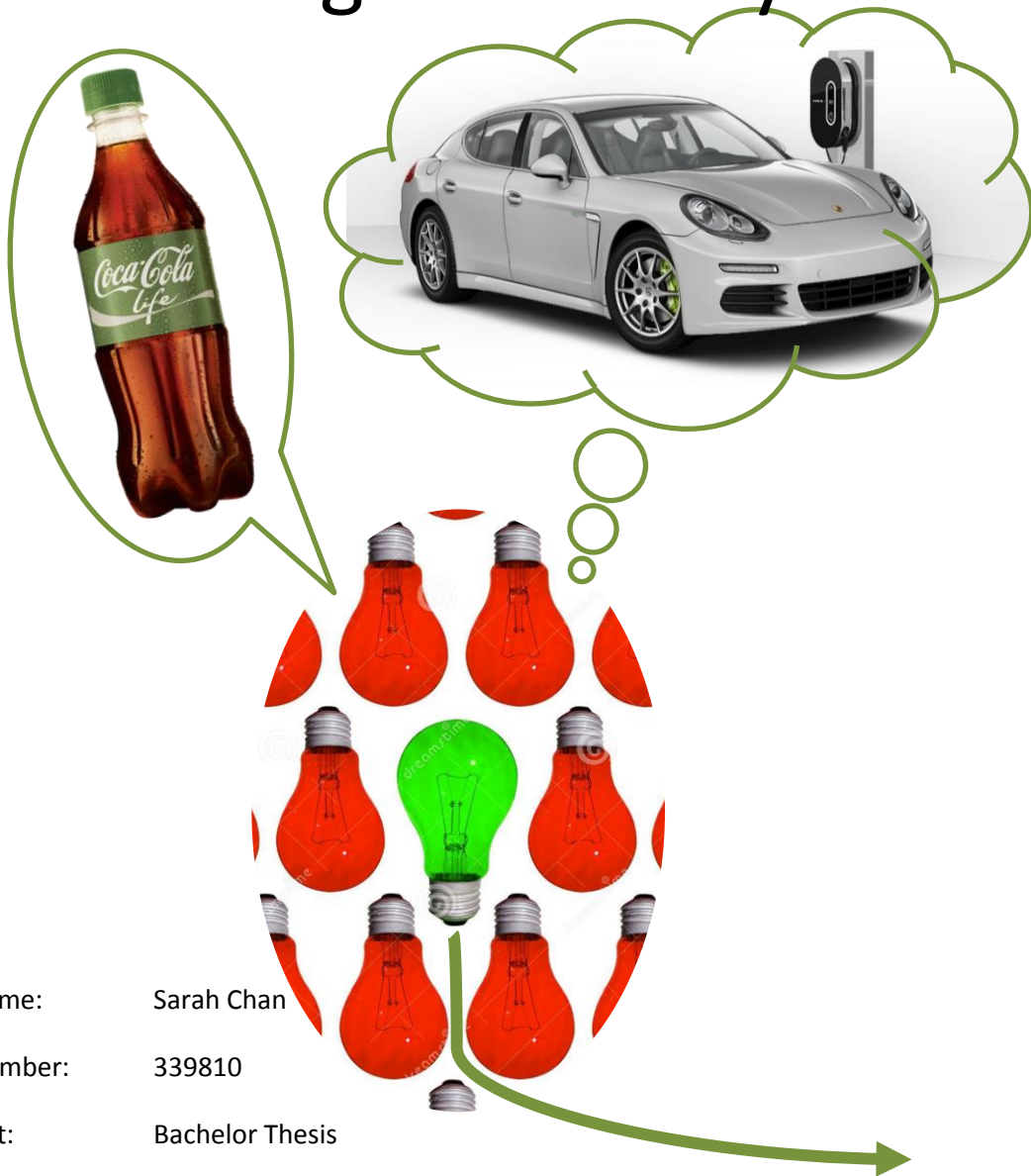


# Consumers' evaluation of green extensions & design similarity



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## MANAGEMENT SUMMARY

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In 2013 the Coca-Cola Company launched a “green” drink, the Coca-Cola Life. After having piloted in Argentina, this new coke will be sold in the U.K. in September 2014 (McMullen, 2014). This green coke is green where the classic coke is red, promises less calories and sugar, and makes use of a greener, fully recyclable packaging (bottle and can). This new product shares the brand name of an established, well-known brand and company (brand extension), Coca-Cola, and is offered in the same product category as the parent brand (line extension). Additionally, with the green labeling, a new dimension is added to the classification of this extension.

Recently, there are many other companies also following this trend of launching green variants into their established product lines. For onlooking companies, the question arises to follow or not.

This thesis aims to contribute to managers’ need for information concerning this new trend. For this purpose it will be researched what consumers think of green extensions. Therefore, the research question: *How do consumers evaluate green extensions, differing in brand concept and taking into consideration the extent of design similarity between the green extension and the parent brand?*

Pitta and Katsanis (1995) pointed out that it is important to know what consumers think of the extension and the parent brand after extension. If any extension and any inconsistency in the association between parent brand and extension could lead to negative evaluation of the parent brand (Kim et al., 2001; Weber & Crocker, 1983; Loken & Roedder John, 1993), then understanding consumers’ evaluation can aid to prevent and reduce any further dilution of the brand image.

This research aims to increase existing insights into green extension as well as vertical line extension, and has an explorative character. For this purpose, a literature review is conducted followed by a quantitative research to provide empirical evidence for the theories and hypotheses resulting from the literature review. In the literature review, three hypotheses are reasoned and supported with the findings in previous research related to line extension, brand concept and green products. The three proposed hypotheses are: *1) Consumers’ evaluation of green extensions is positive. 2) Consumers’ evaluation of green extensions is more positive for prestige brands than for luxury brands. 3) A green extension with a non-similar design to the parent brand previous models is evaluated by consumers more positively than a green extension with a similar design to the parent brand previous models.*

The quantitative research involves surveying a sample of the *consumers* population by means of questionnaires. The questions are mainly formulated to measure consumers’ attitude, value perception and purchase intention. The research covers the product categories cars and carbonated drinks, the brand concepts prestige and luxury and the extents of design similarity similar and non-similar. The data collection mainly takes form of an experimental survey; there are four scenarios to be compared with each other and each respondent evaluates one of the four scenarios. The scenarios involve around hypothetical or recently launched green extensions (car and carbonated drink) of either a prestige or luxury brand that has either a similar or non-similar design. Each participant assesses one green extension scenario for car and one for carbonated drinks. Convenience sampling as commonly used in marketing studies, is applied here.

The data analysis consists of: a reliability and validity test, a pair of manipulation checks to test the manipulation of the scenarios, a set of assumptions checks prior to testing a hypothesis, and the testing of the hypotheses themselves. Based on the results of the assumptions check, the testing continues with a one sample Wilcoxon signed rank test for the first hypothesis, and a mix between (in)dependent t-tests and Wilcoxon rank-sum (or signed rank) tests, for the manipulation checks and the second and third hypothesis. Prior to testing the second and third hypothesis, the MANOVA is run to complement the following more focused tests with an overview of the overall (in)significant effects of the categorical variables.

The results for the first hypothesis are mixed. The results for the attitude towards a green extension (EAT) report statistical evidence of positive consumers' attitude towards green extensions. The results are mixed between positive evaluation and indifferent/unknown evaluation for the perception of value (VAL) and purchase intention (INT).

The relevant valid tests for the second hypothesis reject the null hypothesis that there is no difference in consumers' evaluation between a luxury and a prestige green extension. This provides evidence that prestige car brands can receive more positive consumers' evaluation than luxury car brands for their launched green car extension (hybrid).

The null hypothesis of the third hypothesis that there is no difference in consumers' evaluation between similar and non-similar designed green extensions is overall accepted. Though, it can only be said for Audi and Coca-Cola that both extent of design similarity are equally liked, valued and wanted. The invalidity of tests can be explained by complications reported in the manipulation checks.

The findings in this thesis suggest that the launch of a green extension will be received positively. However, manager should still take caution when setting the price of the extension. If the purchase intention is already low with a 25% increase in price then the actual purchase could mean even lower sales. When it comes to the launch between a prestige and a luxury green car extension, managers can expect the prestige to fair better than the luxury hybrid. This is not at all negative for a new luxury hybrid as the brand is supposed to remain exclusive.

Furthermore, managers of luxury and prestige car brands do not need to worry about the design of a new green extension. Porsche's and Audi's previous extensions have usually had many design similarities to previous models. This should not be a problem either for hybrid models. There were even indications –non significant though- resulting from the data analysis that similar could be preferred over non-similar designs. Finally, managers are recommended to also base their decision of a green launch on researches that have explored how a green extension affects the consumers' evaluation of the post-extension brand image. A proven positive consumers' evaluation here does not necessarily mean that consumers' evaluation of the post-green extension brand image will be positive too.

# 1 INTRODUCTIONS

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A lot of production companies prefer to use similar design for their extensions to benefit from brand associations. Recently, Coca-Cola launched a new product with a green logo in Argentina. The Coca-Cola brand is most well-known for its flagship Coca-Cola Classic. The soft drink is recognizable by the iconic red logo. This makes it certainly surprising and catches attention as all that is red of the original logo is green for this new product. The new product with a green label and has been named Coca-Cola Life. In addition, just as this new name and green look suggests, the product also promises a greener package and carbonated soft drink. The package called PlantBottle, has won awards for it being 100% recyclable and made from 30% plant-based material. This carbonated drink contains the natural sweetener stevia which is in nature sweeter than sugar and thus making the new drink just as sweet but containing less sugar. This also means less calories intake and thus a healthier drink than the Classic and all the other extensions that are said to contain less sugar.

## 1.1 RELEVANCE PROBLEM SETTING

Just as the way that the Coca-Cola brand extends its line with the green coke, many brands have done before. The trend to set a green example has especially been prominent in the car industry, cosmetics industry and recently more and more in the food industry. The question arises however when a brand decides to extend with a greener, environmental-friendly product: how will this extension be perceived by its customer and does this change the image consumers have of the brand? Could the extent to which the design of the green extension differs from the design of the parent, main or most prominent product of the brand influence consumers' evaluation of the brand image after extension?

Launching a new brand in the market has many risks. As the failure rate for new products and cost of launching new products are high (Aaker, 1991; Pitta and Katsanis, 1995; Reddy, Holak and Bhat, 1994) companies have turned to seek out benefits of extending with an established brand name. The idea of brand extension is to leverage a company's existing customer base and brand loyalty to increase its profits with a new product that shares the same brand name. As a result, with brand extension a company can also expect to spend less than in the case of introducing a new brand. Consider lower marketing expenditures and higher retail share as the established brand has already a certain level of brand awareness (Kadiyali, Vilcassim and Chintagunta, 1998). Therefore, brand extension are often used to target new markets and segments.

There is, however, often a risk for negative outcome with expansion strategies and this accounts for brand extensions also. Studies have shown that inconsistent, weak or nonexistent association between the parent product and new brand extension can harm the corresponding image of the parent brand. (Kim, Lavack and Smith, 2001; Martinez and Pina, 2003) The known risks are cannibalism of sales and dilution of the brand image. (Kim and Lavack, 1996; Lui, 2002; Loken & Roedder John, 1993; Martinez and Pina, 2003). According to Chen and Liu (2004) negative effects can occur when the extensions similarity to the corporate brand is extremely small. On the other hand, this can also occur when extensions are equal to the corporate brand, but not on an obvious level for the customer.

Thus, for brand extension to be successful, some logical association between the original product and the new one is required. As consumers' evaluation of objects is subjective and variable, it's believed that consumers have a relation in which brands are accepted and rejected (Berry and Parasuraman, 1991; Grönroos, 2007). Therefore, brand extensions may or may not dilute the core-brand image depending on where they are placed, within or without an acceptable brand range. Furthermore according to literature the *fit*, how similar or consistent the perception is, between the core-brand and the extension is the main aspect of consumers' evaluation of the core-brand (Aaker and Keller, 1990). Grime, Diamantopoulos and Smith (2002) proposed that the better the fit, the greater is the enhancement of the core-brand.

Relating to previous literature, this thesis sets out to gain understanding and provide insight into the fit of perception between the parent brand and extension when concerning a green extension by focusing on design similarities. What is the change in consumer perception of parent brand after a green extension, what are the risks of dilution and reduction in credibility when expanding a company and brand through green extension? Is the distance between the corporate brand and the extended brand too far or is the "fit" acceptable, does the main importance rest on the extent of design similarity between extended product and parent brand product?

## **1.2 RESEARCH QUESTION & SUB QUESTIONS**

Based on the problem discussion in the section above, the purpose of this research is defined to increase the knowledge of brand extensions effect on consumers' evaluation by showing findings relating to previous questions.

Therefore, the central question for this thesis is:

*How do consumers evaluate green extensions, differing in brand concept and taking into consideration the extent of design similarity between the green extension and the parent brand?*

Setting out to answer the research question, a number of sub question are posed:

- i. What are green extensions?
- ii. Does the extent design similarity matter?
- iii. How do consumers evaluate green extensions of brands differing in brand concept?
- iv. Does the extent of design similarity between the green extension and the parent, main or most prominent product of the brand have an effect on either the evaluation of the green extension or the post-extension image of the parent brand?

Consequently, it is proposed to study: consumers' evaluation on the green extensions differing in brand concept and differing in prestige level, consumers' evaluation on also the post-extension image of brands differing in prestige level, and the difference in consumers' evaluation in either the evaluation of extension or post-extension brand image when the design of the extension differs or matches the design of the parent brand. Furthermore, this will be done for two product categories for additional insight on the market and type of product similarity: cars and carbonated drinks. Finally, as this thesis focuses on

green extension -a brand extension concerning the launch of a greener product in the same product category- contribution will also be made to existing knowledge of line extension.

### **1.3 THE GAP CONTRIBUTION SCIENTIFIC AND ACADEMIC**

With this thesis an attempt will be made to extend previous work in four marketing research fields of interest: brand extension, line extension, brand concept, and green (vertical) line extension.

First, previous research in brand extension focuses mainly on category extension, while line extensions account for most of new product introductions (Aaker, 1991, Kirmani, Sood and Bridges, 1999). Only few (Kim and Lavack, 1996, Kim, Lavack and Smith, 2001, Kirmani, Sood and Bridges, 1999, Lei, de Ruyter and Wetzels, 2008, Randall, Ulrich and Reibstein, 1998) have made the effort to better understand this marketing phenomenon. Therefore, this research will focus on line extensions, particularly green line extension, aiming to contribute to fulfil this imbalance of existing knowledge.

Second, none of the mentioned previous research has looked at consumers' evaluation concerning green extension which is the focus of this thesis. A third contribution is the understanding to which difference in brand concept can influence the perception of green extensions and the post-extension images of brand. A recent study has looked at consumers' evaluation of downscale extension of brands differing in prestige level (Riley, Pina and Bravo, 2013). Instead, this thesis focuses on similarity relating to green extension, instead of the price/quality theory involving downscale extension, while also differing in brand concept.

Finally, this thesis attempts to go beyond previous efforts by accounting for design similarity to explain the evaluation of line extension. The study of Kim et al. (2001) has shown that distancing techniques can vary depending on up- or downscale extension and the study of Till & Priluck (2000) implies the importance and role of perception of fit when it comes to extension evaluation process. (See also Grime, Diamantopoulos, & Smith, 2002). The present study extends their studies with new knowledge of fit regarding green extensions. Thus, it contributes to brand extension in terms of the categorization theory and distancing techniques.

### **1.4 MANAGERIAL IMPLICATION**

In the light of extensions that are considered a strategy for expansion to generate growth and to launch new products (Chen and Liu, 2004; Ambler and Styles, 1997), findings of this thesis could provide managers with guidelines of a strategy to launch a green extension. This concerns decisions on which brands to extend into a greener product, prestige or luxury, car or carbonated drink, and what design to use, similar or non-similar.

There has been a new trend of bringing out green products on the market. Various companies of different industries are yet to follow inevitably. Consequently, when a company does, the brand managers will have to prepare and gather all information relevant to green extensions, and deepen into the matter before making the decision to launch. This is relevant and of importance and therefore, in



the last chapter of this thesis, the conclusion, implication and recommendation will be provided to marketers and managers in developing managerial guidelines.

## **2 THEORETICAL FRAMEWORK**

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### **2.1 LINE EXTENSIONS**

As Aaker (1991) stated, there are two types of brand extension: line extension and category extension. Category extensions stretch the brand to a new category or product class (Reddy, Holak and Bhat, 1994). It's when a new product under the same brand name is introduced into a new category. Line extensions are the use of the core-brand name in the new offering in the same product class as the parent brand, and they can be classified in either horizontal or vertical. Horizontal line extension is the introduction of a new product in the same category, into the same price/quality point as the parent brand but for a different segment, such as Diet Coke of the Cola-Cola brand (Pitta and Katsanis, 1995). This type of extension can be related to flavor, color or smell variations (Draganska and Jain, 2005, Nijssen, 1999). Vertical line extension is the introduction of a new product under the same brand name at a different point of price and quality (Kim and Lavack, 1996).

A study has shown that 82% of new product launches are made through extension of existing brands, while only 18% of new products involve the introduction of a new brand. (Kirmani, Sood and Bridges, 1999; Les Echos, 2004; Musante, 2007; Pitta and Katsanis, 1995; Reddy, Holak and Bhat, 1994). Furthermore, on academic level, more attention has gone to category extensions than line extension (Nijssen, 1999) while in practice, of the 82% of new products that are brand extensions, 65% are line extension and 17% category extensions (Les Echos, 2004). As a result, this thesis will focus on line extension with the purpose of contributing valuable insights that can be of use to future research on line extension. One of the recently most hot line extensions is green extension.

### **2.2 GREEN TREND**

In the last decade more and more products have appeared on the market that are in some way "greener" than existing products. Green meaning environment-friendly and health conscious. Examples are packaging consisting of less or no chemicals harming the environment, food being produced without having to damage the environment, engines emitting less or no emission that are harmful.

This evolving trend is influenced by three factors: demand for greener products, government intervention and supply of greener products. As the standard of living increases in developed countries which involves higher income and more higher educated, attention for the environment arises. This resulted in a niche market of consumers that consciously chooses to consume in an environment-friendly way. Furthermore, governments have intervened in various ways. In the car industry, environmental regulations were enforced to restrict the amount of car emission. As a result, car companies have looked for an alternative in hybrid, electrical, gas and diesel engines. In recent years, the governments and institutions have promoted a healthier lifestyle. Attempts are for example educating the people of the consequences of unhealthy consumption & behavior and stating the

calories intake clearly on packages and ads. As environmental concern takes more part in consumers' choices and green product markets expand (Charter and Polonsky, 1999; Prakash, 2000), from the supply side, companies have reacted on this opportunity in producing and promoting environmentally sensitive goods and services (Schlossberg, 1992, Menon and Menon, 1997, Polonsky and Ottman, 1998 and Roozen and De Pelsmacker, 1998). This could also mean companies resorting to Corporate Social Responsibility, which is a self-policy integrated into a company's business model that aims to take responsibility of the company's activities. Besides CSR, there are various reasons for why companies launch green products. Main reasons are to achieve growth, environmental sustainability and better quality of life. (Dangelico & Pujari, 2010)

The environmental regulations have been a restriction and have pressured various companies to change and innovate. However, there are also benefits to adjusting products or process to be environmental friendly or sustainable. (Fraj-Andre's et al., 2008; Miles and Covin, 2000; Miles and Munilla, 1993; Pujari et al., 2003; Shrivastava, 1995; York, 2009). For example, Coca-Cola Company's launch of Coca-Cola Life, a recyclable bottle partly made from natural materials, can have benefits such as increased efficiency use of resources, improvement of the corporate image, product differentiation and enhanced competitive advantage. In addition, their effort with the PlantBottle have been awarded, which can be an additional motivation to launch future recyclable packaging.

The launch of hybrid cars can also have its benefits. The emergence of hybrids meant the development of a new market, thus, increasing of profits can be made possible. Additional benefits can be product differentiation, enhanced competitive advantage (Chen et al. 2006), and reputation and brand image improvement (Dangelico & Pujari, 2010).

However, these benefits are not possible unless consumers are aware of the difference they can make by changing their consumption pattern. As consumers ultimately decide which product to purchase, it is important for the manufacturer to listen to consumers concern and meet those needs.

Dangelico and Pujari's case study (2010) has pointed out the deficiency of consumers' awareness for the added value and advantages of a green product or process. Moreover, green products are often more expensive and of inferior quality to their traditional counterparts. When it comes to hybrid cars and their performance, comfort or certain features are allowed to be sacrificed to be able to drive eco-friendly. (Griskevicius, Tybur, & Van den Bergh, 2010)

Recently, Porsche also started its product line of hybrid cars. This German carmaker company and brand is actually most well-known for its sports car reputation of the 911 models. Regardless, it also manufactures models that can be placed in various other classes and of course the hybrids are now amongst them. At first thought, a sports car manufacturer going hybrid could be contradicting. Porsche mainly produces luxurious cars with high performance. On the contrary, hybrid car technology focuses on fuel-efficiency and lower emission without taking performance into account. To live up to fuel-efficiency that is possible due to driving efficiently and does not involve high speed driving, it would mean to have to sacrifice high performance.

Nevertheless, Porsche is well aware of the deficiencies of hybrid cars but still promises high quality and performance hybrid cars and is set onto improving and innovating with every new technology they can find. (Dr. Ing. h.c. F. Porsche AG, 2011)

Furthermore, regardless of the lesser luxury, convenience, and performance that hybrid cars may offer compared to conventional cars, people seem to purchase premium priced and more expensive hybrid cars to signal a certain pro-social or pro-environmental status and reputation (Griskevicius, Tybur, & Van den Bergh, 2010). This indicates that even though the hybrid is associated with sports cars or a car that is not yet 100% fuel-efficient and emission free, it is the concept that matters. Using or having a product that incorporates the “so much environmental friendly as possible” concept has various emotional and social benefits. This leads to the first hypothesis:

*H1: Consumers’ evaluation of green extensions is positive.*

To support this there is the argument that hybrid cars and any other conspicuous green product can be one of many means to enhance status and signal a pro-social reputation. As consumers become more aware of environmental issues, purchasing visible green products can make the consumer feel good and less guilty about their consumption behavior and its consequences. Moreover, the more consumers become aware of environmental issues, the more this way of status enhancement is possible and acknowledged.

In addition, DelVecchio & Smith (2005) state that when it comes to choosing a brand, social risk -the possibility to be viewed negatively by peers because of a certain buy- plays a role in increasing consumers’ willingness to pay a price premium for a brand extension. Although hybrid cars and green products are generally known to be higher priced and lower in quality (Griskevicius, Tybur, & Van den Bergh, 2010), consumers seem to be willing to pay more for the status enhancement and reputation improvement (see also Schermach, 1997).

### 2.3 BRAND CONCEPT

The brand concepts used in the present thesis are prestige and luxury. According to Truong et al.'s (2009) luxury brands are classified as being in the highest price range and prestige level, while prestige brands enjoy comparable prestige level and is priced slightly above middle price range (see figure 2.3).

**Figure 2.3**

Prestige level	Brand concepts	Price level
High prestige	Luxury	High
	Prestige	
Low prestige	Normal goods	Middle

Early research on brand extensions highlights the importance of considering the distinction between functional and prestige brands (e.g. Broniarczyk & Alba, 1994; McWilliam, 1993; Park, Milberg, & Lawson, 1991; Pitta & Katsanis, 1995; Sharp, 1993). For both functional and prestige brands, consumers

evaluate extensions more positively when there is concept consistency and product feature similarity with the parent brand (Park et al., 1991). Regardless, Riley, Pina, Bravo (2013) have followed Truong et al.'s (2009) classification of luxury brand types and found that brand dilution are potentially greater for prestige than for luxury brands and extensions of prestige car brands should better resort to distancing techniques in order to reduce such risks. Hence, a distinction between luxury and prestige should be made.

This thesis will cover an upscale line extension, an extension that is higher in price compared to its predecessor as consumers usually view green products as more expensive. There are various merits to launching an upscale line extension. Such a launch can revive the core brand, bring up the brand value and enable entrance into a young and growing market (Munthree, Bick, & Abratt, 2006). For instance, as hybrid cars are the trend nowadays in the car industry, highlighting a new hybrid model can attract new and more attention to its parent brand, remind consumers of its parent brand and put its brand image in the minds of consumers again. Moreover according to Munthree, Bick, and Abratt (2006) when consumers evaluate a higher priced extension they expect the quality to be superior and so value the brand more than before the upscale extension. Therefore, an upscale extension can improve the value associated with the core brand. It is worth to note that when it comes to hybrid cars consumers seem to expect lower performance in return for higher environmental performance (Griskevicius, Tybur, and Van den Bergh, 2010).

However when it comes to an upscale extension luxury and prestige brand should be careful of the magnitude of premium pricing. As luxury brand and prestige brand pricing is already high they have less room to play. Although, prestige brands are lower than luxury brands in the price range, therefore, having more room to play. If both would apply relatively the same premium to their extension, the image of an extension of a prestige brand would probably encounter less risk. This is supported with Kim & Lavack's (1996) study that the pricing distance/difference for a prestige brand is perceived as less of a change than the pricing distance for a luxury brand.

It is expected given Kim & Lavack's (1996) study that luxury brands, as they are already higher up the pricing range, are the most sensitive to upscale extensions. Moreover, as previously mentioned, Porsche is also following the trend by launching hybrid models of its established series. However, Porsche as a luxury brand focusses on high performance while hybrids focus on causing minimal environmental damage and fuel efficiency. The core association with hybrid cars does not cohere with the core association with the luxury brand. This supposed inconsistency could be a reason for negative consumers' evaluation.

