	<b>.491</b>					
<b>*Intelligent</b>	<b>.454</b>		.335			
Casual		.832				
Cheerful		.780				
Nice		.732				
Easy-going		.713				
Pleasant		.700				
Good-natured		.690				
Friendly		.660				
Likeable		.652				
Flexible		.633				
Open-minded		.625				
Original		.588				
Real		.572				
Sincere		.559				-.306
Homely		.506				
<b>*True</b>		<b>.424</b>				
<b>*Loyal</b>		<b>.419</b>				
Cool			.831			
Adventurous			.782			
Creative			.778			

Item	Factor					
	1	2	3	4	5	6
Innovative			.754			
Exciting			.739			
Dynamic			.735			
Interesting			.732			
Versatile			.727			
Trendy			.708			
Unique			.665			
Up-to-date			.660			
Elegant				-.852		
Elite				-.850		
Fashionable				-.836		
Urban				-.827		
Luxurious				-.826		
Prestigious				-.824		
Stylish				-.816		
Proud				-.809		
Futuristic				-.808		
Modern				-.805		
Charming				-.804		
Glamorous				-.792		
Upper class				-.791		
Vibrant				-.785		
Selective				-.732		
Good-looking				-.645		
Smooth				-.641		
Cute				-.576		
Feminine				-.539		
<b>*Gentle</b>				<b>-.415</b>		
<b>*Passionate</b>				<b>-.392</b>		
Happy					-.739	
Enjoyable					-.736	
Outgoing					-.728	
Lively					-.698	
Welcoming					-.681	
Positive					-.677	
Free					-.645	
Active					-.620	
Youthful					-.602	
Concerned						-.846
Social responsible						-.813
Supportive						-.802
Reassuring						-.780
Purposeful						-.769
Faithful						-.766

Item	Factor					
	1	2	3	4	5	6
Trustworthy						-.761
Reasonable						-.757
Kind						-.734
<b>*Honest</b>		<b>.398</b>				<b>-.499</b>

\*Items with factor loadings < .50, Items loadings < .30 were suppressed.

Table 4.14 Univariate Normality

Item	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	d.f.	Sig.	Statistic	d.f.	Sig.
Adventurous	.136	438	.000	.947	438	.000
Welcoming	.156	438	.000	.934	438	.000
Good-looking	.149	438	.000	.947	438	.000
Honest	.186	438	.000	.935	438	.000
Faithful	.200	438	.000	.930	438	.000
Exciting	.167	438	.000	.942	438	.000
Lively	.195	438	.000	.928	438	.000
Dynamic	.188	438	.000	.938	438	.000
Cool	.139	438	.000	.942	438	.000
Innovative	.172	438	.000	.939	438	.000
Creative	.140	438	.000	.944	438	.000
Hard-working	.180	438	.000	.940	438	.000
Champion	.181	438	.000	.934	438	.000
Consistent	.139	438	.000	.946	438	.000
Real	.179	438	.000	.928	438	.000
Intelligent	.142	438	.000	.947	438	.000
Versatile	.146	438	.000	.948	438	.000
Satisfying	.151	438	.000	.939	438	.000
Up-to-date	.156	438	.000	.939	438	.000
Sincere	.200	438	.000	.922	438	.000
Competitive	.170	438	.000	.938	438	.000
Youthful	.162	438	.000	.937	438	.000
Well-made	.169	438	.000	.942	438	.000
Established	.163	438	.000	.933	438	.000
Achievement-oriented	.166	438	.000	.940	438	.000
Luxurious	.130	438	.000	.933	438	.000
Cute	.151	438	.000	.945	438	.000
Upper class	.139	438	.000	.933	438	.000
Feminine	.128	438	.000	.946	438	.000
Original	.195	438	.000	.917	438	.000
Social responsible	.189	438	.000	.932	438	.000
Easy-going	.152	438	.000	.938	438	.000
Flexible	.185	438	.000	.929	438	.000

Item	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	d.f.	Sig.	Statistic	d.f.	Sig.
Supportive	.181	438	.000	.940	438	.000
Active	.176	438	.000	.936	438	.000
Urban	.137	438	.000	.946	438	.000
Fashionable	.144	438	.000	.937	438	.000
Kind	.156	438	.000	.944	438	.000
Unique	.162	438	.000	.941	438	.000
Reliable	.138	438	.000	.939	438	.000
Interesting	.142	438	.000	.943	438	.000
Nice	.173	438	.000	.934	438	.000
Open-minded	.186	438	.000	.938	438	.000
Leader	.162	438	.000	.944	438	.000
Confident	.172	438	.000	.939	438	.000
Reasonable	.181	438	.000	.936	438	.000
Efficient	.149	438	.000	.942	438	.000
Elite	.148	438	.000	.937	438	.000
Successful	.155	438	.000	.944	438	.000
Trustworthy	.180	438	.000	.935	438	.000
Stylish	.165	438	.000	.927	438	.000
Professional	.155	438	.000	.938	438	.000
Friendly	.192	438	.000	.926	438	.000
Casual	.180	438	.000	.934	438	.000
Modern	.150	438	.000	.941	438	.000
Purposeful	.173	438	.000	.928	438	.000
Outgoing	.158	438	.000	.941	438	.000
Cheerful	.173	438	.000	.934	438	.000
Prestigious	.168	438	.000	.925	438	.000
Positive	.176	438	.000	.930	438	.000
Clever	.160	438	.000	.947	438	.000
Elegant	.129	438	.000	.938	438	.000
Proud	.148	438	.000	.942	438	.000
Free	.158	438	.000	.944	438	.000
Good-natured	.179	438	.000	.941	438	.000
Selective	.124	438	.000	.947	438	.000
Enjoyable	.156	438	.000	.935	438	.000
Universal	.146	438	.000	.940	438	.000
Strong	.172	438	.000	.940	438	.000
Precise	.179	438	.000	.938	438	.000
Likeable	.198	438	.000	.930	438	.000
Productive	.157	438	.000	.942	438	.000
Reassuring	.191	438	.000	.933	438	.000
Happy	.145	438	.000	.940	438	.000
Charming	.163	438	.000	.936	438	.000
Pleasant	.175	438	.000	.935	438	.000
Smart	.140	438	.000	.946	438	.000

Item	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	d.f.	Sig.	Statistic	d.f.	Sig.
International	.151	438	.000	.928	438	.000
Determined	.148	438	.000	.944	438	.000

## Pretest 1 – Results of Brand Elicitation

Brands	Frequency	Percent
Samsung	7	11.7
Nike	4	6.7
Apple	3	5.0
Body Shop	3	5.0
iPhone	3	5.0
Prada	3	5.0
Sony	3	5.0
Dettol	2	3.3
H&M	2	3.3
Uniqlo	2	3.3
100 plus	1	1.7
Adidas	1	1.7
Air Asia	1	1.7
Applemint	1	1.7
BMW	1	1.7
Bonia	1	1.7
Coke	1	1.7
Colgate	1	1.7
Crocs	1	1.7
Game	1	1.7
Harley	1	1.7
Hyundai	1	1.7
KFC	1	1.7
Levis	1	1.7
Lexus	1	1.7
Louis Vuitton	1	1.7
Mountain Dew	1	1.7
Milo	1	1.7
MNG	1	1.7
Nestle	1	1.7
Nokia	1	1.7
Padini	1	1.7
Pepsi	1	1.7
Polo Ralph Lauren	1	1.7
Scholl	1	1.7
Silky Girl	1	1.7
Vaseline	1	1.7
Yonex	1	1.7
Total	60	100.0

## **Appendix C – Questionnaires**

This appendix comprises all pretests and main studies done. However, due to the magnitude of this thesis, the author reduces the length of the appendix by reproducing the important parts of the questionnaires. Furthermore, only one consent letter and one demographic section are reproduced here since they are being repeated in every pretest and main studies. In all, there are;

- 1) 5 scale development studies,
- 2) 5 pretests for experimental studies, and
- 3) 3 experimental studies.



## Aston Business School

### Consent to Participate in a Research Study

Mozard Mohtar, a doctoral student of Marketing Group, Aston Business School, Aston University, Birmingham, United Kingdom invites you to be part of research study that looks at effects of brand personality. Like humans, brands have personalities. This happens when consumers imbue and transfer any human personality traits to brand. The purpose of this study is to identify brand personality traits unique to Malaysians, and investigate their effects on consumption. I am inviting you to participate because you represent the typical Malaysian consumers.

If you agree to participate, you will be asked to complete a short survey asking your sincere and quick assessments on familiar brands. I expect that this will take 15 to 20 minutes to complete. You will not be provided any incentive to take part in the research. Although you may not directly benefit from participating, the study hopes to improve brand communications in general.

There are no risks associated with this study because the data collection is completely anonymous and the topic is not sensitive. This survey is not testing any experimental procedure or product. Participating in this study is completely voluntary. Even if you decide to participate now, you may change your mind and stop at any time. You may choose to not answer an individual question or you may skip any section of the survey. Refusal to participate involves no penalty of loss of benefits.

All information will be treated in the strictest confidence and results will be produced in the form of aggregated data only. I will not be sharing information about you to anyone outside of the research team. The information collected will be kept private. I plan to publish the results of this study, but will not include any information that would identify you.

If you have any questions, you can ask them now or later. If you wish to ask questions later, you may contact me at [mohtarm@aston.ac.uk](mailto:mohtarm@aston.ac.uk). Your responses are much appreciated. Thank you.

Please forward any inquiry regarding this questionnaire to:

Mozard Mohtar,  
[mohtarm@aston.ac.uk](mailto:mohtarm@aston.ac.uk).

		Tick Box
1	I am invited and confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2	I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected.	
3	I agree to take part in the above study.	

\_\_\_\_\_  
Name of volunteer

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name of Person taking consent  
(if different from researcher)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Researcher

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature



**About yourself (Please tick ✓)**

**Gender**

- Male
- Female

**Nationality**

- Malaysian
- Others
- .....

**Race**

- Malay
- Chinese
- Indian
- Others:

**Age**

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**Occupation**

- Student (part-time)
- Student (full-time)
- Working

- Undergraduate
- Undergraduate
- Position:

- Graduate
- Graduate

**We would like to thank you for your patience in completing our survey. Please go over the survey to ensure that all the questions have been answered. Please write any of your comments below. We appreciate your time and effort to participate in this survey. Thank you again.**

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**End of Survey**

## Study 1: Top-of-Mind Brand Elicitation

Scale Development: Phase 1 - Item Generation

### SECTION 1 – Top-of-mind Brand Recall

The purpose of this section is to discover your brand recall of both local and global brands in the product categories below. You only list down what is the FIRST BRAND that comes to mind when you think of these product categories. Please only write down only ONE BRAND per category.

PRODUCT CATEGORY	BRAND	PRODUCT CATEGORY	BRAND
Fast Food Restaurant		Smart phone	
Airlines		Sports wear	
Detergent		Car	
Toothpaste		Bank	
Medicine – Pain reliever		Mattress	
Bread		Tyres	
Women's undergarments		House paints	
Make-up and beauty		Laptops	
Men's fragrance		Hotel	
Luxury car		Carbonated drinks	


## Study 2: Item Generation

Scale Development: Phase 1 - Item Generation

### SECTION 1 – Brand Personality

The purpose of this section is to evaluate the brand personality traits of these brands below. Brands personality refers to the set of personality traits that are both applicable to and relevant for brands. If I asked you to give me your impressions of a particular person, you might answer with a set of personality attributes/traits. Now let's think about brands in the same way. We would like you to think of each brand as if it were a person. For example, you might think that the human personality traits of TV3 as fun, reliable and vibrant.

Please write down the personality attributes that come to your mind and as many as you could. If you prefer you could answer in Malay

BRANDS	PERSONALITY ATTRIBUTES
<div style="text-align: center;">  <p>Aston University</p> <p><small>Illustration removed for copyright restrictions</small></p> </div>	<p>On the scale of 1 (most utilitarian) to 7 (most symbolic), please rate how symbolic (i.e. self-expressive) or utilitarian (i.e. functional) the brand is.</p> <p>Utilitarian   1   2   3   4   5   6   7   Symbolic</p> <p>Please write down the personality attributes of the brand as much as you possibly can in either English or Malay:</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>

BRANDS	PERSONALITY ATTRIBUTES
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On the scale of 1 (most utilitarian) to 7 (most symbolic), please rate how symbolic (i.e. self-expressive) or utilitarian (i.e. functional) the brand is.