Given the presumed drawbacks -less financial room to upscale and brand concept inconsistency- of luxury brand compared to prestige brand, it would seem that an upscale green extension by a prestige brand will be more easily appreciated than one by a luxury brand. As a result, to test this proposition the hypothesis is formulated as:

*H2: Consumers' evaluation of green extensions is more positive for prestige brands than for luxury brands.*

A prestige brand probably also has less inconsistency to deal with as the brand concept, unlike luxury, is more accessible and targets a greater amount of consumers with its more reasonable price for comparable high quality. Furthermore, a prestige brand does not specifically aim to be exclusive but rather aims to provide a supplementary symbol of status or a fitting status according to the user's identity and financial means (Truong et al., 2008, see also Schermach, 1997). As a previous study has shown possession of green products to be status enhancing (Griskevicius, Tybur, and Van den Bergh, 2010), the green concept incorporated in a prestige branded product would only enhance the prestigious high status. The green concept is highly likely in line with or complements the prestige brand concept. Therefore, consumers' evaluation is expected to be more positive for prestige brands.

## **2.4 BENEFITS OF DESIGN SIMILARITY AT PRODUCT EXTENSIONS**

With the aim to increase insight into what consumers think about green extensions, this thesis also takes an interest in the design of a green extension as a follow-up.

According to previous literature the fit between the core-brand and the extension is the main aspect of consumers' evaluation of the core-brand (Aaker and Keller, 1990). Grime, Diamantopoulos and Smith (2002) proposed that the better the fit the greater is the enhancement of the core-brand. Furthermore, the fit of a product is described by Park, Milberg, and Lawson (1991) as a result in brand extensions, depending on the adaption of new products in relation to the existing brand. This fit depends on two factors: product characteristic similarity and brand concept consistency.

If extensions benefit from sharing the parent brand name, then extensions could also benefit from having a similar design to the more iconic products of the parent brand. Benefits of design similarity can be derived from the categorization theory. The theory is that any difference between the extension and parent could change consumers' prior evaluation of the brand image. If consumers' feedback signals disapproval, the brand image will be prone to dilution. The proposed solutions are either extend with a product sharing similarities with the parent brand when expecting positive feedback, or distance the extension to minimize the risks and dilution when expecting negative feedback. According to Riley, Pina and Bravo (2013) downscale extension of prestige brands can expect negative evaluations and feedback and therefore recommends distancing with a higher discount. However, it is still unclear when to expect positive or negative feedback. Therefore, this thesis studies possible feedbacks of green extension to offer managers insight and support for their decisions concerning the launch of an extension.

Although, when it comes to green extension, consumers might expect not only similarity but also consistency with the green concept. Green extensions form part of the green brand concept. Therefore, implementing a non-similar design such as a green logo or a more natural/organic look may bring benefits to an extension (Reid, Frischknecht, & Papalambros, 2012); it categorizes the new product extension in the right category with other green products.

Incorporating a new design is a way to differentiate. Decisions concerning the design of a new product usually lies with the company as decisions on design are influenced by the company's resources and size, the market situation, the product life cycle, the current product portfolio and the designers' work experience (Person, Jan Schoonmans, & Karjalainen, 2008). However, understanding consumer needs is

vital. The paper by Bayus (2008) especially addresses this as meeting consumers' needs is a huge factor in whether or not the line extension as a new product will be successful. This thesis, thus, explores whether a company intending to launch a green extension should take consumers' evaluation concerning the design into consideration.

An article by Foege (2013) indicated that there could be significant difference in attitude towards a similar designed car and a non-similar designed car. The article showed that non-similar, new designs of hybrids have been more successful than traditional designed hybrids as non-similar designed hybrids generated more sales. This could be because of the presence of additional benefits to a non-similar design that are absent in a similar design. For example, non-similar car designs seem to have had more of an ability to be conspicuous and so were more successful than similar car designs. This leads to formulation the following hypothesis of this thesis:

*H3: A green extension with a non-similar design to previous models of the parent brand is evaluated by consumers more positively than a green extension with a similar design to previous models of the parent brand.*

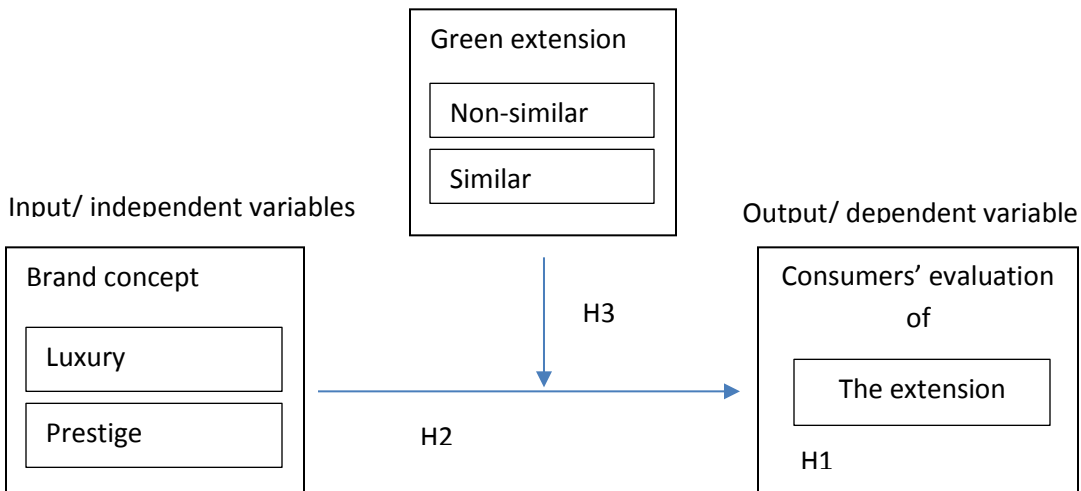
Of course, the brand concept of interest may bring on a different effect than expected. The cars in the article by Foege (2013) concerned various brand concepts. As this thesis only explores this from the brand concepts luxury and prestige, this hypothesis might not hold. For this hypothesis scenarios will be set up so as to create a post-consumer evaluation of supposed recently released green models. The result for this hypothesis can then tell whether or not consumers' thoughts on previous designs can help a company decide on which direction to go with when concerned with the design of a new green extension.

Furthermore, this hypothesis indirectly also expects that the consumer of green products would want to be noticed using the specific green product. Conspicuousness, which is the added value, hence, the more positive consumers' evaluation. The consumer would not get noticed if the green product does not differ enough from the originals. Nevertheless, the green product must not be too different either from the original brand concept. If this were the case then the consumer of the green product would not be noticed as having bought, for example, a hybrid Porsche but rather as having bought a completely different car or just any hybrid. The aim is to still be noticed in a Porsche that is now hybrid.

## 2.5 PROPOSAL FRAMEWORK

The proposal framework can be mapped as follows:

Figure 2.5



The diagram (figure 2.5) shows that the first hypothesis is about exploring the consumers' evaluation of the green extension. (H1= 'Consumers' evaluation of green extensions is positive.')

The second hypothesis adds a dimension of brand concept to explore differences in consumers' evaluation between luxury and prestige brands. (H2= 'Consumers' evaluation of green extensions is more positive for prestige brands than for luxury brands.')

Finally, the third hypothesis adds another dimension: the extent of design similarity. This explores the differences in consumers' evaluation between similar and non-similar designed green extensions. (H3= 'A green extension with a non-similar design to the parent brand previous models is evaluated by consumers more positively than a green extension with a similar design to the parent brand previous models.')

## 3 DATA & METHODOLOGY

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This research aims to increase existing insights into green extension as well as vertical line extension. To achieve the desired objective mainly two types of research are to be conducted.

1. Explorative research by means of a literature review
2. Quantitative research by means of an experimental survey

In this paragraph the focus is on the purposes for the above mentioned types of research. Furthermore, in this paragraph the choice of sub-subjects will be discussed. These include:

1. Car, Porsche
2. Car, Audi
3. Carbonated drink, Royal Club
4. Carbonated drink, Coca-Cola

### 3.1 RESEARCH PURPOSES

A literature review is conducted to explore the existing fields of green extension and vertical line extension in detail. As such, emphasis is put on the subjects: line extension, vertical line extension, high-end brand concepts, green products and green extension. With gathered literature about these subjects, a context can be given of the main subject, green extension. In addition, when formulating the hypotheses, already conducted research can be accounted for. As a result, these hypotheses and the possible findings can contribute to existing research. As this literature review aims to increase insight, it is a form of explorative research.

A quantitative research is conducted to test the formulated hypotheses. As this thesis takes interest in opinions of many different consumers rather than only a couple of opinions from a select group of experts, preference for quantitative research over qualitative research is given (Field, 2009). In addition, the desired responses to test the hypotheses lay with the consumers rather than with the producers.

In this thesis it is chosen to conduct a survey as quantitative research. This is mainly for two reasons:

1. It is more time efficient in regards to a larger group of respondents;
2. Questionnaires are resolute.

Additionally, conducting a survey is convenient for doing a cross-section research. To have more influence on the targeted consumers, it is chosen to distribute the survey on own account.

#### 3.1.1 Product category choice:

To be able to measure and compare consumer evaluation differing in brand concepts and the extent of design similarity, the survey presented the consumers two products to evaluate on. These are a car and a carbonated drink.



These product categories that are going to be covered in this thesis have been chosen for specific reasons. The cars (Porsche or Audi) are chosen because they have already been researched on other grounds except for green extension (For example: (Riley, Pina, & Bravo, 2013)). As such, this research can add to the existing research about cars. The car industry is also chosen because in the marketing it is considered as standard reference because of its specific qualities (Kirmani et al., 1999; Kim et al., 2001; Bearden & Etzel, 1982).

Nowadays many households consider having a car essential. It is has become a vital consumer need and good as it brings many benefits to the consumer. It is also, therefore, that many have purchased or are inclined to purchase one. Nonetheless, a purchase of a car is usually preceded by a considerable amount of thought as a car is a relatively large expense. It is for this consideration that a car is seen as a reasonable benchmark for consumer behavior. Additionally, given the huge investment a car after purchase becomes a part of the consumer identity. To complement this research it is necessary to arrange for another product category that can pose as a contrast to cars. As a result, this product must not be considered a huge necessity and should not be relatively expensive. Neither is a considerable amount of thought needed for purchase nor is it to bear meaning to or become part of the consumer identity. Correspondingly, carbonated drink is applied to as a counter product category. Carbonated drink is not of big concern nor essential as it has various direct substitutes such as water or beer. Products in this category mainly do not cost relatively much and consumers will not dwell on the choice between the different soft drinks. As regard to the low investment as well as the low involvement, a carbonated drink does not complement the consumer identity. Fortunately, the Coca-Cola Company recently launched a green product which especially benefits the further specifics of the product choices for consumers' evaluation.

### **3.1.2 Brand choices:**

To be able to compare between brand concepts in the car and carbonated drink industry, each product category presents one prestige and one luxury brand.

For the car product category the brands Porsche as luxury and Audi as prestige are chosen. These two brands have been considered as such in previous research. In Riley, Pina, and Bravo's (2013) study the pre-test results were that both brands fared the same in familiarity but Porsche scored higher than Audi on the prestige continuum. Given the criteria of this study, the difference in prestige indicates that Porsche conveys a luxury brand image and Audi a prestige brand image. In this manner this research is also in line with previous studies.

The carbonated drink product category presents the brands Royal Club as the luxury brand and Coca-Cola as the prestige brand. Unlike with cars these choices are not based on previous studies. Regardless, the criteria of the previous study are also applied to carbonated drink. Both brands should be equally familiar. The luxury brand is considered as much more exclusive than the prestige brand. Coca Cola meets the requirements for a prestige good, as it is widely known and everywhere easily available. On the contrary, Royal Club profiles itself as an exclusive, premium-quality luxury drink (Royal Club, 2014). This brand focuses on specific occasions and consumers' taste.

### **3.1.3 Summarized:**

Henceforth, in this study mainly two types of research can be distinguished. First, a literature review is conducted to grasp the specific context of this research topic. Hereafter, the research proceeds with a quantitative research, based on the established framework resulting from the literature review, in which Porsche is compared to Audi and Royal Club to Coca-Cola.

### **3.1.4 Similar of non-similar:**

In this research, it is left to the surveyed consumers to determine whether or not the new green product shown is similar or not similar as it cannot be determined for the consumer as an individual whether or not she/ he finds it similar. Although, similar is predefined as showing many resemblance to previous iconic designs of the parent brand and non-similar is predefined as: showing little resemblance to previous iconic designs of the parent brand, having a new and refreshing look, or possibly showing resemblance to designs by competitors.

## **3.2 DATA COLLECTION METHOD**

As was mentioned in the research purpose, the quantitative research includes a survey. A survey consisting of six different questionnaires is to be distributed. Two of the six questionnaires are for a pre-test and the other four are for the main test.

### **3.2.1 The pre-test**

The two questionnaires for the pre-test carry the purpose of confirming whether or not luxury and prestige brands are viewed as such by consumers. First, the questionnaire about Coca-Cola and Royal Club is to be distributed. This was a necessary extra step as no previous research about carbonated drink brands was found unlike the case for Audi and Porsche. Thereafter, the second questionnaire is to be distributed which aims to verify that the consumers indeed evaluate the car brands as well as the carbonated drink brands, as the assigned brand concepts (luxury or prestige). The first pre-test can be seen in appendix A, exhibit 2. The second pre-test can be seen in appendix A, exhibit 3.

### **3.2.2 The main test**

For the main test, four different questionnaires are to be distributed. Together these questionnaires represent an experimental survey. This means that each respondent gets to fill in one variant of the questionnaire and the next respondent gets to view one of the four variants but different from the one variant the previous respondent on the list got to fill in. The data of this survey resulting from the four variants can then be compared with each other. One of the four questionnaires can be seen in appendix A, exhibit 12.

In appendix A, exhibit 4 gives a structured view of the measurement with the corresponding sources and exhibit 5 shows a detailed construct of the experimental survey including: dependent and independent variables, measure names, sources, scales and scale types.

### **3.3 DESIGN OF THE EXPERIMENT AND MANIPULATION**

The main test is an experimental survey to test the differences in consumer evaluation between the brand concepts prestige and luxury and the differences in consumer evaluation between the two extents of design similarity, similar and non-similar. As it is not as interesting to test the differences in consumer evaluations between the product categories cars and carbonated drinks, the survey combined the products to be both asked in a whole questionnaire and so four scenarios were created instead of eight as the experiment design suggests.

#### **3.3.1 Design of the experiment**

Appendix A, exhibit 6 shows an experiment design containing three categorical variables with each having two levels, indicating a two by two by two ( $2 \times 2 \times 2$ ) design. However, participants get to evaluate on both cars and carbonated drinks in a questionnaire while being assigned to one of the four scenarios. See appendix A, exhibit 7 for a summarized view of the four scenarios. Hence, each scenario (i.e. brand type and similarity) is tested with a different group of distinctive participants indicating a 2 by 2 between subject design; product category (car versus carbonated drinks) is within subject design. So each subject assesses one green extension scenario for car and one for carbonated drinks. Any possible carry over effect is not expected, because product categories are different.

#### **3.3.2 Manipulation**

A certain extent of manipulation is apparent as the scenarios are created by means of the manipulated variables brand concept and extent of design similarity. Each of these variables has two levels which are the variation in manipulated variables that may or may not cause differences in the dependent variables measuring consumer evaluation. It is manipulated as such that one group of participants evaluate on Porsche and Royal Club which are positioned as luxury brands and another group of participants evaluate on Audi and Coca-Cola which are positioned as prestige brands. Furthermore, as for the extent of design similarity, participants are shown images of a car and a carbonated drink that are not typical of their parent brand which is determined as non-similar, or images of a car and a carbonated drink that are typical of their parent brand which is determined as similar. Appendix A, exhibit 8 shows the design of the manipulation in a table.

#### **3.3.3 Manipulation checks**

Of course, manipulation checks are a logical follow-up. The questionnaires incorporated questions to confirm whether or not manipulated variables are what they intend to be. In this case, it is checked if the brands are indeed considered as their intended brand concept, and the images are perceived as their intended extent of design similarity. Appendix A, exhibit 9 shows a more specific structure of the manipulated variables to be checked. It seen that 4 checks need be done to clarify of the perceived brand concepts and 8 checks to clarify the perceived design similarity. The responses are given in the form of a 7-point scale for the former and a 10-point scale for the latter. This is followed by a data analysis of the descriptive data given the criteria of the specifics of the brand concept or the extent of design similarity. As supplementary, statistical tests as the t-test or the Wilcoxon rank sum test will be performed.

As the same people answered for Porsche, Audi, Royal Club and Coca-Cola, it is appropriate to run repeated measure tests. (For the questionnaire, see appendix A, exhibit 3). As a result, it can be found whether each person ranked Porsche higher than Audi and Royal Club higher than Coca-Cola, which is the desired outcome. For the design similarity perception check, independent tests would be appropriate as different people were asked for each condition (Similar vs. Non-similar). See appendix A, exhibit 11a for a table of variables to be used concerning perception of similarity and appendix A, exhibit 11b for a table of variables to be used concerning perception of fit. Appendix A, exhibit 11c shows the desired outcome to be tested according to the manipulation and appendix A, exhibit 11d shows the descriptive statistics for the variables concerning perception of similarity.

### **3.4 SAMPLING**

In this thesis *consumers* are the population of interest. The survey is, therefore, conducted to gather information about this population of consumers. It would be most ideal to survey the entire population, however, it is too large a population to include every individual. As a result, a sample from the target population is selected to represent the entire population as to give an estimated characterization of the entire population.

#### **3.4.1 Ideal sampling**

The Ideal sampling for this thesis would be probability sampling. There is less bias compared to non-probability sampling because of randomization. This way of sampling allows for supplementary statistical tests that assume random selection, to be run. The results, interpretations, findings, implications of these tests can then be extrapolated to the entire target population.

If generalizing the resulting findings and statements is the aim, then the sample should be representative. A representative sample would, therefore, consider the relevant characteristics of the target population; the representative sample should be a reflection of the target population but then on a relatively smaller scale. Hence, the ideal sample is one of which each age category is in proportion to the age category of the target population. If the target population can be divided into subgroups with their corresponding proportion then the sample population should consist of subgroups of equal proportion. Finally, random selection should be applied within subgroup.

Nonetheless, convenience sampling is used for the research as this thesis did not have a sampling frame to use in probability sampling. Convenience sampling is used commonly in marketing studies.

#### **3.4.2 Target population**

Considering the subject of this research, the target population in this thesis are people that are able to purchase consumer question and purpose goods regularly to daily. Also, given the concerning products, cars and carbonated drinks, the following groups of people are irrelevant to this target population and, thus, excluded:

- children too young to drink carbonated drinks
- people not old enough to drive, <18
- people too old to participate

It is of importance to ask people that have a reasonable sense in product choices as it is in the interest of this thesis to explore consumers' attitude and intention towards green, conscious consumption. With the target population determined, the sample of consumers will consists of random selected subjects out of this enclosed population.

### 3.4.3 Distribution of the survey

The first pre-test was answered by student and staff of a certain university. The second pre-test was a questionnaire put online by means of Qualtrics. The main test was put online and printed out to be distributed at train stations, neighborhoods around these train stations and at shopping malls. Online distribution included: forums, emails and social media platforms.

### 3.4.4 Limitations

In table 3.5.4 a graphical representation of the sample population is compared to a graphical representation of the population of car consumers to check for the extent of relevance. As can be noted of the sample's subgroups proportions, they are not representative for the entire population (see also appendix A, exhibit 10). From the table it is apparent that the age categories between ages 20-40 are over represented. However, in both cases -population and sample- these age categories between ages 20-40 showed an increase in proportion the higher the age. As a result, the sample may only be (over) representative for the ages 20-40 of the population. If the results should be generalized, it may only be relevant to consumers aged between 20 and 40.

**Table 3.5.4 The entire target population vs. the sample population**

Age category	A graphical representation of the population of car consumers		A graphical representation of the sample population	
	Total amount of owned cars (sorted by age category)	percentage	Group of respondents in possession of a car (sorted by age category)	percentage
All ages	7042937.00	100%	47	
18 - 20	24093.00	0.34%	0	0%
20 - 25	259015.00	3.68%	7	15%
25 - 30	461017.00	6.55%	11	23%
30 - 40	1121600.00	15.93%	10	21%
40 - 50	1614118.00	22.92%	8	17%
50 - 60	1527659.00	21.69%	9	19%
60 - 65	636634.00	9.04%	1	2%
65 and older	1398801.00	19.86%	1	2%

Source for entire population:

[http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=71405ned&D1=0-68&D2=0&D3=\(1-6\)-I&VW=T](http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=71405ned&D1=0-68&D2=0&D3=(1-6)-I&VW=T)

Furthermore, the actual distribution tends towards a convenience sampling. Future results will be biased as sampling was not as random as desired. In this case of non-probability sampling, the main interest shifts to interest in the relationship between phenomena. This way this thesis explores the relationship between consumers' evaluation, brand concept, design similarity and green extensions without generalizing the results and interpretations.

### **3.5 STATISTICAL ANALYSIS APPROACH TO TEST THE HYPOTHESES**

In this paragraph the approach to testing the hypotheses will be discussed. This approach serves as a structure of the next chapter, Results. This includes an elaboration of complementary tests that precede the testing of hypotheses and a discussion of which statistical analysis to apply to test the hypotheses.

The several tests that precede the directly testing of the hypotheses are:

- The reliability and validity tests
- Manipulation checks

The reliability and validity test are appropriate as multi-item scales were used. However, multi-items scales were mostly derived from secondary data in which were already tested for reliability and deemed reliable. Nonetheless, a reliability tests is needed to test the reliability in the additional invented questions related to the value of green products (Field, 2009). For this, Cronbach's alpha is used.

As mentioned earlier, the manipulation check aims to check whether the manipulation is indeed what it intends to be. To check for both the perception of brand concept and the perception of the extent of design similarity, t-tests or non-parametric tests to compare two groups are most appropriate as with every test two groups are compared with each other. The desired outcome of the manipulation check are that Porsche and Royal Club score higher than Audi and Coca-Cola on the level of prestige but equal on familiarity, and that one image of a model (similar looking) scores higher than another image of a model (non-similar looking) of the same brand on design similarity.

The dependent variables for the checking of brand concept perception are the *parent brand position* (BPO) and the *familiarity* (FAM) of the four brands. The independent variable is *brand concept* which has two levels, luxury and prestige. The dependent variable to check the perception of design similarity of a displayed model is similarity (SIM). In addition, the fit of the extension (FIT) is also looked at as how fit the displayed model is perceived may give supplementary explanation. The independent variable is the *extent of design similarity*, which is either similar or non-similar.

Having the complementary tests that precede the testing of hypotheses elaborated the following step would be to discuss which statistical analysis to apply to test which hypothesis. The focus in this paragraph is on determining the potential statistical analyses that are appropriate for the testing of each hypothesis so that in the following chapter only results of in this paragraph determined tests for each hypothesis, including corresponding assumption checks and interpretation, will be covered. The discussions of which potential statistical analyses to apply that are appropriate for testing of a hypothesis will involve the following points:

1. The hypothesis
2. An elaboration of the comparisons to make
3. The dependent and independent variables to be used for the tests
4. Potential tests and the reason they can or cannot be applied

### 3.5.1 Hypothesis 1:

The first hypothesis is: *Consumers' evaluation of green extensions is positive.*

Respondents were asked to indicate their extent of (dis)agreement regarding the statements on a 7-points scale. 1 for strongly disagree, 7 for strong agree and 4 for neither agree nor disagree. Positive in this sense would be greater than 4, as a sample mean of greater than 4 would mean that more respondents agreed than disagreed to statements indicating their attitude, valuation and purchase intention towards the green extensions.

As this hypothesis' objective is to know whether the evaluation is positive, which implies to test whether the sample mean of the responses is greater than the hypothesized value, a one sample t-test can be applied. However, the one sample t-test is based on four assumptions:

1. Dependent variable is continuous.
2. Independent data: sample observations should be random
3. No significant outliers.
4. The population from which the sample has been drawn should be normal; dependent variable should be approximately normally distributed

(Field, 2009)

If it shown after testing of the assumptions that these assumptions are not met, then this one sample t-test will not give a valid result and a non-parametric one sample Wilcoxon rank-signed test should be applied. For the latter test the assumption of same distribution should be checked for.

For this hypothesis the sample mean of a group of responses is compared to a value, greater than four (>4) and greater than five (>5) depending on what can be derived from the descriptive statistics. The dependent variables here are: attitude towards green extension (EAT), value perception of the green extension (VAL) and purchase intention of the green extension (INT).

### 3.5.2 Hypothesis 2:

The second hypothesis is: *Consumers' evaluation of green extensions is more positive for prestige brands than for luxury brands.*

With the direction of consumers' evaluation determined by means of the first hypothesis, the second hypothesis adds to define differences in consumers' evaluation between prestige and luxury brands. For this hypothesis it is evident that two groups are compared with each other again and again. First the two groups, luxury and prestige, are compared overall grouped by product category (luxury car vs. prestige

car) (luxury carbonated drink vs. prestige carbonated drink), then the groups are spilt by product category and also grouped by extent of design similarity to be compared with each other on the design similarity level. A representation of how these groups relate is found in table 3.6.2.

**Table 3.6.2**

Overall	Porsche Royal Club	vs. vs.	Audi Coca-Cola
Non-similar	Non-similar Porsche Non-similar Royal Club	vs. vs.	Non-similar Audi Non-similar Coca-Cola
Similar	similar Porsche similar Royal Club	vs. vs.	similar Audi similar Coca-Cola

The dependent variables here are: attitude towards green extension (EAT), value perception of the green extension (VAL) and purchase intention of the green extension (INT). The independent variables are: product category (PC), brand concept (BC), and extent of design similarity (DS).

As the third hypothesis also asks for a similar statistical testing approach, comparisons of two groups, an additional test can be applied to give an overview of the statistical analysis for both hypotheses.

The dependent variables here are: attitude towards green extension (EAT), value perception of the green extension (VAL) and purchase intention of the green extension (INT). The independent variables are: product category (PC), brand concept (BC), and extent of design similarity (DS).

So before starting on more focused comparisons of two groups, a MANOVA is appropriate to help against making a series of type I errors. Also, the MANOVA makes it possible to look at the three dependent variables (outcomes) simultaneously (Field, 2009). With the MANOVA it is tested whether the dependent variables have an overall significant effect. If the MANOVA is significant, then the following more detailed tests that compare two groups are protected against type I errors.

Nevertheless, even if the MANOVA shows no significant effects, the testing will continue on a more detailed level to explore possible explanation. This can be done with tests such as the ANOVA, independent t-test or Wilcoxon rank-sum test. The first two tests are based the four assumptions underlying parametric tests:

1. Interval data: dependent variable should be continuous.
2. Independence: sample observations should be random
3. Normally distributed data: sampling distribution should be normally distributed.
4. Homogeneity of variances: variances should be the same throughout the data  
(Field, 2009)

Even if some assumptions are violated, these tests may still be valid as they can be robust to the reason a certain assumption is violated. For example, the ANOVA is robust to heterogeneity of variances if the sample sizes are equal (Field, 2009). Nevertheless, resorting to the non-parametric Wilcoxon rank-sum test is also possible. Though, same distribution applies to this test.



The dependent variables here are: attitude towards green extension (EAT), value perception of the green extension (VAL) and purchase intention of the green extension (INT). The independent variable is the categorical variable brand concept with two levels, luxury and prestige.

### 3.5.3 Hypothesis 3:

The third hypothesis is: *A green extension with a non-similar design to the parent brand previous models is evaluated by consumers more positively than a green extension with a similar design to the parent brand previous models*

The procedure to testing the third hypothesis is rather similar to the testing procedure of the second hypothesis. This hypothesis also calls for tests that compare two groups such as t-test, ANOVA, Wilcoxon rank-sum test. Of course, the groups and independent variables are different.

**Table 3.6.3**

Split by product category	Overall	Non-similar cars	vs.	Similar cars
		Non-similar carbonated drinks	vs.	similar carbonated drinks
split by product category + grouped by brand concept	<b>Luxury</b>	Non-similar Porsche	vs.	similar Porsche
		Non-similar Royal Club	vs.	similar Royal Club
	<b>Prestige</b>	Non-similar Audi	vs.	similar Audi
		Non-similar Coca-Cola	vs.	similar Coca-Cola

As table 3.6.3 suggest, consumer evaluation of non-similar design of products are compared to similar design of products. Furthermore, to explore in detail for possible additional information, the group is split by product category and grouped by brand concept. For example, as can be seen, the non-similar luxury car is compared to the similar luxury car.

The dependent variables are the variables that measure consumer evaluation: attitude towards green extension (EAT), value perception of the green extension (VAL) and purchase intention of the green extension (INT). The independent variable is the categorical variable extent of design similarity with two levels, non-similar and similar.

### 3.5.4 End

In this paragraph the potential statistical analyses that are appropriate for the testing of each hypothesis were determined. In the following chapter, Results, the reporting of results for each hypothesis will uphold the following structure:

1. Checking of the assumptions underlying the statistical analyses concerned
2. Reporting of the results
3. Interpretations and findings

## 4 RESULTS

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In the theoretical framework three hypotheses were formulated. First, the direction of consumers' evaluation of green extensions was hypothesized to be positive. Second, it was hypothesized that consumers' evaluation of green extensions is more positive for prestige brands than for luxury brands. Lastly, non-similar -to the parent brand iconic models- designed green extensions are hypothesized to receive more positive evaluation than similar designed green extensions that show similarities to iconic models of the parent brand.

### 4.1 DESCRIPTIVE STATISTICS

In this paragraph gives a first impression of the results by means of an analysis of the descriptive statistics.

Appendix B, exhibit 1 shows a table of mean values of the dependent variables. With reference to the first hypothesis (*consumers' evaluation of green extensions is positive*) and exhibit 1 in appendix B, the following deductions can be made:

It is apparent that the intention of consumers' purchase of a green extension of a car brand is low. This can be seen from the means lower than the value 4 in this table as means lower than 4 are considered low or negative. Nevertheless, consumers seem to have a positive attitude towards green extensions in general.

According to the descriptive statistics, consumers consider hybrids as fully-fledged cars; adding a green mark to the image of a car doesn't make the car less of a car.

With the exception of the purchase intention, all deductions that concern green extensions of a car brand are also valid for carbonated drinks. Consumers' purchase intention of a green extension of a carbonated drink brand is above average.

The following deductions concern the second hypothesis (*consumers' evaluation of green extensions is more positive for prestige brands than for luxury brands*).

Overall, prestige cars are valued higher than luxury cars. The same can be said of carbonated drinks, although the difference between values of prestige vs. luxury is smaller than for green extensions of a car brand.

The rest of these deductions relate to the third hypothesis (*a green extension with a non-similar design to the parent brand previous models is evaluated by consumers more positively than a green extension with a similar design to the parent brand previous models*).

With a luxury car brand, a non-similar car design is preferred over a similar car design. With a prestige car brand, however, a similar car design is preferred over a non-similar car design. With a luxury

carbonated drink brand, a similar design is preferred over a non-similar design and with a prestige carbonated drink brand, a non-similar design is preferred over a similar design (see table 4.1).

**Table 4.1**

The more preferred design	Brand concept	Extent of design similarity	
		Non-similar	Similar
Car	luxury	X	
	prestige		X
Carbonated drink	luxury		x
	prestige	x	

This indicates an interaction effect between brand concept and design similarity. Whether or not this interaction effect is statistically significant will be confirmed hereafter among the next sections. (Paragraph 4.5)

## 4.2 RELIABILITY AND VALIDITY

Most of the questions in the main test questionnaire have already been tested for reliability in previous studies. Nevertheless, the Cronbach's alpha is run to test the reliability of the scales for questions that were invented for the research in this thesis. Appendix B, exhibit 1 shows: the scale measuring the attitude towards hybrid cars (HAT) with the invented questions, the scale measuring the value of the extension (VAL) with added invented questions related to the green concept, and other scales (FIT, EPO and BPO) that were adjusted for the character of this research.

Appendix B, exhibit 2 shows the results of the reliability test. As can be seen, when some questions were left out, the Cronbach's alpha increased. The closer the alpha is to 0.7 the better. The higher the value of alpha, the better the reliability, which is the extent to which questions of the scale are indeed measuring the same variable (Field, 2009). Next to this column, the results of the validity test with a factor analysis are shown. The questions are estimated valid above an absolute value of 0.5. There are questions with factors smaller than 0.5. Their factors were, however, closely around 0.5 and they are, thus, kept.

Appendix A, exhibit 4 shows the results of the reliability test for the scales with questions from a secondary source: Riley, Pina and Bravo (2013).

## 4.3 MANIPULATION CHECK

As mentioned in paragraph 3.4.3, the manipulation checks will be run with the t-test or the Wilcoxon rank-sum test as these tests focus on comparing two groups. Nevertheless, it should first be determined whether parametric tests (t-tests) are appropriate. Therefore, the assumptions of normality and homogeneity of variances are checked for.

The results of normality check for the manipulation check of brand concept perception are to be seen in appendix B, exhibit 5. As the sample sizes are < 50, the Shapiro-Wilk is more appropriate to look at (Field, 2009). The table shows that only the brand positions for carbonated drink accept the null

hypothesis that the sample population is normally distributed. However, when looking at their difference (luxury – prestige), the null hypothesis is rejected. This means that its population is not normally distributed.

The results of homogeneity of variances check for the manipulation check of brand concept perception can be seen in appendix B, exhibit 6. The null hypothesis of Levene's test is that the population variances are equal across groups. The table shows that this is true for the groups of familiarity (FAMporsche vs FAMaudi). However, variances of the groups of brand position (BPOporsche vs BPOaudi) differ significantly as its p-value < 0.05, thus rejecting the null hypothesis of equal variances. There is a certain correlation between the groups, luxury and prestige, for both the brand position and familiarity. However, correlation is only significant when checking for familiarity.

The table (appendix B, exhibit 6b) shows that the variances of the groups of brand position (BPOrc vs BPOcc) are equal. However, variances of the groups testing familiarity (FAMrc vs FAMcc) differ significantly as its p-value < 0.05, thus rejecting the null hypothesis of equal variances. There is a certain correlation between the groups, luxury and prestige, for both the brand position and familiarity. However, their correlation is not significant.

The Pitman-Morgan tests whether the correlated variances differ significantly. Both p-values (Car: brand position and familiarity) are less than 0.05 which means that the null hypothesis of no difference between correlated variances is rejected, thus, there is significant difference between the correlated variances.

Pitman-Morgan test results (appendix B, exhibit 7) show that when testing for familiarity, the p-value is less than 0.05 which means that the null hypothesis of no difference between correlated variances is rejected, thus there is significant difference between the correlated variances. When testing for equal correlated variances of the groups of brand position (BPOrc vs BPOcc), the null hypothesis is accepted.

Appendix B, exhibit 8 shows a summary of the assumption checks and the resulting appropriate tests. It can be seen that overall a Wilcoxon Signed-rank test is applicable.

The results of normality check for the manipulation check of design similarity perception are to be seen in appendix B, exhibit 10. As can be seen, according to the Shapiro-Wilk normality test only two groups ( [PC=1, SIM=2] & [PC=2, SIM=1] ) have a normal distributed population. However, their p-values 0.06 and 0.052 respectively are close to the significant level of 0.05. At a significant level of 0.10 the null hypothesis that the population is normally distributed, is rejected. As a result, it will be continued with tests that are robust towards the violation of the assumption of normality; tests that don't assume a normal distribution of populations.

The results of homogeneity of variances check for the manipulation check of design similarity perception and perception of fit can be seen in appendix B, exhibit 43. The similarity and fit of cars give non-significant result, meaning the null hypothesis that variances are equal, is accepted. This means for the t-test equal variances can be assumed. However, for carbonated drinks both similarity and fit are significant, meaning the variances are not equal. When taking a deeper look into only similarity

(appendix B, exhibit 12), it is again only cars that give a non-significant p-value, meaning cars even differing in brand concept give equal variances. In addition, both carbonated drinks give significant results, meaning equal variances cannot be assumed.

The perception of fit is also checked for as part of the perception of design similarity. Therefore, an assumption check is also run for this variable. Appendix B, exhibit 11 shows that normality can be assumed with the exception of the groups [carbonated drink; luxury; similar] and [carbonated drink; luxury; similar]. Appendix B, exhibit 13 shows for homogeneity of variances on a more detailed level, that for prestige products (car and carbonated drink) equal variances can be assumed but not for luxury products.

Appendix B, exhibit 14 shows a summary of the assumption checks and the resulting appropriate tests. It can be seen that 3 of the 4 tests for the car product category can be run with an independent t-test and only 1 of the 4 tests for the carbonated drink product category can be run with the independent t-test. The rest should be run with a non-parametric counterpart of the independent t-test.

#### 4.3.1 Brand concept

For the manipulation check it is tested whether Porsche is perceived as luxury, Audi perceived as prestige and if Porsche is positioned higher than Audi. So the desired outcome is to be able to reject the null hypothesis that the means of these two groups are equal. This also goes for Royal Club as the luxury brand and Coca-Cola as the prestige brand for the carbonated drinks product category. Although differing in brand position, the two brands for each product category brand should be equally well-known, so the null hypothesis can be accepted.

The same people answered for Porsche, Audi, Royal Club and Coca-Cola. When using a repeated measure, it can be found whether each person ranked Porsche higher than Audi and Royal Club higher than Coca-Cola, which is the desired outcome. (For the questionnaire, see appendix A; exhibit 3)

**Table 4.3.1.a**

Car (Porsche vs Audi)				
	Brand position		Familiarity	
	Mean	St.dev	Mean	St.dev
Luxury (Porsche)	6.1818	.64633	5.2727	1.12045
Prestige (Audi)	5.6591	1.06219	5.0909	1.65929
<b>Test</b>	<b>Ha: L &gt; P</b>	<b>p-value (2-tailed)</b>	<b>H0: L = P</b>	<b>p-value (2-tailed)</b>
Wilcoxon Signed-rank test	Z= -2.039** <sup>a</sup>	.044	Z=-.551 <sup>a</sup>	.672

\*\*significant at a significance level of 0.05 (1-tailed p<0.05)

<sup>a</sup> based on (prestige > luxury) ranks

Porsche as a luxury brand is indeed perceived as having a higher brand position than Audi as a prestige brand as seen in table 4.3.1.a. They are equally well-known.

**Table 4.3.1.b**

Carbonated drink (Royal Club vs Coca Cola)				
	Brand position		Familiarity	
	Mean	St.dev	Mean	St.dev
Luxury (Royal Club)	4.2045	1.20178	4.1364	2.14466
Prestige (Coca-cola)	3.8409	1.42584	6.4545	.50965
<b>Test</b>	<b>Ha: L &gt; P</b>	<b>p-value (2-tailed)</b>	<b>H0: L = P</b>	<b>p-value (2-tailed)</b>
Wilcoxon Signed-rank test	Z=-1.069 <sup>a</sup>	.304	Z=-3.422** <sup>b</sup>	.000

\*\*significant at a significance level of 0.05 (1-tailed p<0.05)

<sup>a</sup> based on (prestige > luxury) ranks

<sup>b</sup> based on (prestige < luxury) ranks

According to the repeated measures t-test Royal Club as a luxury brand is not perceived as having a higher brand position than Coca-Cola as a prestige brand. The results of familiarity show that respondents were more familiar with Coca-Cola than Royal Club as found in table 4.3.1.b. This could be because Royal Club is branded as exclusive for a certain occasion or for a certain lifestyle and taste. As a result, the perception of its brand positions remains unclear.

### 4.3.2 Design similarity

The respondents were asked to rate on a 10-point scale the similarities of the picture shown to a typical product of the brand. Here under is a template of the questions in the questionnaire that aim to measure similarity.

*How would you rate the similarities of this concept/new green [product] to a typical [brand] [product]?*

Please indicate on a 10-point rating scale to what extent this (concept) green [product] shows similarities to a typical [parent brand] [product].

Additional question for non-similar cars only: Please indicate on a 10-stars rating scale to what extent the concept [model name and product] shows similarities to the [name of competitor model].

**1= not at all similar, 10= totally similar**

(See also appendix B, exhibit 12, questions 3 and 10)

The picture shown of a lookalike is considered “similar” if it is overall rated with more stars than the picture shown of an original or new model. In other words, the average rating for a similar designed model should be higher than the average rating for a non-similar designed model, for this manipulation

to be valid. It is, therefore, tested for each brand concept of a product category whether the mean of “similar” is greater than the mean of “non-similar”. As was determined in the assumption paragraph above (or see appendix B, exhibit 14), the tests of similarity for the product category car are run with independent t-tests.

**Table 4.3.2a**

Car (Porsche vs Audi)			
		Extent of design similarity	
		Mean	St.dev
Luxury (Porsche)	similar	<b>6.25</b>	2.04875
	Non-similar	<b>5.25</b>	2.38140
<b>Test</b>		<b>Ha: SIM_P &gt; SIM_P_n</b>	<b>p-value (2-tailed)</b>
Independent t-test		T= -1.424	.163
Prestige (Audi)	similar	<b>7.55</b>	2.13923
	Non-similar	3.85	2.53134
<b>Test</b>		<b>Ha: SIM_A &gt; SIM_A_n</b>	<b>p-value (2-tailed)</b>
Independent t-test		T= -4.983	.000

**Table 4.3.2b**

Carbonated drink (Royal Club vs Coca Cola)			
		Extent of design similarity	
		Mean	St.dev
Luxury (Royal Club)	similar	6.60	1.53554
	Non-similar	6.20	2.72609
<b>Test</b>		<b>Ha: SIM_RC &gt; SIM_RC_n</b>	<b>p-value (2-tailed)</b>
Wilcoxon– Mann–Whitney test		Z=-0.179	.864
Prestige (Coca-Cola)	similar	8.40	1.46539
	Non-similar	5.85	2.47673
<b>Test</b>		<b>Ha: SIM_CC &gt; SIM_CC_n</b>	<b>p-value (2-tailed)</b>
Wilcoxon– Mann–Whitney test		Z=-3.313	<u>.001</u>

As can be seen in Table 4.3.2a-b, there are significant results for the prestige car and the prestige carbonated drink (see also appendix B, exhibit 15). This means people have perceived “similar” prestige products (cars and carbonated drink) as significantly more similar to their typical parent brand product, than non-similar prestige products to the typical parent brand product. In other words, similar prestige products can be considered “similar” as they indeed showed more similarities to their typical parent brand product than non-similar prestige products did. Non-similar prestige products can then also be considered “non-similar”.

This is, however, not significant for luxury products. There are indicators (mean values) that “similar” luxury products are perceived as more similar to their typical parent brand product, than non-similar luxury products to the typical parent brand product. However, the results in the table show that there is no significant difference between “similar” and “non-similar” (luxury brand concept). Regardless, at a significance level of 0.10 the one-tailed p-value of luxury car (t-value(d.f.=38)= -1.424, p-value>0.05) 0.08 shows significance.

Summarized, for luxury products there is no statistical evidence that a “similar” design is indeed perceived as more similar than a “non-similar” design, as the difference between the mean values is not significant. For prestige products there is statistical evidence that a “similar” design is indeed perceived as more similar than a “non-similar” design as the difference between the mean values is significant.

#### **4.3.2.1 Perception of fit**

The questions in the questionnaire concerning perception of fit can be relevant to the perceived design similarity. The variable FIT tells us how fitting the people found the green extension to the parent brand. It could explain why a similar design may not be perceived as similar at all.

Therefore, it is tested whether similar designs had a higher fit than non-similar designs. The results of the independent t-test show that the difference between (similar vs. non-similar) perceptions of fit is not significant. The Wilcoxon rank sum test is also run for the luxury products as for these homogeneity of variances could not be assumed and the normality was questionable. The latter test reports a similar deduction; no significant difference. With this there is no significant evidence that the fit of a similar product is greater than the fit of a non-similar product, but it does say that the similar design and the non-similar design have an equal perception of fit. Nevertheless, these results do not help explain why a similar designed luxury green extension is not perceived as similar or is perceived as closely related to a non-similar designed luxury green extension.

## **4.4 FIRST HYPOTHESIS**

### **4.4.1 Assumptions**

The ideal test to assign to this hypothesis *consumers' evaluation of green extensions is positive* would be the one sample t-test. This t-test, however, is a parametric test and is only valid when the assumptions underlying this test are met. Two of the assumptions, normality of the sample distribution and no



significant outliers, are checked. The results are that normality can be assumed according to the result of the Shapiro-Wilk normality test. With the significance level at 0.05, only two groups of the dependent variable EAT violated this assumption. Nevertheless, non-normality would not have been a problem as the assumption stated that the dependent variable should be approximately normally distributed (Moore, McCabe, Duckworth, & Alwan, 2009). The population from which the sample was drawn is presumed normally distributed –but usually this is not the case- and the sample should, therefore, have a roughly similar distribution for this assumption to be met.

However, the other assumption of no significant outliers is violated for all dependent variables. Appendix B, exhibit 18 shows the presence of outliers for the dependent variables EAT, VAL and INT. As there are outliers to deal with, it is more appropriate to continue with a non-parametric test, the sign test (Moore, McCabe, Duckworth, & Alwan, 2009). Alternatively, the outliers can also be omitted as there are not many. However, this will not be done in an objective way as there is no reason for the outliers to be erroneous measurement (Field, 2009). All outliers are between 1 and 7; they are true observations as respondent were asked to indicate their extent of (dis)agreement on a 7-point scale and an average was taken of their responses for a certain scale. Therefore, it can be said that the assumptions underlying the one sample t-test does not correspond to the reality of consumers' evaluation in this thesis.

#### **4.4.2 Results**

The first hypothesis questions whether consumers' evaluation of green extension is positive. Positive evaluation was determined as having a mean score greater than four. From the descriptive statistic it could be seen that except for the mean of the purchase intention of a green car (INT), all means were greater than the value 4. Therefore, it is tested whether the mean scores differ significantly from 4. Significant differences give evidence that consumers' evaluation of green extension is indeed positive.

However, as the assumptions check ruled out the t-test, the sign test is run and the medians are used instead of the means. As a result, the null hypothesis for all groups is that the median is equal to 4.

Appendix B, exhibit 22a shows a table with the results of the one sample Wilcoxon signed rank test. From the descriptive statistics it was seen that the purchase intention of a green car (INT) had means lower than 4. In the same table the results for the purchase intention of a luxury car extension (car, INT) rejected the null hypothesis. This means that the purchase intention of a luxury green car (INT) which is a part of the consumers' evaluation is not as positive as hypothesized. The INT of a car in both similar and non-similar prestige scenario accepted the null hypothesis but this only means that the medians are equal to 4 which indicate that this part of the consumer evaluation was neither positive nor negative. It can be concluded from this that most consumers have little intention of buying such a luxury green car. When it concerns a prestige green car, then most consumers would be indifferent about the purchase intention.

From the descriptive statistics it could be seen that six means came very close to the value 5:

- Attitude towards a non-similar luxury green car extension (EAT),
- Attitude towards a non-similar prestige green car extension (EAT),

- Value perception of a similar prestige green car extension (VAL),
- Value perception of a non-similar prestige green car extension (VAL),
- Attitude towards a non-similar prestige green carbonated drink extension (EAT),
- Purchase intention a non-similar prestige green carbonated drink extension (INT).

The results of the one sample Wilcoxon signed rank for these variables rejected the null hypothesis; the median of these variables differ significantly from the value 4 and there is evidence that these parts of the consumers' evaluation are positive. There is also another variable that rejected the null hypothesis with a mean greater than the value 4 but less than the value 5: the value perception of a similar luxury green car extension (VAL). This means that the median is significantly greater than the value 4 and that it can be said that this also adds to a positive consumers' evaluation.

There were also two variables with means greater than the value 5 in the descriptive statistics:

- Attitude towards a similar prestige green car extension (EAT),
- Attitude towards a similar prestige green carbonated drink extension (EAT).

As expected for these variables, the null hypothesis was rejected. There is evidence that the medians of these variables take on values greater than 4, thus most consumers have a positive attitude towards similar prestige green extension.

The one sample Wilcoxon signed rank test works with medians and treats the scales as ordinal variables. This means that, as the value 5 is greater than 4, a variable with a median value around 5 is considered a more positive evaluation than a variable with a median around 4. How much more positive is not clear. An one sample Wilcoxon signed rank test is run again to test whether the two above mentioned variables with means greater than 5, also have medians equal to 5 or greater than 5. See appendix B, exhibit 22b for a report of the results. The result for the attitude towards a similar prestige green car extension (EAT) rejected the null hypothesis. This would say that the median (5.6667, appendix B, exhibit 2) differs significantly from the value 5. However, the p-value (0.047) is very close to the significance level (0.05). In any case, as the median is greater than the values 4 and 5, there is strong evidence that this adds to a positive consumers' evaluation. On the other hand, the result for the attitude towards a similar prestige green carbonated drink extension (EAT) accepted the null hypothesis. This confirms the previous result that the median is definitely not equal to 4, because it is rather equal to 5. Additionally, the results for six variables mentioned above with means coming close to 5, accepted the null hypothesis that the median is equal to the value 5. This confirms that these were positive consumers' evaluation.

It is apparent that consumers' evaluation for a luxury green extension (similar and non-similar) was neither positive nor negative. The medians of the variables that measure this part of the consumers' evaluation do not differ significantly from the value 4. This indicates that consumers were indecisive. This could be because of consumers' unfamiliarity with the brand Royal Club. As a result, most consumers could neither say nor take a side.

The overall purchase intention of a green extension (INT) has a median that does differ significantly from the value 4 (appendix B; exhibit 44). The overall attitude towards a green extension (EAT) and the overall

value perception of a green extension (VAL) did differ significantly from the value 4. These results give evidence to positive consumers' evaluation. To confirm the "more" positive evaluation, the test was also run with the null hypothesis that the median equals 5. The null hypothesis was accepted with the result for EAT, rejected with the result for VAL and, of course, rejected with the result for INT. This confirms that consumers' attitude towards green extension was positive. About the purchase intention, however, consumers seem to be hesitant.

Table 4.4 shows the overall results of dependent variables split by product category. The same can be said of the attitude towards a green extension (EAT) for both product category as mentioned above; positive consumers' attitude. It is the value perception of a green car extension (VAL) that is positive, with a median greater than 4. However, the value perception of a green carbonated drink extension (VAL) is neither positive nor negative as the null hypothesis of a median equal to the value 4 is accepted and so the median (4.3250) does not differ significantly from the value 4. It also be seen that the purchase intention of a green car extension (INT) does not add up to a positive consumers' evaluation; the median is equal to the value 4. The purchase intention of a green carbonated drink (INT), however, does form a part of the positive consumers' evaluation as the median is significantly greater than the value 4. In conclusion, the results for the overall attitude towards a green extension (all EAT) are close to the results found for EAT on a level grouped by product category. The overall VAL and INT, however, have varying results when split by product category.

**Table 4.4**

Product category	Dependent variables	median	"median equals 4"	Sig.	"median equals 5"	Sig.	"median equals 4.5"	Sig.
cars	EAT	5.0000	Reject	.000	Accept	.767		
	VAL	4.5000	Reject	.000	Reject	.000	accept	.394
	INT	3.5000	Reject	.000	Reject	.000		
Carbonated drinks								
	EAT	4.6667	Reject	.000	Accept	.065		
	VAL	4.3250	Accept	.053	Reject	.000		
	INT	4.6000	Reject	.002	Reject	.001	accept	.960

## 4.5 SECOND HYPOTHESIS

### 4.5.1 Assumption

The tests that were found appropriate for the testing of this hypothesis were: one-way ANOVA, independent t-test, Wilcoxon rank-sum test and Kruskal-Wallis test. These tests can compare the means across two groups but the first two tests are only valid if the assumptions underlying parametric test are met. These two tests of the four are also more accurate if normal distribution and homogeneity of

variances can be assumed. Therefore, to decide whether the results of a t-test or ANOVA should be reported, it is first checked whether these assumption are met.

Normality is checked for each dependent variable split by product category and, because of the character of this hypothesis, grouped by brand concept. Five of the twelve dependent variables put to this test were not normal (appendix B, exhibit 27). However, when taking a look at the Q-Q plots (appendix B, exhibit 19-21), the population distribution of the groups do not look very normally distributed. Thus, normality can be assumed when looking at the result of the Shapiro-Wilk test, but not when looking at the Q-Q plots.