Utilitarian 1 2 3 4 5 6 7 Symbolic

Please write down the personality attributes of the brand as much as you possibly can in either English or Malay:

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On the scale of 1 (most utilitarian) to 7 (most symbolic), please rate how symbolic (i.e. self-expressive) or utilitarian (i.e. functional) the brand is.

Utilitarian 1 2 3 4 5 6 7 Symbolic

Please write down the personality attributes of the brand as much as you possibly can in either English or Malay:

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BRANDS	PERSONALITY ATTRIBUTES
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On the scale of 1 (most utilitarian) to 7 (most symbolic), please rate how symbolic (i.e. self-expressive) or utilitarian (i.e. functional) the brand is.

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On the scale of 1 (most utilitarian) to 7 (most symbolic), please rate how symbolic (i.e. self-expressive) or utilitarian (i.e. functional) the brand is.

Utilitarian 1 2 3 4 5 6 7 Symbolic

Please write down the personality attributes of the brand as much as you possibly can in either English or Malay:

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<b>BRANDS</b>	<b>PERSONALITY ATTRIBUTES</b>
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On the scale of 1 (most utilitarian) to 7 (most symbolic), please rate how symbolic (i.e. self-expressive) or utilitarian (i.e. functional) the brand is.

Utilitarian 1 2 3 4 5 6 7 Symbolic

Please write down the personality attributes of the brand as much as you possibly can in either English or Malay:

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On the scale of 1 (most utilitarian) to 7 (most symbolic), please rate how symbolic (i.e. self-expressive) or utilitarian (i.e. functional) the brand is.

Utilitarian 1 2 3 4 5 6 7 Symbolic

Please write down the personality attributes of the brand as much as you possibly can in either English or Malay:

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BRANDS	PERSONALITY ATTRIBUTES
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On the scale of 1 (most utilitarian) to 7 (most symbolic), please rate how symbolic (i.e. self-expressive) or utilitarian (i.e. functional) the brand is.

Utilitarian 1 2 3 4 5 6 7 Symbolic

Please write down the personality attributes of the brand as much as you possibly can in either English or Malay:

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On the scale of 1 (most utilitarian) to 7 (most symbolic), please rate how symbolic (i.e. self-expressive) or utilitarian (i.e. functional) the brand is.

Utilitarian 1 2 3 4 5 6 7 Symbolic

Please write down the personality attributes of the brand as much as you possibly can in either English or Malay:

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BRANDS	PERSONALITY ATTRIBUTES
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On the scale of 1 (most utilitarian) to 7 (most symbolic), please rate how symbolic (i.e. self-expressive) or utilitarian (i.e. functional) the brand is.

Utilitarian 1 2 3 4 5 6 7 Symbolic

Please write down the personality attributes of the brand as much as you possibly can in either English or Malay:

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On the scale of 1 (most utilitarian) to 7 (most symbolic), please rate how symbolic (i.e. self-expressive) or utilitarian (i.e. functional) the brand is.

Utilitarian 1 2 3 4 5 6 7 Symbolic

Please write down the personality attributes of the brand as much as you possibly can in either English or Malay:

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### Study 3: Item Reduction (3 sets)

Scale Development: Phase 1 - Item Generation

Study 3 - Set A

#### SECTION 1 – Brand Personality

The purpose of this section is to evaluate the brand personality traits of brands. Brands personality refers to the set of personality traits that are both applicable to and relevant for brands. If I asked you to give me your impressions of a particular person, you might answer with a set of personality attributes/traits.

Now let's think about brands in the same way. We would like you to think of each brand as if it were a person. For example, you might think that the human personality traits of BlackBerry as fun, innovative and vibrant; Nike as energetic, cool and aggressive and Toyota as competent, reliable and trustworthy

Since the study is not about any particular brand, try to think about all your favourite local and global brands that you are using and wish to purchase in the future in various product/service categories when you evaluate each trait. (1=Not at all relevant, 7=Extremely relevant)

	Not at all Relevant						Extremely Relevant
Achievement Oriented	1	2	3	4	5	6	7
Committed	1	2	3	4	5	6	7
Efficient	1	2	3	4	5	6	7
Cooperative	1	2	3	4	5	6	7
Intelligent	1	2	3	4	5	6	7
Classic	1	2	3	4	5	6	7
Unconventional	1	2	3	4	5	6	7
Glamorous	1	2	3	4	5	6	7
Dominant	1	2	3	4	5	6	7
Confident	1	2	3	4	5	6	7
Solid	1	2	3	4	5	6	7
Controlling	1	2	3	4	5	6	7
Slow	1	2	3	4	5	6	7
Sweet	1	2	3	4	5	6	7
Congenial	1	2	3	4	5	6	7
Informed	1	2	3	4	5	6	7
Selfish	1	2	3	4	5	6	7
Interesting	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7
Precise	1	2	3	4	5	6	7
Proud	1	2	3	4	5	6	7
Patient	1	2	3	4	5	6	7
Cheerful	1	2	3	4	5	6	7
Exciting	1	2	3	4	5	6	7
Independent	1	2	3	4	5	6	7

Well-Made	1	2	3	4	5	6	7
Helpful	1	2	3	4	5	6	7
Loyal	1	2	3	4	5	6	7
Bourgeois (middle class)	1	2	3	4	5	6	7
Shy	1	2	3	4	5	6	7
Elite	1	2	3	4	5	6	7
Reputable	1	2	3	4	5	6	7
Productive	1	2	3	4	5	6	7
Corporate	1	2	3	4	5	6	7
Extrovert	1	2	3	4	5	6	7
Macho	1	2	3	4	5	6	7
Adaptive	1	2	3	4	5	6	7
Metro sexual	1	2	3	4	5	6	7
Ambitious	1	2	3	4	5	6	7
Dignified	1	2	3	4	5	6	7
Loving	1	2	3	4	5	6	7
Competitive	1	2	3	4	5	6	7
Modern	1	2	3	4	5	6	7
Conservative	1	2	3	4	5	6	7
Selective	1	2	3	4	5	6	7
Local	1	2	3	4	5	6	7
Optimistic	1	2	3	4	5	6	7
Agreeable	1	2	3	4	5	6	7
Pleasant	1	2	3	4	5	6	7
Consistent	1	2	3	4	5	6	7
Arrogant	1	2	3	4	5	6	7
Fashionable	1	2	3	4	5	6	7
Level-Headed	1	2	3	4	5	6	7
Caring	1	2	3	4	5	6	7
Wasteful	1	2	3	4	5	6	7
Relaxed	1	2	3	4	5	6	7
Western	1	2	3	4	5	6	7
Smooth	1	2	3	4	5	6	7
Childlike	1	2	3	4	5	6	7
Mobile	1	2	3	4	5	6	7
Enthusiastic	1	2	3	4	5	6	7
Attentive	1	2	3	4	5	6	7
Responsible	1	2	3	4	5	6	7
Thrifty	1	2	3	4	5	6	7
Up-To-Date	1	2	3	4	5	6	7
Open	1	2	3	4	5	6	7
Family-Oriented	1	2	3	4	5	6	7
Energetic	1	2	3	4	5	6	7
Emotional	1	2	3	4	5	6	7
Inward-Looking	1	2	3	4	5	6	7
Bold	1	2	3	4	5	6	7
Obtrusive (Pushy)	1	2	3	4	5	6	7
Outmoded (Obsolete)	1	2	3	4	5	6	7
Refined	1	2	3	4	5	6	7
Tenacious	1	2	3	4	5	6	7

Cute	1	2	3	4	5	6	7
Champion	1	2	3	4	5	6	7
Ordinary	1	2	3	4	5	6	7
Unsafe	1	2	3	4	5	6	7
Saucy (Disrespectful)	1	2	3	4	5	6	7

Study 3 - Set B

### SECTION 1 – Brand Personality

The purpose of this section is to evaluate the brand personality traits of brands. Brands personality refers to the set of personality traits that are both applicable to and relevant for brands. If I asked you to give me your impressions of a particular person, you might answer with a set of personality attributes/traits.

Now let's think about brands in the same way. We would like you to think of each brand as if it were a person. For example, you might think that the human personality traits of BlackBerry as fun, innovative and vibrant; Nike as energetic, cool and aggressive and Toyota as competent, reliable and trustworthy

Since the study is not about any particular brand, try to think about all your favourite local and global brands that you are using and wish to purchase in the future in various product/service categories when you evaluate each trait. (1=Not at all relevant, 7=Extremely relevant)

	Not at all Relevant						Extremely Relevant
Good Natured	1	2	3	4	5	6	7
Unique	1	2	3	4	5	6	7
Dependent	1	2	3	4	5	6	7
Straightforward	1	2	3	4	5	6	7
Reasonable	1	2	3	4	5	6	7
Imaginative	1	2	3	4	5	6	7
Socially Responsible	1	2	3	4	5	6	7
Scrupulous	1	2	3	4	5	6	7
Versatile	1	2	3	4	5	6	7
Unfriendly	1	2	3	4	5	6	7
Tolerant	1	2	3	4	5	6	7
Spirited	1	2	3	4	5	6	7
Dynamic	1	2	3	4	5	6	7
Small-Town	1	2	3	4	5	6	7
Hardworking	1	2	3	4	5	6	7
Friendly	1	2	3	4	5	6	7
Futuristic	1	2	3	4	5	6	7
Kind	1	2	3	4	5	6	7
Superficial	1	2	3	4	5	6	7
Busy	1	2	3	4	5	6	7
Talkative	1	2	3	4	5	6	7
Young	1	2	3	4	5	6	7
Vivid	1	2	3	4	5	6	7

Rational	1	2	3	4	5	6	7
Naïve	1	2	3	4	5	6	7
Traditional	1	2	3	4	5	6	7
Successful	1	2	3	4	5	6	7
True	1	2	3	4	5	6	7
Flexible	1	2	3	4	5	6	7
Honest							
Rugged	1	2	3	4	5	6	7
Generous	1	2	3	4	5	6	7
Sincere	1	2	3	4	5	6	7
Outdoorsy	1	2	3	4	5	6	7
Sporty	1	2	3	4	5	6	7
Likable	1	2	3	4	5	6	7
Persistent	1	2	3	4	5	6	7
Affectionate	1	2	3	4	5	6	7
Strong	1	2	3	4	5	6	7
Prestigious	1	2	3	4	5	6	7
Informative	1	2	3	4	5	6	7
Established	1	2	3	4	5	6	7
Prestigious	1	2	3	4	5	6	7
Well-Organised	1	2	3	4	5	6	7
Funny	1	2	3	4	5	6	7
Compassionate	1	2	3	4	5	6	7
Light-Hearted	1	2	3	4	5	6	7
Contemporary	1	2	3	4	5	6	7
Free	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Irritating	1	2	3	4	5	6	7
Chill	1	2	3	4	5	6	7
Geeky	1	2	3	4	5	6	7
Handy	1	2	3	4	5	6	7
Determined	1	2	3	4	5	6	7
Easy Going	1	2	3	4	5	6	7
Feminine	1	2	3	4	5	6	7
Stylish	1	2	3	4	5	6	7
Smart	1	2	3	4	5	6	7
Confused	1	2	3	4	5	6	7
Imposing	1	2	3	4	5	6	7
Real	1	2	3	4	5	6	7
International	1	2	3	4	5	6	7
Welcoming	1	2	3	4	5	6	7
Gentle	1	2	3	4	5	6	7
Pretentious	1	2	3	4	5	6	7
Disorderly	1	2	3	4	5	6	7
Savvy	1	2	3	4	5	6	7
Concerned	1	2	3	4	5	6	7
Authoritarian	1	2	3	4	5	6	7
Hardy	1	2	3	4	5	6	7
Thriving	1	2	3	4	5	6	7
Playful	1	2	3	4	5	6	7

Adventurous	1	2	3	4	5	6	7
Trustworthy	1	2	3	4	5	6	7
Original	1	2	3	4	5	6	7
Open-Minded	1	2	3	4	5	6	7
Empathetic	1	2	3	4	5	6	7
Intense	1	2	3	4	5	6	7
Conscientious	1	2	3	4	5	6	7

### Study 3 – Set C

#### SECTION 1 – Brand Personality

The purpose of this section is to evaluate the brand personality traits of brands. Brands personality refers to the set of personality traits that are both applicable to and relevant for brands. If I asked you to give me your impressions of a particular person, you might answer with a set of personality attributes/traits.