Homogeneity of variances is checked for each dependent variable split by product category. Hereby, it can then be found whether the variances are (not) significantly different across the two groups to be compared. If the t-test is to be used to compare the luxury groups to the prestige groups, then the assumption of homogeneity should be met. This is assumption is met by all dependent variables except for the purchase intension in the car product category (INT) (appendix B, exhibit 27).

As normality can likely not be assumed and homogeneity of variances cannot be assumed for the variable INT of the car product category, the next step can then be:

- 1) Run the independent t-test and report the appropriate t-statistic that does not assume equal variances.
- 2) Run a Wilcoxon rank-sum as this test does not assume a normal distribution or homogeneity of variances.

#### **4.5.2 Results**

As determined in paragraph 3.6, relevant MANOVA test results are covered first. Appendix B, exhibit 41 shows that the overall effect of design similarity is not significant. Furthermore, the overall effect of brand concept on the dependent variables EAT and VAL is significant, but not for INT. The overall effect of product category on the dependent variables VAL and INT is significant, but not for EAT. Earlier in this thesis an interaction effect between design similarity and brand concept was proposed (Paragraph 4.1). The graphs in appendix B, exhibit 42 show that for EAT and VAL there is an interaction effect, but not for INT. However, it can be seen in the table of appendix B, exhibit 41 (or exhibit 23) that this interaction effect (BC\*DS) for EAT and VAL is not significant. With these results, it can be expected that with brand concept (hypothesis 2) there will be significant results and with design similarity there won't be significant results. The reports of the following results will confirm this.

The results of the preceding assumption check suggested the independent t-test. This is run for all dependent variables. The second hypothesis is recalled as 'Consumer evaluation is more positive for prestige brands than for luxury brands'. The descriptive statistics have confirmed this but it is yet uncertain whether this is significantly so.

Overall, it could be said that for all variables, except for the variables VAL and INT in the carbonated drinks product category, there was significant difference.

## Cars

- EAT: (t-value(d.f.=78)=-1.725, p-value<0.05)
- VAL: (t-value(d.f.=78)=-3.229, p-value<0.05)
- INT: (t-value(d.f.=74.414)=-1.911, p-value<0.05)

These results imply that a green extension of a prestige car brand is evaluated higher than a green extension of a luxury car brand.

## Carbonated drinks

- EAT: (t-value(d.f.=78)=-2.450, p-value<0.05)

The descriptive statistics did indicate that a prestige green carbonated drink is valued more and will more likely to be purchased than a luxury green drink but this not significant.

- VAL: (t-value(d.f.=78)=-0.333, p-value>0.05)
- INT: (t-value(d.f.=78)=-0.431, p-value>0.05)

These not significant results could be due to Coca-Cola being more prominent as what was apparent from the manipulation check. As the brands were not as familiar, information about the less familiar brand is less valid and a comparison is then biased. That non significance is reported for carbonated drinks but not for cars could be because the value of one carbonated drink is not so different from another carbonated drink. Recall that carbonated drinks have a low involvement and cars have a high involvement. Furthermore, the prices of carbonated drinks have small absolute differences. This could explain why purchase intention of carbonated drinks does not differ between the two brand concepts. Coca-Cola has a higher score probably because the brand is more well-known and/or preferred for its taste.

In detail, non-similar luxury car vs non-similar prestige car, the attitude (EAT) towards a luxury green extension was more positive than a prestige green extension. However, this is not significant. For similar luxury car vs similar prestige car, a prestige green extension was more positive than a luxury green extension just as the descriptive statistics indicated with a t-value(d.f.=38)=-2.804 and a p-value<0.05.

Recall that the purchase intension in the car product category (INT) violated the assumption of homogeneity of variances. On detailed level, it is the purchase intension of a non-similar car that violated the assumption. For this variable it is, therefore, looked at the t-statistic that does not assume homogeneity of variances (t-value(d.f.=35.308 )=-0.972, p-value>0.05) or the Wilcoxon rank-sum Z-statistic (U=166, Z=-0.923, p-value>0.05).

As normality was violated and as the Wilcoxon rank-sum test does not assume normal distribution, the Wilcoxon rank-sum test result would be most accurate. Nevertheless, the result is the same for both tests; the intention to purchase a prestige green extension is as much as the intention to purchase a luxury green extension.

Additionally, it appears that it is because of the similar group (Cars, INT) that there was, overall, significant more intention to purchase a prestige than luxury green car (INT). This similar group gave the significant results  $t\text{-value}(d.f.=38)=-1.712$  with a  $p\text{-value}<0.05$ .

As for the test results that were not significant on overall level, on detailed level they are also non-significant. Note that for one variable (carbonated drink, INT, similar) that the mean of luxury was greater than the mean of prestige, but this is not significant.

The independent t-test was used assuming normality of distribution. However, because the Q-Q plots showed non-normality of distribution, the Wilcoxon rank-sum test was also run to explore if the same can be said of the results as with the t-test. This is indeed so; all tests that gave significant results with the t-test also gave significant result with the Wilcoxon rank-sum test and the same can be said of the non-significant test results. A summary of this report can be seen in appendix B, exhibit 32.

### **4.5.3 Interpretation**

Between prestige and luxury it appears that the prestige brand concept has been given more positive evaluations than the luxury brand concept. It can be concluded that brand concept matters and that a prestige green extension is preferred over a luxury green extension. This could mean that the green concept fits better with a prestige brand than a luxury brand, and/or a luxury green extension is considered exclusively for an elite group of consumers.

With the descriptive statistics there were already indications that a prestige green extension is given more positive evaluations than a luxury green extension. Moreover, both statistical tests showed that most of these indications were significant. This result could add as insight into a future research which, for example, explores why a green extension of a certain brand is more successful or generates more sale than another green extension of another brand concept.

## **4.6 THIRD HYPOTHESIS**

### **4.6.1 Assumption**

The procedure to checking the assumptions of the applicable parametric tests for the third hypothesis is roughly similar to the assumption check for the second hypothesis parametric tests.

Instead of grouping by brand concept, it is grouped by extent of design similarity as it is design similarity that is of interest to the third hypothesis.

In appendix B, exhibit 35, third column of the table shows which groups violated the assumption of normality meaning that their population does not have a normal distribution. There are five out of the twelve groups that violated this assumption. Right to that column, is the column that shows which groups to be compared have met or violated the assumption of homogeneity of variances. Four out of six groups to be compared have surely met the assumption. However, there are complications around the other two which are the attitude towards the extension (EAT) in the car product category and (EAT) in the carbonated drink product category. The overall attitude towards the extension (EAT) in the car

product category met the assumption but on detailed level the attitude towards the extension (EAT) of a prestige car brand violated the assumption. On the other hand, the overall EAT in the carbonated drinks category violated the assumption but on detailed level it is the EAT of a luxury carbonated drink brand that met the assumption and the EAT of a prestige carbonated drink brand that did not.

The two groups that violated the assumption of homogeneity of variances, attitude towards an extension (EAT) of a prestige parent brand (x2), are then approached with the independent t-test while not assuming equal variances, and/or with the Wilcoxon rank-sum test.

#### **4.6.2 Results**

Testing the third hypothesis is testing whether an extension with a non-similar design to the typical predecessor of the parent brand is given more positive evaluations than an extension with a similar design of to the typical predecessor. The descriptive statistics show that the direction of the test varies. It is not for all dependent variable that the mean of the variable for an extension with a non-similar design is greater than the mean of the variable for an extension with a similar design. This is only the case for three out of the six dependent variables. The other three show a reversed direction.

In detail, grouped by brand concept, five out of twelve cases the mean of the variable for an extension with a non-similar design is greater than the mean of the variable for an extension with a similar design. See appendix B, exhibit 40. However, none of this is significant. Nevertheless, there were more indications that a green extension with a similar design is preferred over one with a non-similar design.

Recall that manipulation check did not give a very clear line between non-similarity and similarity as the test results for luxury (car and carbonated), the mean score of similar being greater than the mean score of non-similar, were not significant. Although, the shown luxury similar car model got significantly higher ratings than the shown luxury non-similar car model at a significant level of 0.10. Consumers were supposed to perceive the similar model as more similar to the typical product of the parent brand and of course, the non-similar model as less or not similar. As it appears, they did not perceive the luxury similar and non-similar models as too different; people actually did not distinguish between the image of a non-similar model and the image of a similar model. As a result, the consumer evaluation (EAT)(VAL)(INT) of similar and non-similar designed green extension did not differ too much either.

As the normality check was questionable because of the Q-Q plots the Wilcoxon rank sum test was also run for this hypothesis testing. The result is that the same can be said about the results that came out of this non-parametric test as the results of the t-test regarding significance; all not significant.

#### **4.6.3 Interpretation**

The results for this hypothesis were not significant but they may have been with a larger sample size. The hypothesis is rejected; a non-similar designed green extension is not given more positive evaluations than a similar designed green extension. In fact, the descriptive statistics showed more indication of a similar design being liked more than a non-similar design for a green extension. As none of this is significant, it is rather implied that the extent of design similarity does not matter for a green extension. A non-similar design would be received just as well/bad as a similar design. In conclusion, consumers do not make a distinction between non-similar and similar looking green extensions.

## 4.7 SUMMARY

<p>H1: <i>Consumers' evaluation of green extensions is positive.</i></p>	<p>The majority of the tests <u>reject the H0</u>: median = 4. That is, these medians were greater than the value 4. Thus, most consumers' evaluation of green extension were positive</p>
<p>H2: <i>Consumers' evaluation of the green extension is more positive for prestige brands than for luxury brands.</i></p>	<p>The majority of the tests <u>reject the H0</u>: L=P. That is, there is evidence that prestige brands received more positive consumers' evaluation than luxury brands for their launched green extension.</p> <p>It is notable, though, that this majority concerns the product category car; carbonated drink showed no significant difference in brand position and significant difference in familiarity between brand concepts, when it should have been the opposite. As a result, any result concerning carbonated drink and brand concept is disregarded for its unreliability further in this thesis.</p>
<p>H3: <i>A green extension with a non-similar design to the parent brand previous models is evaluated by consumers more positively than a green extension with a similar design to the parent brand previous models</i></p>	<p>The tests for the product category car <u>accept the H0</u>: nsim=sim. That is, there is no difference in consumers' evaluation between similar and non-similar designed hybrid extensions. Both extent of design similarity are equally liked, valued and wanted for hybrids.</p> <p>Though, do recall that there was no significant difference in design similarity between similar and non-similar for <u>luxury</u> car (Porsche).</p> <p>As mentioned above, the findings on carbonated drink will be disregarded further in this thesis as it cannot be relied on results for this product category. Nevertheless, it is mentionable that there was a significant difference in design similarity between similar and non-similar for Coca-Cola. However, there was no significant difference in design similarity between similar and non-similar for Royal Club.</p>

See appendix B, exhibit 45 for a clarification of the complications; a schematic view is shown of the allowed and valid comparisons according to the manipulation checks.



## 5 CONCLUSION

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This thesis consists of five chapters. In the first and introduction chapter the subject is introduced and the main research question is posed:

*How do consumers evaluate green extensions, differing in brand concept and taking into consideration the extent of design similarity between the green extension and the parent brand?*

To provide a reasoned answer to this research question four sub questions were posed. In the second chapter, the *Theoretical framework*, these questions lead to the proposition of three hypotheses. Furthermore, in this chapter context is given of the main subjects: line extension, high-end brand concepts and green products. The third chapter, *Data & Methodology*, explains the purpose of the research, the data collection and the procedure to testing the hypotheses. These three hypotheses and their preceding checks are then tested for. Results of these tests are reported in the fourth chapter, *Results*. It is in this fifth and last chapter, *Conclusion*, that the findings are summarized, discussed and reflected upon. Further in this chapter there are also paragraphs stating the managerial implications, the scientific implications, the limitations of this research and interesting future research.

### 5.1 SUMMARY

It became apparent in the results chapter that consumer evaluation of green extension is either *not positive nor negative* or *positive*. This indicates that consumers are by all means not negative towards green extension. This is understandable as nowadays choosing for green products is advertised as contributing to a better world and future. In other words, purchasing green products can take away guilt that the consumer may feel with the regular product and make the consumer feel better about the purchase than a not as advertised environmental-friendly product.

However, there is the case that consumers can view green products as lower quality. For example, a consumer may associate a hybrid of a sports car series with a highly likely reduced (speed) performance. In any case, the experience will not be the same. This could explain why results also show that not all consumers' evaluation is positive; some are neither negative nor positive. This could indicate the presence of a conflict between the green concept, the product and brand.

Consumer evaluation of green extension differing in brand concept can vary significantly. The results indicate that prestige green extension will more likely be accepted or approved of by consumers than luxury green extension.

Consumer evaluation of green extensions differing in extent of design similarity did not vary. With this result it is apparent that there are no significant indications of design similarity mattering to consumers or mattering to how consumers view green extensions.

The second and third hypotheses are constructed on the assumption of the manipulation made in this research. By means of the manipulation check, the results of the pre-test in the study by Riley, Pina, Bravo (2013) has been confirmed: Porsche as a luxury car brand is perceived as having a higher brand position, in terms of luxury and prestige, than Audi as a prestige car. However, the manipulation check disproved the expectation that Royal Club is perceived as having a higher brand position than Coca-Cola. The difference was not significant. This is because, as the first pre-test indicated, consumers are not very familiar with the Royal Club brand. The brand is exclusive; it targets a specific type of consumers on special occasions.

Furthermore, in regards to the third hypothesis, the manipulation check to check whether consumers indeed perceived non- similar and similar products as the assigned intention, gave results that varied in brand concept. The manipulation check was positive for the prestige brand concept; the image of a similar prestige model was rated higher in similarity to an image of a non-similar prestige model. This thus confirms and supports the manipulation. For the luxury brand concept this was negative. This could be because the non- similar model shown was already a known and expected model. Some consumers may have already accustomed to the model and thus do not find it too different. The results of these manipulation checks have consequences for the results of the hypothesis testing.

With the results of testing the second hypothesis, it can be said that green extension by a prestige brand is valued and liked more, and can more likely be afforded than a green extension by a luxury brand. This is not valid, though, for the carbonated drink as there were complications with the manipulation previously explained. On a more detailed level it could be said that prestige green extension was liked and approved of as much as a luxury green extension, but a prestige green extension was in no means evaluated as inferior to a luxury green extension. These results can more or less be explained by the positioning of the brand and the corresponding concept.

Prestige brands have more room to scale up and differentiate than luxury brands. A car brand like Audi is distinct among its competitors but its models and series are alike, especially the front grill. Its positioning allows for the green concept to be incorporated without being too inconsistent with the already established prestige brand concept. The more positive results for a prestige brand can also be explained with the study of Park et al. (1991) that for prestige brands, consumers evaluated extensions more positively when there is concept consistency and product feature similarity with the parent brand.

In contrast, Porsche is exclusively for a specific type of consumer. This is expressed by the price range and the front lights design signaling a typical high (rich) status. The thought of the green concept - maybe lower quality- incorporated in the brand may not suit the consumers that know the brand for its core advantages, such as power and performance. On the other hand, consumers with a positive attitude towards green products may misapprehend the idea of a green extension by a brand known for its focus on "*speedy sport*" cars. The existence of a "green" extension that otherwise usually causes pollution, is inappropriate and raises all sorts of doubts. It is of course ideal if the sports car brand contributes in one way or another to a better environment, minimizing the harm to the environment but a full efficient and still high performance green extension is still questionable. Hence, the luxury brand concept being less positive may find its cause in that the brand does not fit with the green

concept, neither can a green extension of a luxury brand like Porsche be viewed as an environmental friendly product. On two fronts, from the perspective of the loyal customer or fan and from the perspective of pro green consumers a green extension by a luxury brand is criticized.

Among the limited literature found for this research, no study of line extension in combination with design was accounted for. There are studies about the fit between parent and extension, there are articles about new, particular designs that have mattered but there were no information found that related to design of a green extension. Results in Person et al.'s (2008) study show that decisions of a design are mainly influenced by the company. Consumers' evaluation was not included, but the more experienced designers expect that both designs, look alike or new will be roughly as successful. This can explain why no significant difference is found. Consumers may want a lot, but may not know clearly what they want. As a result, it is not revealed what most consumers actually like to be seen in or with, and the company decides the design of the new model. What is really apparent is that consumers want cars as there are many benefits to a (new) car, but the design of a new hybrid model of an established car brand may not matter much to them. Nevertheless, there were indications that designs differing in brand concept can matter. There may be differences in sales but this may not be significant. Perhaps for the comparison of other brand concepts, or perhaps with a different method not depending on consumer perception of an image, this difference will be more apparent.

## **5.2 MANAGER IMPLICATION**

The results of this research can give managers who are planning a green line extension some insight into what options there are and what actions they can take. This thesis mainly contributes recommendations that concern decision making on whether the brand and brand concept is suitable and ready to extend with a greener product. As an extra, results also imply whether or not design of a green extension should need special attention.

Managers should take consideration of the parent brand position. Overall the consumers are either indifferent or positive towards green-extension. As green extensions are more and more the trend, benefits of extending with a green extension become more apparent and keep growing. A benefit, for example, is the renewing of the brand that comes with the launch of a green extension. It brings new attention to the brand and renews its awareness.

However, a green extension of a luxury brand may be received differently by consumers than a green extension of a prestige brand. The positioning of the parent brand should be taken into consideration when brand managers position the (new) green extension. For a luxury brand like Porsche, managers can expect that its green extension will not be as well received as one by a prestige brand. This is argued with the reasoning that luxury products are exclusive because of their price range and their core advantage. Porsche cars are dedicated to drivers that can afford luxury and like sportsmanship all together; Porsche is characterized by their luxury cars that excel in gaining high performance and speed. Furthermore, Royal Club is especially suited for drink mixes and special occasions.

Conversely, the vision of going green and sustainable is that more and more people choose green products over regular products. Green products do not intend to be exclusive and are special because they are green or sustainable and promote positive green attitude.

The concepts, luxury and green, are contrasting but can nonetheless be combined or used to the advantage of a brand extension. If the intention is to attract publication about their own hybrid models compared to competitors, then combining otherwise contrasting concepts may be a working strategy to renew the brand and attract new attention to the brand.

Lastly, managers should take caution when setting the price. It seems that a higher price for a hybrid, even when additional benefits are apparent, can keep the purchase intention low. Decisions concerning pricing should be based on further exploration into the willingness to pay for greener products.

### **5.3 SCIENTIFIC IMPLICATION**

This thesis contributes insights on line extension when the extension is: green the green concept and the design of green products. Riley, Pina, Bravo's (2013) study was focused on downscale vertical line extension. In this thesis the focus was on green extension that is an up-scale line extension. The brands Porsche and Audi were again used to represent the brand concept luxury and prestige respectively. Furthermore results show that people may be indifferent about how a new green product looks like. There are also indications that a higher priced hybrid will be less likely considered; knowing it is a green product is not enough reason to pay more. This finding, however, contradicts to findings in Griskevicius, Tybur, and Van den Bergh's (2010) article. Nevertheless, in general, additional insight was explored about line extension; this thesis contributes to studies concerning line extension such as Aaker (1991); Kirmani, Sood and Bridges (1999); Kim and Lavack (1996); Kim, Lavack and Smith (2001); Lei, de Ruyter and Wetzels (2008); and Randall, Ulrich and Reibstein (1998).

### **5.4 LIMITATIONS**

The research in this thesis was limited to a small size sample. This has consequences for the power. Furthermore, the sampling tends to a convenient sampling. This has consequences for bias. As a result, interpretation should be kept to 'relationships between phenomena' such as brand concept, extent of design similarity and product category.

This research did not follow the ideal research design with a control and experiment group. For example, the green extensions were not compared to regular, non-green extensions, nor was there a 'before and after' situation or a 'With and Without' situation.

A better comparison or counterpart for Coca Cola should have been found as Royal Club was not equally familiar. On one hand it can, therefore, be said that Royal Club is exclusive, on the other hand comparing it to Coca Cola makes it an imbalanced comparison.

Moreover, the questionnaire was considered unappealing because of the amount of questions. Some potential respondents stopped half way through the questionnaire. This on its turn had consequences for the sampling. Perhaps if the questionnaire was considerably shorter, potential respondents would be more eager to complete the questionnaire.

The questionnaire included questions for screening and excluding not useful (invalid) respondents. However, for the data analysis, it could not be afforded to exclude respondents. Equal-sized samples of data across the scenarios were obtained by means of randomization and it was most desired to keep these sample sizes equal. As a result, these questions intended for screening were disregarded.

Post-extension effects on core brand image were ultimately not feasible with the absence of the relevant questionnaire for consumers' evaluation on the core brand after the launch of a green extension.

## **5.5 FURTHER RESEARCH**

As the results became more apparent after the data analysis, questions arose around the purchase intention. For future research it can be explored what the willingness to pay is for a green extension, or like Pina, feature a two level down or upscale extension to test an estimated acceptable degree of differentiation.

A suitable follow-up research is to explore the effect of green extension on the post-extension brand image. In this research there was positive consumers' evaluation of the green extension, but this may not necessarily also lead to positive evaluation of the post-extension brand image.

In various studies a trade-off between successful extension and brand adherence is mentioned. It would be interesting to find whether this trade-off also applies when green extensions are concerned. As green products are considered expensive but the "better" products nowadays, it can be expected that both extension and post-extension core brand would benefit from a green extension. However, the question is whether or not the green concept is consistent enough with the core brand concept as any inconsistent information between the extension and parent brand could lead to negative evaluation of the parent brand and, thus, dilution of the brand image (Loken & Roedder John, 1993; Weber & Crocker, 1983). It is important to know of the evaluation of post-extension brand image because if an extension could possibly harm the core brand, appropriate measures to reduce the risks should be taken.

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## 7 APPENDIX

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### 7.1 APPENDIX A: DATA & METHODOLOGY

**Exhibit 1: A summary of the research purpose**

Type of research:	Purpose:	Approach:
<ul style="list-style-type: none"><li>• Exploratory</li></ul>	Increase insights, to explore what is still lacking and interesting	Literature review
<ul style="list-style-type: none"><li>• descriptive</li></ul>	Quantitative, relationship between phenomena, hypothesis	Survey (measure attitude and intentions) Cross section differences across groups

**Exhibit 2: The questionnaire for pre-test 1**

Dear respondent,

I am a student at the Erasmus University in Rotterdam and currently, I am doing a research for my bachelor thesis about "green" products as new products to a product line. As part of the research I have set up this survey to serve as a pre-test.

The survey is about the carbonated drinks "Coca-Cola" vs. "Royal Club".

I would appreciate it if you would fill this in seriously and carefully. It will take a maximum 5 minutes of your time. Data collected from this survey will be used for educational purposes only and will be treated strictly confidential.

Thank you in advance for your time and response!

**Royal Club vs. Coca-Cola**

**1. How familiar are you with the Royal Club brand?**

1 2 3 4 5 6 7

not at all familiar        totally familiar

**2. How familiar are you with Coca-Cola brand?**

1 2 3 4 5 6 7

not at all familiar        totally familiar

**3. Royal Club is a luxury brand in the market of carbonated drinks. (It's an exclusive drink)**

How much do you agree or disagree with this statement?

1 2 3 4 5 6 7

strongly disagree (it's not a luxury drink at all)        strongly agree (it's totally a luxury drink)

**4. Coca-Cola is a luxury brand in the market of carbonated drinks. (It's an exclusive drink)**

How much do you agree or disagree with this statement?

1 2 3 4 5 6 7

strongly disagree (it's not a luxury drink at all)        strongly agree (it's totally a luxury drink)

## Royal Club vs. Coca-Cola

5. At a casual party, from which carbonated brand would you more likely consume a drink? (Consume = buy and drink)
- A drink of the Royal Club brand is more likely
  - A drink of the *Coca-Cola* brand is more likely
  - I don't get carbonated drinks at casual parties
  - I don't attend casual parties
6. At a chic party, from which carbonated brand would you more likely consume a drink?
- A drink of the Royal Club brand is more likely
  - A drink of the *Coca-Cola* brand is more likely
  - I don't get carbonated drinks at chic parties
  - I don't attend casual parties
7. What is your age? \_\_\_\_\_
8. What is your gender?       Male       Female
9. How regular do you consume carbonated drinks?
- Everyday
  - Once every week
  - Once every month
  - Occasionally, only at events
  - Never, I don't drink carbonated drinks
  - Other \_\_\_\_\_
10. What is your favorite carbonated/ soft drink? \_\_\_\_\_

**You have completed this survey.**

**Thank you for your time! :)**

### 7.1.1 Pre-test 2

**Exhibit 3:**

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Dear respondent,

I am a bachelor student at Erasmus University Rotterdam and for my bachelor thesis I am conducting a research concerning product line extension. Therefore, I have set up this corresponding questionnaire and I would appreciate it if you would fill this in seriously and carefully.

Your answers will be kept confidential. Filling in will take about 10 minutes of your time.

Thank you in advance for your time and response.

**7.1.1.1 Audi**

**You will be asked to answer questions about the Audi car brand.**



Source: [http://www.audi-me.com/me\\_partner/p\\_aeau000008/home/service/audi\\_genuine\\_parts/A8.html](http://www.audi-me.com/me_partner/p_aeau000008/home/service/audi_genuine_parts/A8.html)

1. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.

**1= strongly disagree, 2= disagree, 3=somewhat disagree, 4= neither agree nor disagree, 5=somewhat agree, 6= agree, 7= strongly agree**

	1	2	3	4	5	6	7
I am familiar with the Audi brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Audi is a luxury car brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Audi is a prestige car brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
I find the Audi brand favorable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like the Audi brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find the Audi brand appealing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.

**1= strongly disagree, 2= disagree, 3=somewhat disagree, 4= neither agree nor disagree, 5=somewhat agree, 6= agree, 7= strongly agree**

	1	2	3	4	5	6	7
Having an Audi car can indicate a person's social status.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An Audi car is a symbol of achievement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An Audi car is a symbol of wealth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
An Audi car should be easily recognizable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An Audi car is a symbol of prestige.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An Audi car attracts attention.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An Audi car can be used to impress other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### 7.1.1.2 Porsche

You will now be asked to answer questions about the Porsche car brand.