Now let's think about brands in the same way. We would like you to think of each brand as if it were a person. For example, you might think that the human personality traits of BlackBerry as fun, innovative and vibrant; Nike as energetic, cool and aggressive and Toyota as competent, reliable and trustworthy

Since the study is not about any particular brand, try to think about all your favourite local and global brands that you are using and wish to purchase in the future in various product/service categories when you evaluate each trait. (1=Not at all relevant, 7=Extremely relevant)

	Not at all Relevant						Extremely Relevant
Chic	1	2	3	4	5	6	7
Snobbish	1	2	3	4	5	6	7
Stable	1	2	3	4	5	6	7
Considerate	1	2	3	4	5	6	7
Small-Minded	1	2	3	4	5	6	7
Sophisticated	1	2	3	4	5	6	7
Annoying	1	2	3	4	5	6	7
Sultry	1	2	3	4	5	6	7
Sweet	1	2	3	4	5	6	7
Professional	1	2	3	4	5	6	7
Orderly	1	2	3	4	5	6	7
Athletic	1	2	3	4	5	6	7
Peaceful	1	2	3	4	5	6	7
Mild-Mannered	1	2	3	4	5	6	7
Hard Working	1	2	3	4	5	6	7
Casual	1	2	3	4	5	6	7
Trendy	1	2	3	4	5	6	7
Creative	1	2	3	4	5	6	7
Resolute	1	2	3	4	5	6	7
Boring	1	2	3	4	5	6	7

Thoughtful	1	2	3	4	5	6	7
Clever	1	2	3	4	5	6	7
Enjoyable	1	2	3	4	5	6	7
Youthful	1	2	3	4	5	6	7
Tough	1	2	3	4	5	6	7
Spiritual	1	2	3	4	5	6	7
Universal	1	2	3	4	5	6	7
Sloppy	1	2	3	4	5	6	7
Calm	1	2	3	4	5	6	7
Low Class	1	2	3	4	5	6	7
Moderate	1	2	3	4	5	6	7
Active	1	2	3	4	5	6	7
Cool	1	2	3	4	5	6	7
Daring	1	2	3	4	5	6	7
Warm	1	2	3	4	5	6	7
Charming	1	2	3	4	5	6	7
Altruist	1	2	3	4	5	6	7
Urban	1	2	3	4	5	6	7
Faithful	1	2	3	4	5	6	7
Passionate	1	2	3	4	5	6	7
Strict	1	2	3	4	5	6	7
Cordial	1	2	3	4	5	6	7
Elitist	1	2	3	4	5	6	7
Leader	1	2	3	4	5	6	7
Hypocritical (Deceitful)	1	2	3	4	5	6	7
Wholesome	1	2	3	4	5	6	7
Fanciful	1	2	3	4	5	6	7
Soft Spoken	1	2	3	4	5	6	7
Unique	1	2	3	4	5	6	7
Down-To-Earth	1	2	3	4	5	6	7
Homely	1	2	3	4	5	6	7
Luxurious	1	2	3	4	5	6	7
Elegant	1	2	3	4	5	6	7
Vibrant	1	2	3	4	5	6	7
Old-Fashioned	1	2	3	4	5	6	7
Romantic	1	2	3	4	5	6	7
Innovative	1	2	3	4	5	6	7
Nice	1	2	3	4	5	6	7
Loud	1	2	3	4	5	6	7
Selfish	1	2	3	4	5	6	7
Mystical	1	2	3	4	5	6	7
Technical	1	2	3	4	5	6	7
Reliable	1	2	3	4	5	6	7
Aggressive	1	2	3	4	5	6	7
Refreshing	1	2	3	4	5	6	7
Sentimental	1	2	3	4	5	6	7
Unethical	1	2	3	4	5	6	7
Secure	1	2	3	4	5	6	7
Purposeful	1	2	3	4	5	6	7
Bubbly	1	2	3	4	5	6	7

Simple	1	2	3	4	5	6	7
Positive	1	2	3	4	5	6	7
Good Looking	1	2	3	4	5	6	7
Masculine	1	2	3	4	5	6	7
Upper Class	1	2	3	4	5	6	7
Reassuring	1	2	3	4	5	6	7
Supportive	1	2	3	4	5	6	7
Extravagant	1	2	3	4	5	6	7
Lively	1	2	3	4	5	6	7
Satisfying	1	2	3	4	5	6	7

## Study 4: Scale Development


Scale Development: Phase 2 – Scale Development

### SECTION 1: Brand Personality

The purpose of this section is to evaluate the brand personality traits of the brand mentioned. Brand personality refers to the set of personality traits that are both applicable to and relevant for brands. If I asked you to give me your impressions of a particular person, you might answer with a set of personality attributes/traits.

Now let's think about the brand mentioned in the same way. We would like you to think the brand as if it were a person. For example, you might think that the human personality traits of BlackBerry as fun, innovative and vibrant; Reebok as energetic, cool and aggressive and Toyota as competent, reliable and trustworthy

Please describe the brand below in reference to the personality traits listed (1=Not at all Descriptive, 7=Extremely Descriptive).<sup>50</sup>

		Not at all Descriptive					Extremely Descriptive	
 <p>Aston University Illustration removed for copyright restrictions</p>	Relaxed	1	2	3	4	5	6	7
	Adventurous	1	2	3	4	5	6	7
	Concerned	1	2	3	4	5	6	7
	Welcoming	1	2	3	4	5	6	7
	Good Looking	1	2	3	4	5	6	7
	Honest	1	2	3	4	5	6	7
	Faithful	1	2	3	4	5	6	7
	Exciting	1	2	3	4	5	6	7
	Lively	1	2	3	4	5	6	7
	Dynamic	1	2	3	4	5	6	7
	Cool	1	2	3	4	5	6	7
	Innovative	1	2	3	4	5	6	7
	Creative	1	2	3	4	5	6	7
	Hard Working	1	2	3	4	5	6	7
	Champion	1	2	3	4	5	6	7
	Consistent	1	2	3	4	5	6	7
	Real	1	2	3	4	5	6	7
	Intelligent	1	2	3	4	5	6	7
	Versatile	1	2	3	4	5	6	7
	Vibrant	1	2	3	4	5	6	7
	Satisfying	1	2	3	4	5	6	7
	Up-to-Date	1	2	3	4	5	6	7
	Sincere	1	2	3	4	5	6	7
	Competitive	1	2	3	4	5	6	7
	Youthful	1	2	3	4	5	6	7

<sup>50</sup> Note: In total 12 brands (i.e. 12 questionnaire sets) in various local and global product and service categories are selected in this study. They are Air Asia, Apple, BMW, CIMB, Colgate, Dell, Hilton, KFC, MAS, Maybank, Nike, and Panadol



	Well-Organised	1	2	3	4	5	6	7
	Simple	1	2	3	4	5	6	7
	Well-Made	1	2	3	4	5	6	7
	Established	1	2	3	4	5	6	7
	Achievement-Oriented	1	2	3	4	5	6	7
	Luxurious	1	2	3	4	5	6	7
	Cute	1	2	3	4	5	6	7
	Upper Class	1	2	3	4	5	6	7
	Feminine	1	2	3	4	5	6	7
	Futuristic	1	2	3	4	5	6	7
	Original	1	2	3	4	5	6	7
	Socially	1	2	3	4	5	6	7
	Responsible	1	2	3	4	5	6	7
	Easy Going	1	2	3	4	5	6	7
	Flexible	1	2	3	4	5	6	7
	Extravagant	1	2	3	4	5	6	7
	Supportive	1	2	3	4	5	6	7
	Glamour	1	2	3	4	5	6	7
	Active	1	2	3	4	5	6	7
	True	1	2	3	4	5	6	7
	Urban	1	2	3	4	5	6	7
	Fashionable	1	2	3	4	5	6	7
	Kind	1	2	3	4	5	6	7
	Unique	1	2	3	4	5	6	7
	Generous	1	2	3	4	5	6	7
	Reliable	1	2	3	4	5	6	7
	Interesting	1	2	3	4	5	6	7
	Nice	1	2	3	4	5	6	7
	Open Minded	1	2	3	4	5	6	7
	Leader	1	2	3	4	5	6	7
	Confident	1	2	3	4	5	6	7
	Reasonable	1	2	3	4	5	6	7
	Informative	1	2	3	4	5	6	7
	Efficient	1	2	3	4	5	6	7
	Elite	1	2	3	4	5	6	7
	Successful	1	2	3	4	5	6	7
	Responsible	1	2	3	4	5	6	7
	Sentimental	1	2	3	4	5	6	7
	Trustworthy	1	2	3	4	5	6	7
	Stylish	1	2	3	4	5	6	7
	Professional	1	2	3	4	5	6	7
	Bold	1	2	3	4	5	6	7
	Friendly	1	2	3	4	5	6	7
	Casual	1	2	3	4	5	6	7
	Modern	1	2	3	4	5	6	7
	Purposeful	1	2	3	4	5	6	7
	Outgoing	1	2	3	4	5	6	7
	Cheerful	1	2	3	4	5	6	7



	Prestigious	1	2	3	4	5	6	7
	Gentle	1	2	3	4	5	6	7
	Positive	1	2	3	4	5	6	7
	Down-to-earth	1	2	3	4	5	6	7
	Clever	1	2	3	4	5	6	7
	Smooth	1	2	3	4	5	6	7
	Elegant	1	2	3	4	5	6	7
	Trendy	1	2	3	4	5	6	7
	Simple	1	2	3	4	5	6	7
	Proud	1	2	3	4	5	6	7
	Passionate	1	2	3	4	5	6	7
	Free	1	2	3	4	5	6	7
	Good Nature	1	2	3	4	5	6	7
	Homely	1	2	3	4	5	6	7
	Selective	1	2	3	4	5	6	7
	Active	1	2	3	4	5	6	7
	Enjoyable	1	2	3	4	5	6	7
	Romantic	1	2	3	4	5	6	7
	Universal	1	2	3	4	5	6	7
	Strong	1	2	3	4	5	6	7
	Ordinary	1	2	3	4	5	6	7
	Precise	1	2	3	4	5	6	7
	Likable	1	2	3	4	5	6	7
	Productive	1	2	3	4	5	6	7
	Reassuring	1	2	3	4	5	6	7
	Happy	1	2	3	4	5	6	7
	Charming	1	2	3	4	5	6	7
	Stable	1	2	3	4	5	6	7
	Loyal	1	2	3	4	5	6	7
	Aggressive	1	2	3	4	5	6	7
	Pleasant	1	2	3	4	5	6	7
	Smart	1	2	3	4	5	6	7
	International	1	2	3	4	5	6	7
	Determined	1	2	3	4	5	6	7



## Study 5: Scale Validation


Scale Development: Phase 3 – Scale Validation

### SECTION 1: Brand Personality

The purpose of this section is to evaluate the brand personality traits of the brand mentioned. Brand personality refers to the set of personality traits that are both applicable to and relevant for brands. If I asked you to give me your impressions of a particular person, you might answer with a set of personality attributes/traits.

Now let's think about the brand mentioned in the same way. We would like you to think the brand as if it were a person. For example, you might think that the human personality traits of BlackBerry as fun, innovative and vibrant; Reebok as energetic, cool and aggressive and Toyota as competent, reliable and trustworthy


Please describe the brand below in reference to the personality traits listed (1=Not at all Descriptive, 7=Extremely Descriptive).<sup>51</sup>

		Not at all Descriptive					Extremely Descriptive	
 <small>Illustration removed for copyright restrictions</small>	Relaxed	1	2	3	4	5	6	7
	Adventurous	1	2	3	4	5	6	7
	Concerned	1	2	3	4	5	6	7
	Welcoming	1	2	3	4	5	6	7
	Good Looking	1	2	3	4	5	6	7
	Honest	1	2	3	4	5	6	7
	Faithful	1	2	3	4	5	6	7
	Exciting	1	2	3	4	5	6	7
	Lively	1	2	3	4	5	6	7
	Dynamic	1	2	3	4	5	6	7
	Cool	1	2	3	4	5	6	7
	Innovative	1	2	3	4	5	6	7
	Creative	1	2	3	4	5	6	7
	Hard Working	1	2	3	4	5	6	7
	Champion	1	2	3	4	5	6	7
	Consistent	1	2	3	4	5	6	7
	Real	1	2	3	4	5	6	7
	Intelligent	1	2	3	4	5	6	7
	Versatile	1	2	3	4	5	6	7
	Vibrant	1	2	3	4	5	6	7
	Satisfying	1	2	3	4	5	6	7
	Up-to-Date	1	2	3	4	5	6	7
	Sincere	1	2	3	4	5	6	7
	Competitive	1	2	3	4	5	6	7
	Youthful	1	2	3	4	5	6	7

<sup>51</sup> Note: In total 12 brands (i.e. 12 questionnaire sets) in various local and global product and service categories are selected in this study. They are Air Asia, Apple, BMW, CIMB, Colgate, Dell, Hilton, KFC, MAS, Maybank, Nike, and Panadol

Well-Organised	1	2	3	4	5	6	7
Simple	1	2	3	4	5	6	7
Well-Made	1	2	3	4	5	6	7
Established	1	2	3	4	5	6	7
Achievement-Oriented	1	2	3	4	5	6	7
Luxurious	1	2	3	4	5	6	7
Cute	1	2	3	4	5	6	7
Upper Class	1	2	3	4	5	6	7
Feminine	1	2	3	4	5	6	7
Futuristic	1	2	3	4	5	6	7
Original	1	2	3	4	5	6	7
Socially	1	2	3	4	5	6	7
Responsible	1	2	3	4	5	6	7
Easy Going	1	2	3	4	5	6	7
Flexible	1	2	3	4	5	6	7
Extravagant	1	2	3	4	5	6	7
Supportive	1	2	3	4	5	6	7
Glamour	1	2	3	4	5	6	7
Active	1	2	3	4	5	6	7
True	1	2	3	4	5	6	7
Urban	1	2	3	4	5	6	7
Fashionable	1	2	3	4	5	6	7
Kind	1	2	3	4	5	6	7
Unique	1	2	3	4	5	6	7
Generous	1	2	3	4	5	6	7
Reliable	1	2	3	4	5	6	7
Interesting	1	2	3	4	5	6	7
Nice	1	2	3	4	5	6	7
Open Minded	1	2	3	4	5	6	7
Leader	1	2	3	4	5	6	7
Confident	1	2	3	4	5	6	7
Reasonable	1	2	3	4	5	6	7
Informative	1	2	3	4	5	6	7
Efficient	1	2	3	4	5	6	7
Elite	1	2	3	4	5	6	7
Successful	1	2	3	4	5	6	7
Responsible	1	2	3	4	5	6	7
Sentimental	1	2	3	4	5	6	7
Trustworthy	1	2	3	4	5	6	7
Stylish	1	2	3	4	5	6	7
Professional	1	2	3	4	5	6	7
Bold	1	2	3	4	5	6	7
Friendly	1	2	3	4	5	6	7
Casual	1	2	3	4	5	6	7
Modern	1	2	3	4	5	6	7
Purposeful	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Cheerful	1	2	3	4	5	6	7



 Aston University Illustration removed for copyright restrictions	Prestigious	1	2	3	4	5	6	7
	Gentle	1	2	3	4	5	6	7
	Positive	1	2	3	4	5	6	7
	Down-to-earth	1	2	3	4	5	6	7
	Clever	1	2	3	4	5	6	7
	Smooth	1	2	3	4	5	6	7
	Elegant	1	2	3	4	5	6	7
	Trendy	1	2	3	4	5	6	7
	Simple	1	2	3	4	5	6	7
	Proud	1	2	3	4	5	6	7
	Passionate	1	2	3	4	5	6	7
	Free	1	2	3	4	5	6	7
	Good Nature	1	2	3	4	5	6	7
	Homely	1	2	3	4	5	6	7
	Selective	1	2	3	4	5	6	7
	Active	1	2	3	4	5	6	7
	Enjoyable	1	2	3	4	5	6	7
	Romantic	1	2	3	4	5	6	7
	Universal	1	2	3	4	5	6	7
	Strong	1	2	3	4	5	6	7
	Ordinary	1	2	3	4	5	6	7
	Precise	1	2	3	4	5	6	7
	Likable	1	2	3	4	5	6	7
	Productive	1	2	3	4	5	6	7
	Reassuring	1	2	3	4	5	6	7
	Happy	1	2	3	4	5	6	7
	Charming	1	2	3	4	5	6	7
	Stable	1	2	3	4	5	6	7
	Loyal	1	2	3	4	5	6	7
	Aggressive	1	2	3	4	5	6	7
	Pleasant	1	2	3	4	5	6	7
	Smart	1	2	3	4	5	6	7
	International	1	2	3	4	5	6	7
Determined	1	2	3	4	5	6	7	

**SECTION 2: Brand Attachment and Purchase Intention**

This section will assess your attachment and purchase intention towards the brand mentioned in this survey.

1) Please indicate your attachment towards the brand mentioned (0 = Not at all, 11 = Completely).

	Not at all										Completely	
	0	1	2	3	4	5	6	7	8	9	10	11
To what extent is the brand part of you and who you are?												
To what extent do you feel personally connected to the brand?												
To what extent do you feel emotionally bonded to the brand?												
To what extent is the brand part of you?												
To what extent does the brand say something to other people about who you are?												

2) Please indicate your purchase intention and likelihood for the brand above.

Unlikely	1	2	3	4	5	6	7	Likely
Impossible	1	2	3	4	5	6	7	Possible
Improbable	1	2	3	4	5	6	7	Probable

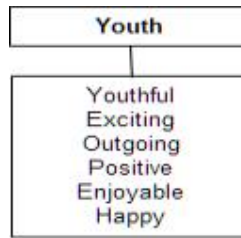
## Pretest 1: Brand Elicitation

Experiment 1: BPC Operationalization

### Section 1: Personality of a Brand - Youth

This section introduces brand personality concept to you. Like human, a brand can be personified with human characters or traits. If Red Bull energy drink were a human being, it can be characterized as having confident and daring traits. Brands acquire personalities through clever and creative advertising efforts in TV, radio, internet, social network, events, sponsorship etc.

Below are the 6 personality traits that represent youth or youthful personality.<sup>52</sup>



- 1) Referring to the 6 traits above, please write the first 3 brands that came into your mind which you believe possess youth traits.

.....

- 2) Choose one of the brands above and briefly describe any advertisement, events or personal experience that make the brand feels and looks youthful.

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**Turn to Next Page**

<sup>52</sup> There are 4 sets of questionnaires, each for all for MBP dimensions – 6-item youth, 6-item sophistication, 6-item competence, and 4-item sincerity. Instructions for all questionnaires are changed accordingly.

3) Please indicate your attitude towards youth personality and its traits.

Bad	1	2	3	4	5	6	7	Good
Low Quality	1	2	3	4	5	6	7	High Quality
Unappealing	1	2	3	4	5	6	7	Appealing
Unpleasant	1	2	3	4	5	6	7	Pleasant
Negative	1	2	3	4	5	6	7	Positive
Dislike	1	2	3	4	5	6	7	Like

4) Please rate your familiarity with the brand you have chosen to describe.

Unfamiliar	1	2	3	4	5	6	7	Familiar
Inexperienced	1	2	3	4	5	6	7	Experienced
Not Knowledgeable	1	2	3	4	5	6	7	Knowledgeable






## Pretest 2: Brand Selection (Set A)

Experiment 1: BPC Operationalization




### Section 1: Brand Personality




Like human, a brand can be personified with human characters such as exciting and youthful such as Coke. Brands acquire personalities through clever and creative advertising efforts in TV, radio, internet, social media, events, sponsorship etc.

Below are 12 top global brands in their respective product category. Please assess these brands based on the personality traits on a 7-point scale (1= Not at all descriptive, 7 = Extremely descriptive).<sup>53</sup>




		Not at all Descriptive					Extremely Descriptive	
 <small>Illustration removed for copyright restrictions</small>	Luxurious	1	2	3	4	5	6	7
	Elite	1	2	3	4	5	6	7
	Stylish	1	2	3	4	5	6	7
	Elegant	1	2	3	4	5	6	7
	Proud	1	2	3	4	5	6	7
	Charming	1	2	3	4	5	6	7
 <small>Illustration removed for copyright restrictions</small>	Luxurious	1	2	3	4	5	6	7
	Elite	1	2	3	4	5	6	7
	Stylish	1	2	3	4	5	6	7
	Elegant	1	2	3	4	5	6	7
	Proud	1	2	3	4	5	6	7
	Charming	1	2	3	4	5	6	7
 <small>Illustration removed for copyright restrictions</small>	Luxurious	1	2	3	4	5	6	7
	Elite	1	2	3	4	5	6	7
	Stylish	1	2	3	4	5	6	7
	Elegant	1	2	3	4	5	6	7
	Proud	1	2	3	4	5	6	7
	Charming	1	2	3	4	5	6	7

<sup>53</sup> There are 4 sets of questionnaires in which the group of brands were rotated following a Latin square procedure. In the second set, brands in group A (Prada, BMW, and Samsung) will be replaced by brands in group B (Nike, Topshop, and Xbox). Brands in group B were replaced with brands in group C (Nikon, Boss, and Toyota). Brands in group C were replaced with brands in group D (The Body Shop, Vaseline, and Dettol). In the third set, the arrangements were CDAB. Lastly, the brands in the fourth set were arranged DABC.

 Illustration removed for copyright restrictions	Youthful	1	2	3	4	5	6	7
	Exciting	1	2	3	4	5	6	7
	Outgoing	1	2	3	4	5	6	7
	Positive	1	2	3	4	5	6	7
	Enjoyable	1	2	3	4	5	6	7
	Happy	1	2	3	4	5	6	7
	 Illustration removed for copyright restrictions	Youthful	1	2	3	4	5	6
Exciting		1	2	3	4	5	6	7
Outgoing		1	2	3	4	5	6	7
Positive		1	2	3	4	5	6	7
Enjoyable		1	2	3	4	5	6	7
Happy		1	2	3	4	5	6	7
 Illustration removed for copyright restrictions		Youthful	1	2	3	4	5	6
	Exciting	1	2	3	4	5	6	7
	Outgoing	1	2	3	4	5	6	7
	Positive	1	2	3	4	5	6	7
	Enjoyable	1	2	3	4	5	6	7
	Happy	1	2	3	4	5	6	7

 Illustration removed for copyright restrictions	Champion	1	2	3	4	5	6	7
	Competitive	1	2	3	4	5	6	7
	Achievement-oriented	1	2	3	4	5	6	7
	Successful	1	2	3	4	5	6	7
	Professional	1	2	3	4	5	6	7
	Productive	1	2	3	4	5	6	7
	 Illustration removed for copyright restrictions	Champion	1	2	3	4	5	6
Competitive		1	2	3	4	5	6	7
Achievement-oriented		1	2	3	4	5	6	7
Successful		1	2	3	4	5	6	7
Professional		1	2	3	4	5	6	7
Productive		1	2	3	4	5	6	7
 Illustration removed for copyright restrictions		Champion	1	2	3	4	5	6
	Competitive	1	2	3	4	5	6	7
	Achievement-oriented	1	2	3	4	5	6	7

	Successful	1	2	3	4	5	6	7
	Professional	1	2	3	4	5	6	7
	Productive	1	2	3	4	5	6	7

		Not at all Descriptive				Extremely Descriptive		
 Aston University <small>Illustration removed for copyright restrictions</small>	Sincere	1	2	3	4	5	6	7
	Flexible	1	2	3	4	5	6	7
	Casual	1	2	3	4	5	6	7
	Good-Natured	1	2	3	4	5	6	7
 Aston University <small>Illustration removed for copyright restrictions</small>	Sincere	1	2	3	4	5	6	7
	Flexible	1	2	3	4	5	6	7
	Casual	1	2	3	4	5	6	7
	Good-Natured	1	2	3	4	5	6	7
 Aston University <small>Illustration removed for copyright restrictions</small>	Sincere	1	2	3	4	5	6	7
	Flexible	1	2	3	4	5	6	7
	Casual	1	2	3	4	5	6	7
	Good-Natured	1	2	3	4	5	6	7

## Main Experiment 1 (Set A)

Experiment 1: BPC Operationalization

### Section 1 – Brand Personality Assessment of XBOX

Like human, a brand can be personified with human characters or traits. If XBOX was a person how would you describe him or her? Please assess XBOX's brand personality on the traits below.<sup>54</sup>

	Not at all Descriptive				Extremely Descriptive		
Youthful	1	2	3	4	5	6	7
Exciting	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Positive	1	2	3	4	5	6	7
Enjoyable	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7

### Section 2 – Brand Personality Assessment of TOYOTA

If TOYOTA was a person how would you describe him or her? Please assess TOYOTA's brand personality on the traits below.