Source: <http://www.carwallpapers.ru/wp/porsche/911/2011-carrera-s/Porsche-911-Carrera-S-2011-1680x1050-001.jpg>

5. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.

**1= strongly disagree, 2= disagree, 3=somewhat disagree, 4= neither agree nor disagree, 5=somewhat agree, 6= agree, 7= strongly agree**

	1	2	3	4	5	6	7
I am familiar with the Porsche brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Porsche is a luxury car brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Porsche is a prestige car brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



6. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
I find the Porsche brand favorable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like the Porsche brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find the Porsche brand appealing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
Having a Porsche car can indicate a person's social status.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A Porsche car is a symbol of achievement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A Porsche car is a symbol of wealth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
A Porsche car should be easily recognizable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A Porsche car is a symbol of prestige.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A Porsche car attracts attention.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A Porsche car can be used to impress other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In recent years, more attentions has been called to the environmental damages resulting from human behavior. The government has acted upon this and car companies followed with the development of technologies in reducing car emission. This eventually led to the introduction of the hybrid car. The market of hybrid cars emerged and many brands are now following this trend.

**The next question will ask about these hybrid (green) cars.**

9. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.

**1= strongly disagree, 2= disagree, 3=somewhat disagree, 4= neither agree nor disagree, 5=somewhat agree, 6= agree, 7= strongly agree**

	1	2	3	4	5	6	7
A hybrid car is worth the money. (You paid for good value)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A hybrid car would be a good buy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A hybrid car is of comparative value to a typical gasoline car.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The performance of a hybrid car is even better than a gasoline car.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fuel efficiency of a hybrid car is even better than a typical gasoline car.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety of a hybrid car is even better than a typical gasoline car.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality of a hybrid car is even better than a typical gasoline car.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dependability/ reliability of a hybrid car is even better than a typical gasoline car.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A hybrid car is better for the environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**7.1.1.3 Coca-Cola**

**You will now be asked to answer questions about the Coca-Cola brand.**



10. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.  
**1= strongly disagree, 2= disagree, 3=somewhat disagree, 4= neither agree nor disagree, 5=somewhat agree, 6= agree, 7= strongly agree**

	1	2	3	4	5	6	7
I am familiar with the Coca-Cola brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coca-Cola is a luxury brand in the market of carbonated drinks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coca-Cola is a prestige brand in the market of carbonated drinks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coca-Cola's carbonated drinks are considered functional products/ drinks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coca-Cola's carbonated drinks are considered budget drinks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
I find the Coca-Cola brand favorable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like the Coca-Cola brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Coca-Cola brand appeals to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**7.1.1.4 Royal Club**

**You will now be asked to answer questions about the Royal Club brand, a carbonated drink brand.**

12. How much do you agree or disagree with each of the following statements?  
Please indicate using the following 7-points scale.

**1= strongly disagree, 2= disagree, 3=somewhat disagree, 4= neither agree nor disagree, 5=somewhat agree, 6= agree, 7= strongly agree**



	1	2	3	4	5	6	7
I am familiar with the Royal Club brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Royal Club is a luxury brand in the market of carbonated drinks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Royal Club is a prestige brand in the market of carbonated drinks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Royal Club carbonated drinks are considered functional products/ drinks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Royal Club carbonated drinks are considered budget drinks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
I find the Royal Club brand favorable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like the Royal Club brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Royal Club brand appeals to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. What is your age? \_\_\_\_\_

15. What is your gender?  Male  Female

16. Are you in the possession of a car? If yes, what car brand is it? (What brands are they?)

No  Yes \_\_\_\_\_

17. How regular do you consume carbonated drinks?

- Everyday
- Once every week
- Once every month
- Occasionally, only at events
- Never, I don't drink carbonated drinks
- Other \_\_\_\_\_

18. What is your favorite car brand? \_\_\_\_\_

19. What is your favorite carbonated/ soft drink? \_\_\_\_\_

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**You have completed this survey. Thank you for your time! : )**

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**Exhibit 4: Measurement**

Measure	Questionnaire template		Source
Brand familiarity	FAM	FAM: Familiar/ not familiar with the brand	Milberg et al. (1997)
Fit of extension	FIT	FIT1: The green extension fits with the parent brand well/ badly  FIT2: The green extension is logical/ not logical  FIT3: It is very appropriate/ not appropriate for the parent brand to extend with the green extension	Keller and Aaker (1992)
Extent of similarity of extension to the typical parent product	SIM	SIM1: similarities to a typical parent branded product  (SIM2: similarities to the competitor	

		product) *only asked in case of cars, not of drinks	
General attitude towards extension	EAT	EAT1: new green extension is favorable/ unfavorable  EAT2: new green extension is liked/ disliked  EAT3: new green extension is appealing/ unappealing	Musante (2007); Kirmani et al. (1999)
Value perception of extension	VAL	VAL1: worth paying for the value of the green extension  VAL2: the green extension would be a good buy  VAL3: holds comparative value to a typical parent branded product	Taylor and Bearden (2002); Lei et al. (2008)
		VAL4: better performance  VAL5: better fuel efficiency  VAL6: more safety  VAL7: better quality  VAL8: more reliability  VAL9: better for the environment	
Market position of extension	EPO	EPO1: the green extension is considered a luxury/ budget product  EPO2: the green extension is considered a prestige/ functional product	Lei et al. (2008)
		EPO3: impress/ does not impress	Truong et al. (2008)
Purchase intention	INT	INT1: a purchase of the green extension is worth a consideration/ is	O'Cass and Grace (2004); Lafferty (2007)

		<p>insignificant</p> <p>INT2: a purchase of the green extension is likely / unlikely</p> <p>INT3: a purchase of the green extension is probable / improbable</p>	
Attitude towards green products	GAT	<p>GAT1: preference for the environmental-friendly alternative over conventional of same price</p> <p>GAT2: preference for the environmental-friendly alternative regardless of price</p> <p>GAT3: awareness of environmental-friendly effects before purchase</p>	
Attitude towards healthier alternatives	HEA	<p>HEA1: preference for the healthier alternative over regular of same price</p> <p>HEA2: preference for the healthier alternative if taste is good or better</p> <p>HEA3: preference for the healthier alternative regardless of price</p> <p>HEA4: preference for the healthier alternative regardless of taste</p> <p>HEA5: awareness of health effects before purchase</p> <p>HEA6: preference for the healthier and environmental-friendly alternative</p>	

**Exhibit 5: Construct of the experimental survey**

Construct/variable	Measure	Source	Scale	Scale type
Dependent variables:	Brand familiarity	Milberg et al. (1997)	FAM: Familiar/ not familiar with the	7 points likert scale (ordinal)

			brand	but mean assumed as metric/ interval)
	Fit of extension	Keller and Aaker (1992)	FIT1: The green extension fits with the parent brand well/ badly  FIT2: The green extension is logical/ not logical  FIT3: It is very appropriate/ not appropriate for the parent brand to extend with the green extension	7 points likert scale (ordinal but mean assumed as metric/ interval)
	Extent of similarity of extension to the typical parent product		SIM1: similarities to a typical parent branded product  (SIM2: similarities to the competitor product) *only asked in case of cars, not of drinks	10 points scale (ordinal but mean assumed as metric/ interval)
	General attitude towards extension	Musante (2007); Kirmani et al. (1999)	EAT1: new green extension is favorable/ unfavorable  EAT2: new green extension is liked/ disliked  EAT3: new green extension is appealing/ unappealing	7 points likert scale (ordinal but mean assumed as metric/ interval)
	Value perception of	Taylor and	VAL1: worth paying	7 points likert



	extension	Bearden (2002); Lei et al. (2008)	for the value of the green extension  VAL2: the green extension would be a good buy  VAL3: holds comparative value to a typical parent branded product	scale (ordinal but mean assumed as metric/ interval)
			VAL4: better performance  VAL5: better fuel efficiency  VAL6: more safety  VAL7: better quality  VAL8: more reliability  VAL9: better for the environment	7 points likert scale (ordinal but mean assumed as metric/ interval)
	Market position of extension	Lei et al. (2008)	EPO1: the green extension is considered a luxury/ budget product  EPO2: the green extension is considered a prestige/ functional product	7 points likert scale (ordinal but mean assumed as metric/interv al)
		Truong et al. (2008)	EPO3: impress/ does not impress	
	Purchase intention	O'Cass and Grace (2004); Lafferty (2007)	INT1: a purchase of the green extension is worth a	7 points likert scale (ordinal but mean

			consideration/ is insignificant  INT2: a purchase of the green extension is likely / unlikely  INT3: a purchase of the green extension is probable / improbable	assumed as metric/ interval)
Independent variables:	Product category			nominal
	Brand concept			nominal
	Extent of design similarity			nominal
Control variables:	Attitude towards green products		GAT1: preference for the environmental-friendly alternative over conventional of same price  GAT2: preference for the environmental-friendly alternative regardless of price  GAT3: awareness of environmental-friendly effects before purchase	3 points likert scale, ordinal
	Attitude towards healthier alternatives		HEA1: preference for the healthier alternative over regular of same price  HEA2: preference for the healthier alternative if taste	3 points likert scale, ordinal

			<p>is good or better</p> <p>HEA3: preference for the healthier alternative regardless of price</p> <p>HEA4: preference for the healthier alternative regardless of taste</p> <p>HEA5: awareness of health effects before purchase</p> <p>HEA6: preference for the healthier and environmental-friendly alternative</p>	
Demographic variables:	Age			metric
	Gender			nominal
	Car ownership			nominal
	Consumption of carbonated drinks			ordinal
	Favorite car brand			text
	Favorite carbonated drink			text

### 7.1.2 Experiment design

Exhibit 6:

Experimental design

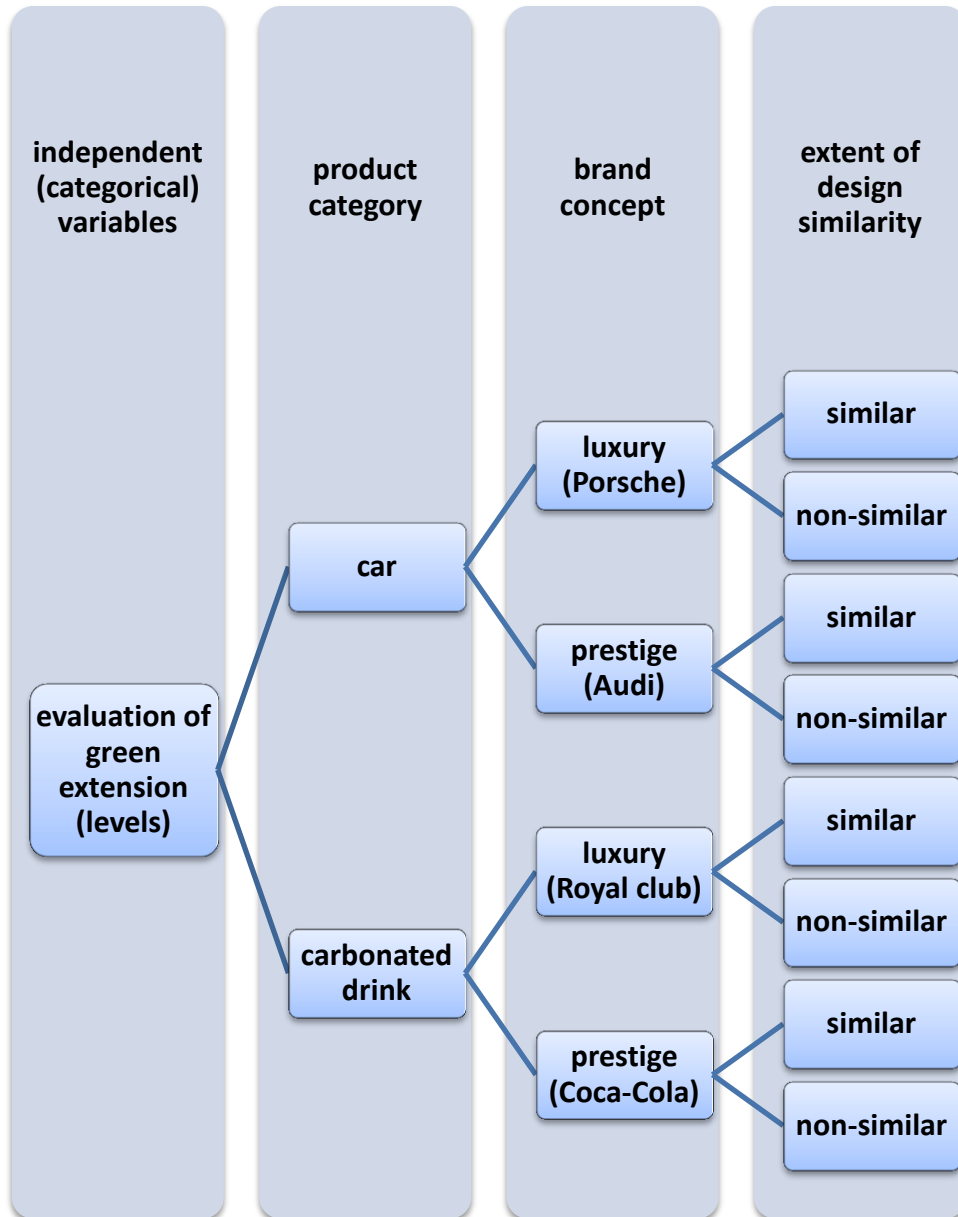


Exhibit 7:

A summary of the four scenarios

scenarios	description
Luxury x non similar	Participants are shown a Porsche model and Royal Club bottle design that are <u>not</u> typical of their parent brand.
Prestige x non similar	Participants are shown an Audi model and Coca-Cola bottle design that are <u>not</u> typical of their parent brand.
Luxury x similar	Participants are shown a Porsche model and Royal Club bottle design that are typical of their parent brand.
Prestige x similar	Participants are shown an Audi model and Coca-Cola bottle design that are typical of their parent brand.

### 7.1.3 Manipulation

#### Exhibit 8:

#### Design of the manipulations

2 by 2 between subject design	Extent of design similarity	
Brand concept	<b>Luxury</b> = Porsche + Royal Club, image1= <i>non-similar</i>	<b>Luxury</b> = Porsche + Royal Club, image2= <b>similar</b>
	<b>Prestige</b> = Audi + Coca-Cola, image1= <i>non-similar</i>	<b>Prestige</b> = Audi + Coca-Cola, image2= <b>similar</b>

#### Exhibit 9:

#### Manipulation checks

1. The perception of brand concept		<i>luxury</i>	<i>prestige</i>
Car		Porsche = luxury	Audi = prestige
Carbonated drink		Royal Club = luxury	Coca-Cola = prestige
2. The perception of design similarity		<i>Non-similar</i>	<i>Similar</i>
Car	luxury	Image shown of Porsche= non-similar	Image shown of Porsche= similar
	prestige	Image shown of Audi= non-similar	Image shown of Audi= similar
Carbonated drink	luxury	Image shown of Royal Club= non-similar	Image shown of Royal Club= similar
	prestige	Image shown of Coca-Cola= non-similar	Image shown of Coca-Cola= similar

### 7.1.4 Sampling

**Exhibit 10: Sample Population**

	Absolute amount	Percentage
Total amount of cars (in the Netherlands)	7915613	100
Total amount of owned cars (in the Netherlands)	7042937	89

	Absolute amount	percentage
Total respondents	100	100
Respondents in possession of a car	47	47

Source for entire population: [http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=71405ned&D1=0-68&D2=0&D3=\(I-6\)-I&VW=T](http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=71405ned&D1=0-68&D2=0&D3=(I-6)-I&VW=T)

**Exhibit 11a:**

	Luxury		Prestige	
	Similar	Non-similar	Similar	Non-similar
Car	SIM_P	SIM_P_n	SIM_A	SIM_A_n
		SIM_LE_n		SIM_B_n
Carbonated drink	SIM_RC	SIM_RC_n	SIM_CC	SIM_CC_n

**Variables used to test perception of similarity**

**Exhibit 11b:**

	Luxury		Prestige	
	Similar	Non-similar	Similar	Non-similar
Car	FIT_P2	FIT_P_n	FIT_A2	FIT_A_n
Carbonated drink	FIT_RC	FIT_RC_n	FIT_CC	FIT_CC_n

**Exhibit 11c:**

The desired outcome, how similarity should be perceived according to manipulation:

Expected high value (= very similar) for:	Expected low value (= not very similar) for:	Desired outcome:
<b>SIM_P</b>	<b>SIM_P_n</b>	<b>SIM_P &gt; SIM_P_n</b>
<b>SIM_A</b>	<b>SIM_A_n</b>	<b>SIM_A &gt; SIM_A_n</b>
<b>SIM_RC</b>	<b>SIM_RC_n</b>	<b>SIM_RC &gt; SIM_RC_n</b>
<b>SIM_CC</b>	<b>SIM_CC_n</b>	<b>SIM_CC &gt; SIM_CC_n</b>
<b>SIM_LE_n</b>		
<b>SIM_B_n</b>		

Exhibit 11d: Descriptive statistics of “similarity”

name	mean	St. dev.	
<b>SIM_P</b>	<b>6.25</b>	2.04875	<b>SIM_P &gt; SIM_P_n</b>
<b>SIM_P_n</b>	<b>5.25</b>	2.38140	
<b>SIM_A</b>	<b>7.55</b>	2.13923	<b>SIM_A &gt; SIM_A_n</b>
<b>SIM_A_n</b>	3.85	2.53134	
<b>SIM_RC</b>	6.60	1.53554	<b>SIM_RC &gt; SIM_RC_n</b>
<b>SIM_RC_n</b>	6.20	2.72609	
<b>SIM_CC</b>	8.40	1.46539	<b>SIM_CC &gt; SIM_CC_n</b>
<b>SIM_CC_n</b>	5.85	2.47673	

**Exhibit 12:**

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Dear respondent,

I am a bachelor student at Erasmus University Rotterdam and for my bachelor thesis I am conducting a research concerning product line extension. Therefore, I have set up this corresponding questionnaire and I would appreciate it if you would fill this in seriously and carefully.

Your answers will be kept confidential. Filling in will take about 10 minutes of your time.

Thank you in advance for your time and response.

**You will be asked to answer questions about the Audi car brand.**



Source: [www.audi.com](http://www.audi.com)

1. How much do you agree or disagree with each of the following statement? Please indicate using the following 7-points scale.

**1= strongly disagree, 2= disagree, 3=somewhat disagree, 4= neither agree nor disagree, 5=somewhat agree, 6= agree, 7= strongly agree**

	1	2	3	4	5	6	7
I am familiar with the Audi brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In recent years, more attentions has been called to the environmental damages resulting from human behavior. The government has acted upon this and car companies followed with the development of technologies in reducing car emission. This eventually led to the introduction of the hybrid car. The market of hybrid cars emerged and many brands are now following this trend. Audi participates in this trend as well and has many concept cars ready that could make it to production. For example, the Audi A9 hybrid concept.



“The proposed drivetrain for the A9 concept is an advanced hybrid setup which uses an internal combustion engine working in conjunction with four in-wheel electric motors.”

Source: [http://www.disen-art.com/encyclopedia/concept\\_cars/audi\\_a9.html](http://www.disen-art.com/encyclopedia/concept_cars/audi_a9.html)

The following questions concern the Audi A9 hybrid concept.

2. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
The launching of such a hybrid car would fit the Audi brand well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Audi extending with such a hybrid car is logical.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is appropriate for Audi to extend with a hybrid car as such.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The picture below shows a concept model of the Audi A9 hybrid sport sedan developed by independent designer Daniel Garcia.



Source: <http://www.carscoops.com/2010/05/audi-a9-hybrid-sports-sedan-concept-by.html>

Reviews have point out some similarities to BMW EfficientDynamics and Porsche Panamera killer.

Reviews quote: *-“Over-styled (in a good way) über-luxury hybrid sports saloons. A technologically-advanced Panamera killer.”*

*-“I see a honda emerging from the front and rear graphics.”*

*-“It’s more copied from the Mazerati’s Birdcage concept, mixed with goodies from BMW’s EfficientDynamics and Alfa’s Pininfirina concept.”*

- “Come from the last Chrysler Intrepid family instead of Audi family”
- “This is much more BMW than Audi.”
- “It looks like a mixture of BMW (Efficient Dynamics), Aston Martin Rapide and VW Passat CC design styles”

Source: <http://www.carscoops.com/2010/05/audi-a9-hybrid-sports-sedan-concept-by.html>

The BMW Vision Efficient Dynamics is shown in the following picture.



Source: ww.bmw.com

3. How would you rate the similarities of this concept hybrid car to a typical Audi car?
  1. Please indicate on a 10-stars rating scale to what extent the Audi A9 hybrid concept car still shows similarities to a typical Audi car.
  2. Please indicate on a 10-stars rating scale to what extent the Audi A9 hybrid concept car shows similarities to the BMW efficient dynamics.

**1= not at all similar, 10= totally similar**

1. similarities to a typical Audi car:



2. similarities to the BMW efficient dynamics:



4. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
I find this new hybrid car of the Audi brand favorable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like this new hybrid car model of the Audi brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This new hybrid car of the Audi brand appeals to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**For the following questions, presume that the price of the hybrid car is 25% higher than the price of its gasoline counterpart.**

5. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
This hybrid concept car would be worth the money. (You paid for good value)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This hybrid concept car would be a good buy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This hybrid concept car is of comparative value to a typical Audi car.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The performance of this hybrid concept car would be even better than a typical Audi.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fuel efficiency of this hybrid concept car would be even better than a typical Audi.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety of this hybrid concept car would be even better than a typical Audi.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality of this hybrid concept car would be even better than a typical Audi.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dependability/ reliability/ steadiness of this hybrid concept car would be even better than a typical Audi.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This hybrid concept car would be better for the environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
I would consider this hybrid car to be a luxury car/ product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This hybrid car would be considered a prestige car/ product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Possession of this hybrid car could impress other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. How much do you agree or disagree with each of the following statements? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
I would consider buying such a car. (It's Audi and hybrid)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will likely buy this hybrid car.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A purchase of this hybrid car is probable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**You will now be asked to answer questions about the Coca-Cola brand.**



8. How much do you agree or disagree with each of the following statement? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
I am familiar with the Coca-Cola brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Recently, there has also been an increased focus on the health consequences of human consumption behavior. This has led to the emergence of a new market segment; the health conscious consumers. Various companies have reacted on this and adjusted their policy to one that is more responsible and engaged. For example, the Coca-Cola Company recently added a new variant to its line, the Coca-Cola Life, a healthier drink in an environmental-friendly package.

*“Coca-Cola Life is the first soda from the Coca-Cola family that is naturally sweetened with sugar*

*and Stevia, which adds to our portfolio a delicious taste with a proposed low in calories”- The Coca-Cola company. source: <http://www.coca-cola.com.ar>*

*“Coca-Cola Life is packaged in the company’s award-winning PlantBottle. The bottle, featuring a green label, is made with 30 percent plant material and is fully recyclable.”*

*source: <http://www.foxnews.com/leisure/2013/07/24/green-coke-launched-in-argentina-with-natural-sweetener-and-eco-bottle/#ixzz2cWHTuUQK>*

9. How much do you agree or disagree with each of the following statement? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
The launching of this green drink fits the Coca-Cola brand well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To extend with a green drink is logical for Coca-Cola.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is appropriate for Coca-Cola to extend with a green drink.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The picture below shows Coca-Cola's new green drink, Coca-Cola Life.



source: <http://cocacoladeargentina.com.ar/producto/coca-cola-life/>

10. How would you rate the similarities of this new green drink to a typical Coca-Cola drink?  
Please indicate on a 10-stars rating scale to what extent this new green drink shows similarities to a typical Coca-Cola drink.

**1= not at all similar, 10= totally similar**

Similarities to a typical Coca-Cola:



11. How much do you agree or disagree with each of the following statement? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
I find this new green drink of the Coca-Cola brand favorable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like the introduction of a new green drink by the Coca-Cola brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This new green drink of the Coca-Cola brand appeals to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**For the following questions, presume that the price of this green drink is 25% higher than the price of its original.**

12. How much do you agree or disagree with each of the following statement? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
This green drink is worth the money. (You paid for good value)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This green drink would be a good buy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This green drink is of comparative value to a typical Coca-Cola carbonated drink.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This green drink would taste even better than a typical Coca-Cola.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The packaging of this green drink is better for the environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. How much do you agree or disagree with each of the following statement? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
I consider this green drink to be a luxury drink/ product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This green drink is considered a prestige drink/ product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consumption of this green drink can impress other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This green drink is like any beverage to quench one's thirst.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This green drink is considered a budget drink in the market of carbonated drinks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. How much do you agree or disagree with each of the following statement? Please indicate using the following 7-points scale.

	1	2	3	4	5	6	7
I would like to try this drink first before purchase.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will likely buy Coca-Cola's new green drink.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will probably give this green drink a try.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would consider buying such a drink regularly. (It's Coca-Cola and green)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would consume such a drink regularly if it tastes good.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. How much do you agree or disagree with each of the following statements? Please indicate using the following 3-points scale.

**1= disagree, 2= neither agree nor disagree, 3= agree**

	1	2	3
I would prefer the environmental-friendly alternative over the conventional ones of similar price.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would prefer the environmental-friendly alternative regardless of the price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find out about the environmental effects of products before purchasing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. How much do you agree or disagree with each of the following statements? Please indicate using the following 3-points scale.

	1	2	3
I would choose the healthier alternative if one of comparable price is available.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would choose the healthier alternative only if it tastes as good as, or better than the originals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would prefer the healthier alternative regardless of the price.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would prefer the healthier alternative regardless of the taste difference.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I check the food products for possible effects to health before purchasing. (Ingredients, amount of calories, sugar percentage, the kind of fat)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would choose the healthier alternative that is also environmental-friendly regardless of the price.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. What is your age? \_\_\_\_\_

18. What is your gender?  Male  Female

19. Are you in the possession of a car? If yes, what car brand is it? (What brands are they?)  
1 No 0 Yes \_\_\_\_\_

20. How regular do you consume carbonated drinks?

- Everyday
- Once every week
- Once every month
- Occasionally, only at events
- Never, I don't drink carbonated drinks
- Other \_\_\_\_\_

21. What is your favorite car brand? \_\_\_\_\_

22. What is your favorite carbonated/ soft drink? \_\_\_\_\_

**You have completed this survey. Thank you for your time! :)**



## 7.2 APPENDIX B: RESULTS

### 7.2.1 Descriptive statistics

**Exhibit 1: descriptive statistics: the means of dependent variables**

		LUX			PRES		
		similar	Non-similar	overall	similar	Non-similar	overall
Cars	EAT	4.366667	4.9333	4.650000	5.3500	4.8833	5.1167
	VAL	4.4125	4.1583	4.285417	4.7643	4.9875	4.8759
	INT	2.866700	3.1333	3.000000	3.6667	3.600000	3.6334
	total	11.645867	12.224967	11.935417	13.780986	13.470833	13.625910
Carbonated Drinks	EAT	4.3833	4.2833	4.333333	5.1000	4.9500	5.0250
	VAL	4.2875	4.0800	4.183750	4.2900	4.2400	4.2650
	INT	4.3300	4.4400	4.385000	4.2800	4.7300	4.5050
	total	13.000833	12.803333	12.902083	13.670000	13.920000	13.795000

**Exhibit 2: descriptive statistics: the medians of dependent variables**

		LUX			PRES		
		similar	Non-similar	overall	similar	Non-similar	overall
Cars	EAT	4.3333	4.8333	4.650000	5.6667	5.0000	5.1167
	VAL	4.3750	4.0000	4.285417	4.7143	4.8125	4.8759
	INT	2.6667	3.0000	3.000000	4.0000	3.8333	3.6334
	total	11.645867	12.224967	11.935417	13.780986	13.470833	13.625910
Carbonated Drinks	EAT	4.3333	4.3333	4.333333	5.3333	5.1667	5.0250
	VAL	4.0000	4.1000	4.183750	4.4000	4.4000	4.2650
	INT	4.3000	4.8000	4.385000	4.2000	5.0000	4.5050
	total	13.000833	12.803333	12.902083	13.670000	13.920000	13.795000

### 7.2.2 Reliability

**Exhibit 3: Variables of the Cronbach's Alpha reliability test**

Product category	Scale/measure	Question (statement)	Source
Cars	HAT	A hybrid car is worth the money. (You paid for good value)	
		A hybrid car would be a good buy.	
		A hybrid car is of comparative value to a typical gasoline car.	
		The performance of a hybrid car is even better than a gasoline car.	
		Fuel efficiency of a hybrid car is even better than a typical gasoline car.	
		Safety of a hybrid car is even better than a typical gasoline car.	
		Quality of a hybrid car is even better than a typical gasoline car.	
		Dependability/ reliability of a hybrid car is even better than a typical gasoline car.	
		A hybrid car is better for the environment.	
	FIT	<i>The launching of such a hybrid car would fit the (car brand name) brand well.</i>	Keller and Aaker (1992)
		<i>(Car brand name) extending with such a hybrid car is logical.</i>	
		<i>It is appropriate for (car brand name) to extend with a hybrid car as such.</i>	
	VAL	<i>This hybrid concept car would be worth the money. (You paid for good value)</i>	Taylor and Bearden (2002); Lei et al. (2008)
		<i>This hybrid concept car would be a good buy.</i>	
		This hybrid concept car is of comparative value to a typical Audi car.	
		The performance of this hybrid concept car would be even better than a typical (car brand name).	
		Fuel efficiency of this hybrid concept car would be even better than a typical (car brand name).	
		Safety of this hybrid concept car would be even better than a typical (car brand name).	
		Quality of this hybrid concept car would be even better than a typical (car brand name).	
		Dependability/ reliability/ steadiness of this hybrid concept car would be even better than a typical (car brand name).	
This hybrid concept car would be better for the environment.			
EPO	<i>I would consider this hybrid car to be a luxury car/ product.</i>	Lei et al. (2008)	
	<i>This hybrid car would be considered a prestige car/ product</i>		
	<i>Possession of this hybrid car could impress other people.*</i>	Truong et al. (2008)	
Carbonated drinks	BPO	<i>(Brand name) is a luxury brand in the market of carbonated drinks.</i>	Lei et al. (2008)
		<i>(Brand name) is a prestige brand in the market of carbonated drinks.</i>	
		<i>(Brand name) carbonated drinks are considered functional products/ drinks.**</i>	

		<i>(Brand name) carbonated drinks are considered budget drinks.**</i>	
	VAL	<i>This green drink is worth the money. (You paid for good value)</i>	Taylor and Bearden (2002); Lei et al. (2008)
		<i>This green drink would be a good buy.</i>	
		This green drink is of comparative value to a typical (Brand name) carbonated drink.	
		This green drink would taste even better than a typical (Brand name).	
		The packaging of this green drink is better for the environment.	
	EPO	<i>I consider this green drink to be a luxury drink/ product.</i>	Lei et al. (2008)
		<i>This green drink is considered a prestige drink/ product.</i>	
		<i>Consumption of this green drink can impress other people. *</i>	Truong et al. (2008)
		This green drink is like any beverage to quench one's thirst.	
		<i>This green drink is considered a budget drink in the market of carbonated drinks.**</i>	

Note: italicized text indicates a statement that can have been seen before in previous literature.

\*originally does not fit in this scales.

\*\* repeated but in reverse question.

#### Exhibit 4: Results of the reliability and validity test

Questionnaire	Brand (Product category)	Reliability of scales			Factor analysis								
		measure	variable		Cronbach's Alpha	questions	Factor correlation						
Pre-test 2	Hybrid Cars Attitude	(HAT)			.810 excl. comparative value Q3.1_3, safety Q3.1_6	Q3.1_1	.801						
						Q3.1_2	.872						
						Q3.1_4	.732						
						Q3.1_5	.529						
						Q3.1_7	-.472						
						Q3.1_8	.438						
						Q3.1_9	.869						
						Coca-Cola	Parent Brand Positioning	(BPO)			.703 excl. Q4.1_2, Q4.1_3 (.654 excl. 4,5)	Q4.1_2	.507
												Q4.1_3	.727
	Q4.1_4	.893											
	Q4.1_5	.734											
	Royal Club	Parent Brand Positioning	(BPO)			.725 excl. Q5.1_2, Q5.1_3 (.918 excl. 4,5)	Q5.1_2	.620					
							Q5.1_3	.761					
Q5.1_4							-.740						
Q5.1_5							-.543						
Scenario 1:	Porsche	Value	VAL		.799 excl. 3	Q6_1	.692						

Luxury – Non-similar		perceptions of extension			comparative,5 fuel efficiency,9 better for environment	Q6_2	.675	
						Q6_4	.752	
						Q6_6	.524	
						Q6_7	.675	
						Q6_8	.510	
	Royal Club	Value perceptions of extension	VAL			.817	Q18_1	.675
							Q18_2	.754
							Q18_3	.575
							Q18_4	.613
							Q18_5	-.781
Market position of extension	EPO				.870 excl. Q19_4, 5	Q19_1	.935	
						Q19_2	.664	
						Q19_3	.842	
Scenario 2: Luxury – similar	Porsche	Fit of extension	FIT		.955 excl. Q19_1 (.160 if none excluded)	Q3_2	.849	
						Q3_3	.917	
		Value perceptions of extension	VAL			.778 excl Q6_3, 4, 5,6,8 (.445 if none excluded)	Q6_1	.473
							Q6_2	.431
							Q6_7	.610
	Q6_9	.882						
	Royal Club	Value perceptions of extension	VAL			.835 excl. Q18_3 (.746 if none excluded)	Q18_1	.898
							Q18_2	.884
							Q18_4	.621
							Q18_5	.520
Market position of extension		EPO			.754 excl. Q19_3,4,5	Q19_1	.794	
Q19_2	.707							
Scenario 3: Prestige – Non-similar	Audi	Value perceptions of extension	VAL		.797 excl. Q6_2 (.784 if none excluded)	Q6_1	.592	
						Q6_3	.684	
						Q6_4	.409	
						Q6_5	.413	
						Q6_6	.926	
						Q6_7	.787	
						Q6_8	.652	
						Q6_9	.811	
						Coca-Cola	Value perceptions of extension	VAL
	Q18_2	.588						
	Q18_3	.734						
	Q18_4	.860						
	Q18_5	.710						
	Market position of extension	EPO			.699		Q19_1	.607
	Q19_2	.893						
Q19_3	.822							
Q19_4	-.606							
Q19_5	.807							

Scenario 4: Prestige – similar	Audi	Fit of extension	FIT		.885 excl. Q3_1 (.667 if none excluded)	Q3_2	.885
						Q3_3	.926
		Value perceptions of extension	VAL		.849 excl. Q6_3,5 (.760 if none excluded)	Q6_1	.630
						Q6_2	.827
						Q6_4	.858
						Q6_6	.585
						Q6_7	.526
	Market position of extension	EPO		.566 excl. Q8_1 (.106 if none excluded)	Q8_2	.757	
					Q8_3	-.636	
	Coca-Cola	Value perceptions of extension	VAL		.823	Q18_1	.504
						Q18_2	.456
						Q18_3	.590
						Q18_4	.623
						Q18_5	.707
Market position of extension		EPO		.826 excl. Q19_3,4,5 (.249 if none excluded)	Q19_1	-.825	
					Q19_2	-.872	

### 7.2.3 Manipulation check

#### 7.2.3.1 Checking of the assumptions1

##### 7.2.3.1.1 Normality

**Exhibit 5: Normality check for the manipulation check of brand concept perception**

Cars	brand position	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Brand position	luxury	.293	22	.000	.825	22	.001
	prestige	.262	22	.000	.885	22	.015
	Luxury - Prestige	.183	22	.053	.907	22	.041
Brand familiarity	luxury	.242	22	.002	.893	22	.021
	prestige	.254	22	.001	.842	22	.002
	Luxury - Prestige	.334	22	.000	.794	22	.000
Carbonated drinks							

Brand position	luxury	.204	22	.018	.963	22	.557
	prestige	.133	22	.200*	.965	22	.598
	Luxury - Prestige	.237	22	.002	.858	22	.005
Brand familiarity	luxury	.217	22	.009	.871	22	.008
	prestige	.359	22	.000	.637	22	.000
	Luxury - Prestige	.179	22	.065	.858	22	.005

a. Lilliefors Significance Correction

### 7.2.3.1.2 Homogeneity of variances

#### Exhibit 6: Homogeneity of variances check for the manipulation check of brand concept perception

	Car (Porsche vs Audi)			
	Brand position	p-value	Familiarity	p-value
Levene test	F=4.416	.042	F=1.893	.176
correlation	.251	.261	.703	.000

Exhibit 6b: (for carbonated drink)

	Carbonated drink (Royal Club vs Coca Cola)			
	brand position	p-value (2-tailed)	Familiarity	p-value (2-tailed)
Levene test	F=.518	.476	F=42.73	.000
correlation	.353	.107	-.016	.944

### 7.2.3.1.3 Pitman-Morgan: difference between correlated variances

#### Exhibit 7: Pitman-Morgan: difference between the correlated variances

Pitman-Morgan	brand position	p-value (2-tailed)	Familiarity	p-value (2-tailed)
Car	t=2.3907	.0268	t=2.5346	.0197
Carbonated drink	t=0.8211	.4212	t=8.8741	.000

7.2.3.1.4 Summarized overview

**Exhibit 8: Summary of the assumption check and the resulting tests**

		Checking the assumptions of:		The appropriate test
		Normality (Shapiro-Wilk test)	Homogeneity of variances	
Cars (Porsche vs. Audi)	Brand position	violated	Levene's test: violated	n-par: Wilcoxon Signed-rank test
	Familiarity	violated	Pitman-Morgan test: violated	n-par: Wilcoxon Signed-rank test
Carbonated drinks (Royal Club vs. Coca-Cola)	Brand position	violated	Levene's test: assumption met	Dependent t-test or Wilcoxon Signed-rank test
	Familiarity	violated	Levene's test: violated	n-par: Wilcoxon Signed-rank test

### 7.2.3.2 Results

Exhibit 9: Test results of the manipulation check for brand concept perception

Car (Porsche vs Audi)				
	brandposition	p-value (2-tailed)	Familiarity	p-value (2-tailed)
Test	Ha: L>P		H0: L=P	
Anova repeated-measures	F=5.002**	.036	F=.522	.478
t-test (paired)	t=2.236**	.036	t=.722	.478
Wilcoxon Signed-rank test	Z= -2.039** <sup>a</sup>	.044	Z=-.551 <sup>a</sup>	.672

\*significant at a significance level of 0.10 (1-tailed p<0.10)

\*\*significant at a significance level of 0.05 (1-tailed p<0.05)

<sup>a</sup> based on (prestige > luxury) ranks

Carbonated drink (Royal Club vs Coca Cola)				
	brandposition	p-value (2-tailed)	Familiarity	p-value (2-tailed)
Test	Ha: L>P		H0: L=P	
Anova repeated measure	F=15.842**	.001	F=11.501**	.003
t-test (paired)	t=1.133	.270	t=-4.915**	.000
Wilcoxon Signed-rank test	Z=-1.069 <sup>a</sup>	.304	Z=-3.422** <sup>b</sup>	.000

\*significant at a significance level of 0.10 (1-tailed p<0.10)

\*\*significant at a significance level of 0.05 (1-tailed p<0.05)

<sup>a</sup> based on (prestige > luxury) ranks

<sup>b</sup> based on (prestige < luxury) ranks

### 7.2.3.3 Checking of the assumptions

#### 7.2.3.3.1 Normality test

##### 7.2.3.3.1.1 Similarity

Exhibit 10: Normality check for the manipulation check of design similarity perception

Tests of Normality								
PC			Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
			Statistic	df	Sig.	Statistic	df	Sig.
1.00	Similarity	1.00	.161	40	.011	.923	40	.010
		2.00	.144	40	.036	.947	40	.060



2.00	Similarity	1.00	.153	40	.019	.945	40	.052
		2.00	.181	40	.002	.911	40	.004

a. Lilliefors Significance Correction

PC: 1=Cars, 2=carbonated drinks

SIM: 1=Non-similar, 2=Similar

#### 7.2.3.3.1.2 FIT

**Exhibit 11: Normality check for the manipulation check of design similarity perception (FIT)**

			Tests of Normality <sup>a</sup>			Shapiro-Wilk			
PC	BC	SIM	Statistic	df	Sig.	Statistic	df	Sig.	
1.00	1.00	FIT	1.00	.177	20	.102	.910	20	.063
			2.00	.149	20	.200*	.938	20	.224
	2.00	FIT	1.00	.194	20	.047	.910	20	.064
			2.00	.185	20	.071	.931	20	.161
2.00	1.00	FIT	1.00	.130	20	.200*	.955	20	.458
			2.00	.201	20	.033	.827	20	.002
	2.00	FIT	1.00	.163	20	.175	.963	20	.595
			2.00	.190	20	.057	.878	20	.016

a. Lilliefors Significance Correction

\*. This is a lower bound of the true significance.

#### 7.2.3.3.2 Homogeneity of variances

**Exhibit 12: Homogeneity of variances check for the manipulation check of design similarity perception**

PC	BC		Levene's Test for Equality of Variances		
			F	Sig.	
1.00	1.00 =luxury	SIM_P >	Equal variances assumed	2.621	.114
		SIM_P_n	Equal variances not assumed		
	2.00 =prestige	SIM_A >	Equal variances assumed	.929	.341
		SIM_A_n	Equal variances not assumed		
2.00	1.00 =luxury	SIM_RC >	Equal variances assumed	8.190	.007
		SIM_RC_n	Equal variances not assumed		

	2.00 =prestige	SIM_CC > SIM_CC_n	Equal variances assumed	10.126	.003
			Equal variances not assumed		

**Exhibit 13: Homogeneity of variances check for the perception of FIT**

				Levene's Test for Equality of Variances	
PC	BC			F	Sig.
1.00	1.00	FIT	Equal variances assumed	7.187	.011
	2.00	FIT	Equal variances assumed	.608	.440
2.00	1.00	FIT	Equal variances assumed	6.968	.012
	2.00	FIT	Equal variances assumed	.266	.609

7.2.3.3.3 Summarized

**Exhibit 14: Summary of the assumption check and the resulting tests**

			Checking the assumptions of:		The appropriate test
			Normality (Shapiro-Wilk test)	Homogeneity of variances	
Cars (Porsche vs. Audi)	Extent of design similarity	LUX	violated	Assumption met	Independent t-test
		PRES	violated	Assumption met	Independent t-test
	Fit of extension to parent brand	LUX	violated	violated	Wilcoxon rank-sum test
		PRES	violated	Assumption met	Independent t-test
Carbonated drinks (Royal Club vs. Coca-Cola)	Extent of design similarity	LUX	violated	violated	Wilcoxon rank-sum test
		PRES	violated	violated	Wilcoxon rank-sum test
	Fit of extension to parent brand	LUX	violated	violated	Wilcoxon rank-sum test
		PRES	violated	Assumption met	Independent t-test

### 7.2.3.4 Independent t-test

#### 7.2.3.4.1 Sim

**Exhibit 15a: The independent t-test results of the manipulation check for design similarity perception**

				t-test for Equality of Means			
PC	BC			t	Sig. (2-tailed)	Mean Difference	Std. Error Difference
1.00	1.00	<b>SIM_P &gt;</b> =luxury	Equal variances assumed	-1.424	.163	-1.00000	.70244
		<b>SIM_P_n</b>					
	2.00	<b>SIM_A &gt;</b> =prestige	Equal variances assumed	-4.983	.000	-3.70000	.74251
		<b>SIM_A_n</b>					
2.00	1.00	<b>SIM_RC &gt;</b> =luxury	Equal variances <u>not</u> assumed	-.572	.572	-.40000	.69962
		<b>SIM_RC_n</b>					
	2.00	<b>SIM_CC &gt;</b> =prestige	Equal variances <u>not</u> assumed	-3.963	.000	-2.55000	.64349
		<b>SIM_CC_n</b>					

#### 7.2.3.4.2 FIT

**Exhibit 15b:**

**The independent t-test results of the manipulation check for design similarity perception (FIT)**

				t-test for Equality of Means		
PC	BC			t	Sig. (2-tailed)	df
1.00	1.00	FIT	Equal variances not assumed	.085	.933	29.323
	2.00	FIT	Equal variances assumed	.671	.506	38
2.00	1.00	FIT	Equal variances not assumed	-.448	.658	28.934
	2.00	FIT	Equal variances assumed	-.658	.515	38

### 7.2.3.5 Mann-Whitney U similarity check

#### 7.2.3.5.1 Sim

**Exhibit 16a: The Wilcoxon rank-sum test results (design similarity)**

Test Statistics <sup>b</sup>			
BC		CARS	C DRINK
<b>Luxury</b>	Mann-Whitney U	155.500	193.500
	Wilcoxon W	365.500	403.500
	Z	-1.216	-.179
	Asymp. Sig. (2-tailed)	.224	.858
	Exact Sig. [2*(1-tailed Sig.)]	.231 <sup>a</sup>	.862 <sup>a</sup>
	Exact Sig. (2-tailed)	.229	.864
	Exact Sig. (1-tailed)	.115	.432
	Point Probability	.003	.004
<b>Prestige</b>	Mann-Whitney U	55.000	79.000
	Wilcoxon W	265.000	289.000
	Z	-3.945	-3.313
	Asymp. Sig. (2-tailed)	.000	.001
	Exact Sig. [2*(1-tailed Sig.)]	.000 <sup>a</sup>	.001 <sup>a</sup>
	Exact Sig. (2-tailed)	.000	.001
	Exact Sig. (1-tailed)	.000	.000
	Point Probability	.000	.000

a. Not corrected for ties.

b. Grouping Variable: SIM

#### 7.2.3.5.2 FIT

**Exhibit 16b: The Wilcoxon rank sum test results (FIT)**

Test Statistics <sup>b</sup>			
BC		CARS	C DRINK
1.00	Mann-Whitney U	172.500	188.500
=luxury	Wilcoxon W	382.500	398.500
	Z	-.749	-.315
	Asymp. Sig. (2-tailed)	.454	.753
	Exact Sig. [2*(1-tailed Sig.)]	.461 <sup>a</sup>	.758 <sup>a</sup>

	Exact Sig. (2-tailed)	.463	.760
	Exact Sig. (1-tailed)	.231	.380
	Point Probability	.004	.005
2.00	Mann-Whitney U	181.000	171.500
=prestige	Wilcoxon W	391.000	381.500
	Z	-.527	-.781
	Asymp. Sig. (2-tailed)	.598	.435
	Exact Sig. [2*(1-tailed Sig.)]	.620 <sup>a</sup>	.445 <sup>a</sup>
	Exact Sig. (2-tailed)	.606	.443
	Exact Sig. (1-tailed)	.303	.221
	Point Probability	.004	.004

a. Not corrected for ties.

b. Grouping Variable: SIM

## 7.2.4 Hyp 1

### 7.2.4.1 1

Exhibit 17:

Assumption of normality check for the hypotheses

		Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
Group		Statistic	df	Sig.	Statistic	df	Sig.
EAT	1.00	.163	20	.168	.920	20	.097
	2.00	.127	20	.200 <sup>*</sup>	.960	20	.544
	3.00	.141	20	.200 <sup>*</sup>	.951	20	.377
	4.00	.154	20	.200 <sup>*</sup>	.945	20	.303
	5.00	.146	20	.200 <sup>*</sup>	.949	20	.353
	6.00	.215	20	.016	.927	20	.137
	7.00	.246	20	.003	.781	20	.000
	8.00	.267	20	.001	.830	20	.003
VAL	1.00	.123	20	.200 <sup>*</sup>	.971	20	.784
	2.00	.098	20	.200 <sup>*</sup>	.963	20	.600
	3.00	.164	20	.164	.975	20	.849
	4.00	.165	20	.158	.945	20	.296

	5.00	.134	20	.200*	.941	20	.251
	6.00	.156	20	.200*	.964	20	.617
	7.00	.120	20	.200*	.959	20	.533
	8.00	.116	20	.200*	.967	20	.691
INT	1.00	.146	20	.200*	.915	20	.080
	2.00	.200	20	.035	.939	20	.227
	3.00	.157	20	.200*	.920	20	.101
	4.00	.174	20	.112	.946	20	.306
	5.00	.122	20	.200*	.978	20	.909
	6.00	.181	20	.084	.907	20	.055
	7.00	.197	20	.041	.953	20	.421
	8.00	.127	20	.200*	.944	20	.282

a. Lilliefors Significance Correction

\*. This is a lower bound of the true significance.