	Not at all Descriptive				Extremely Descriptive		
Champion	1	2	3	4	5	6	7
Competitive	1	2	3	4	5	6	7
Achievement-oriented	1	2	3	4	5	6	7
Successful	1	2	3	4	5	6	7
Professional	1	2	3	4	5	6	7
Productive	1	2	3	4	5	6	7

### Section 3: Brand Personality – Youth and Competence

XBOX has always been described as being youthful. For 2014 XBOX intends to include competent personality in its new advertising campaign. The advertising campaign will include competent personality used in TOYOTA's advertising

<sup>54</sup> There are 6 sets of questionnaires for 6 BPC pairs in which to reduce order effect another 6 set of questionnaires are development by swapping; 1) the first brand with the second brand, and 2) the two brand personality dimensions.

campaigns. The new advertisements for XBOX will portray both youthful and competent personalities.

Please take a moment to imagine how the advertisements would be like, and answer the questions below.

- 1) Please indicate the extent youthful and competent personalities complement each other based on the following questions.

Do both personalities fit each other?	Not at all fit	1	2	3	4	5	6	7	Fit very well
How similar are these two personalities?	Very different	1	2	3	4	5	6	7	Very similar
Do both personalities complement each other?	Not at all complementing	1	2	3	4	5	6	7	Very complementing
Having both personalities together...	do not make sense	1	2	3	4	5	6	7	make sense

- 2) Please compare youthful personality with competent personality.

	Not at all						Extremely
Youthful personality is more <b><u>Dominant</u></b>	1	2	3	4	5	6	7
Youthful personality is more <b><u>Assertive</u></b>	1	2	3	4	5	6	7
Youthful personality is more <b><u>Forceful</u></b>	1	2	3	4	5	6	7
Youthful personality is more <b><u>Domineering</u></b>	1	2	3	4	5	6	7
Youthful personality is more <b><u>Firm</u></b>	1	2	3	4	5	6	7
Youthful personality is more <b><u>Self-confident</u></b>	1	2	3	4	5	6	7
Youthful personality is more <b><u>Self-assured</u></b>	1	2	3	4	5	6	7
Youthful personality is more <b><u>Un-self-conscious</u></b>	1	2	3	4	5	6	7

3) Please indicate your attitude towards both personalities to characterize the brand.

Bad	1	2	3	4	5	6	7	Good
Low Quality	1	2	3	4	5	6	7	High Quality
Unappealing	1	2	3	4	5	6	7	Appealing
Unpleasant	1	2	3	4	5	6	7	Pleasant
Unfavourable	1	2	3	4	5	6	7	Favourable
Negative	1	2	3	4	5	6	7	Positive

#### Section 4 – Self Personality Assessment

1) How would you describe yourself on the personality traits listed below?

	Not at all Descriptive					Extremely Descriptive	
Luxurious	1	2	3	4	5	6	7
Elite	1	2	3	4	5	6	7
Stylish	1	2	3	4	5	6	7
Elegant	1	2	3	4	5	6	7
Proud	1	2	3	4	5	6	7
Charming	1	2	3	4	5	6	7
Youthful	1	2	3	4	5	6	7
Exciting	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Positive	1	2	3	4	5	6	7
Enjoyable	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7
Champion	1	2	3	4	5	6	7
Competitive	1	2	3	4	5	6	7
Achievement-oriented	1	2	3	4	5	6	7
Successful	1	2	3	4	5	6	7
Professional	1	2	3	4	5	6	7
Productive	1	2	3	4	5	6	7
Sincere	1	2	3	4	5	6	7
Flexible	1	2	3	4	5	6	7
Casual	1	2	3	4	5	6	7
Good-Natured	1	2	3	4	5	6	7

## Pretest 3: Product Category Selection

Experiment 2: BPC Effects

### Section 1: Product Involvement

The purpose of this section is to evaluate your involvement on the products that are listed below.

1) Contemporary art poster	<table border="0"> <tr><td>Unimportant</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>Important</td></tr> <tr><td>Boring</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>Interesting</td></tr> <tr><td>Irrelevant</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>Relevant</td></tr> <tr><td>Unexciting</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>Exciting</td></tr> <tr><td>Means Nothing</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>Means a lot to me</td></tr> <tr><td>Unappealing</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>Appealing</td></tr> <tr><td>Mundane</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>Fascinating</td></tr> <tr><td>Worthless</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>Valuable</td></tr> <tr><td>Uninvolving</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>Involving</td></tr> <tr><td>Not needed</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>Needed</td></tr> </table>	Unimportant	1	2	3	4	5	6	7	Important	Boring	1	2	3	4	5	6	7	Interesting	Irrelevant	1	2	3	4	5	6	7	Relevant	Unexciting	1	2	3	4	5	6	7	Exciting	Means Nothing	1	2	3	4	5	6	7	Means a lot to me	Unappealing	1	2	3	4	5	6	7	Appealing	Mundane	1	2	3	4	5	6	7	Fascinating	Worthless	1	2	3	4	5	6	7	Valuable	Uninvolving	1	2	3	4	5	6	7	Involving	Not needed	1	2	3	4	5	6	7	Needed
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12) Electronic Gym Bicycles	Unimportant	1	2	3	4	5	6	7	Important
	Boring	1	2	3	4	5	6	7	Interesting
	Irrelevant	1	2	3	4	5	6	7	Relevant
	Unexciting	1	2	3	4	5	6	7	Exciting
	Means Nothing	1	2	3	4	5	6	7	Means a lot to me
	Unappealing	1	2	3	4	5	6	7	Appealing
	Mundane	1	2	3	4	5	6	7	Fascinating
	Worthless	1	2	3	4	5	6	7	Valuable
	Uninvolving	1	2	3	4	5	6	7	Involving
	Not needed	1	2	3	4	5	6	7	Needed

## Pretest 4: Product Congruity

Experiment 2: BPC Effects

### SECTION 1: Introduction

An international smartphone company is thinking of expanding into a new product category. The purpose of this questionnaire is to identify which product category is consistent with the existing product category. The following sections will address the various major product categories.

### SECTION 2: Product Category Consistency

Please evaluate the following product categories whether it is consistent with the smartphone category.

1) Art (Contemporary Art Posters)	Inconsistent	1	2	3	4	5	6	7	Consistent
	Atypical	1	2	3	4	5	6	7	Typical
	Unusual	1	2	3	4	5	6	7	Usual
2) Baby (Baby Stroller)	Inconsistent	1	2	3	4	5	6	7	Consistent
	Atypical	1	2	3	4	5	6	7	Typical
	Unusual	1	2	3	4	5	6	7	Usual
3) Books, Comics, & Magazine (Magazine)	Inconsistent	1	2	3	4	5	6	7	Consistent
	Atypical	1	2	3	4	5	6	7	Typical
	Unusual	1	2	3	4	5	6	7	Usual
4) Camera (Digital Camera)	Inconsistent	1	2	3	4	5	6	7	Consistent
	Atypical	1	2	3	4	5	6	7	Typical
	Unusual	1	2	3	4	5	6	7	Usual
5) Clothing, Shoes, & Accessories (Jeans)	Inconsistent	1	2	3	4	5	6	7	Consistent
	Atypical	1	2	3	4	5	6	7	Typical
	Unusual	1	2	3	4	5	6	7	Usual
6) Computers & Tablets (Laptop)	Inconsistent	1	2	3	4	5	6	7	Consistent
	Atypical	1	2	3	4	5	6	7	Typical
	Unusual	1	2	3	4	5	6	7	Usual
7) Consumer Electronics (Television)	Inconsistent	1	2	3	4	5	6	7	Consistent
	Atypical	1	2	3	4	5	6	7	Typical
	Unusual	1	2	3	4	5	6	7	Usual

8) Crafts, Toys & Hobbies (Radio Controlled Toys)	Inconsistent 1 2 3 4 5 6 7 Consistent Atypical 1 2 3 4 5 6 7 Typical Unusual 1 2 3 4 5 6 7 Usual
9) Health & Beauty (Fragrance)	Inconsistent 1 2 3 4 5 6 7 Consistent Atypical 1 2 3 4 5 6 7 Typical Unusual 1 2 3 4 5 6 7 Usual
10) Home & Garden (Microwave Oven)	Inconsistent 1 2 3 4 5 6 7 Consistent Atypical 1 2 3 4 5 6 7 Typical Unusual 1 2 3 4 5 6 7 Usual
11) Musical Instrument (Digital Piano)	Inconsistent 1 2 3 4 5 6 7 Consistent Atypical 1 2 3 4 5 6 7 Typical Unusual 1 2 3 4 5 6 7 Usual
12) Sports Goods (Electronic Gym Bicycle)	Inconsistent 1 2 3 4 5 6 7 Consistent Atypical 1 2 3 4 5 6 7 Typical Unusual 1 2 3 4 5 6 7 Usual
13) Video Games (Games Console)	Inconsistent 1 2 3 4 5 6 7 Consistent Atypical 1 2 3 4 5 6 7 Typical Unusual 1 2 3 4 5 6 7 Usual

## Main Experiment 2 (control)

Experiment 2: BPC Effect

### Section 1 – Brand extension

Please read the short passage below:

Brand X is a smartphone company. For 2014, Brand X plans to expand its business into the laptop computer market. All laptop computers will be designed and produced by Brand X.<sup>55</sup>

Please answer the questions or statements below:

- 1) To what extent to which laptop computer is congruent (i.e. compatible, match) with brand X's smartphone?

a) unusual	1	2	3	4	5	6	7	usual
b) atypical	1	2	3	4	5	6	7	typical
c) inconsistent	1	2	3	4	5	6	7	consistent

- 2) Extending into laptop computer is a ... for Brand X.

bad fit	1	2	3	4	5	6	7	good fit
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- 3) It is ... to expand into laptop computer.

not at all appropriate	1	2	3	4	5	6	7	very appropriate
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- 4) Expanding into laptop computer is ...

not at all logical	1	2	3	4	5	6	7	very logical
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- 5) Extending to laptop computer ...

Does not make sense	1	2	3	4	5	6	7	make sense
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<sup>55</sup> There are 6 sets of questionnaires – high involvement products (laptop, tv, and fragrance), and low involvement products (video game console, radio-controlled toy, and baby stroller). Parent brand remains unchanged in all sets.

## Section 2: Brand extension evaluation

1) Please indicate your attitude towards the Brand X's laptop computer.

Bad	1	2	3	4	5	6	7	Good
Low Quality	1	2	3	4	5	6	7	High Quality
Unappealing	1	2	3	4	5	6	7	Appealing
Unpleasant	1	2	3	4	5	6	7	Pleasant
Unfavourable	1	2	3	4	5	6	7	Favourable
Negative	1	2	3	4	5	6	7	Positive

2) Please indicate your purchase intention likelihood for Brand X's laptop computer.

Unlikely	1	2	3	4	5	6	7	Likely
Impossible	1	2	3	4	5	6	7	Possible
Improbable	1	2	3	4	5	6	7	Probable
Undesirable	1	2	3	4	5	6	7	Desirable

## Main Experiment 2 (High BPC)

Experiment 2: BPC Effects

### Section 1 – Introduction to Brand Personality

A brand can be described using human personality traits. Brands personality refers to the set of personality traits that are both applicable to and relevant for brands. If I asked you to give me your impressions of a particular person, you might answer with a set of personality attributes/traits. The same process can be done for a brand. Personality traits can be used to describe brands too.

### Section 2 – Brand Personality Assessment

*Please read the short passage below:*

Brand X is a smartphone company. It has always been perceived as a youthful brand, thus portraying itself as enjoyable and having an outgoing personality. Advertisements for Brand X have always focused on individuals having fun and feeling joyful in order to create images of excitement.

For 2014, Brand X plans to expand into a new product category, which is the laptop computer. Rather than portraying the laptop computers as being youthful, Brand X's laptop computers will be portrayed as being competent. All advertising campaigns will focus on building competitive and professional personalities by showing individuals who achieve success. All laptop computers will be designed and produced by the smartphone company.<sup>56</sup>

- 1) If Brand X was a person, how would you describe him or her on the personality traits below?

	Not at all Descriptive					Extremely Descriptive	
Youthful	1	2	3	4	5	6	7
Exciting	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Positive	1	2	3	4	5	6	7
Enjoyable	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7

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<sup>56</sup> There are 6 sets of questionnaires – high involvement products (laptop, tv, and fragrance), and low involvement products (video game console, radio-controlled toy, and baby stroller). Parent brand remains unchanged in all sets.

2) How would you describe the new brand personality for the laptop computer?

	Not at all Descriptive					Extremely Descriptive	
Champion	1	2	3	4	5	6	7
Competitive	1	2	3	4	5	6	7
Achievement-oriented	1	2	3	4	5	6	7
Successful	1	2	3	4	5	6	7
Professional	1	2	3	4	5	6	7
Productive	1	2	3	4	5	6	7

### Section 3 – Brand extension

*Please answer the questions or statements below:*

1) To what extent to which laptop computer is congruent (i.e. compatible, match) with brand X's smartphone?

- |                 |   |   |   |   |   |   |   |            |
|-----------------|---|---|---|---|---|---|---|------------|
| a) unusual      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | usual      |
| b) atypical     | 1 | 2 | 3 | 4 | 5 | 6 | 7 | typical    |
| c) inconsistent | 1 | 2 | 3 | 4 | 5 | 6 | 7 | consistent |

2) Extending into laptop computer is a ... for Brand X.

bad fit	1	2	3	4	5	6	7	good fit
---------	---	---	---	---	---	---	---	----------

3) It is ... to expand into laptop computer.

not at all appropriate	1	2	3	4	5	6	7	very appropriate
------------------------	---	---	---	---	---	---	---	------------------

4) Expanding into laptop computer is ...

not at all logical	1	2	3	4	5	6	7	very logical
--------------------	---	---	---	---	---	---	---	--------------

5) Extending to laptop computer ...

Does not make sense	1	2	3	4	5	6	7	make sense
---------------------	---	---	---	---	---	---	---	------------



## Section 4 – Brand Personality Complementarity

Please answer the following questions or statements below based on the above personality assessments of smartphone and laptop computers:

- 1) Do personalities for both smartphone and laptop computer fit each other?

Not at all fit    1    2    3    4    5    6    7    Fit very well

- 2) How similar are the personalities between smartphone and laptop computer?

Very different    1    2    3    4    5    6    7    Very similar

- 3) Do both personalities complement each other?

Not at all complementing    1    2    3    4    5    6    7    Very complementing

- 4) Having two personalities for smartphone and laptop computer...

Does not Make sense    1    2    3    4    5    6    7    make sense

## Section 5 - Brand extension evaluation

- 1) Please indicate your attitude towards Brand X's laptop computer.

Bad	1	2	3	4	5	6	7	Good
Low Quality	1	2	3	4	5	6	7	High Quality
Unappealing	1	2	3	4	5	6	7	Appealing
Unpleasant	1	2	3	4	5	6	7	Pleasant
Unfavourable	1	2	3	4	5	6	7	Favourable
Negative	1	2	3	4	5	6	7	Positive

- 2) Please indicate your purchase intention likelihood for Brand X's laptop computer.

Unlikely	1	2	3	4	5	6	7	Likely
Impossible	1	2	3	4	5	6	7	Possible
Improbable	1	2	3	4	5	6	7	Probable
Undesirable	1	2	3	4	5	6	7	Desirable

## Main Experiment 2 (Low BPC)

Experiment 2: BPC Effects

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### Section 1 – Introduction to Brand Personality

A brand can be described using human personality traits. Brands personality refers to the set of personality traits that are both applicable to and relevant for brands. If I asked you to give me your impressions of a particular person, you might answer with a set of personality attributes/traits. The same process can be done for a brand. Personality traits can be used to describe brands too.

### Section 2 – Brand Personality Assessment

*Please read the short passage below:*

Brand X is a smartphone company. It has always been perceived as a youthful brand, thus portraying itself as enjoyable and having an outgoing personality. Advertisements for Brand X have always focused on individuals having fun and feeling joyful in order to create images of excitement.

For 2014, Brand X plans to expand into a new product category, which is the laptop computer. Rather than portraying the laptop computers as being youthful, Brand X's laptop computers will be portrayed as being sincere. All advertising campaigns will focus on building good-natured and flexible personalities by showing individuals who are sincere. All laptop computers will be designed and produced by the smartphone company.<sup>57</sup>

- 1) If Brand X was a person, how would you describe him or her on the personality traits below?

	Not at all Descriptive					Extremely Descriptive	
Youthful	1	2	3	4	5	6	7
Exciting	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Positive	1	2	3	4	5	6	7
Enjoyable	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7

<sup>57</sup> There are 6 sets of questionnaires – high involvement products (laptop, tv, and fragrance), and low involvement products (video game console, radio-controlled toy, and baby stroller). Parent brand remains unchanged in all sets.

2) How would you describe the new brand personality for the laptop computer?

	Not at all Descriptive				Extremely Descriptive		
Sincere	1	2	3	4	5	6	7
Flexible	1	2	3	4	5	6	7
Casual	1	2	3	4	5	6	7
Good-Natured	1	2	3	4	5	6	7

### Section 3 – Brand extension

*Please answer the questions or statements below:*

1) To what extent to which laptop computer is congruent (i.e. compatible, match) with brand X's smartphone?

- |                 |   |   |   |   |   |   |   |            |
|-----------------|---|---|---|---|---|---|---|------------|
| a) unusual      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | usual      |
| b) atypical     | 1 | 2 | 3 | 4 | 5 | 6 | 7 | typical    |
| c) inconsistent | 1 | 2 | 3 | 4 | 5 | 6 | 7 | consistent |

2) Extending into laptop computer is a ... for Brand X.

bad fit	1	2	3	4	5	6	7	good fit
---------	---	---	---	---	---	---	---	----------

3) It is ... to expand into laptop computer.

not at all appropriate	1	2	3	4	5	6	7	very appropriate
------------------------	---	---	---	---	---	---	---	------------------

4) Expanding into laptop computer is ...

not at all logical	1	2	3	4	5	6	7	very logical
--------------------	---	---	---	---	---	---	---	--------------

5) Extending to laptop computer ...

Does not make sense	1	2	3	4	5	6	7	make sense
---------------------	---	---	---	---	---	---	---	------------

## Section 4 – Brand Personality Complementarity

Please answer the following questions or statements below based on the above personality assessments of smartphone and laptop computers:

- 1) Do personalities for both smartphone and laptop computer fit each other?

Not at all fit    1    2    3    4    5    6    7    Fit very well

- 2) How similar are the personalities between smartphone and laptop computer?

Very different    1    2    3    4    5    6    7    Very similar

- 3) Do both personalities complement each other?

Not at all complementing    1    2    3    4    5    6    7    Very complementing

- 4) Having two personalities for smartphone and laptop computer...

Does not Make sense    1    2    3    4    5    6    7    make sense

## Section 5 - Brand extension evaluation

- 1) Please indicate your attitude towards Brand X's laptop computer.

Bad	1	2	3	4	5	6	7	Good
Low Quality	1	2	3	4	5	6	7	High Quality
Unappealing	1	2	3	4	5	6	7	Appealing
Unpleasant	1	2	3	4	5	6	7	Pleasant
Unfavourable	1	2	3	4	5	6	7	Favourable
Negative	1	2	3	4	5	6	7	Positive

- 2) Please indicate your purchase intention likelihood for Brand X's laptop computer.

Unlikely	1	2	3	4	5	6	7	Likely
Impossible	1	2	3	4	5	6	7	Possible
Improbable	1	2	3	4	5	6	7	Probable
Undesirable	1	2	3	4	5	6	7	Desirable

## Pretest 5: Brand Personality Visual Advertising Stimuli (Youth)

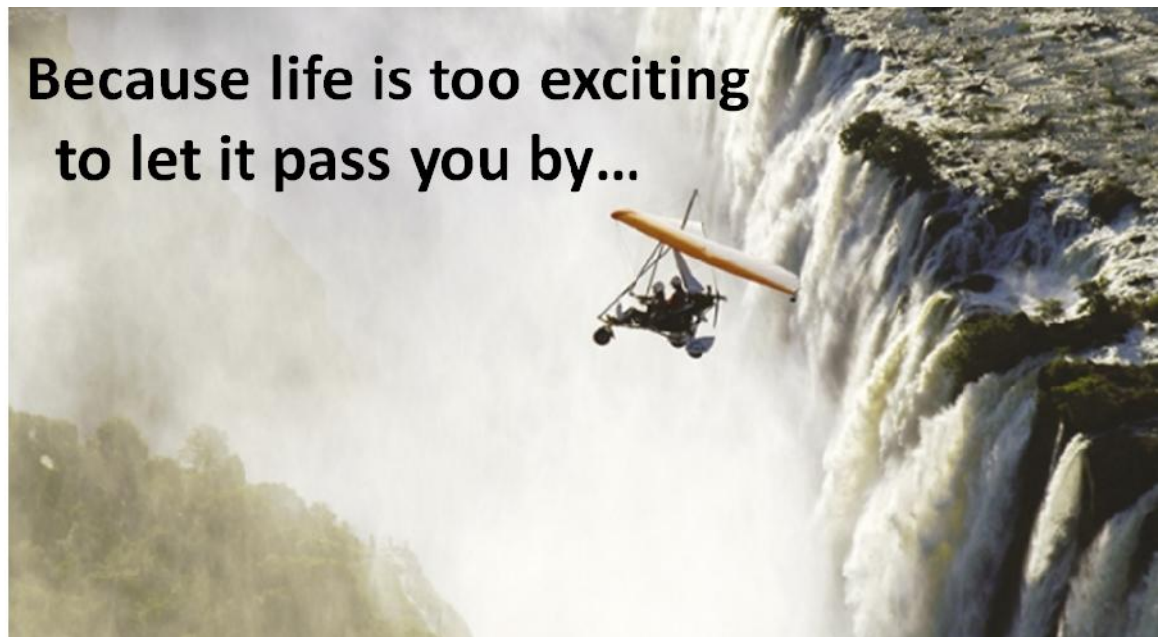
Experiment 3: BPC Effects

### Section 1 – Introduction to Brand Personality

A brand can be described using human personality traits. Brands personality refers to the set of personality traits that are both applicable to and relevant for brands. If I asked you to give me your impressions of a particular person, you might answer with a set of personality attributes/traits. The same process can be done for a brand. Personality traits can be used to describe brands too.

### Section 2 – Brand Personality Assessment

Below is a sample of an advertisement. After you have taken a moment to familiarise with the advertisement, please answer the following questions.<sup>58</sup>



1) Please rate your attitude towards the advertisement.

Bad	1	2	3	4	5	6	7	Good
Low Quality	1	2	3	4	5	6	7	High Quality
Unappealing	1	2	3	4	5	6	7	Appealing
Unpleasant	1	2	3	4	5	6	7	Pleasant
Unfavourable	1	2	3	4	5	6	7	Favourable
Negative	1	2	3	4	5	6	7	Positive

<sup>58</sup> There are 4 sets of questionnaires to test visual ad stimuli for sophistication, youth, competence, and sincerity

2) To what extent do these personality traits describe the advertisement?

	Not at all Descriptive					Extremely Descriptive	
Luxurious	1	2	3	4	5	6	7
Elite	1	2	3	4	5	6	7
Stylish	1	2	3	4	5	6	7
Elegant	1	2	3	4	5	6	7
Proud	1	2	3	4	5	6	7
Charming	1	2	3	4	5	6	7
Youthful	1	2	3	4	5	6	7
Exciting	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Positive	1	2	3	4	5	6	7
Enjoyable	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7
Champion	1	2	3	4	5	6	7
Competitive	1	2	3	4	5	6	7
Achievement-oriented	1	2	3	4	5	6	7
Successful	1	2	3	4	5	6	7
Professional	1	2	3	4	5	6	7
Productive	1	2	3	4	5	6	7
Sincere	1	2	3	4	5	6	7
Flexible	1	2	3	4	5	6	7
Casual	1	2	3	4	5	6	7
Good-Natured	1	2	3	4	5	6	7

## Pretest 5: Brand Personality Visual Advertising Stimuli (Competence)

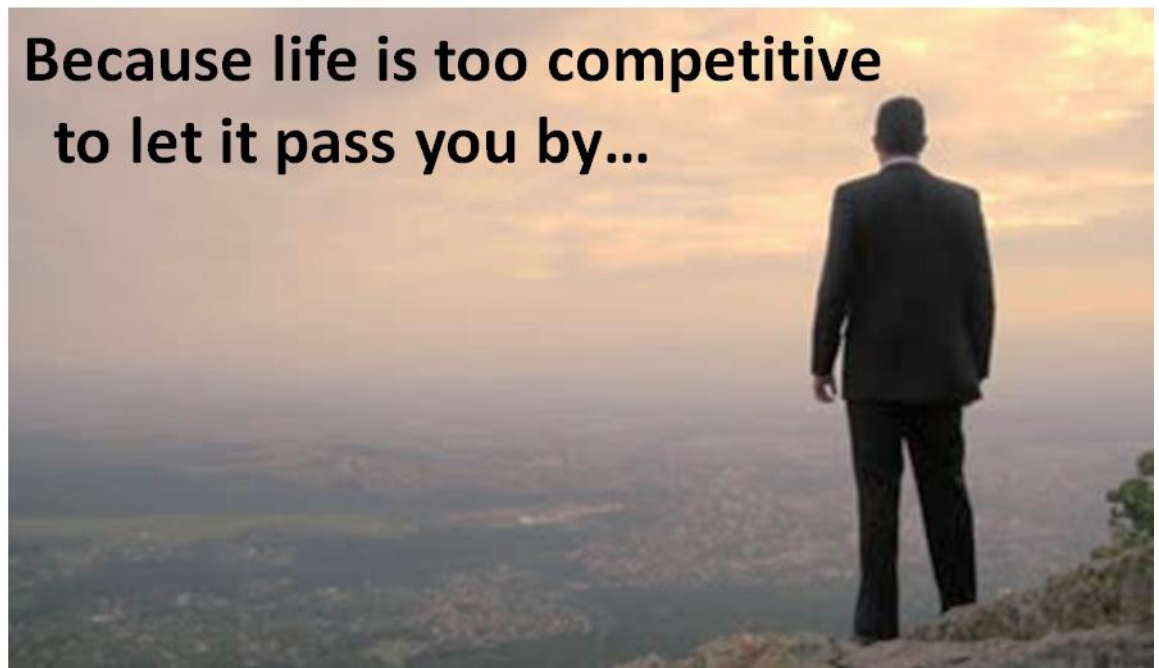
Experiment 3: BPC Effects

### Section 1 – Introduction to Brand Personality

A brand can be described using human personality traits. Brands personality refers to the set of personality traits that are both applicable to and relevant for brands. If I asked you to give me your impressions of a particular person, you might answer with a set of personality attributes/traits. The same process can be done for a brand. Personality traits can be used to describe brands too.

### Section 2 – Brand Personality Assessment

Below is a sample of an advertisement. After you have taken a moment to familiarise with the advertisement, please answer the following questions.



1) Please rate your attitude towards the advertisement.

Bad	1	2	3	4	5	6	7	Good
Low Quality	1	2	3	4	5	6	7	High Quality
Unappealing	1	2	3	4	5	6	7	Appealing
Unpleasant	1	2	3	4	5	6	7	Pleasant
Unfavourable	1	2	3	4	5	6	7	Favourable
Negative	1	2	3	4	5	6	7	Positive

2) To what extent do these personality traits describe the advertisement?

	Not at all Descriptive					Extremely Descriptive	
Luxurious	1	2	3	4	5	6	7
Elite	1	2	3	4	5	6	7
Stylish	1	2	3	4	5	6	7
Elegant	1	2	3	4	5	6	7
Proud	1	2	3	4	5	6	7
Charming	1	2	3	4	5	6	7
Youthful	1	2	3	4	5	6	7
Exciting	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Positive	1	2	3	4	5	6	7
Enjoyable	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7
Champion	1	2	3	4	5	6	7
Competitive	1	2	3	4	5	6	7
Achievement-oriented	1	2	3	4	5	6	7
Successful	1	2	3	4	5	6	7
Professional	1	2	3	4	5	6	7
Productive	1	2	3	4	5	6	7
Sincere	1	2	3	4	5	6	7
Flexible	1	2	3	4	5	6	7
Casual	1	2	3	4	5	6	7
Good-Natured	1	2	3	4	5	6	7



## Pretest 5: Brand Personality Visual Advertising Stimuli (Sincerity)

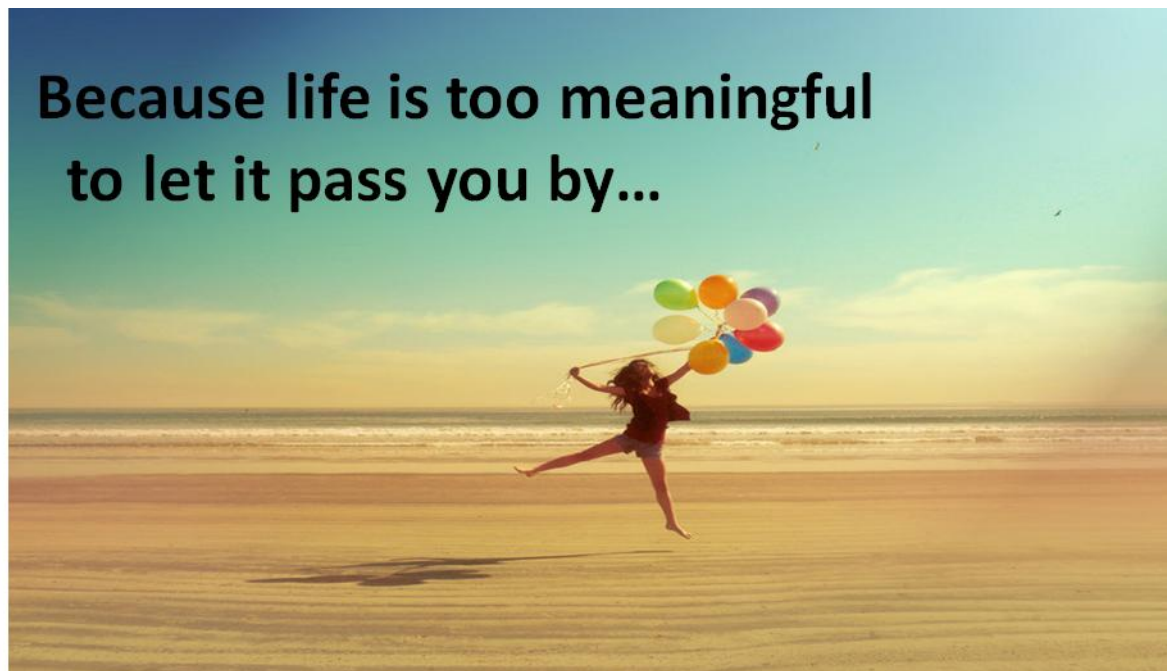
Experiment 3: BPC Effects

### Section 1 – Introduction to Brand Personality

A brand can be described using human personality traits. Brands personality refers to the set of personality traits that are both applicable to and relevant for brands. If I asked you to give me your impressions of a particular person, you might answer with a set of personality attributes/traits. The same process can be done for a brand. Personality traits can be used to describe brands too.

### Section 2 – Brand Personality Assessment

Below is a sample of an advertisement. After you have taken a moment to familiarise with the advertisement, please answer the following questions.



1) Please rate your attitude towards the advertisement.

Bad	1	2	3	4	5	6	7	Good
Low Quality	1	2	3	4	5	6	7	High Quality
Unappealing	1	2	3	4	5	6	7	Appealing
Unpleasant	1	2	3	4	5	6	7	Pleasant
Unfavourable	1	2	3	4	5	6	7	Favourable
Negative	1	2	3	4	5	6	7	Positive

2) To what extent do these personality traits describe the advertisement?

	Not at all Descriptive					Extremely Descriptive	
Luxurious	1	2	3	4	5	6	7
Elite	1	2	3	4	5	6	7
Stylish	1	2	3	4	5	6	7
Elegant	1	2	3	4	5	6	7
Proud	1	2	3	4	5	6	7
Charming	1	2	3	4	5	6	7
Youthful	1	2	3	4	5	6	7
Exciting	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Positive	1	2	3	4	5	6	7
Enjoyable	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7
Champion	1	2	3	4	5	6	7
Competitive	1	2	3	4	5	6	7
Achievement-oriented	1	2	3	4	5	6	7
Successful	1	2	3	4	5	6	7
Professional	1	2	3	4	5	6	7
Productive	1	2	3	4	5	6	7
Sincere	1	2	3	4	5	6	7
Flexible	1	2	3	4	5	6	7
Casual	1	2	3	4	5	6	7
Good-Natured	1	2	3	4	5	6	7

## Main Experiment 3 (Control)

Experiment 3: BPC Effects

### Section 1 – Brand extension

Please read the short passage below:

Astra is a smartphone company. Astra plans to expand its business into the laptop computer market. All laptop computers will be designed and produced by Astra.



**Astra**  
Smartphone



**Astra**  
Ultrabook

Please answer the questions or statements below:

1) Please indicate your likability for Astra as a brand name?

Unfavourable 1 2 3 4 5 6 7 Favourable

2) Is Astra appropriate for a brand name?

not at all appropriate 1 2 3 4 5 6 7 very appropriate

3) To what extent to which laptop computer is congruent (i.e. compatible, match) with Astra's smartphone?

- a) unusual 1 2 3 4 5 6 7 usual  
b) atypical 1 2 3 4 5 6 7 typical  
c) inconsistent 1 2 3 4 5 6 7 consistent



### Section 3 – Self Personality Assessment

1) How would you describe yourself on the personality traits listed below?

	Not at all Descriptive					Extremely Descriptive	
Luxurious	1	2	3	4	5	6	7
Elite	1	2	3	4	5	6	7
Stylish	1	2	3	4	5	6	7
Elegant	1	2	3	4	5	6	7
Proud	1	2	3	4	5	6	7
Charming	1	2	3	4	5	6	7
Youthful	1	2	3	4	5	6	7
Exciting	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Positive	1	2	3	4	5	6	7
Enjoyable	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7
Champion	1	2	3	4	5	6	7
Competitive	1	2	3	4	5	6	7
Achievement-oriented	1	2	3	4	5	6	7
Successful	1	2	3	4	5	6	7
Professional	1	2	3	4	5	6	7
Productive	1	2	3	4	5	6	7
Sincere	1	2	3	4	5	6	7
Flexible	1	2	3	4	5	6	7
Casual	1	2	3	4	5	6	7
Good-Natured	1	2	3	4	5	6	7

## Main Experiment 3 (High BPC)

Experiment 3: BPC Effects

### Section 1 – Introduction to Brand Personality

A brand can be described using human personality traits. Brands personality refers to the set of personality traits that are both applicable to and relevant for brands. If I asked you to give me your impressions of a particular person, you might answer with a set of personality attributes/traits. The same process can be done for a brand. Personality traits can be used to describe brands too.

### Section 2 – Brand Personality Assessment

Astra is a smartphone company.

1) Please indicate your likability for Astra as a brand name?

Unfavourable 1 2 3 4 5 6 7 Favourable

2) Is Astra appropriate for a brand name?

not at all appropriate 1 2 3 4 5 6 7 very appropriate

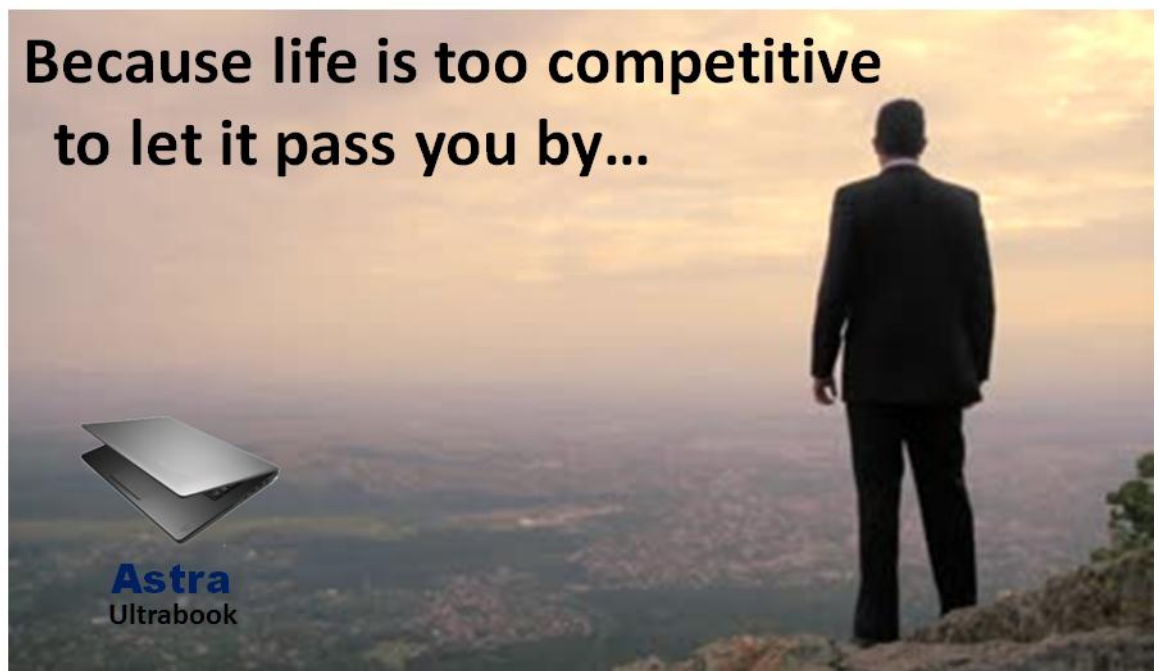
Below is a sample of the ad for its smartphone:



3) Based on the advertisement, if Astra Smartphone was a person, how would you describe him or her on the personality traits below?

	Not at all Descriptive					Extremely Descriptive	
Youthful	1	2	3	4	5	6	7
Exciting	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Positive	1	2	3	4	5	6	7
Enjoyable	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7

Astra plans to expand its business into the laptop computer market. All television will be designed and produced by Astra. Below is an advertisement for its laptop:<sup>59</sup>



<sup>59</sup> There are 3 sets of questionnaires, one for each high involvement product (laptop, TV, and fragrance).

- 4) Based on the advertisement, if Astra Ultrabook was a person, how would you describe him or her on the personality traits below?

	Not at all Descriptive					Extremely Descriptive	
Champion	1	2	3	4	5	6	7
Competitive	1	2	3	4	5	6	7
Achievement-oriented	1	2	3	4	5	6	7
Successful	1	2	3	4	5	6	7
Professional	1	2	3	4	5	6	7
Productive	1	2	3	4	5	6	7

### Section 3 – Brand extension

*Please answer the questions or statements below:*

- 1) To what extent to which laptop computer is congruent (i.e. compatible, match) with Astra's smartphone?

- a) unusual    1   2   3   4   5   6   7    usual  
 b) atypical    1   2   3   4   5   6   7    typical  
 c) inconsistent    1   2   3   4   5   6   7    consistent

- 2) Extending into laptop computer is a ... for Astra.

bad fit    1   2   3   4   5   6   7    good fit

- 3) It is ... to expand into laptop computer.

not at all appropriate    1   2   3   4   5   6   7    very appropriate

- 4) Expanding into laptop computer is ...

not at all logical    1   2   3   4   5   6   7    very logical

- 5) Extending to laptop computer ...

Does not make sense    1   2   3   4   5   6   7    make sense



## Section 4 – Brand Personality Complementarity

Please answer the following questions or statements below based on the above personality assessments of smartphone and laptop computers:

- 1) Do personalities for both smartphone and laptop computer fit each other?

Not at all fit    1    2    3    4    5    6    7    Fit very well

- 2) How similar are the personalities between smartphone and laptop computer?

Very different    1    2    3    4    5    6    7    Very similar

- 3) Do both personalities complement each other?

Not at all complementing    1    2    3    4    5    6    7    Very complementing

- 4) Having two personalities for smartphone and laptop computer...

Does not Make sense    1    2    3    4    5    6    7    make sense

## Section 5 - Brand extension evaluation

- 1) Please indicate your attitude towards Astra's laptop computer.

Bad	1	2	3	4	5	6	7	Good
Low Quality	1	2	3	4	5	6	7	High Quality
Unappealing	1	2	3	4	5	6	7	Appealing
Unpleasant	1	2	3	4	5	6	7	Pleasant
Unfavourable	1	2	3	4	5	6	7	Favourable
Negative	1	2	3	4	5	6	7	Positive

- 2) Please indicate your purchase intention likelihood for Astra's laptop computer.

Unlikely	1	2	3	4	5	6	7	Likely
Impossible	1	2	3	4	5	6	7	Possible
Improbable	1	2	3	4	5	6	7	Probable
Undesirable	1	2	3	4	5	6	7	Desirable

## Section 6 – Self Personality Assessment

1) How would you describe yourself on the personality traits listed below?

	Not at all Descriptive					Extremely Descriptive	
Luxurious	1	2	3	4	5	6	7
Elite	1	2	3	4	5	6	7
Stylish	1	2	3	4	5	6	7
Elegant	1	2	3	4	5	6	7
Proud	1	2	3	4	5	6	7
Charming	1	2	3	4	5	6	7
Youthful	1	2	3	4	5	6	7
Exciting	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Positive	1	2	3	4	5	6	7
Enjoyable	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7
Champion	1	2	3	4	5	6	7
Competitive	1	2	3	4	5	6	7
Achievement-oriented	1	2	3	4	5	6	7
Successful	1	2	3	4	5	6	7
Professional	1	2	3	4	5	6	7
Productive	1	2	3	4	5	6	7
Sincere	1	2	3	4	5	6	7
Flexible	1	2	3	4	5	6	7
Casual	1	2	3	4	5	6	7
Good-Natured	1	2	3	4	5	6	7

## Main Experiment 3 (Low BPC)

Experiment 3: BPC Effects

### Section 1 – Introduction to Brand Personality

A brand can be described using human personality traits. Brands personality refers to the set of personality traits that are both applicable to and relevant for brands. If I asked you to give me your impressions of a particular person, you might answer with a set of personality attributes/traits. The same process can be done for a brand. Personality traits can be used to describe brands too.

### Section 2 – Brand Personality Assessment

Astra is a smartphone company.

1) Please indicate your likability for Astra as a brand name?

Unfavourable 1 2 3 4 5 6 7 Favourable

2) Is Astra appropriate for a brand name?

not at all appropriate 1 2 3 4 5 6 7 very appropriate

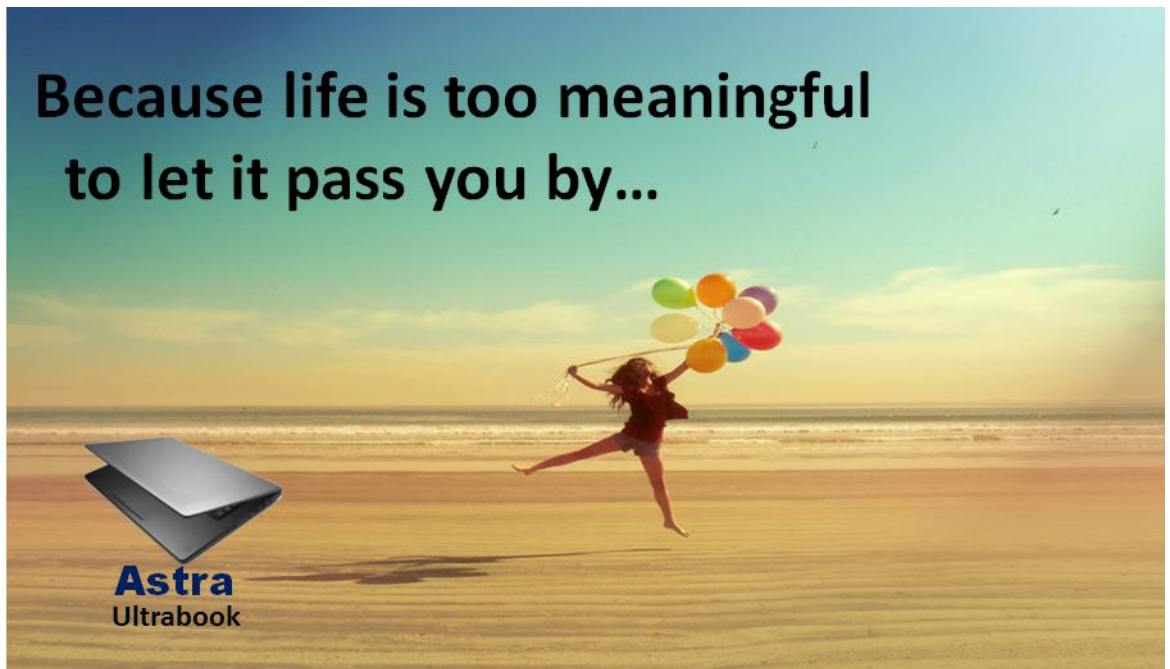
Below is a sample of the ad for its smartphone:



3) Based on the advertisement, if Astra Smartphone was a person, how would you describe him or her on the personality traits below?

	Not at all Descriptive					Extremely Descriptive	
Youthful	1	2	3	4	5	6	7
Exciting	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Positive	1	2	3	4	5	6	7
Enjoyable	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7

Astra plans to expand its business into the laptop computer market. All television will be designed and produced by Astra. Below is an advertisement for its laptop:



4) Based on the advertisement, if Astra Ultrabook was a person, how would you describe him or her on the personality traits below?

	Not at all Descriptive					Extremely Descriptive	
Sincere	1	2	3	4	5	6	7
Flexible	1	2	3	4	5	6	7
Casual	1	2	3	4	5	6	7
Good-Natured	1	2	3	4	5	6	7

### Section 3 – Brand extension

Please answer the questions or statements below:

- 1) To what extent to which laptop computer is congruent (i.e. compatible, match) with Astra's smartphone?

a) unusual	1	2	3	4	5	6	7	usual
b) atypical	1	2	3	4	5	6	7	typical
c) inconsistent	1	2	3	4	5	6	7	consistent

- 2) Extending into laptop computer is a ... for Astra.

bad fit	1	2	3	4	5	6	7	good fit
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- 3) It is ... to expand into laptop computer.

not at all appropriate	1	2	3	4	5	6	7	very appropriate
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- 4) Expanding into laptop computer is ...

not at all logical	1	2	3	4	5	6	7	very logical
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- 5) Extending to laptop computer ...

Does not make sense	1	2	3	4	5	6	7	make sense
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### Section 4 – Brand Personality Complementarity

Please answer the following questions or statements below based on the above personality assessments of smartphone and laptop computers:

- 1) Do personalities for both smartphone and laptop computer fit each other?

Not at all fit	1	2	3	4	5	6	7	Fit very well
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- 2) How similar are the personalities between smartphone and laptop computer?

Very different	1	2	3	4	5	6	7	Very similar
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3) Do both personalities complement each other?

Not at all 1 2 3 4 5 6 7 Very  
complementing complementing

4) Having two personalities for smartphone and laptop computer...

Does not 1 2 3 4 5 6 7 make  
Make sense sense

### Section 5 - Brand extension evaluation

1) Please indicate your attitude towards Astra's laptop computer.

Bad	1	2	3	4	5	6	7	Good
Low Quality	1	2	3	4	5	6	7	High Quality
Unappealing	1	2	3	4	5	6	7	Appealing
Unpleasant	1	2	3	4	5	6	7	Pleasant
Unfavourable	1	2	3	4	5	6	7	Favourable
Negative	1	2	3	4	5	6	7	Positive

2) Please indicate your purchase intention likelihood for Astra's laptop computer.

Unlikely	1	2	3	4	5	6	7	Likely
Impossible	1	2	3	4	5	6	7	Possible
Improbable	1	2	3	4	5	6	7	Probable
Undesirable	1	2	3	4	5	6	7	Desirable

### Section 6 – Self Personality Assessment

1) How would you describe yourself on the personality traits listed below?

	Not at all Descriptive					Extremely Descriptive	
Luxurious	1	2	3	4	5	6	7
Elite	1	2	3	4	5	6	7
Stylish	1	2	3	4	5	6	7
Elegant	1	2	3	4	5	6	7
Proud	1	2	3	4	5	6	7
Charming	1	2	3	4	5	6	7
Youthful	1	2	3	4	5	6	7
Exciting	1	2	3	4	5	6	7
Outgoing	1	2	3	4	5	6	7
Positive	1	2	3	4	5	6	7
Enjoyable	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7

Champion	1	2	3	4	5	6	7
Competitive	1	2	3	4	5	6	7
Achievement-oriented	1	2	3	4	5	6	7
Successful	1	2	3	4	5	6	7
Professional	1	2	3	4	5	6	7
Productive	1	2	3	4	5	6	7
Sincere	1	2	3	4	5	6	7
Flexible	1	2	3	4	5	6	7
Casual	1	2	3	4	5	6	7
Good-Natured	1	2	3	4	5	6	7