### Exhibit 18: The presence of outliers (first hypothesis)

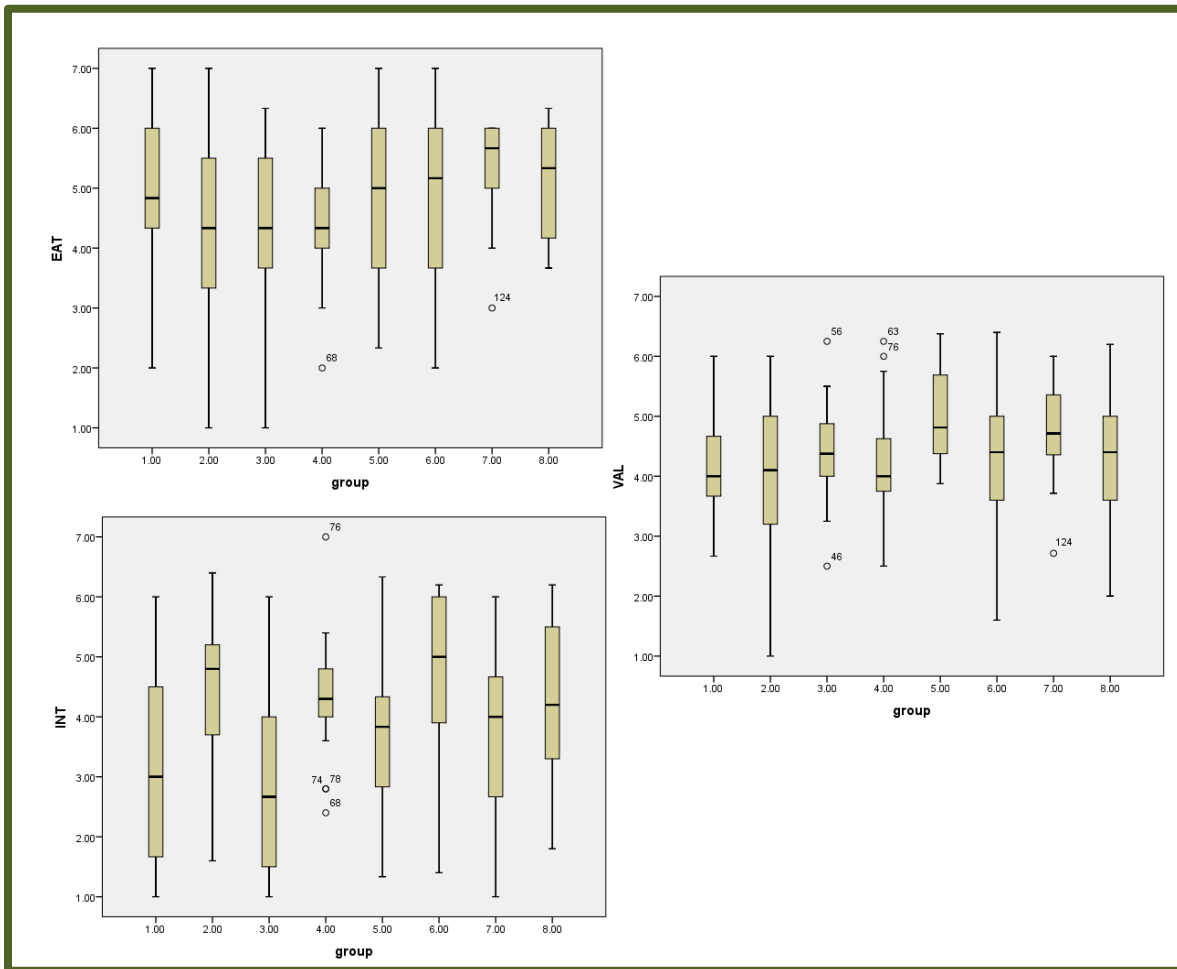


Exhibit: 19

Q-Q plots for normality check (EAT)

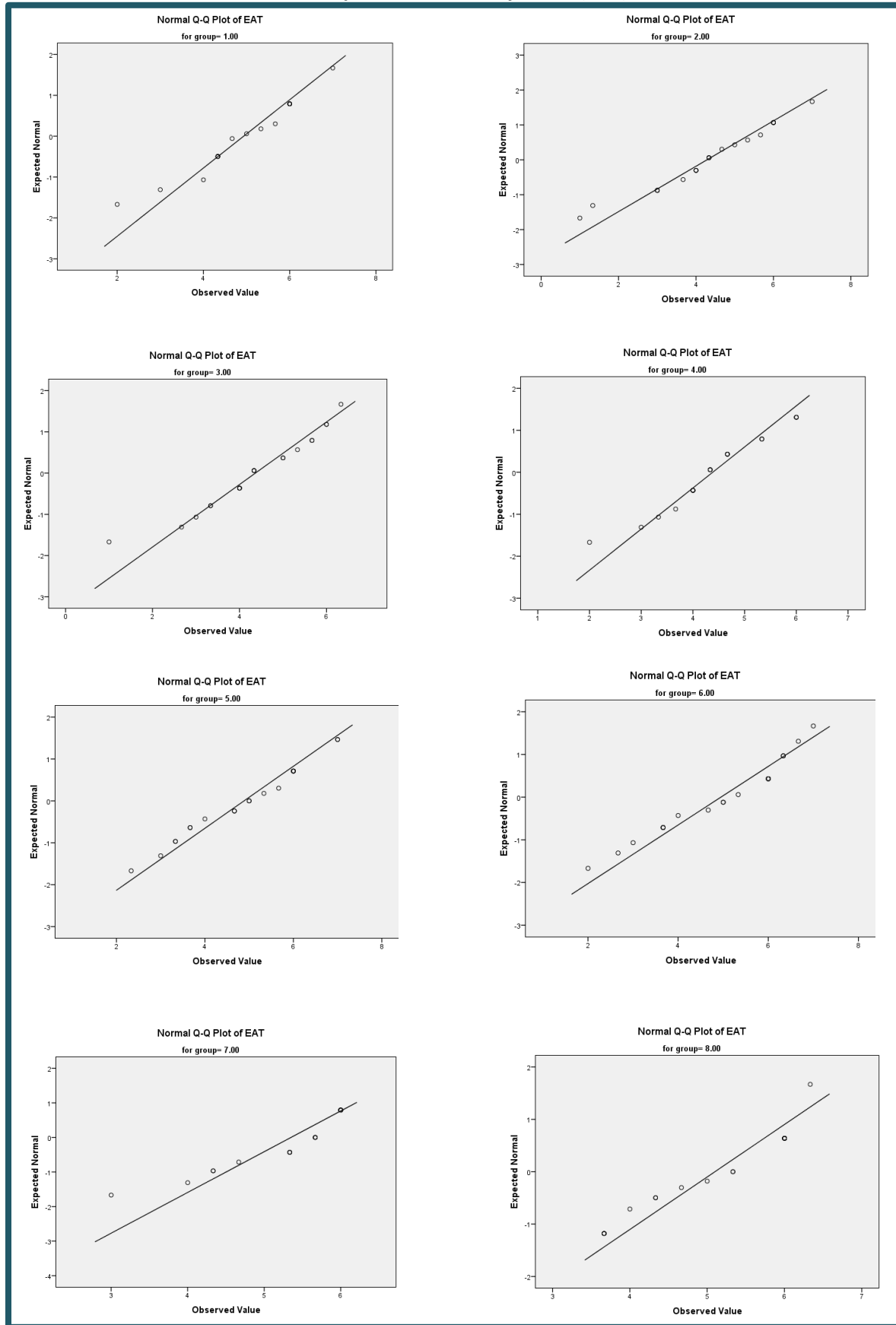


Exhibit: 20

Q-Q plots for normality check (VAL)

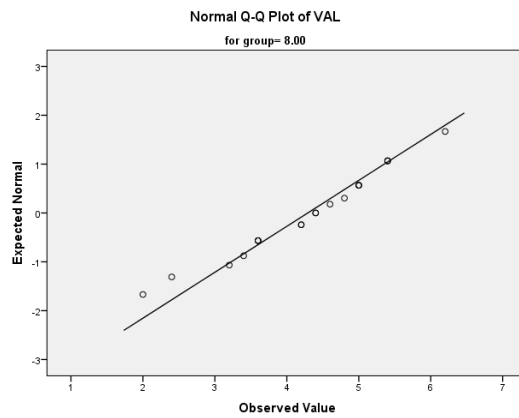
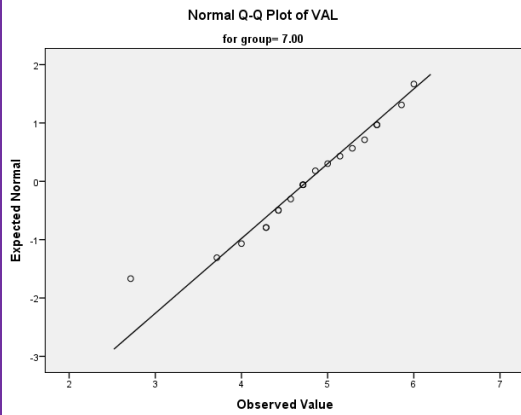
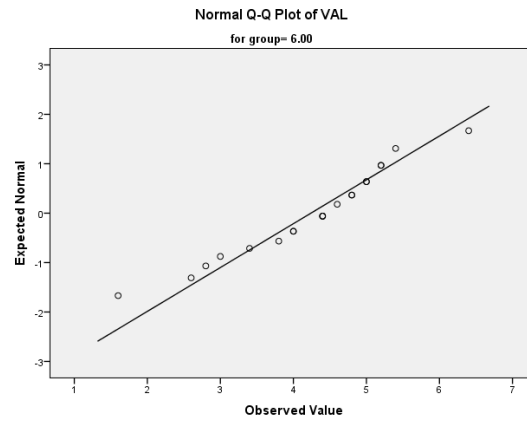
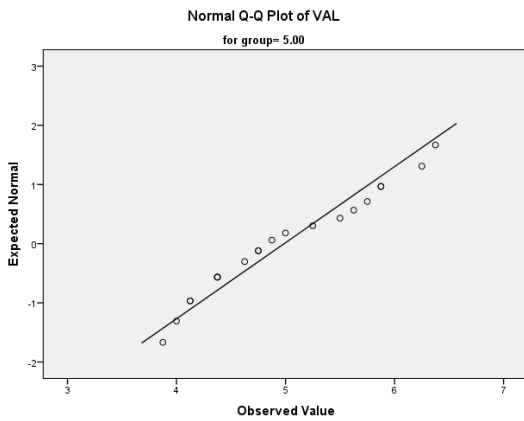
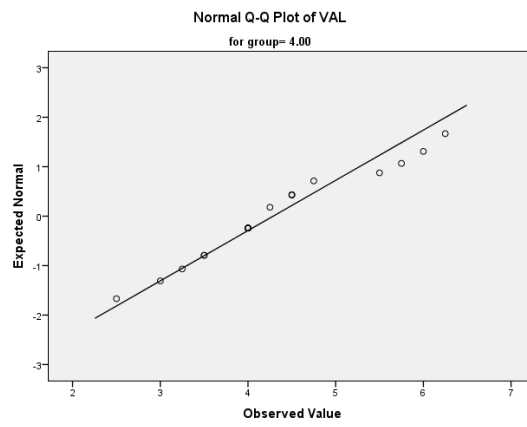
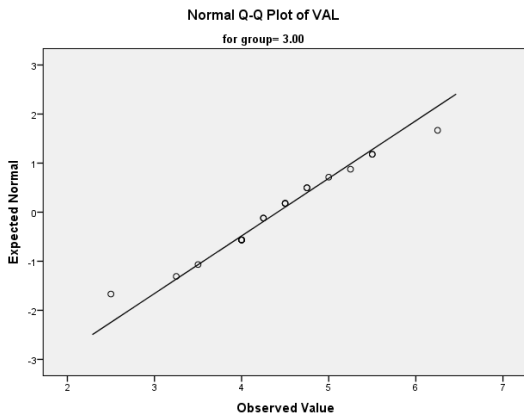
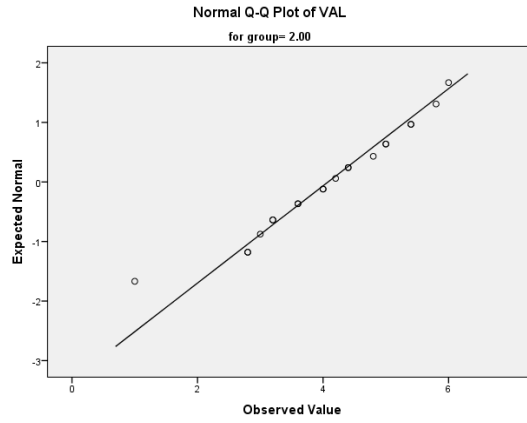
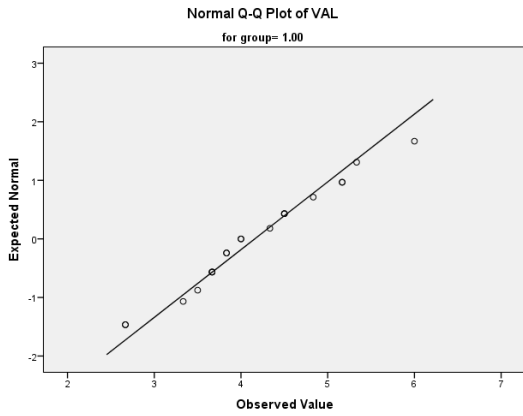
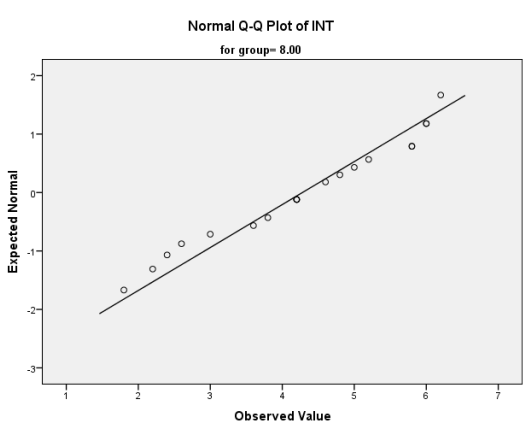
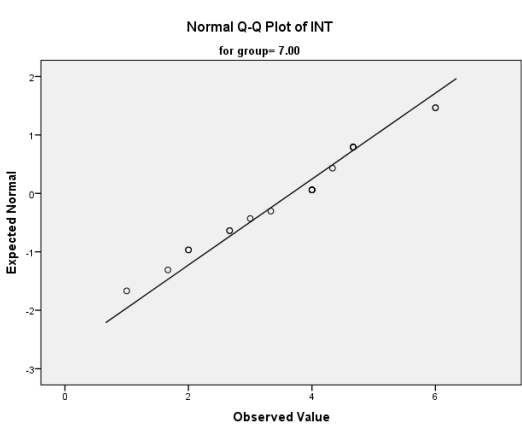
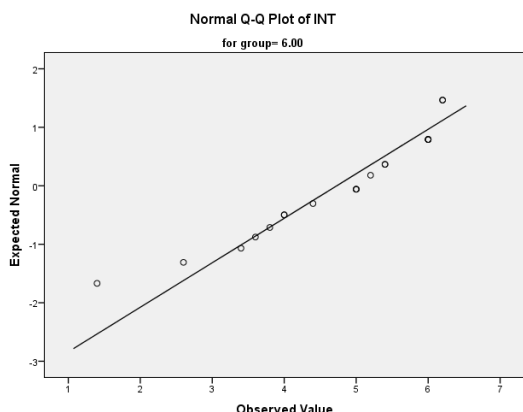
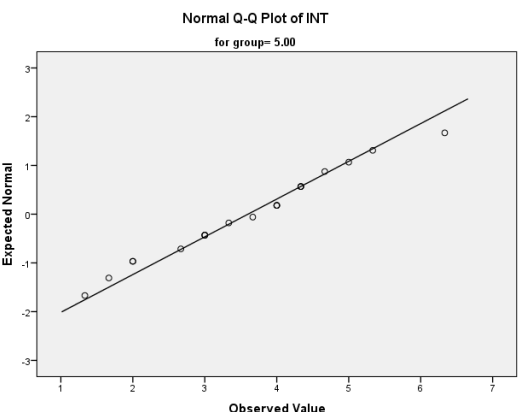
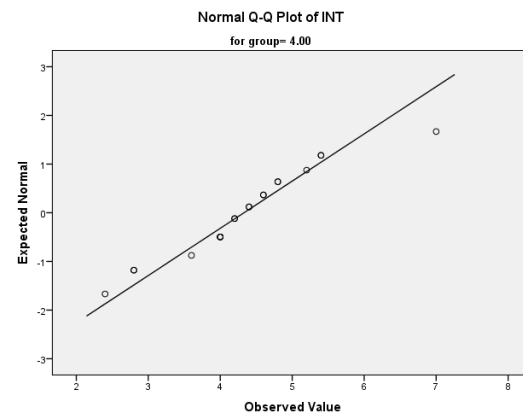
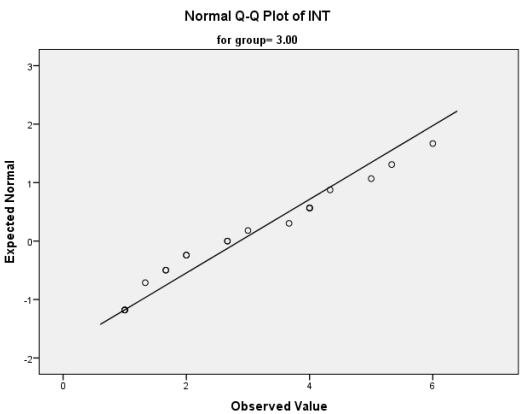
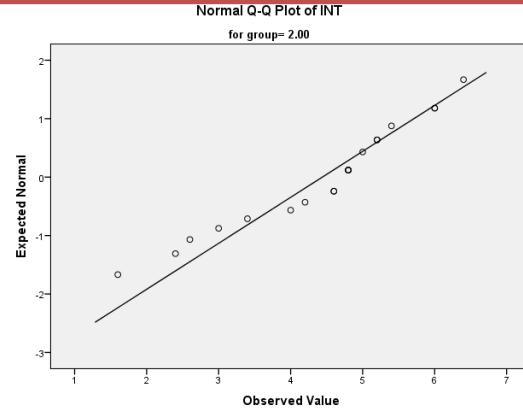
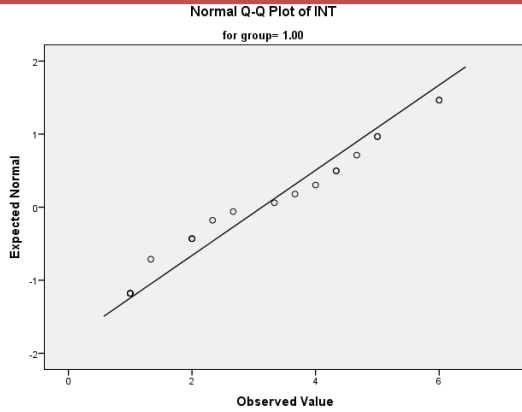




Exhibit: 21

Q-Q plots for normality check (INT)



7.2.4.2 2

Exhibit 22a:

The one sample Wilcoxon signed rank test results (“median equals 4”)

		Dependent variables	significance	Outcome: reject / accept the null hypothesis “median equals 4”
Scenario 1: Luxury – Non-similar	car	EAT	.004	reject
		VAL	.445	accept
		INT	.046	reject
	Carbonated drink	EAT	.324	accept
		VAL	.616	accept
		INT	.152	accept
Scenario 2: Luxury – similar	car	EAT	.170	accept
		VAL	.049	reject
		INT	.007	reject
	Carbonated drink	EAT	.103	accept
		VAL	.269	accept
		INT	.162	accept
Scenario 3: Prestige – Non-similar	car	EAT	.010	reject
		VAL	.000	reject
		INT	.184	accept
	Carbonated drink	EAT	.012	reject
		VAL	.316	accept
		INT	.029	reject
Scenario 4: Prestige – similar	car	EAT	.000	reject
		VAL	.001	reject
		INT	.253	accept
	Carbonated drink	EAT	.001	reject
		VAL	.203	accept
		INT	.312	accept
Significance level is 0.05				

**Exhibit 22b: The one sample Wilcoxon signed rank test results (“median equals 5”)**

		Dependent variables	significance	Outcome: reject / accept the null hypothesis “median equals 5”
Scenario 1: Luxury – Non-similar	car	EAT	.745	accept
		VAL	.001	reject
		INT	.001	reject
	Carbonated drink	EAT	.069	accept
		VAL	.005	reject
		INT	.090	accept
Scenario 2: Luxury – similar	car	EAT	.051	accept
		VAL	.009	reject
		INT	.000	reject
	Carbonated drink	EAT	.020	reject
		VAL	.010	reject
		INT	.005	reject
Scenario 3: Prestige – Non-similar	car	EAT	.661	accept
		VAL	.920	accept
		INT	.001	reject
	Carbonated drink	EAT	.826	accept
		VAL	.007	reject
		INT	.432	accept
Scenario 4: Prestige – similar	car	EAT	.047	reject
		VAL	.242	accept
		INT	.001	reject
	Carbonated drink	EAT	.806	accept
		VAL	.008	reject
		INT	.058	accept
Significance level is 0.05				

**7.2.5 Hyp 2**

**7.2.5.1 0**

**Exhibit 23: Relevant results of the MANOVA test**

**Multivariate Tests<sup>c</sup>**

Effect	Value	F	Sig.	Partial Eta Squared	Observed Power <sup>b</sup>
Intercept Pillai's Trace	.960	1213.133 <sup>a</sup>	.000	.960	1.000

BC	Pillai's Trace	.057	3.020 <sup>a</sup>	.032	.057	.702
PC	Pillai's Trace	.281	19.553 <sup>a</sup>	.000	.281	1.000
DS	Pillai's Trace	.012	.608 <sup>a</sup>	.611	.012	.174
BC * PC	Pillai's Trace	.045	2.330 <sup>a</sup>	.077	.045	.576
BC * DS	Pillai's Trace	.043	2.254 <sup>a</sup>	.084	.043	.561
PC * DS	Pillai's Trace	.005	.270 <sup>a</sup>	.847	.005	.101
BC * PC * DS	Pillai's Trace	.028	1.425 <sup>a</sup>	.238	.028	.372

a. Exact statistic

b. Computed using alpha = .05

c. Design: Intercept + BC + PC + DS + BC \* PC + BC \* DS + PC \* DS + BC \* PC \* DS  
pillai's trace robust to violation of the assumptions.

### 7.2.5.2 1

#### Exhibit 24: Assumption of normality check for the second hypotheses

			Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
PC	BC		Statistic	df	Sig.	Statistic	df	Sig.
1.00	EAT	1	.130	40	.085	.946	40	.055
		2	.185	40	.001	.905	40	.003
	VAL	1	.105	40	.200 <sup>*</sup>	.982	40	.770
		2	.089	40	.200 <sup>*</sup>	.977	40	.562
	INT	1	.154	40	.017	.914	40	.005
		2	.160	40	.011	.969	40	.343
2.00	EAT	1	.148	40	.027	.955	40	.116
		2	.235	40	.000	.913	40	.005
	VAL	1	.109	40	.200 <sup>*</sup>	.971	40	.400
		2	.125	40	.119	.970	40	.353
	INT	1	.143	40	.038	.973	40	.446
		2	.119	40	.159	.933	40	.020

a. Lilliefors Significance Correction

\*. This is a lower bound of the true significance.

#### Exhibit 25:

Test of Homogeneity of Variances				
PC	Levene Statistic	df1	df2	Sig.

1.00	EAT	.220	1	78	.640
	VAL	.186	1	78	.667
	INT	4.726	1	78	.033
2.00	EAT	.411	1	78	.523
	VAL	.004	1	78	.948
	INT	2.203	1	78	.142

**Exhibit 26:**

**ANOVA**

pc			Sum of Squares	df	Mean Square	F	Sig.
1.00	diff_eat	Between Groups	2864.553	3	954.851	1.863	.143
		Within Groups	38947.977	76	512.473		
		Total	41812.530	79			
	diff_val	Between Groups	566.415	3	188.805	.425	.735
		Within Groups	33735.712	76	443.891		
		Total	34302.127	79			
	diff_int	Between Groups	1528.449	3	509.483	.911	.440
		Within Groups	42516.244	76	559.424		
		Total	44044.694	79			
2.00	diff_eat	Between Groups	3358.164	3	1119.388	2.117	.105
		Within Groups	40194.006	76	528.868		
		Total	43552.170	79			
	diff_val	Between Groups	352.204	3	117.401	.205	.892
		Within Groups	43461.001	76	571.855		
		Total	43813.205	79			
	diff_int	Between Groups	1540.328	3	513.443	1.125	.344
		Within Groups	34688.087	76	456.422		
		Total	36228.415	79			

Summarized

**Exhibit 27:**

	Checking the assumptions of:		The appropriate test
	Normality (Shapiro-Wilk	Homogeneity of variances	

		test)			
Cars (Porsche vs. Audi)	EAT (attitude towards extension)	Violated at significance level of 0.10	Assumption met		Independent t-test
		Violated at significance level of 0.05			Independent t-test
	VAL (value of extension)	Assumption met	Assumption met		Independent t-test
		Assumption met			Independent t-test
	INT (purchase intention of extension)	Violated at significance level of 0.05	Violated	Violated Equal variances not assumed	Wilcoxon rank-sum test (+ independent t-test)
		Assumption met		Assumption met	Wilcoxon rank-sum test (+ independent t-test)
Carbonated drinks (Royal Club vs. Coca-Cola)	EAT (attitude towards extension)	Assumption met	Assumption met		Independent t-test
		Violated at significance level of 0.05			Independent t-test
	VAL (value of extension)	Assumption met	Assumption met		Independent t-test
		Assumption met			Independent t-test
	INT (purchase intention of extension)	Assumption met	Assumption met		Independent t-test
		Violated at significance level of 0.05			Independent t-test

7.2.5.3 2

Exhibit 28:

			Independent Samples Test					
			Levene's Test for Equality of Variances		t-test for Equality of Means			
			F	Sig.	t	df	Sig. (2-tailed)	M
PC								
1.00	EAT	Equal variances assumed	.220	.640	-1.725	78	.088	
		Equal variances not assumed			-1.725	77.004	.088	

	VAL	Equal variances assumed	.186	.667	-3.229	78	.002
		Equal variances not assumed			-3.229	77.272	.002
	INT	Equal variances assumed	4.726	.033	-1.911	78	.060
		Equal variances not assumed			-1.911	74.414	.060
2.00	EAT	Equal variances assumed	.411	.523	-2.450	78	.017
		Equal variances not assumed			-2.450	77.849	.017
	VAL	Equal variances assumed	.004	.948	-.333	78	.740
		Equal variances not assumed			-.333	77.973	.740
	INT	Equal variances assumed	2.203	.142	-.431	78	.668
		Equal variances not assumed			-.431	76.121	.668

**Exhibit 29:**

			Levene's Test for Equality of Variances					
			F	Sig.	t	df	Sig. (2-tailed)	M
DS	EAT	Equal variances assumed	.557	.460	.124	38	.902	
		Equal variances not assumed			.124	37.454	.902	
1.00	VAL	Equal variances assumed	.045	.833	-3.189	38	.003	
		Equal variances not assumed			-3.189	37.586	.003	
	INT	Equal variances assumed	3.843	.057	-.972	38	.337	
		Equal variances not assumed			-.972	35.308	.338	
2.00	EAT	Equal variances assumed	2.718	.107	-2.804	38	.008	
		Equal variances not assumed			-2.804	32.404	.008	
	VAL	Equal variances assumed	.106	.746	-1.362	38	.181	
		Equal variances not assumed			-1.362	37.710	.181	
	INT	Equal variances assumed	1.101	.301	-1.712	38	.095	
		Equal variances not assumed			-1.712	37.123	.095	
1.00	EAT	Equal variances assumed	.069	.795	-1.408	38	.167	
		Equal variances not assumed			-1.408	37.886	.167	

	VAL	Equal variances assumed	.155	.696	-.430	38	.670
		Equal variances not assumed			-.430	37.738	.670
	INT	Equal variances assumed	.103	.750	-.709	38	.482
		Equal variances not assumed			-.709	37.957	.482
2.00	EAT	Equal variances assumed	.566	.457	-2.244	38	.031
		Equal variances not assumed			-2.244	37.978	.031
	VAL	Equal variances assumed	.239	.628	-.008	38	.994
		Equal variances not assumed			-.008	37.776	.994
	INT	Equal variances assumed	2.319	.136	.131	38	.896
		Equal variances not assumed			.131	35.408	.896

### 7.2.5.3.1 Npar

#### Exhibit 30:

PC		EAT	VAL	INT
1.00	Mann-Whitney U	633.000	472.500	605.000
	Wilcoxon W	1453.000	1292.500	1425.000
	Z	-1.626	-3.155	-1.884
	Asymp. Sig. (2-tailed)	.104	.002	.060
	Exact Sig. (2-tailed)	.105	.001	.060
	Exact Sig. (1-tailed)	.052	.001	.030
	Point Probability	.001	.000	.000
2.00	Mann-Whitney U	564.000	741.500	732.000
	Wilcoxon W	1384.000	1561.500	1552.000
	Z	-2.293	-.564	-.656
	Asymp. Sig. (2-tailed)	.022	.573	.512
	Exact Sig. (2-tailed)	.021	.576	.516
	Exact Sig. (1-tailed)	.011	.288	.258
	Point Probability	.000	.002	.002

a. Grouping Variable: BC

#### Exhibit 31:

PC	DS		EAT	VAL	INT
1.00	1.00	Mann-Whitney U	196.000	93.000	166.000
		Wilcoxon W	406.000	303.000	376.000



		Z	-.110	-2.897	-.923
		Asymp. Sig. (2-tailed)	.913	.004	.356
		Exact Sig. [2*(1-tailed Sig.)]	.925 <sup>a</sup>	.003 <sup>a</sup>	.369 <sup>a</sup>
		Exact Sig. (2-tailed)	.919	.003	.364
		Exact Sig. (1-tailed)	.460	.002	.182
		Point Probability	.005	.000	.004
2.00		Mann-Whitney U	106.000	142.000	136.500
		Wilcoxon W	316.000	352.000	346.500
		Z	-2.573	-1.573	-1.729
		Asymp. Sig. (2-tailed)	.010	.116	.084
		Exact Sig. [2*(1-tailed Sig.)]	.010 <sup>a</sup>	.121 <sup>a</sup>	.086 <sup>a</sup>
		Exact Sig. (2-tailed)	.009	.118	.085
		Exact Sig. (1-tailed)	.005	.059	.043
		Point Probability	.000	.002	.001
2.00	1.00	Mann-Whitney U	150.500	185.500	166.500
		Wilcoxon W	360.500	395.500	376.500
		Z	-1.347	-.393	-.909
		Asymp. Sig. (2-tailed)	.178	.694	.363
		Exact Sig. [2*(1-tailed Sig.)]	.183 <sup>a</sup>	.698 <sup>a</sup>	.369 <sup>a</sup>
		Exact Sig. (2-tailed)	.182	.702	.371
		Exact Sig. (1-tailed)	.091	.351	.185
		Point Probability	.002	.005	.004
2.00		Mann-Whitney U	130.000	188.000	196.500
		Wilcoxon W	340.000	398.000	406.500
		Z	-1.922	-.325	-.095
		Asymp. Sig. (2-tailed)	.055	.745	.924
		Exact Sig. [2*(1-tailed Sig.)]	.060 <sup>a</sup>	.758 <sup>a</sup>	.925 <sup>a</sup>
		Exact Sig. (2-tailed)	.055	.753	.931
		Exact Sig. (1-tailed)	.027	.376	.465
		Point Probability	.001	.005	.005

a. Not corrected for ties.

b. Grouping Variable: BC

**Exhibit 32:**

Product category	Dep. variables	Means 1 <sup>st</sup> : luxury 2 <sup>nd</sup> : prestige	Testing direction, Ha:	Extent of design similarity	Means 1 <sup>st</sup> : luxury 2 <sup>nd</sup> : prestige	Testing direction, Ha:	
Cars (Porsche vs. Audi)	EAT	L= 4.6500	Pres > Lux** U*	Non-similar	L= 4.9333 P= 4.8833	Lux > Pres	
		P= 5.1167		similar	L= 4.3667 P= 5.3500		Pres > Lux** U**
	VAL	L=4.2854	Pres > Lux** U**	Non-similar	L= 4.1583 P= 4.9875	Pres > Lux** U**	
		P= 4.8759		similar	L= 4.4125 P= 4.7643		Pres > Lux* U*
	INT	L=3.0000	Pres > Lux** U**	Non-similar	L= 3.1333 P= 3.6000	Pres > Lux U	
		P= 3.6333		similar	L= 2.8667 P= 3.6667		Pres > Lux** U**
	Carbonated drinks (Royal Club vs. Coca-Cola)	EAT	L=4.3333	Pres > Lux** U**	Non-similar	L= 4.2833 P= 4.9500	Pres > Lux* U*
			P= 5.0250		similar	L= 4.3833 P= 5.1000	
VAL		L=4.1838	Pres > Lux	Non-similar	L= 4.0800 P= 4.2400	Pres > Lux	
		P= 4.2650		similar	L= 4.2875 P= 4.2900		Pres > Lux
INT		L=4.3850	Pres > Lux	Non-similar	L= 4.4400 P= 4.7300	Pres > Lux	
		P= 4.5050		similar	L= 4.3300 P= 4.2800		Lux > Pres

\* one-tailed significance with the significant level at 0.10

\*\* one-tailed significance with the significant level at 0.05

## 7.2.6 Hyp3

### 7.2.6.1 1

**Exhibit 33:**

		Tests of Normality						
PC	DS	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk			
		Statistic	df	Sig.	Statistic	df	Sig.	
1.00	EAT	1.00	.157	40	.015	.951	40	.082
		2.00	.179	40	.003	.881	40	.001
	VAL	1.00	.082	40	.200 <sup>*</sup>	.980	40	.703
		2.00	.113	40	.200 <sup>*</sup>	.978	40	.622
	INT	1.00	.116	40	.188	.957	40	.135
		2.00	.161	40	.011	.941	40	.037
2.00	EAT	1.00	.144	40	.036	.956	40	.122
		2.00	.182	40	.002	.918	40	.006
	VAL	1.00	.107	40	.200 <sup>*</sup>	.973	40	.445
		2.00	.088	40	.200 <sup>*</sup>	.985	40	.850
	INT	1.00	.141	40	.043	.934	40	.022
		2.00	.124	40	.123	.978	40	.619

a. Lilliefors Significance Correction

\*. This is a lower bound of the true significance.

**Exhibit 34:**

Test of Homogeneity of Variances

PC		Levene Statistic	df1	df2	Sig.
1.00	EAT	.112	1	78	.739
	VAL	.733	1	78	.395
	INT	.014	1	78	.907
2.00	EAT	4.990	1	78	.028
	VAL	.798	1	78	.375
	INT	.408	1	78	.525

Summarized

**Exhibit 35:**

	Checking the assumptions of:		The appropriate test
	Normality	Homogeneity of variances	

		(Shapiro-Wilk test)			
Cars (Porsche vs. Audi)	EAT (attitude towards extension)	Violated at significance level of 0.10	Assumption met	Assumption met	Independent t-test
		Violated at significance level of 0.05		Violated Equal variances not assumed	Wilcoxon rank-sum test (+ independent t-test)
	VAL (value of extension)	Assumption met	Assumption met	Independent t-test	
		Assumption met		Independent t-test	
	INT (purchase intention of extension)	Assumption met	Assumption met	Independent t-test	
		Violated at significance level of 0.05		Independent t-test	
Carbonated drinks (Royal Club vs. Coca-Cola)	EAT (attitude towards extension)	Assumption met	Violated Equal variances not assumed	Assumption met	Independent t-test
		Violated at significance level of 0.05		Violated at significance level of 0.10	Wilcoxon rank-sum test (+ independent t-test)
	VAL (value of extension)	Assumption met	Assumption met	Independent t-test	
		Assumption met		Independent t-test	
	INT (purchase intention of extension)	Violated at significance level of 0.05	Assumption met	Independent t-test	
		Assumption met		Independent t-test	

7.2.6.2 2

Exhibit 36:

			Levene's Test for Equality of Variances		t-test for Equality of Means			
			F	Sig.	t	df	Sig. (2-tailed)	M Difference
PC								
1.00	EAT	Equal variances assumed	.112	.739	.181	78	.856	
		Equal variances not assumed			.181	77.827	.856	

	VAL	Equal variances assumed	.733	.395	-.079	78	.937
		Equal variances not assumed			-.079	77.211	.937
	INT	Equal variances assumed	.014	.907	.295	78	.769
		Equal variances not assumed			.295	78.000	.769
2.00	EAT	Equal variances assumed	4.990	.028	-.427	78	.670
		Equal variances not assumed			-.427	69.796	.671
	VAL	Equal variances assumed	.798	.375	-.528	78	.599
		Equal variances not assumed			-.528	76.496	.599
	INT	Equal variances assumed	.408	.525	1.011	78	.315
		Equal variances not assumed			1.011	77.562	.315

**Exhibit 37:**

			Levene's Test for Equality of Variances				
			F	Sig.			
BC							
1	EAT	Equal variances assumed	.028	.867	1.422	38	.163
		Equal variances not assumed			1.422	37.647	.163
	VAL	Equal variances assumed	.105	.748	-.937	38	.355
		Equal variances not assumed			-.937	37.992	.355
	INT	Equal variances assumed	.370	.547	.510	38	.613
		Equal variances not assumed			.510	37.775	.613
2	EAT	Equal variances assumed	6.054	.019	-1.308	38	.199
		Equal variances not assumed			-1.308	31.945	.200
	VAL	Equal variances assumed	.306	.584	.906	38	.371
		Equal variances not assumed			.906	38.000	.371
	INT	Equal variances assumed	.065	.800	-.159	38	.875
		Equal variances not assumed			-.159	37.901	.875
1	EAT	Equal variances assumed	2.233	.143	-.242	38	.810
		Equal variances not assumed			-.242	33.037	.810

	VAL	Equal variances assumed	1.010	.321	-.591	38	.558
		Equal variances not assumed			-.591	36.316	.559
	INT	Equal variances assumed	1.223	.276	.301	38	.765
		Equal variances not assumed			.301	36.445	.765
2	EAT	Equal variances assumed	3.249	.079	-.380	38	.706
		Equal variances not assumed			-.380	33.618	.706
	VAL	Equal variances assumed	.022	.882	-.144	38	.886
		Equal variances not assumed			-.144	37.872	.886
	INT	Equal variances assumed	.010	.920	1.064	38	.294
		Equal variances not assumed			1.064	37.955	.294

### 7.2.6.2.1 Npar

#### Exhibit 38:

**Test Statistics<sup>a</sup>**

PC		EAT	VAL	INT
1.00	Mann-Whitney U	780.500	773.500	763.500
	Wilcoxon W	1600.500	1593.500	1583.500
	Z	-.190	-.255	-.353
	Asymp. Sig. (2-tailed)	.849	.798	.724
	Exact Sig. (2-tailed)	.852	.801	.728
	Exact Sig. (1-tailed)	.426	.401	.364
	Point Probability	.002	.002	.002
2.00	Mann-Whitney U	782.500	769.500	659.000
	Wilcoxon W	1602.500	1589.500	1479.000
	Z	-.170	-.294	-1.360
	Asymp. Sig. (2-tailed)	.865	.769	.174
	Exact Sig. (2-tailed)	.868	.772	.176
	Exact Sig. (1-tailed)	.434	.386	.088
	Point Probability	.002	.002	.001

a. Grouping Variable: DS

#### Exhibit 39:

**Test Statistics<sup>b</sup>**

PC	BC		EAT	VAL	INT
1.00	1	Mann-Whitney U	143.000	160.000	181.500
		Wilcoxon W	353.000	370.000	391.500

		Z	-1.559	-1.087	-.504
		Asymp. Sig. (2-tailed)	.119	.277	.615
		Exact Sig. [2*(1-tailed Sig.)]	.127 <sup>a</sup>	.289 <sup>a</sup>	.620 <sup>a</sup>
		Exact Sig. (2-tailed)	.122	.283	.623
		Exact Sig. (1-tailed)	.061	.142	.311
		Point Probability	.002	.003	.005
2		Mann-Whitney U	161.500	176.000	192.500
		Wilcoxon W	371.500	386.000	402.500
		Z	-1.062	-.650	-.204
		Asymp. Sig. (2-tailed)	.288	.516	.838
		Exact Sig. [2*(1-tailed Sig.)]	.301 <sup>a</sup>	.529 <sup>a</sup>	.841 <sup>a</sup>
		Exact Sig. (2-tailed)	.295	.524	.845
		Exact Sig. (1-tailed)	.147	.262	.423
		Point Probability	.003	.004	.005
2.00	1	Mann-Whitney U	196.000	185.000	167.500
		Wilcoxon W	406.000	395.000	377.500
		Z	-.109	-.408	-.882
		Asymp. Sig. (2-tailed)	.913	.684	.378
		Exact Sig. [2*(1-tailed Sig.)]	.925 <sup>a</sup>	.698 <sup>a</sup>	.383 <sup>a</sup>
		Exact Sig. (2-tailed)	.919	.692	.385
		Exact Sig. (1-tailed)	.460	.346	.193
		Point Probability	.005	.005	.004
	2	Mann-Whitney U	199.000	195.500	158.500
		Wilcoxon W	409.000	405.500	368.500
		Z	-.028	-.122	-1.126
		Asymp. Sig. (2-tailed)	.978	.903	.260
		Exact Sig. [2*(1-tailed Sig.)]	.989 <sup>a</sup>	.904 <sup>a</sup>	.265 <sup>a</sup>
		Exact Sig. (2-tailed)	.984	.909	.266
		Exact Sig. (1-tailed)	.492	.455	.133
		Point Probability	.005	.005	.003

a. Not corrected for ties.

b. Grouping Variable: DS

**Exhibit 40:**

Product category	Dep. variables	Means 1 <sup>st</sup> : non-similar 2 <sup>nd</sup> : similar	Testing direction, Ha:	Brand concept	Means 1 <sup>st</sup> : non-similar 2 <sup>nd</sup> : similar	Testing direction, Ha:	
Cars (Porsche vs. Audi)	EAT	Ns= 4.9083	nsim > sim	luxury	Ns= 4.9333	nsim > sim	
		S= 4.8583			S= 4.3667		
		VAL	Ns= 4.5729	sim > nsim	luxury	Ns= 4.8833	<u>sim</u> > nsim
			S= 4.5884			S= 5.3500	
		VAL	Ns= 4.5729	sim > nsim	luxury	Ns= 4.1583	<u>sim</u> > nsim
			S= 4.5884			S= 4.4125	
		INT	Ns= 3.3667	nsim > sim	luxury	Ns= 4.9875	nsim > sim
			S= 3.2667			S= 4.7643	
		INT	Ns= 3.3667	nsim > sim	luxury	Ns= 3.1333	nsim > sim
			S= 3.2667			S= 2.8667	
		EAT	Ns= 3.3667	nsim > sim	prestige	Ns= 3.6000	<u>sim</u> > nsim
			S= 3.2667			S= 3.6667	
Carbonated drinks (Royal Club vs. Coca-Cola)	EAT	Ns= 4.6167	sim > nsim	luxury	Ns= 4.2833	<u>Sim</u> > nsim	
		S= 4.7417			S= 4.3833		
		VAL	Ns= 4.1600	sim > nsim	luxury	Ns= 4.9500	<u>sim</u> > nsim
			S= 4.2887			S= 5.1000	
		VAL	Ns= 4.1600	sim > nsim	luxury	Ns= 4.0800	<u>Sim</u> > nsim
			S= 4.2887			S= 4.2875	
		INT	Ns= 4.5850	nsim > sim	luxury	Ns= 4.2400	<u>Sim</u> > nsim
			S= 4.3050			S= 4.2900	
		INT	Ns= 4.5850	nsim > sim	luxury	Ns= 4.4400	Nsim > sim
			S= 4.3050			S= 4.3300	
		INT	Ns= 4.5850	nsim > sim	prestige	Ns= 4.7300	Nsim > sim
			S= 4.3050			S= 4.2800	



**Exhibit 41:**

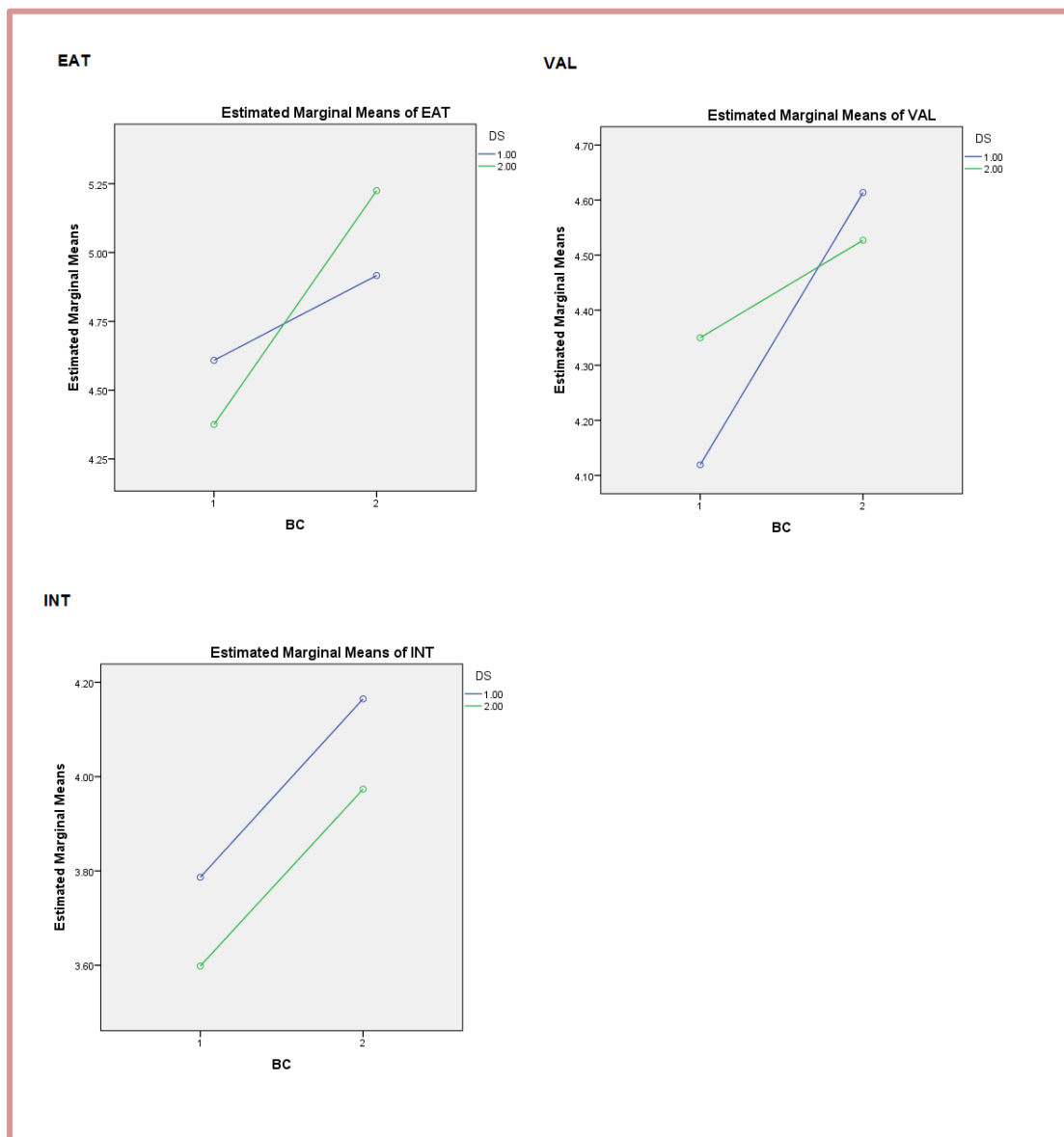
**Tests of Between-Subjects Effects**

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	EAT	21.305 <sup>a</sup>	7	3.044	1.988	.060
	VAL	13.783 <sup>b</sup>	7	1.969	2.085	.048
	INT	62.137 <sup>c</sup>	7	8.877	4.663	.000
Intercept	EAT	3657.656	1	3657.656	2389.130	.000
	VAL	3101.142	1	3101.142	3283.371	.000
	INT	2409.739	1	2409.739	1265.753	.000
BC	EAT	13.417	1	13.417	8.764	.004
	VAL	4.512	1	4.512	4.777	.030
	INT	5.675	1	5.675	2.981	.086
PC	EAT	1.667	1	1.667	1.089	.298
	VAL	5.077	1	5.077	5.376	.022
	INT	50.925	1	50.925	26.749	.000
DS	EAT	.056	1	.056	.037	.848
	VAL	.208	1	.208	.220	.640
	INT	1.444	1	1.444	.758	.385
BC * PC	EAT	.506	1	.506	.331	.566
	VAL	2.593	1	2.593	2.745	.100
	INT	2.635	1	2.635	1.384	.241
BC * DS	EAT	2.934	1	2.934	1.916	.168
	VAL	1.008	1	1.008	1.067	.303
	INT	.000	1	.000	.000	.994
PC * DS	EAT	.306	1	.306	.200	.655
	VAL	.128	1	.128	.136	.713
	INT	.324	1	.324	.170	.681
BC * PC * DS	EAT	2.417	1	2.417	1.579	.211
	VAL	.256	1	.256	.271	.604
	INT	1.133	1	1.133	.595	.442
Error	EAT	232.706	152	1.531		
	VAL	143.564	152	.944		
	INT	289.377	152	1.904		
Total	EAT	3911.667	160			
	VAL	3258.488	160			
	INT	2761.253	160			

Corrected Total	EAT	254.010	159			
	VAL	157.346	159			
	INT	351.515	159			

- a. R Squared = .084 (Adjusted R Squared = .042)
- b. R Squared = .088 (Adjusted R Squared = .046)
- c. R Squared = .177 (Adjusted R Squared = .139)

**Exhibit 42:**



**Exhibit 43:**

Cars: The similarity of similar cars vs. non similar cars  
 The fit of similar cars vs. non similar cars

Carbonated drinks: The similarity of similar carbonated drinks vs. non similar carbonated drinks  
 The fit of similar carbonated drinks vs. non similar carbonated drinks

			Levene's Test for Equality of Variances	
			F	Sig.
PC	1.00 Similarity	Equal variances assumed	2.656	.107
		Equal variances not assumed		
	FIT	Equal variances assumed	1.929	.169
		Equal variances not assumed		
2.00	Similarity	Equal variances assumed	9.273	.003
		Equal variances not assumed		
	FIT	Equal variances assumed	4.270	.042
		Equal variances not assumed		

**Exhibit 44:**

	median	Outcome: reject / accept the null hypothesis "median equals 4"	Sig.	Outcome: reject / accept the null hypothesis "median equals 5"	Sig.	Outcome: reject / accept the null hypothesis "median equals 4.5"	Sig.
All EAT	4.8333	Reject	.000	Accept	.112	reject	.002
All VAL	4.4000	Reject	.000	Reject	.000	accept	.370
All INT	4.0000	Accept	.406	Reject	.000	reject	.000

According to manipulation check 1 (brand concept), luxury and prestige can be compared with each other for cars but not for carbonated drinks.

According to manipulation check 2 (extent of design similarity), similar and non-similar can be compared with each other for the prestige (car and carbonated drink) brands but not for the luxury (car and carbonated drink) brands.

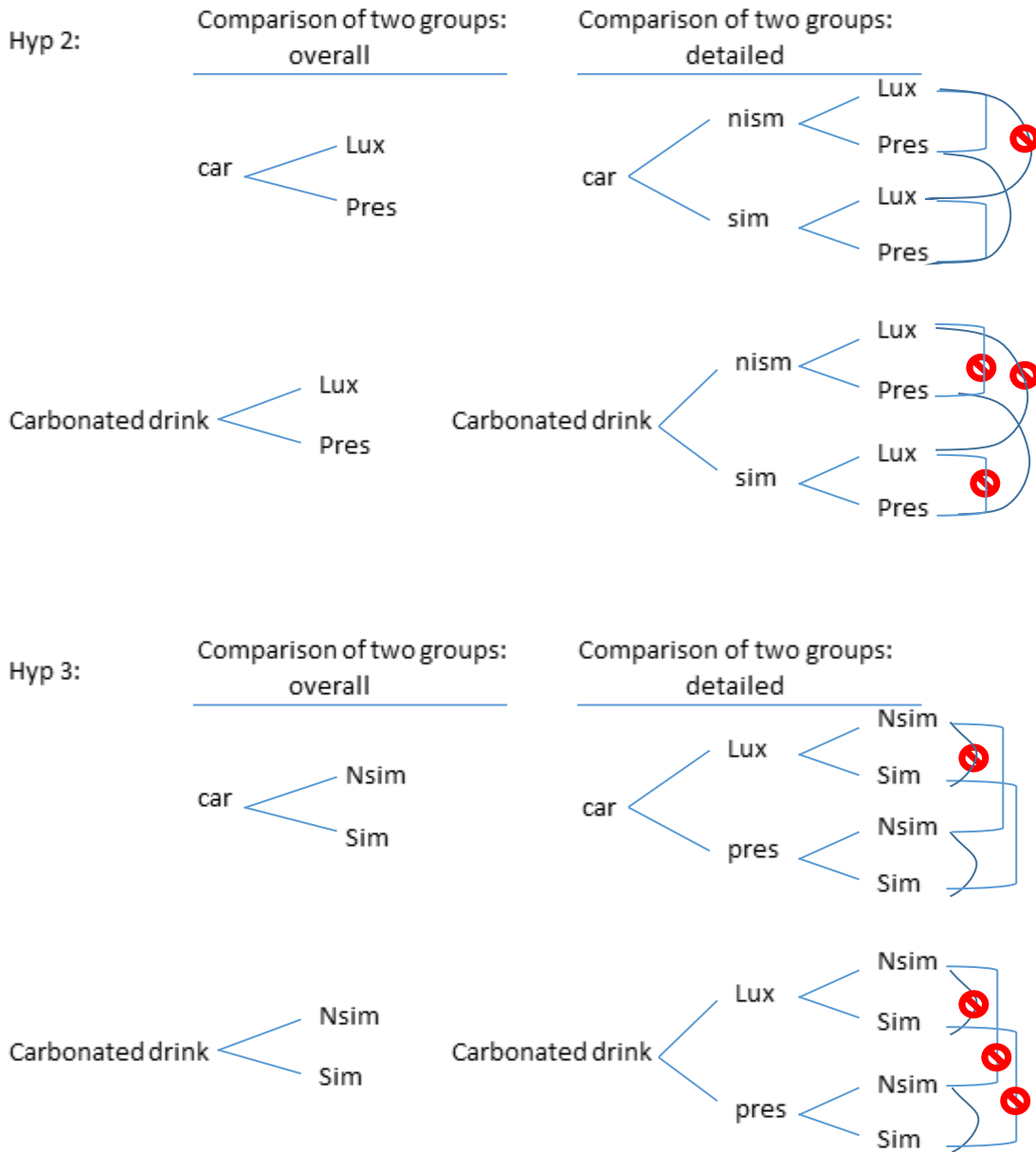


Exhibit 45:

