

**consumer  
perception  
of visually  
novel design**  
the influence of  
brand strength

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AUGUST  
2021



# Consumer perception of visually novel design: the influence of brand strength

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**Master Thesis**

August 2021



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# SUMMARY

Visual Novelty, as an important aspect of product appearance, is proved to influence consumer purchase decisions. Meanwhile, a brand is often used to assist in making purchase decisions. It might be interesting for product designers and brand managers to know how different brands should choose the proper level of visual novelty to gain consumer preference. The present research investigates the joint influence of brand strength and visual novelty on consumer preference by drawing on the concepts of purchase motivations and roles of brands.

This research deployed an experimental study through an online questionnaire, in which people were asked to evaluate their attitudes towards a novel design and a typical design for electric water kettles and Bluetooth speakers.

Contrasting to the hypotheses, the results show that people more strongly prefer a typical-looking product for a strong brand than a weak brand. Moreover, the preference for a typical design is weaker and less significant for a weak brand. The possible reason could be that the product categories used in this research are driven more by utilitarian motivations instead of the predefined utilitarian and expressive motivations. People pursue little expressive need, so a visually novel product may be unnecessary for self

expression of uniqueness. Conversely, a more typical design might better fulfill the practical need for products and hence is preferred. Meanwhile, a strong brand helps to create more confidence about the possible performance quality and hence product choices than a weak brand, so the preference for a typical design is stronger for a strong brand than a weak brand.

In addition, the results show that, for both strong and weak brand, high levels of visual novelty can assist people in the expression of personality and distinguishing from others, but it may not serve as an added value for the purchase of utilitarian products. For a weak brand, people are less likely to use low levels of visual novelty as a strategy to decrease the perceived performance risk. It might also be because of the overall low perception of the product categories used.

Finally, based on the findings and discussions, the implication for practices and theory, and future research are given.



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# 1

## INTRODUCTION



The visual design of a product can contribute to market success, which has been addressed by lots of research (Page & Herr, 2002; Talke et al., 2009; Karjalainen and Snelders, 2010). Nowadays, Many Products in the market often have similar functional performance. Firms started to deploy product design as a strategic tool to differentiate themselves from competitors (Page & Herr, 2002). A design-driven innovation approach is successfully employed by many companies like Alessi, Apple, Bang & Olufsen, Dyson, or Kartell to create differentiating advantages in the market (Talke et al., 2009).

The appearance of a product can critically impact consumer perception and purchase decisions (Bloch 1995; Creusen, 2015). A product appearance is often used by consumers to make inferences about its quality, ease of use, symbolic value, etc. (Creusen & Schoormans, 2005). However, Landwehr, Herrmann, and Wentzel (2012) argued that, in the purchase situation, consumers often look at different cues at their disposal and brand names are one important cue for functional quality. Some researcher( Veryzer, 1995; Page and Herr, 2002) also thought that consumer response to product design should consider both aesthetic and functional aspects. It seems that consumers might not respond to product appearance in a simple manner in which they only consider the information provided by product appearance, but consumers would consider the impacts of other cues. For example, consumer might respond differently to product design when

it was attached with different brand names, price, purchase contexts. Some researchers started to explore how the influence of product appearance interacts with other factors, such as product category (Zhu, Li, Liu & Haipeng, 2020), personal attributes (Celhay &Trinquecoste, 2015; Truong, Klink, Fort-Rioche, & Athaide, 2014), and innovation type (Mugge & Dahl, 2013), to influence consumer responses. One important factor is brand strength.

A brand is often used to assist in making purchase decisions (Keller, 2003), as it is one of the critical signals for product quality (Page and Herr, 2002). Using their prior experience with brands, consumers can make predictions about the overall quality and attributes of the product (Page and Herr, 2002). Similarly, Beverland ( 2018) believed brands create values for users because brands are trusted marks that can efficiently provide lots of information and thus help people to develop confidence and reduce anxiety and regrets before and after purchase. The existing literature explored how product aesthetics (mainly referring to aesthetic attractiveness) interact with brand strength to affect consumer preference and purchase decisions (Landwehr, Herrmann & Wentzel, 2012; Page & Herr, 2002). A lot of research about such interaction influence has been done on product aesthetics, but visual novelty, as a important dimension of product appearance, has been paid little attention.



Visual novelty can also influence consumers' product evaluation (e.g., Creusen & Schoormans, 2005; Muge & Schoormans, 2012a). For example, a visually novel product can easily catch people's attention and increase their interests (Creusen & Schoormans, 2005). But people tend to attach high learning costs to a novel design (Muge & Dahl, 2013). More familiar-looking products are perceived to have less purchase risk, as they look more reliable to consumers (Celhay & Trinquocoste, 2015; Schnurr, 2017). Let's consider integrating the impact of brand in consumer evaluation processes. It may raise the questions that how brand strength influences consumer perception of a visually typical or novel product. Put differently, will consumers have higher acceptance for a typical-looking product than novel-looking product if they know the product comes from a weak brand or will people prefer a more typical-looking product if the product is from a strong brand? However, there is scant research into the joint influence of visual novelty and brand strength on consumer preference. Companies adopt different

design strategies regarding the levels of visual novelty.

In practice, some brands use a visually novel design that highly deviates from the prototypical design of the product category for its new products. For example, Dyson developed the supersonic hairdryer in a ring shape that is very innovative and never seen in other hair dryers (figure1). And they finally made a big success in the market. On the other hand, some brands offer visually typical products that resemble the look of the respective product category. For example, as a relatively new and not quite well-known brand, Anker designs its electronic products (e.g., power banks or Bluetooth speakers) in typical appearances (figure2). Their products gain popularity and receive many good reviews in online shopping websites (Statt, 2017; Amazon-Native Brand Anker Goes Public, 2020 ). So it may be useful to provide insight to product designers and brand managers into how different brands should choose the level of novelty for their new products to guarantee market success.

figure1: Dyson >>  
hair dryers



<< Figure 2: Anker products



The present research investigates the joint influence of brand strength and visual novelty on consumer preference, namely, how visual novelty influences consumer attitudes depending on the strength of the brand. The remainder of the article will be organized as follows. We begin with a literature review to build a comprehensive understanding of the research topic and gain in-depth knowledge about the relationships between product appearance and consumer response, visual novelty and consumer response, and brand influence in consumer evaluation processes. Based on the literature review, we focus on products with both expressive and utilitarian importance for consumers, representing

the majority of products in the market, and discuss the joint influence of visual novelty and brand strength for these products. Several hypotheses are made accordingly. Afterwards, an experiment is conducted to answer the hypotheses. Finally, a discussion of findings and the implication for practice and theory are given.





# 2

## LITERATURE REVIEW

To systematically study this research topic, we need to know the independent influence of visual novelty and brand strength on consumer responses. As a result, extensive literature has been read related to consumer perception of product design, the impact of visual product novelty, brand management, brand measurement, etc. Some articles zoom out on the topic of the influence of product appearance on consumer perception, while some zoom in and investigate the exact impact of atypical products on brand perception or consumer response. In general, the literature examined for the project could be classified into three parts: Product appearance and consumer response, visual novelty and consumer response, and the influence of brands.




## 2.1. Product appearance and consumer responses

### 2.1.1. Product appearance

Product appearance pertains to the exterior design of a product that people can easily observe, for example, the body design of a car, packages of fast food, or the overall visual design of a chair( figure2). It is usually the first information that people could get from the product (Creusen, 2015). Some authors use different words to describe product appearances, such as product form (Bloch,1995) or product design (Homburg, Schwemmler,& Kuehnl, 2015). However, they all share a similar meaning.



 Figure 3: Egg chair designed by Arne Jacobsen



## 2.1.2. The importance of product appearance

Product appearance creates brand and product values for consumers (Creusen, 2015). It can convey product information by, for example, looking durable, high-tech, or easy to use. Customers can be attracted or entertained by a product design. Product appearance can communicate brand image through deploying consistent visual elements of the brand identity. Consumers can use product appearance to guide their product evaluation (Page & Herr, 2002).

Product appearance can contribute to product success in four ways, summarized by Bloch (1995). Firstly, product appearance is vital to attract people's attention. A distinctive design can trigger aesthetic appreciation which could contribute to purchase intent (Celhay & Trinquencoste, 2015). Secondly, product appearance can communicate both product-related information and brand information. Companies like Braun, Smith & Wesson, and Ralph Lauren have their own design philosophies and utilize them in product design to transfer and reinforce corporate values (Forty, 1986). Thirdly, product design could be regarded as an applied art (Bloch, 1995), as people see it every day. The distinctive appearance of the product may stimulate sensory pleasure. Fourthly, compared to fast-moving goods, durables will stay in users' homes or other environments for a longer time, which will create a long-lasting effect.

As a result, product appearance is vital for different stakeholders. It should be regarded as an integral part of a product and given thoughtful attention in the early phase of NPD (Creusen, 2015).

## 2.1.3. Consumer response to product appearance

When purchasing a product, consumers often have limited knowledge to evaluate the objective performance of the product. Therefore, product appearance is sometimes used as an important cue to make predictions about the product performance subjectively (Mugge & Schoormans, 2012a). Put differently, the appearance of a product influences consumer decisions.

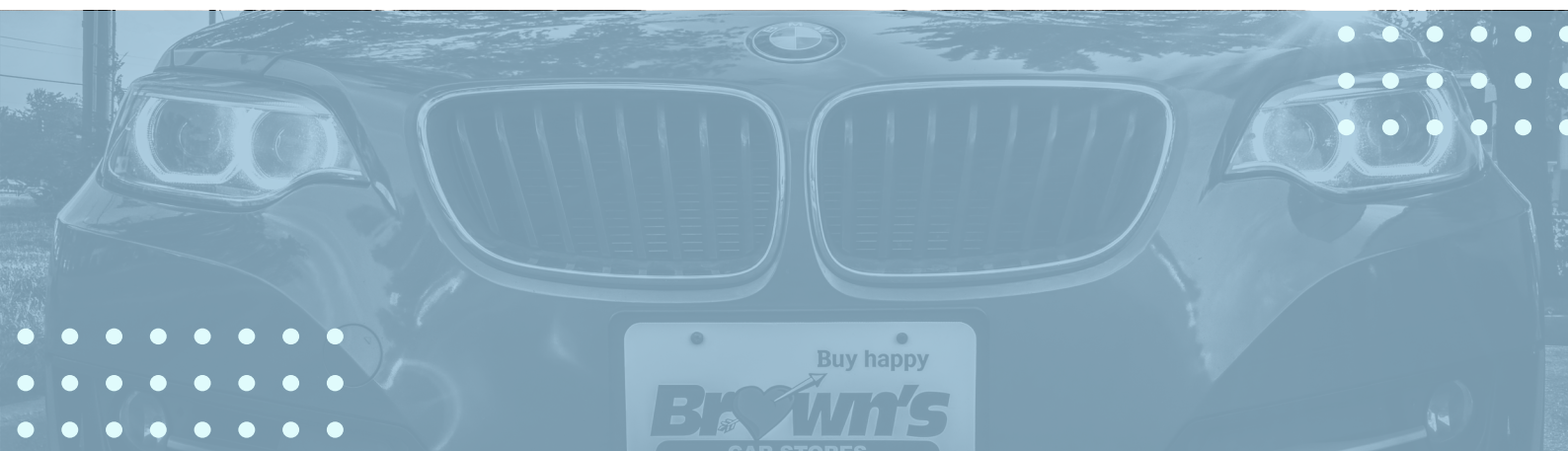




A general notion mentioned by many authors is that an attractive product appearance can induce more positive impressions regarding performance quality from consumers (Page and Herr 2002, Creusen and Schoormans 2005; Mugge & Schoormans, 2012a). It is coherent with the theory "what is beautiful is good" (Dion et al., 1972). The theory shows that people tend to associate good impressions with beautiful things. However, a person wearing glasses is normally perceived as more intelligent, although their attractiveness will be decreased. As a result, there might be other design principles about how the physical features like product appearance can contribute to more favorable product evaluations, except 'what is beautiful is good' (Mugge & Schoormans, 2012a). Visual novelty can be another feature that has a significant impact on consumer product evaluation. Talke et al. (2009) supported this argument by showing that design newness (similar to visual novelty) is a relevant dimension of product innovativeness. And some companies use it as a useful criterion in the product development process because design newness can significantly impact car sales (Talke et al., 2009). Also, Mugge and Schoormans (2012a) found that visual novelty was associated with technological advancements and thus could directly increase perceived performance quality. As a result, visual novelty can be considered a relevant dimension of product appearance, demonstrating a significant impact on consumer evaluation.

**Six roles of product appearance:** Product appearance plays different roles in the process of consumer evaluation. Creusen and Schoormans (2005) classified six roles in these processes, namely by providing aesthetic value, symbolic value, an impression of functional value, ergonomic value, drawing attention, and influencing categorization. Aesthetic value is the most direct and popular role mentioned by consumers. For example, consumers can be pleased by an attractive product or dislike certain colors or shapes. Consumers can gain symbolic value through product appearances, as people often purchase the product form in their own style to express personal identity or belonging to a social group. Product appearance can convey the functional value or communicate quality to consumers, as a product can look high quality or vulnerable. The appearance of a product can help to form impressions of ease of use (ergonomic roles) by, for example, the complexity level of the design. A distinctive design can help products gain consumer's attention and thus increase the chance of purchase (attention-drawing role). Product appearance can assist consumers in identifying the category that it belongs to (ease of categorization role).

Understanding the different roles of product appearance will help clarify which values in the consumer perception will be examined later when discussing the influence of visual novelty on consumer response, such as perceived quality perception or symbolic value.



## 2.1.4. Moderating influences on the relationship between product appearance and consumer response

Different people with different personalities and tastes in different situations will form various perceptions or even opposite preferences even regarding the same product. How product appearance impacts consumer evaluation depends on several factors: product category-related factors, the type of consumers, brand strength and image, product life cycle, culture and times, and contextual factors (figure 3) (Bloch, 1995; Creusen, 2015). Consumers with different personalities, demographic attributes or amount of product knowledge value different product aspects, so the influence of product appearance will differ. For example, younger people tend to pay more attention to expressive aspects of products (Henry, 2002). Consumers have different levels of involvement in different product categories. For example, more effort is in general paid to the purchase of a car than toilet paper.

**Purchase motivation:** Purchase motivations, as one of the product category-related factors and one aspect of consumer differences, are also important for consumer product evaluation. There are two types of purchase motivations proposed by Park and Young (1983), which are the utilitarian motive

and expressive motive, respectively. If a product is bought for utilitarian motives, people are mainly concerned with functional performance, such as batteries. However, when consumers purchase a product with expressive motives, such as a greeting card or designer sunglasses, the possibility to achieve sensory satisfaction or personal expression may be the main interest for consumers. Some products have both utilitarian and expressive importance to consumers. For example, both the styling and function performance like petrol consumption are critical elements in consumer purchase decisions for a car.

**Brand strength and image:** Brand information is frequently used to assist in making purchase decisions (Keller, 2003). Brands can act as an important cue for quality evaluation (Page and Herr, 2002). Product appearance can communicate images and core values of a brand to consumers. As a result, big brands prefer to use consistent design elements in product form, as they want to be recognized by consumers (Creusen, 2015). (Ps. strong and weak brands will be defined later in this chapter)

After building the general relationship between product appearance and consumer response (figure 4), more in-depth investigations could be added to certain aspects of product appearance, such as visual

novelty, and moderating factors, such as brand strength.

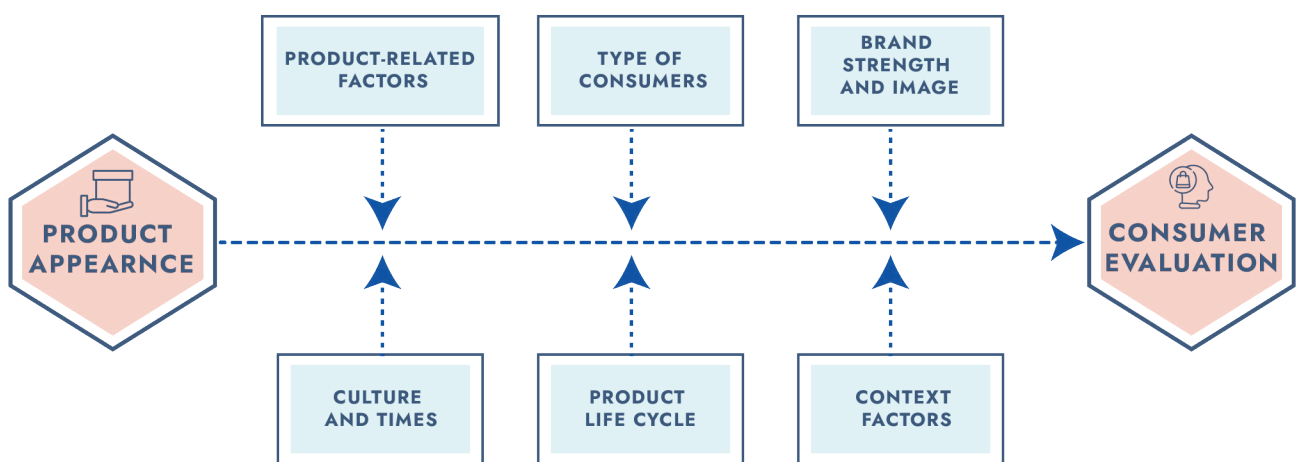


Figure 4: Moderating influences between product appearance and consumer evaluation (based on Creusen, 2015; Bloch, 1995)



## 2.2. Visual novelty and consumer response

### 2.2.1. Visual typicality

Visual typicality and novelty are important design factors of product appearance. Typicality is the similarity that a product has to the representative appearance of the product category (Garber, 1995). Consumers constantly see product variants of a product category with similar design features, so they form a prototype for the product category in their minds. When consumers encounter a new product, this visual prototype will be used as an example to evaluate how a product from a certain product category should look (Hung & Chen 2012; Mugge & Schoormans, 2012). For example, the typical design of a laptop will be like a rectangular flat box in white, grey or black color, while a curved-shaped box in yellow will be regarded as an atypical look. Celhay and Trinquocoste (2015) used category-based visual codes as a similar examination of typicality in package design domain. The same elements which appear on the exterior designs of the majority of products in a category are called category-based visual codes. For example, most beers have half-transparent green colors and

rectangular labels stuck around the middle of the bottle. The authors argued that these category cues help to define the typical look of a package design.

When designers consider choosing a typical design, both benefits and drawbacks should be considered. The more the appearance of a product is typical, the easier a product can be categorized. Typicality helps consumers save time and effort and requires less awareness in processing product information (Blijlevens et al., 2012). People tend to buy a product with a typical appearance in a low involvement purchase, as it can help them save time and effort (Hoyer, 1984). Consumers feel more familiar with a typical product design, as they are constantly exposed to similar products. This familiarity will contribute to a more positive evaluation of a product, according to Zajonc's mere exposure theory (Zajonc, 1968).



This finding is consistent with the 'preference for prototype' theory that the more a product is a prototype of an object, the more preference people have. The linear relationship between typicality and aesthetic preference has been found in various articles and consumer products, such as houses (e.g., Hekkert et al., 2003; Celhay & Trinquencoste, 2015).

### 2.2.2. Visual novelty

Visual novelty pertains to the deviation of the product appearance from the prototype of a given category (Mugge & Dahl, 2013). Some articles use other words to express a similar meaning, such as originality (Hekkert et al., 2003), design newness (Talke et al., 2009), or atypicality (Loken and Ward, 1990). Visual novelty can induce arousal (Bloch, 1995). Consumers can be aroused by a product because of its distinctive appearance. Blijlevens et al. (2012) showed that a positive linear relationship is found between arousal and aesthetic appraisal of product designs and is independent of the influence of typicality.

Visual novelty and typicality coexist in a product but are negatively correlated (Hekkert et al., 2003). The level of visual novelty (typicality) is considered to be relative and measured by comparing with other members of a given category (Celhay & Trinquencoste, 2015). The level of novelty (typicality) depends on how many visual attributes a

product shares with the prototype of a given category (Talke et al., 2009). A product will look more novel when it has fewer visual attributes in common with the prototype.

There are both advantages and disadvantages when applying a novel appearance to a product (figure 5). A novel appearance can easily catch consumers' attention and thus may increase the chance for purchase (Creusen and Schoormans, 2005). Talke et al. (2009) argued that the visual novelty of a product acted as a means for consumers to express personal identity. This is also coherent with the uniqueness theory (Snyder & Fromkin, 1979) that refers to the pursuit of individual identity by product choices. The novel appearance can better communicate the new attributes of a new product to consumers and help the new product to differentiate from other products in the same category (Creusen and Schoormans, 2005). A novel-looking product is perceived to have greater performance quality as it is associated with technological advancement (Mugge & Schoormans, 2012a). However, the novel appearance decreases the perceived usability of a product (Mugge & Schoormans, 2012b), as the new technological advancement is inferred with higher learning costs which may frustrate consumers. The increased learning cost is because no existing category schema is stored in consumers' minds and they need to consciously learn and explore information to understand the new product. Consequently, consumer product evaluation of a novel product can be negatively impacted by high Learning cost inference (Mugge & Dahl, 2013).



Novel products can raise the problem of categorization. An extremely novel product is hard to be categorized by consumers, as they share less visual resemblance with the prototype of a given category. Therefore, it may lose the chance to be considered by

consumers as product alternatives (Celhay & Trinquencoste, 2015). An extremely novel product is also perceived as less aesthetically attractive than a slightly novel product (Blijlevens et al., 2011).

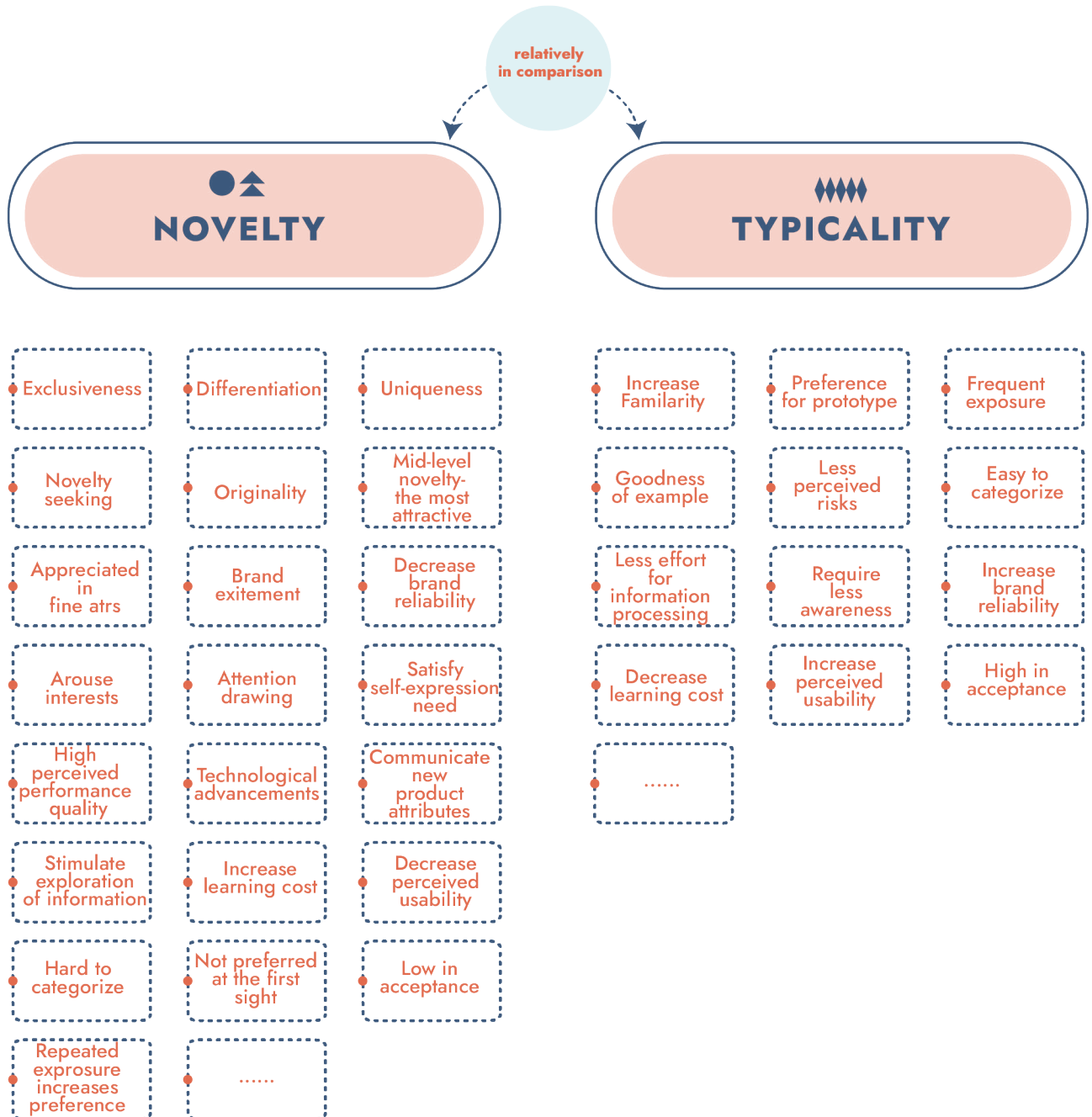


Figure 5: Summary of the key points of visual novelty and visual typicality based on all literature mentioned in this section



### 2.2.3. Consumer preference for visual novelty or typicality

As both visual typicality and novelty have their own advantages and disadvantages, whether designers should adopt a visually typical or novel design for a new product and what factors influence consumer preference for visual novelty is not always clear.

An inverted U shape relationship has been found between typicality and aesthetic preference by many researchers, which means consumers aesthetically prefer a moderate degree of novelty for product appearance compared to a highly typical or novel design (Celhay & Trinquécoste, 2015). Hekkert et al. (2003) had similar results in their research that both visual typicality and novelty positively influenced aesthetic preference, while the best option was the optimal combination of both elements. Aesthetic preference is only concerned with aesthetic value in consumer evaluation of product appearance. As for functional value, Mugge and Schoormans (2012) found that a novel product is perceived to have better performance quality because of its association with technology advancements. According to the discussion above, consumers may prefer a moderate visually novel product because of the contribution to more attractive aesthetics or a visually more novel product because of the better-perceived quality. However, the argument that consumers prefer a more typical design is also supported by some theories, like 'preference for prototype' and 'mere exposure effect' (discussed above). These are contradictory findings. However, Celhay and Trinquécoste (2015) believed that whether consumers preferred a more typical or novel product can be moderated by several factors.

### 2.2.4. Moderating influences between visual novelty and consumer preference

Bornstein (1989) stated that looking for typicality and looking for novelty are two natural human behaviors that coexist in every person. It is natural that people choose what is familiar (or typical) over what is novel because people are adaptive to avoid the potential risk in new things. On the other hand, it is also natural that people favor what is novel over what is typical, as novelty facilitates learning. With the presence of certain conditions, the preferred choices can be either what is typical or what is novel. As a result, whether consumers prefer novelty or typicality can depend on several moderating variables (Celhay & Trinquécoste, 2015; Creusen & Schoormans 2005).

Celhay and Trinquécoste (2015) confirmed several variables (including the perceived risk, consumers' tendency to innovate, consumer product expertise, age, and education level) that moderate the relationship between perceived typicality and consumer preference in package design. For example, consumers who are experts in the product category or have a high willingness to innovate tend to prefer a more novel design, and when consumers are in a high-risk purchase situation, the most typical design will be chosen, but in a low-risk purchase situation, consumers have no specific preference.



The type of technological innovations also has significant moderating influences on consumer choice of a novel-looking product or a typical-looking product. Consumers favor a typical design for incremental technological innovation because of knowledge transfer provided by typicality. At the same time, no preference for the level of novelty was found for radical technological innovation (referring to innovations that people can not categorize based on prior experience and disrupt their existing usage habits) because people lack baseline knowledge (Lee, 2019; Mugge & Dahl, 2013). The consumer preference here is concerned more with the functional value of product appearance because consumers are more concerned with learning costs attached to new innovation or a novel look. Besides, Zhu et al. (2020) demonstrated the moderating effect of product categories on consumer purchase intention for products with different levels of visual novelty. For hedonic products, consumers prefer a more novel

design, as higher visual novelty can induce pleasure. While for utilitarian products, consumers like a less novel design because the functional need can be better met by a typical product appearance which gives a more reliable impression and is associated with fewer risks (Schnurr, 2017).

Now we know how visual novelty influences consumer preference in general (figure 6). However, the impact of the brand has not been taken into account in this relationship, as little research has been done directly on this topic. So in the next chapter, a more in-depth analysis will be made about how a brand (or brand strength) influences product appearance and its relationship with visual novelty, as a bridge to investigate the joint influence of brand strength and visual novelty on consumer preference.

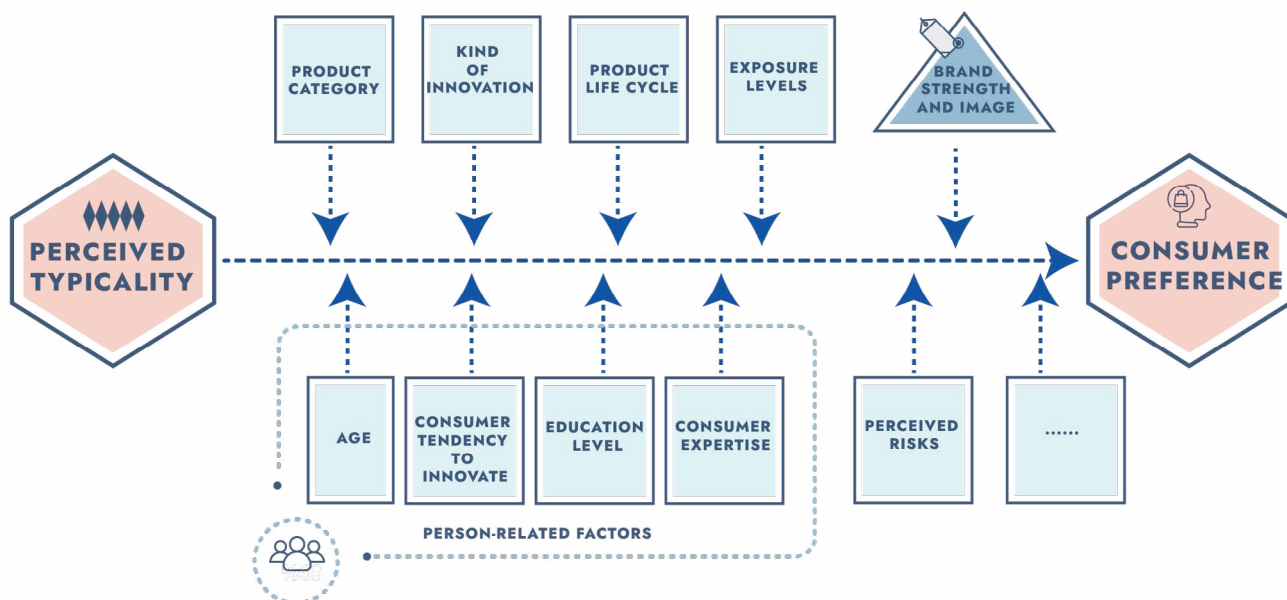


Figure 6: Moderating influences between novelty and consumer preference based on Celhay and Trinquécoste (2015), Zhu et al. (2020), Mugge and Dahl (2013), etc

## 2.3. The influence of brand

Nowadays, focusing on the physical value of the business is far from enough to guarantee success. Therefore, companies put great emphasis on the intangible value of the business existing in the mind of consumers, which refers to the value of brands (Kaplan, 2007). The power of brands can help companies to charge higher price premiums, ensure stable customer loyalty, and promising future sales (Fischer et al., 2010). 'Brands not only create value for companies, but people also use brands to demonstrate who they are in the world and how they want others to perceive them' (Beverland, 2018, p3). Beverland (2018) and Fischer, Volckner and Sattler (2010) emphasized the expressive value of a brand, in that brands give consumers the ability to project their identity goals to other audiences.



Figure 7: personal care products of The Body Shop

### 2.3.1. The interaction between brands and product appearance

Product appearance and brand perception are closely linked. Product appearance can be used to communicate information about brands. For example, the identity of a Brand is conveyed visually in the physical elements of product appearance, which consumers use to reinforce their impression of a brand (Schmitt and Simonson, 1997). Consumers may make connections between the meaning of a brand and the visual attributes of a product. Therefore, many companies keep a consistent visual language of brands in terms of color combinations, layout structures, or the style of photography, and they also use this visual language in product design. For example, the body shop deploys a simple layout and green colors in their package design to convey the brand image of being organic,

environmentally responsible, and generous (figure 7). This visual consistency can again reinforce the brand image of companies, especially for big corporates who want to be recognized by consumers (Creusen, 2015). The perception and evaluation of product appearance and brand can influence each other, according to Schnurr (2017). The author talked about the spill-over effect from product perception to brand perception. If consumers regard the product appearance as bold, this perception of boldness may spill over to the brand, which will also be perceived as brave. Furthermore, the author found out that a novel design could increase brand excitement as the product was perceived to be more interesting. On the other hand, a novel design would decrease brand reliability as a novel design can make it hard to understand its benefits without further explanations and is thus considered to be less functional ( figure 8).

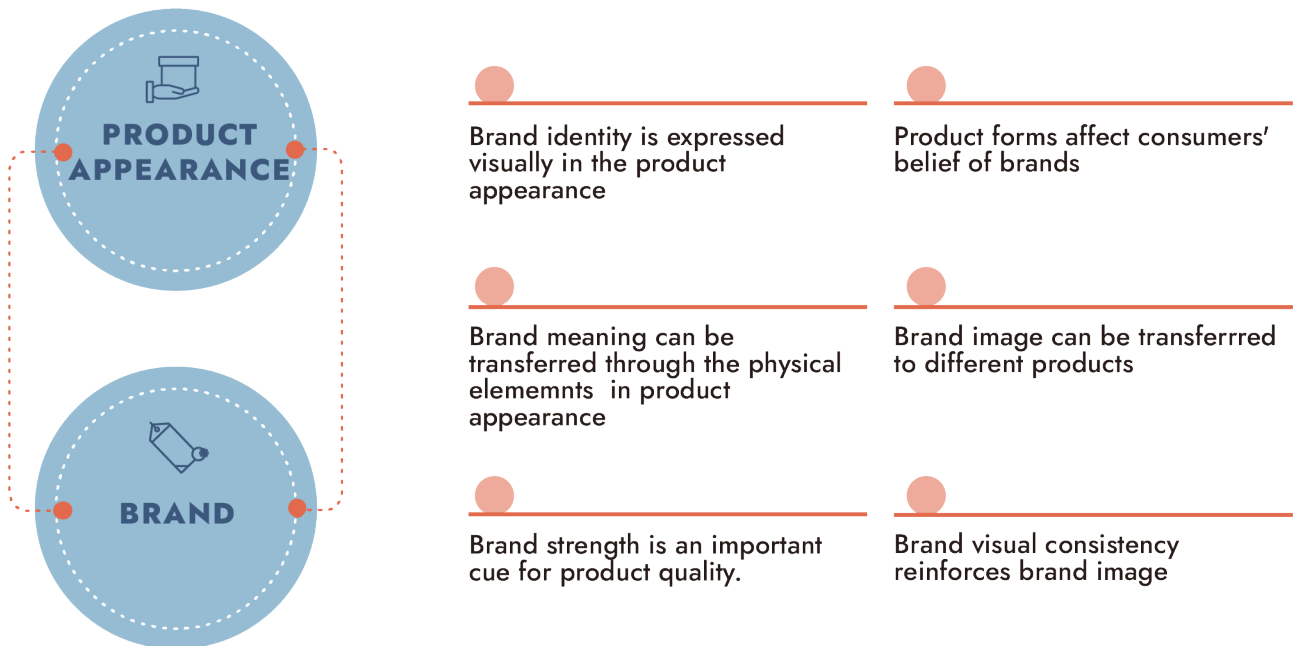


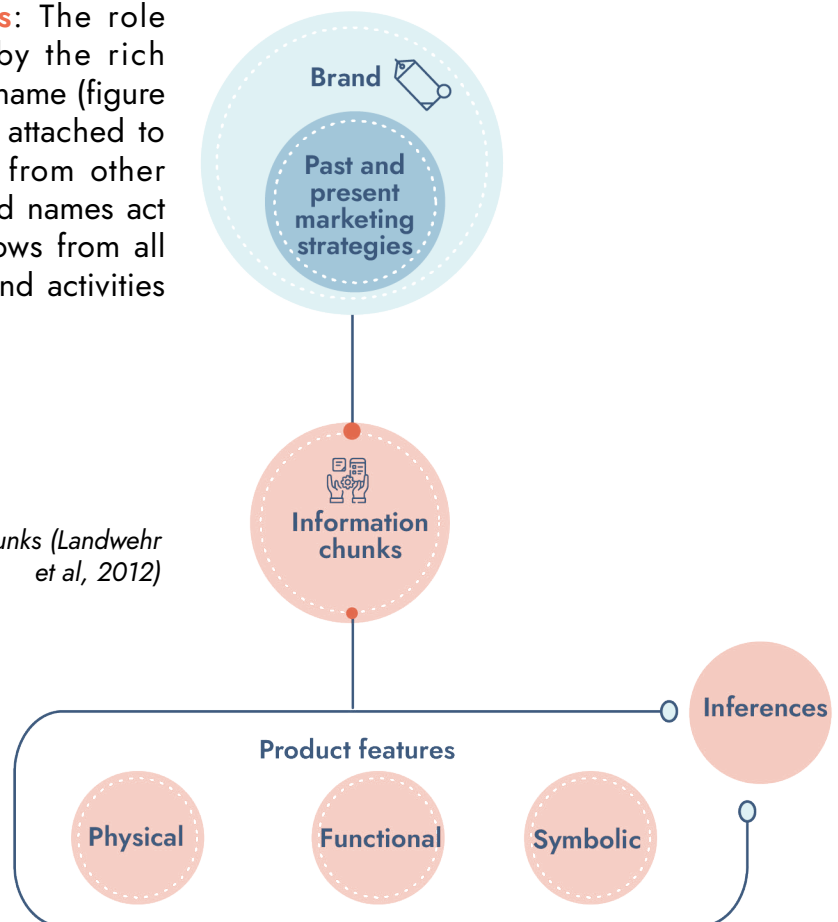
Figure 8: Interactions between product appearance and brand perceptions

## 2.3.2. Roles/Functions of brand

Brands often play important roles in the process of purchase decisions and consumption (Fischer et al, 2010). Landwehr et al. (2012) explained in their experiments on cars that people would use brand names for quality and performance judgments of cars, besides product aesthetics. Also, Page and Herr (2002) emphasized the importance of brand for consumer evaluations of products and argued that brand names can attract consumers, form an initial impression, and guide product evaluation. In general, there are two major functions (roles) of brands that exist in the consumer purchase and consumption process: performance risk reduction and social demonstration (Fischer et al., 2010).

**Brand as information chunks:** The role of risk reduction is realized by the rich information contained in a brand name (figure 9). A brand is not only a name attached to a product that differentiates it from other products. More importantly, brand names act as 'information chunks' that follows from all the marketing strategies and brand activities

of firms. This information can help consumers to make inferences about utilitarian features (physical, functional features), and expressive features (symbolic features) of products (Landwehr et al., 2012). In real life, the information and knowledge about products between companies and consumers are imbalanced, so a brand can act as a bridge to transfer the quality or symbolism information of a product to consumers, while consumers decrease their costs for information gathering (Landwehr et al., 2012). Similarly, Fischer et al. (2010) used the concept of 'information economics' to refer to the importance of brands as a signal to reduce the perceived risk in purchase decisions.



» Figure 9: Brands as information chunks (Landwehr et al, 2012)

Consumers use their prior experience and what they know about the overall quality of brands as a cue to form reasonable expectations about the quality and functional attributes of current products. In this way, consumers reduce the perceived risk for purchasing (Fischer et al., 2010). Snoj et al. (2004) mentioned that perceived risk in product purchase is a multidimensional concept, including financial, functional, physical, psychological, and social risks. The risk-reduction function of brands in Fischer et al.'s article mainly refers to reducing functional risks which relate to a product's inability to meet functional performance or quality expectations. Some authors phrase the functional risk as performance risks (Sweeney, Soutar & Johnson, 1999). Besides, brands can also help people to reduce social or psychological risks, which is related to the negative impact on consumers' self-image or social status because of choosing a wrong product, since brands can also provide symbolic information about a product.


Social demonstration as the other role refers to the projection of self-identity enabled by brands. Belk (1988) showed that consumers use their brand choice to show the kind of person that they are or want to be. Brands can also be a means for consumers to demonstrate their status and belonging to certain social groups (Fischer et al., 2010). For example, Apple is often associated with creative communities, and the purchase of Apple products may make one feel more creative or let others think they are creative people. As we can see, the symbolic demonstration is aided by information related to meaning associations that brands provide.

### 2.3.3. Brand strength

Brand strength indicates the influence of brands on consumer choices. The measurement of brand strength captures the overall attractiveness of brands in the mind of consumers (He & Calder, 2020). Page and Herr (2002) mentioned that brand strength relates to the associations of a brand in consumers' minds and can be closely linked to brand attitude. So, brand strength is measured by how much people know about a brand and favor a brand. It also indicates a brand's ability to serve as 'information chunk'.

It seems that brand strength is a non-monetary measurement, but, according to Sinclair and Keller (2014), brand strength is essential for evaluating the brand value and identifying how much of sales are contributed by brands. If a brand creates value, brand strength can determine consumers' willingness to pay for the brand over the baseline that no brand exists. Brand strength and brand equity sound similar and can both be used to measure the value or influence of a brand, but actually, they are different. Brand equity measures the subjective perception of the meaning of a brand in the mind of consumers (He & Calder, 2020). However, brand strength should link brand equity to the actual consumer choices (Srinivasan, Hsu, & Fournier, 2012). Accordingly, brand strength is more closely related to purchase decisions than brand equity.





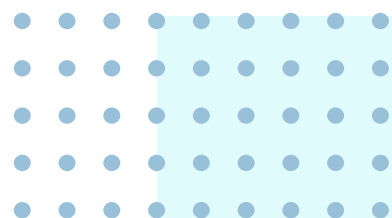
Based on the analyses above, strong brands can have greater influences on consumers' product choices, compared to weak brands, by providing more information to form reasonable perceptions about the overall product attributes and reducing the subjective risks associated with purchases (Landwehr et al., 2012; Fisher et al., 2010). Conversely, weak brands have less impact on consumer decisions, as they provide limited information for people to understand a new product and build trust in purchase decisions.

### 2.3.4. Influence of brand strength on consumer perception

As discussed above, brands have a significant impact on consumer evaluation processes. However, how brands or, more specifically, brand strength influences the consumer perception and evaluation of product design, especially visually novel ( or typical) product design, remains unknown. So, the following part will demonstrate relevant findings in existing articles to shed light on these questions.

Page and Herr (2002) proved that brand strength had a significant influence on consumers' quality judgments. In their experiments with laptops, products were perceived as having higher quality when paired with a strong brand than a weaker brand because a strong brand can be used as a highly diagnostic cue for quality prediction. Conversely, consumers have little knowledge about a weak brand and can only make inferences based on product appearance if it is the only information at their disposal. So a strong brand plays an effective role of performance risk reduction in forming positive quality judgments.

In addition, Landwehr et al. (2012) interestingly found that brand strength does impact consumer choices in a way that consumers are more confident to use product aesthetics to guide their decision processes when cars come from a strong brand. Moreover, the fact that consumers attach more weight to product aesthetics in purchase decisions for a strong brand only happens when perceived risk is high, not low, implying that brands played the role of risk reduction in this case. The authors explained that a strong brand could guarantee that their cars meet the minimal functional need concerned by consumers, and hence they may have more bravery to choose a more attractive car. Goh et al. (2013) believed that consumers relied more on the visual similarity to the prototype of a product category to evaluate a product for a weak brand than a strong brand, as weak brands are less capable of providing enough cues to form reasonable consumer attitudes. Consequently, typical elements of product appearance are more important for consumer evaluation processes for weak brands than strong brands.





### 2.3.5. Brand and product appearance influence in Consumer evaluation processes

Consumers with different needs will look into different product information and brand information. Thus the brand and appearance influence on consumer decisions will vary accordingly.

Macinnis and Jaworski (1989) identified two types of consumer needs: utilitarian and expressive needs. The utilitarian need is the requirement for products to remove and avoid problems, while the expressive need refers to the need to provide social and aesthetic utility. The two types of need can stimulate the corresponding purchase motivations. Utilitarian motives pertain to consumers' emphasis on cost benefits and functional performance of products in their purchase decision. With this type of motive, consumers pay more attention to the practical (functional) and ergonomic value of product appearance (Creusen, 1998). Whereas expressive motives refer to consumers' focus on their self-concept and the projection of individual desired images to the outside audience. Expressive motives can be divided into symbolic and hedonic motives, with which consumers are interested in the symbolic and hedonic value of product appearance, respectively, and

pay more attention to the intangible product attributes (Creusen, 1998). Consumers with hedonic motives are highly concerned with the sensory pleasure (refer to aesthetic pleasure in this article) that a product can provide. Symbolic motives include the need for social acceptance, which means the need to gain positive evaluation from others, and ego gratification, which refers to the need to enhance and express self-identity (Ratchford, 1987; Vaughn, 1980). Motivations are defined as goal-directed arousal (Park & Mittal, 1985).

The goal of assessing purchase motivation in this research will be to assess the desire to process different product information (or precisely product appearance) and brand information, more specifically functional or expressive information. If we integrate all the relevant information, the following routes can be built (figure 10). Consumers with utilitarian needs have utilitarian purchase motivations, so they are inclined to look into the functional and ergonomic value of product appearance and focus on the brand role of performance risk reduction to help product evaluations (e.g., does the look or brand names imply good quality). Consumers with expressive needs have expressive purchase motivation, so they pay attention to the symbolic and aesthetic value of a product and activate the brand role of social demonstration to facilitate the forming of product impression (e.g., does the look or brand names help me to express who I am).





In these processes, one route is mainly concerned with the utilitarian aspects of the consumer evaluation process, while the other focuses on the expressive aspects. Besides, the reliability and validity of these two dimensions for consumer product evaluations are proved by many authors (Macinnis &

Jaworski, 1989; Voss, Spangenberg, & Grohmann, 2003; Homburg, Schwemmler & Kuehnl, 2015; Ratchford, 1987).

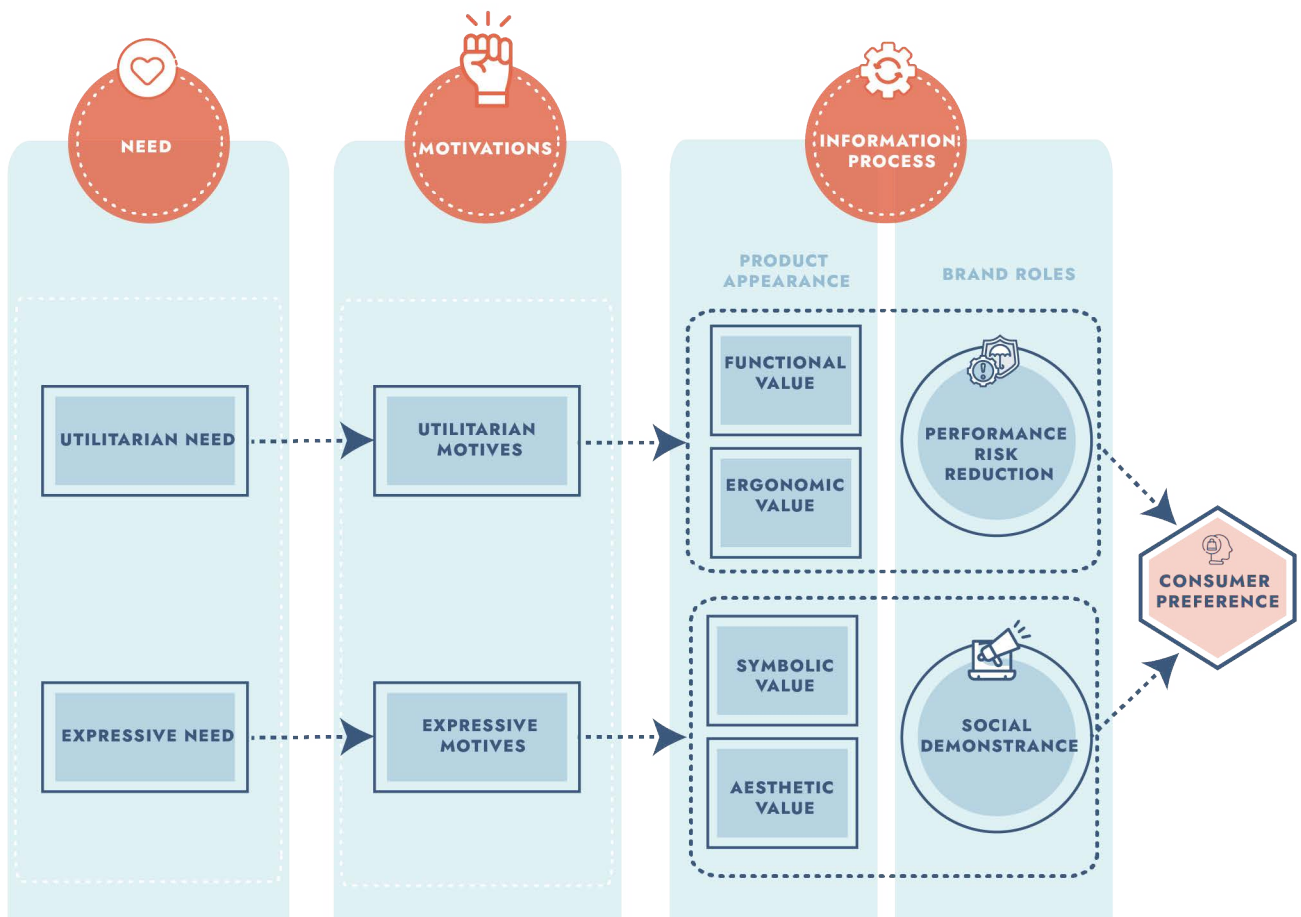


Figure 10: Consumer evaluation processes with the influence of brand



# 3

## HYPOTHESES



After synthesizing relevant literature and drawing connections in papers, it can be concluded that the joint influence of brand strength and visual novelty on consumer responses can be moderated by some factors, such as the type of consumers or product category (Creusen, 2015; Zhu et al., 2020; Celhay and Trinquécoste, 2015). In this chapter, we will discuss the joint influence of brand strength and visual novelty on consumer preference, mainly for products with both utilitarian and expressive importance to consumers. Several possible hypotheses regarding consumer decisions will be proposed accordingly.



## 3.1. Influence of purchase motivations

### 3.1.1. Classification of products

The expressive and utilitarian dimensions of (or, more precisely, purchase motivations underlying) consumer evaluation processes can be linked to different types of products (Voss et al., 2003; Ratchford, 1987). In this research, by arranging different combinations of purchase motivations, products will be grounded into three categories (figure 11): utilitarian products, expressive products, and products with both utilitarian and expressive importance. Utilitarian products refer to products that people mainly want to meet their functional performance needs and seek the brand role of performance risk reduction, such as a sander or laptop stands. As for expressive products, people want to realize aesthetic pleasure, gain prestige, or express personality by products or brands, such as handbags or designer sunglasses. So the brand role of social demonstrance


can be more relevant. There is a third type of product and the most popular type in which both utilitarian needs and expressive needs are important for purchase decisions, such as cars, motorbikes, or headphones. People attempt to achieve both utilitarian and expressive motives in a single purchase of such products. Products with expressive importance tend to be socially important products which are more visible to other people and often associated with social values (Creusen, 2015; Williams, 2002).



Product category moderates the relationship between visual typicality and consumer preference. Mugge and Dahl (2013) found that consumers form positive evaluations for washing machines, hairdryers, and cameras with low levels of visual novelty. These products are evaluated mainly on the functional attributes by consumers. Hekkert et al. (2003) argued that seeking novelty was very appreciated in abstract paintings and drawings, focusing more on the expressive need of consumers. In contrast, a linear relationship between typicality and aesthetic preference has been found in many human artifacts, such as consumer goods and houses, which attend more to utilitarian needs (Hekkert

et al., 2003). A summative finding was showed by Zhu et al. (2020) that people tend to choose less novel designs for utilitarian products and more novel designs for hedonic products, because a higher level of novelty can induce more pleasure to meet the need for hedonic consumption and deploying the goal of 'satisfying functional need' will lead to less novel design. However, the authors do not consider the symbolic value of products when classifying products; hedonic goods are often purchased for the goal of self-expression or for signaling social status (Belk, 1988; Alba & Williams, 2013).



 Figure 11: product categories

In this research, we look into products with both utilitarian and expressive importance, as most products provide both values to consumers (Ratchford, 1987). Even for expressive products, people still pay attention to their quality or functional features. For example, expensive watches, for which people use more feeling than thinking motives and modes of information processing in purchase decisions (Rachford, 1987), are also evaluated

frequently on their quality and functionality. A too novel design may make consumers wonder how to use it and decreases usability (Mugge & Schoormans, 2012b) (figure 12). As for utilitarian products, people who attach high importance to the beauty of product appearance may still choose a more attractive design (Bloch, Brunel & Arnold, 2003).



Figure 12: A novel watch designed by Alexander Sorokin (Source: Behance)



## 3.2. Consumer decisions for products with both utilitarian and expressive importance

For products for which people attempt to achieve both utilitarian and expressive goals, there are still priority levels between the two goals. According to the regulatory focus theory, utilitarian goals seem to be the prior goals that people want to achieve, as people are not willing to compromise on functional goals but are willing to compromise on hedonic or symbolic goals (Berry, 1994; Aaker & Lee, 2001). In other words, people need to fulfill their utilitarian needs first before they pursue expressive needs (Berry, 1994; Landwehr et al., 2012). Similarly, Chitturi, Raghunathan, and Mahajan (2007) found that when a product exceeds the basic functional and hedonic needs, a hedonically superior one will be favored over a functionally superior one. They call this phenomenon the

principle of hedonic dominance, meaning that people may not care about the hedonic benefits unless they know that the product can meet the minimal requirements for functional performance. So, for products with both utilitarian and expressive importance, people may want to first meet the utilitarian goals and leave out the expressive goals by choosing a more typical-looking product if product appearance is the only information at their disposal. It might be due to that a typical design helps to create familiarity and thus reduce the perceived risks for people (Bornstein, 1989; Page & Herr, 2002, Schnurr, 2017).



However, a strong brand can increase the average perceptions of product qualities and create reliable trust in products' expected performance (Fischer et al., 2010). Hence, people may believe a product from a strong brand meets the minimal utilitarian requirements (Landwehr et al., 2012; Chitturi et al., 2007). When a product is from a strong brand, people can use the brand as a more powerful signal to reduce perceived performance risks instead of using a typical design (Fischer et al., 2010; Page and Herr, 2002), as the name of a strong brand provides sufficient information for consumers to make predictions about the possible quality and reduce subjective performance risks. According to the principle of hedonic dominance or regulatory focus theory discussed above, a more novel-looking product may be favored to meet the expressive goals of pursuing uniqueness and differentiation after the functional requirements are met. Schnurr (2017) found that consumers regard atypical design as being more interesting and exciting. Hence a more novel design may enhance the perception of uniqueness in people's minds and gives people more possibility to express their distinctiveness. Wu and Lee (2016) found that the perceived product uniqueness positively impacts product attitude and purchase intent. The authors argued that people will have more need for uniqueness and value atypical design in some situations.

So perceived product uniqueness indicates the ability of the product to express personal uniqueness or differentiate people from others.

In conclusion, for strong brands, higher visual novelty may increase consumers' perception of product uniqueness and help them to develop personal uniqueness, leading to positive consumer responses. So for strong brands, perceived product uniqueness may mediate the effect of more novel design on consumer preference (figure 13). In agreement with the reasoning, Landwehr et al. (2012) showed a similar finding that people tend to choose more attractive cars if they know the cars are manufactured by strong brands. Cars, in this case, are good examples of products with which people want to demonstrate their social status and personal tastes and do not want to sacrifice their utilitarian needs, such as safety. Sign value (or sign function), as a similar concept to perceived product uniqueness, also indicates the ability of a product to express an image of its consumer or user in social communications (Evrard & Aurier, 1996). We decide to use perceived product uniqueness as the formal wording in the present research, as perceived product uniqueness also includes the uniqueness perception of the product.

**H1: For strong brands, perceived uniqueness mediates the effect of visual novelty on consumer preference, as higher levels of visual novelty increase the perceived uniqueness of the product.**





In contrast, a weak brand is less capable of reducing the perceived performance risks, as people cannot infer the possible product quality based on the limited information provided by a weak brand. Hence, a product from a weak brand may fail to meet consumers' utilitarian goals. Then people may not be interested in the expressive benefits this product provides, such as a more novel and exclusive appearance. They may first make sure the product can meet the functional need and thus choose a typical-looking product as a supplement strategy to reduce performance risks recommended by Ladwein (1998). In Mugge and Dahl's (2013) experiment on washing machines, cameras, and hair dryers (which are evaluated largely on functional performance or quality levels by people), more positive attitudes are generated for the products with low levels of design newness, because a more typical design helps people to transfer their existing knowledge about the product category to effectively use a new product.

Low levels of visual novelty are proved to be able to increase consumers' familiarity with the product and reduce perceived

risks attached to purchase choice (Zhu et al., 2020; Celhay and Trinquencoste, 2015; Schnurr, 2017). In Celhay and Trinquencoste's experiment about wine labels (2015), the most typical-looking label is chosen when people feel the purchase situation involves high risk, such as buying a bottle of wine to bring to a wine expert's home. Similarly, Ladwein (1998) showed a direct positive linear relationship between perceived typicality and purchase intent under high perceived risks. Also, Wu and Lee (2016) proved that consumption risk (refers to the uncertainty in product performance and negative consequence on product expectations) is negatively related to product attitudes and purchase intention. Put differently, when the perceived risks are low, people may generate more favorable and positive attitudes towards products and increase their purchase intention. In this case, perceived risks mainly refer to perceived performance risks. As a result, perceived performance risks may mediate the influence of visual novelty on consumer preference (figure 13).

**H2: For weak brands, perceived performance risks mediate the effect of visual novelty on consumer preference, as low levels of visual novelty decrease the perceived performance risks.**

**H3: When purchasing a product with both expressive and utilitarian importance, consumers prefer a more novel design for a strong than for a weak brand.**



*When purchasing a product with both expressive and utilitarian importance, consumers prefer a more novel design for a strong than for a weak brand.*

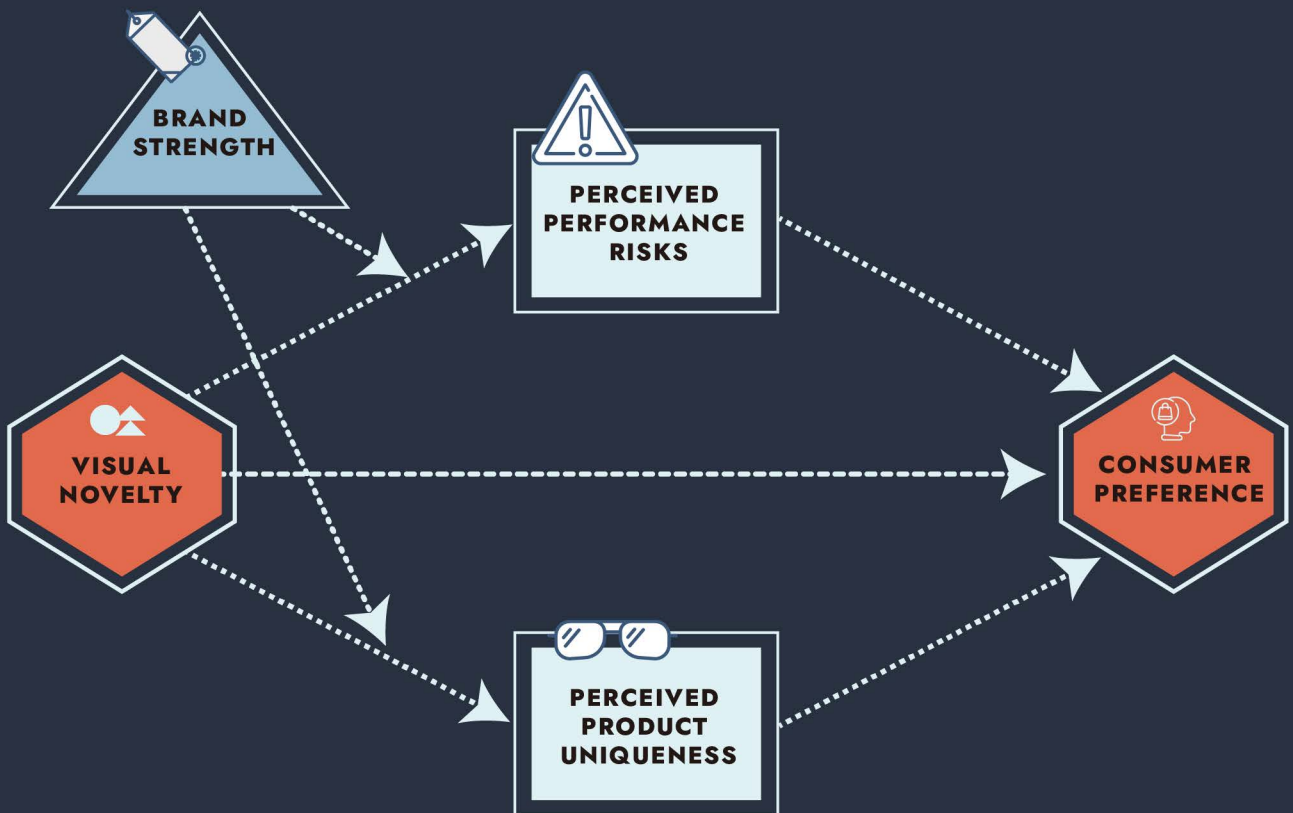


Figure 13: The model for consumer responses regarding products with both utilitarian and expressive importance



# 4

## METHOD

To investigate the joint influence of brand strength and visual novelty on consumer preference, we conducted an experimental study. A pretest was done to select a more novel-looking and a less novel-looking product, and a weak and a strong brand for each of two product categories. After the pretest, four conditions can be created by pairing the two chosen product designs with two brands for each category. In the main study, participants were presented with two stimuli (from two different categories) with the same level of visual novelty and brand strength. The corresponding brand names were shown beside the product pictures. Participants were asked to rate several variables, including consumer preference, perceived performance risks, and perceived product uniqueness.



## 4.1. Product category selection

To select the proper product categories, several criteria are generated (figure 14). Firstly, because the importance of brands is different across various categories (Fischer et al., 2010), brands should be important for the product category. Hence, we can observe a more significant impact of brands on consumer response. If a brand is not important for the category, we can not observe the interaction with visual novelty. Secondly, products need to have both utilitarian and expressive importance for consumers. Thirdly, they should be medium to high-involvement products, which means that consumers will exert some efforts to evaluate product information. Fourthly, the products have high penetration levels in the market, which means the majority may have prior experiences with

the products so that the research data can be more meaningful and realistic. fifthly, the products are not gender-specific, such as handbags or shavers, as some products have prominent designs, targeting females or males, like a female shaver with pink color, which a male would not choose. It will avoid the influence of gender on data.



According to Fischer et al. (2010), brands are perceived as highly important for durable products, compared to fast-moving consumer goods (FMCG), services, or retail businesses. Besides, durables have both utilitarian and expressive importance for consumers (Fisher et al., 2010). Although durables are often purchased for utilitarian value, aesthetic value plays a role in purchase decisions, as they are often visible to others and often stay in a home for a longer time (Creusen & Schoormans, 2005). So durables are a good option for the study. After comparing lots of durable products based on all the criteria, electric water kettles and Bluetooth speakers

were chosen. These two products have lots of design variants in the market, which can help choose products with different levels of visual novelty. Although these two products have both expressive and utilitarian value for consumers, electric water kettles may be purchased slightly more for utilitarian reasons, while Bluetooth speakers (often refer to portable speakers using in the outside environment) may have higher visibility and are probably considered more for their expressive value. This consideration of inclined-utilitarian or expressive motivation is to increase the generalizability of the results.



Figure 14: criteria for the product categories

## 4.2. Participants

One hundred fifty-nine people (Mage = 29, 52% male) aged between 20-50 from an online panel participated in the main study. This age group covered the majority of the consumer groups for electric water kettles and Bluetooth speakers but probably did not vary too much in response towards such ordinal durables to limit the influence of ages on consumer preference for product appearance. For example, younger people show more tolerance of ambiguity and have more tendency to accept a novel design (De Bont et al., 1992; Celhay & Trinquecoste, 2015). Electric water kettles and Bluetooth speakers are popular consumer products that are often seen in people's lives and have relatively high market penetration levels. Most of the participants (95%) lived in the Netherlands for more than five years. Hence, we assumed people who lived in the Netherlands for more than five years should have similar basic knowledge with these product categories and corresponding brands.



**159**  
participants



**52%**  
male



**95%**  
living in the Netherlands  
more than five years



**29**  
mean age



Figure 15: demographic data of main study participants



## 4.3. Stimuli

The pretest aim was to select two products with two levels of visual novelty (more novel and less novel) and two brands (weak and strong) for electric kettles and Bluetooth speakers, respectively. Firstly, an internet search in the popular Dutch online shopping websites, such as bol.com, Amazon.nl, Mediamarket, Blokker, etc., was conducted to collect lots of product images with various visual novelty and brand names as a base. Then nine more novel products and six less novel products for kettles (figure 16), and nine more novel products and six less novel products for speakers (figure 17) were identified after subjective comparison within the supervising team. It was more challenging to select a novel design than a typical design. Hence, visually novel options were more than the options for typical images. The chosen product images all obeyed the selection criteria: no specific style (like retro style), no recognizable design or brand design, similar colors and materials (kettle in grey or black metal; speaker in black plastic or fabric). Meanwhile, these pictures were also enhanced

by Photoshop, in terms of shape, color, or proportion, to manipulate the levels of visual novelty as well as decrease the influences of other aesthetic elements such as shadows and reflections. Besides, the brand logos were erased from the designs.

As for the brand stimuli selections, four stronger and five weaker kettle brands (figure 18), and five stronger and five weaker speaker brands (figure 19) were identified through reading consumer reviews and using the website function of sorting by popularity. All selected brands were kept in neutral positioning (not low-end or high-end) without recognizable iconic brand design. If people know a brand has a strong design style, it would be strange to put a product image in other styles under this brand name, which could influence people's judgements. These whole processes were conducted for both categories, respectively (figure 20).







◀ Figure 16: kettle images used in the pretest

◃ Figure 18: brand names of kettles used in the pretest



⤴ Figure 19: brand names of speakers used in the pretest

⤵ Figure 17: speaker images used in the pretest

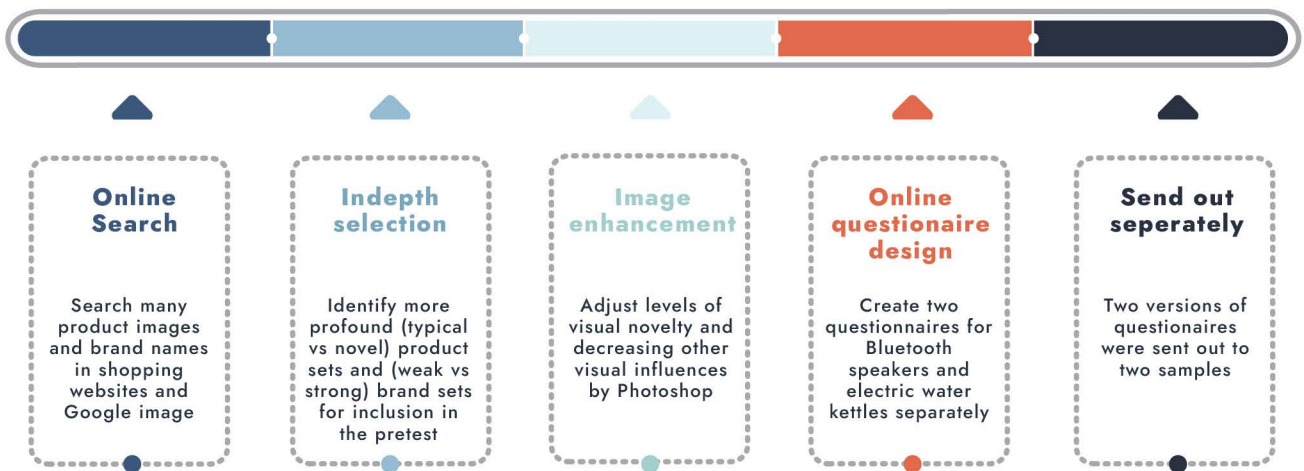



After that, two questionnaires were created for Bluetooth speakers and electric water kettles separately. Each questionnaire was sent to a different sample of 31 participants (Age range: 20-51,  $M_{age}=29$ , 52% male) for electric water kettles and 30 participants (Age range: 20-42,  $M_{age}=27$ , 43% male) for Bluetooth speakers. Both product designs and brands of the same category were rated in one questionnaire. Firstly participants were shown an overview of all the products that they would encounter in the later pages to form an overall impression. Next, one participant rated all products on several scales (visual novelty, attractiveness, and ease of use). After the ratings of product design, participants were shown an overview of all the brands that would appear on the following pages. Then they rated each brand on scales of familiarity and liking. In the last part of the survey, some additional questions regarding the usage frequency of the products, purchase time of the products, living time in the Netherlands, and some basic demographic information were asked. The order of product images and brand stimuli was randomized. Additionally, below each product image, participants were asked whether they could recognize

the brand of this product. This question was to avoid certain products with recognizable brand designs, especially for a strong brand (e.g., SMEG). The average fill-in time of the questionnaire was 620 s for the kettle questionnaire and 408 s for the speaker questionnaire.

Visual novelty was measured on 9-point scales ("not very typical-looking/very typical-looking for the category," and "unusual-looking/usual-looking") modified according to the scales of Veryzer and Hutchinson (1998). The adoption of the 9-point scale instead of the commonly used 7-point scale was to observe more subtle differences in the data when there are many options to be compared. The following control variables that may influence the results were also checked to make sure that the chosen products were not varied in other dimensions except visual novelty. Attractiveness (unattractive/attractive) and ease of use (not very easy to use/very easy to use) were measured on 9-point scales adapted from Mugge & Dahl, 2013 (figure 20).

## P R E T E S T   P R O C E S S



 Figure 20: pretest processes

There are many ways to measure brand strength. In popular brand ranking websites, such as Interbrand, the evaluation of brand strength takes into account the impact of different stakeholders on business, namely customers, employees, and investors. However, He & Calder's model for measuring brand strength is based directly on the ability of a brand to influence consumer decisions (2020). In this research, we looked into consumer perception of products, so the power of brands to influence consumer's choices would be more relevant. Therefore, brand strength was measured by consumers' familiarity (very unfamiliar/very familiar) and liking for the brand (dislike a great deal/like a great deal ) on 9-point scales (Page and Herr,2002; Goh et al., 2013) (figure 21).

### 4.3.1. Pretest results

To select the most proper pair differing in visual novelty while not differing much in attractiveness and ease of use for each category, we first compared the mean value of visual novelty and picked the one with the highest and lowest novelty ratings, which, however also differed in attractiveness or ease of use ratings. Therefore, several options of pairings of a novel one and a typical one were proposed to the supervisory teams. All these options were confirmed by non-parametric tests (not normally distributed) that they differed significantly in visual novelty. When pairing products, the products which participants recognized the brand were excluded. By considering the differences in the mean of attractiveness and ease of use, as well as their distribution, two options (figure 18) which had bigger differences in the mean of visual novelty (Kettle:  $M_{typical}=3.84$ ,  $M_{novel}=7.92$ ,  $z=-4.67$ ,  $p<.001$ ; Speaker:  $M_{typical}=2.18$ ,  $M_{novel}=7.32$ ,  $z=-4.79$ ,  $p<.001$  ), and more similarity and balance in the ratings of other control variables was selected for two categories. The chosen options didn't differ significantly in attractiveness ratings but still differed significantly in ease of use. So in the main study, ease of use could be included as a covariate to limit its influence (figure 22).

### Measures for pretests



Figure 21: measures for pretest

A similar analysis was used to choose the brand pair (weak and strong). We looked at both the mean ratings and distributions of brand strength. However, the two items of brand strength-brand familiarity and brand liking can not be merged as one scale for measuring brand strength but should be compared separately because they did not correlate significantly for weaker brand sets. When participants felt very unfamiliar with a brand, they tended to give mid-level rating for likeness, which was also confirmed by a comment from participants saying that 'If I was not familiar with a brand, it is hard to either like it or dislike it..... so I chose the middle one'. We tended to choose the one with around the lowest familiarity and likeness ratings for weak brands, while for a strong brand, the one with around the highest and

familiarity and liking ratings were selected. When decisions were hard to make, we checked whether these ratings' distributions were normal. Finally, Philips and Joccu (Figure 19) were selected as the strong and weak brand stimuli for kettles respectively (Familiarity:  $M_{\text{weak}}=1.23$ ,  $M_{\text{strong}}=8.52$ ,  $z=-4.99$ ,  $p<.001$ ; Liking:  $M_{\text{weak}}=4.74$ ,  $M_{\text{strong}}=7.10$ ,  $z=-4.52$ ,  $p<.001$ ), while Sony and Vanzon were chosen as the strong and weak brand stimuli for speaker respectively (Familiarity:  $M_{\text{weak}}=1.27$ ,  $M_{\text{strong}}=8.07$ ,  $z=-4.85$ ,  $p<.001$ ; Liking:  $M_{\text{weak}}=4.87$ ,  $M_{\text{strong}}=7.17$ ,  $z=-4.49$ ,  $p<.001$ ) (figure 23).

### *Kettle stimuli*



### *speaker stimuli*



### *Kettle brand*

JOCUU PHILIPS

### *speaker brand*

Vanzon SONY

Figure 22: The selected visual novelty pairs- visually novel and typical products

Figure 23: The selected Brand pairs-the weak and strong brands

## 4.4. Procedure

The main study employed a 2 (brand strength: strong vs weak) × 2 (visual novelty: low vs high) × 2 (product categories: electric water kettles and Bluetooth speakers) mixed experimental design. Brand strength and visual novelty were evaluated between subjects. Product category was a within-subject factor. Based on the pretest data, the two products (less novel and more novel) and two brands (weak and strong) were combined to generate four conditions for each category. The stimuli used in each condition are shown in figure 24. In an online questionnaire, each participant rated one condition for both water kettles and Bluetooth speakers. The level of visual novelty and brand strength were kept the same, which meant if one participant rated a typical design and a weak brand for kettles, they then also rated a typical design

and a weak brand for speakers. The order of the two product categories was randomized. Firstly, participants rated the product stimuli on scales of consumer preference, perceived performance risks, perceived product uniqueness, and visual novelty for each category. Next, some additional questions were asked for each category, such as brand-related questions (brand strength and brand sensitivity), category related questions (product usage frequency, purchase time, and purchase motivations for the category). Lastly, participants were asked to answer some personal questions, including need for uniqueness, CVPA (see the later part), and basic demographic questions. The average fill-in time of the questionnaire was 451 s.



Figure 24: stimuli used in the main study



## 4.5.Measures

### 4.5.1.Dependent variables

Positive product attitudes towards product appearance may lead to purchase behavior (Bloch, 1995). Also, Celhay and Trinquécoste (2015) showed that aesthetic appreciation is positively correlated with purchase intent. As a result, purchase intent can be added as a relevant dimension for measuring consumer preference. Consumer preferences ( $\alpha_{\text{kettle}} = .88$ ,  $\alpha_{\text{speaker}} = .88$ ) are assessed on three 7-point scales adapted from Alpert and Kamins (1995), Hardesty, Carlson and Bearden(2002), Truong et al., (2014): How much do you prefer this [product category] compared to other [product category] on the market (I do not prefer it at all / I strongly prefer it); If you would buy a [product category], would you consider to buy this one (definitely not / yes, definitely); What is your overall opinion of this water kettle (negative / positive).

Participants also rated visual novelty (Kettle:  $r_s = -.54$ ,  $p < .001$ ; Speaker:  $r_s = -.70$ ,  $p < .001$ ), attractiveness, ease of use, and brand strength (Kettle:  $r_s = .70$ ,  $p < .001$ ; Speaker:  $r_s = .63$ ,

$p < .001$ ) on 7- point scales with the same items as the pretest, except replacing the item 'usual-looking/unusual-looking' by 'not original/original' adapted from Zhao et al. (2009).

### 4.5.2.Mediating variables

Perceived performance risks ( $\alpha_{\text{kettle}} = .91$ ,  $\alpha_{\text{speaker}} = .87$ ) were measured on three 7-point items: I think this [product category] would be a risky purchase, in the sense that it may not work properly (Jacoby& Kaplan, 1972); I am unsure if this [product category] performs satisfactorily; I am concerned about the reliability of this [product category]. The last two items were modified from Pueschel, Chamaret, and Parguel (2017). All items were anchored by strongly disagree/strongly agree.





To access perceived product uniqueness (  $\alpha_{\text{kettle}} = .93$ ,  $\alpha_{\text{speaker}} = .94$  ), participants rated three items on a 7-point scale: This product reflects its user's uniqueness; This product helps to express its user's personality; This product would help the user in establishing a distinctive image ( Wu & Lee, 2016; Homburg et al. 2015; Mittal & Lee, 1989). All items were anchored by strongly disagree/strongly agree.

### 4.5.3. Covariates

The dependent variable (consumer preference) may also be impacted by the personality attributes of consumers: the need for uniqueness and the importance attached to product aesthetics (refers to 'centrality of visual product aesthetics', shorted as CVPA), because, according to Creusen (2015), the need for uniqueness and CVPA are two critical personality variables that can influence people's evaluation for product appearance. People with high needs for uniqueness are likely to distinguish themselves from others by adopting unusual, atypical, scarce consumer products (Bloch, 1995). Conversely, people with low needs for uniqueness may prefer a more typical-looking product as visual typicality decrease the perceived product uniqueness. As for CVPA, consumer preference for a more novel or typical design can also depend on how much importance people attach to product aesthetics. The more consumers think visual appearance is important, the more they will value the originality of a design and choose a more novel design in purchases. If consumers regard the visual appearance

as a less important attribute to evaluate, a more typical-looking product might be likely be selected (Bloch et al., 2003; Celhay & Trinquencoste, 2015). Hence, CVPA and the need for uniqueness may impact the joint influence of brand strength and visual novelty on consumer decisions and thus should be controlled during analysis.

After assessing two products, each participant rates their need for uniqueness on five 7-point items (see figure 25). These five items were reduced from the twelve items of Ruvio, Shoham, and Brenčič (2008). The reduction of items also refers to the factor loading of the most original 30 items for measuring need for uniqueness by picking the highest loading (Tian, Bearden & Hunter, 2001). However, according to the reliability analysis, the removal of the item "I have often violated the understood rules of my social group regarding what to buy or own" would increase alpha from 0.80 to 0.84. The increase was not so big and both values shows a good reliability of the scales. Hence, all five items will be kept (Five-item scale:  $\alpha = .80$ ).

CVPA ( $\alpha = .80$ ) was accessed on the following 7-point scales (see figure 25) (Kristensen, Gabrielsen and Zaichkowsky, 2012). The items of both need for uniqueness and CVPA are anchored by strongly disagree/strongly agree.



As discussed in the hypotheses part, people with different purchase goals are interested in different product values and thus generate different product attitudes and purchase decisions. Therefore, the influence of utilitarian motivations (Kettle: $r_s=0.60$ ,  $P<.001$ ; Speaker: $r_s=0.53$ ,  $p<.001$ ) and expressive motivations for purchasing product categories on the final result should be considered. Participants were asked what their motivations were when purchasing a [product category] and rate five items (see figure 25) adapted from Homburg et al. (2015) and Gilal, Zhang, and Gilal (2018), ranging from 1 (strongly disagree) to 7 (strongly agree). Regarding the expressive motivations ( $\alpha_{\text{kettle}} = 0.75$ ,  $\alpha_{\text{speaker}} = 0.79$ ), the main study result showed the removal of the item 'It is important to me that an electric water kettle looks appealing' could increase the internal consistency of the expressive motivation scale from 0.75 to 0.92 for kettles, from 0.79 to 0.93 for speakers. It seems there are two separate scales for expressive motivations. The problematic item measures the hedonic motivation (referring to aesthetic pleasure), while the other two items measure the symbolic motivation. But Homburg et al.'s findings (2015) revealed that there are three dimensions of product designs (aesthetics, functionality, and symbolism) and hedonic motives are important dimensions of expressive motivations (Creusen, 1998). If deleting the item measuring aesthetic need, the measure of expressive motivations will be incomplete. Also, the Cronch's alpha of

expressive motivations including all three items reflect acceptable internal reliability. Therefore, all three items will be kept.

Band sensitivity ( $\alpha_{\text{kettle}}=.94$ ,  $\alpha_{\text{speaker}}=.91$ ) was measured by four 7-point items adopted from Fischer et al. (2010) (see figure 25), such as when purchasing a [product category], I focus mainly on the brand, All items were anchored by strongly disagree/strongly agree.

#### 4.5.4. Other Variables

Because how much knowledge and experience people have about a product category and a brand may also influence their product attitudes (Sujan, 1985; Broniarczyk & Alba, 1994), participants were asked their usage frequency and whether and how long ago they purchased one for kettles and speakers. It acted as an indirect way to access product and brand knowledge. Some basic demographic questions, including gender and age, were asked in the end.



## Measures for covariates

### CVPA

- I enjoy seeing displays of products that have superior designs
- A product's design is a source of pleasure for me
- I see things in a product's design that other people tend to pass over
- I have the ability to imagine how a product will fit in with the designs of other things I already own
- when I see a product that has a really great design, I feel a strong urge to buy it

### Expressive motivation

- It is important to me that a [product] looks appealing
- It is important to me that a [product] helps me in establishing a distinctive image
- A [product] would help me to express my personality

### Utilitarian motivation

- It is mainly important to me that a [product] performs well
- To me, a [product] is mainly a practical product

### Need for uniqueness

- Having an eye for products that are interesting and unusual assists me in establishing a distinctive image
- I actively seek to develop my personal uniqueness by buying special products or brands
- I have often violated the understood rules of my social group regarding what to buy or own
- The more commonplace a product or brand is among the general population, the less interested I am in buying it
- I often try to avoid products or brands that I know are bought by the general population

### Brand sensitivity

- When I purchase a [product], the brand plays—compared to other things—an important role
- When purchasing a [product], I focus mainly on the brand
- To me, it is important to purchase a [product] from a well-known brand
- The brand plays a significant role as to how satisfied I am with a [product]



Figure 25 measures for utilitarian and expressive importance (Homburg et al., 2015; Gilal, Zhang & Gilal, 2018)



# 5

## RESULTS

To improve the reliability of results, we did several self-tests by reading very fast through the whole questionnaire (210-300s) to set the baseline (260s) for serious questionnaire fill-in time. We decided to exclude participants who used less than 260s (25 participants), as they might not read and understand the text seriously. One person who made a comment about filling in an unwanted answer was also excluded. So, in total, the responses of 133 participants would be used for the following analysis. We also tried to exclude people who have never used or purchased the products, the results were similar to that of 133 participants, but less participants would reduce the credibility of the results. So we decide to use the data of 133 participants for the following data analysis.

## 5.1. Manipulation checks

Brand strength ( Kettle:  $D(133) = 0.16, p < 0.01$ ; Speaker:  $D(133) = 0.17, P < 0.01$  ), visual novelty ( Kettle:  $D(133) = 0.11, p < 0.01$ ; Speaker:  $D(133) = 0.14, P < 0.01$  ), ease of use (Kettle:  $D(133) = 0.26, p < 0.01$ ; Speaker:  $D(133) = 0.19, P < 0.01$ ), and attractiveness (Kettle:  $D(133) = 0.22, p < 0.01$ ; Speaker:  $D(133) = 0.18, P < 0.01$ ) were not normally distributed. Therefore, to confirm the success of manipulation of visual novelty and brand strength, non-parametric tests were conducted separately for kettles and speakers. For both categories, participants rated the product with higher levels of visual novelty as significantly more novel than the product with low levels of visual novelty ( kettle:  $M_{\text{typical}} = 2.50, M_{\text{novel}} = 4.20, U = 821.50, p < .001$ ; Speaker:  $M_{\text{typical}} = 2.58, M_{\text{novel}} = 5.48, U = 169.50, p < .001$ ), so the manipulation of novelty has succeeded. The attractiveness was not significantly different

between the visually novel group and the typical group for both kettles and speakers (Kettle:  $M_{\text{typical}} = 4.39, M_{\text{novel}} = 4.29, U = 2169.50, P = .95$ ; Speaker:  $M_{\text{typical}} = 4.12, M_{\text{novel}} = 4.36, U = 1923.00, p = 0.23$ ), which is good because consumer's preference for a product design would not be due to product attractiveness, but mainly visual novelty. However, there was a significant difference in ease of use between groups for both categories, consistent with the pretest results. The typical design was easier to use than the novel design (Kettle:  $M_{\text{typical}} = 6.07, M_{\text{novel}} = 5.47, U = 1589.50, P < .01$ ; Speaker:  $M_{\text{typical}} = 5.25, M_{\text{novel}} = 4.39, U = 1341.00, p < .001$ ). In general, the manipulation of visual novelty is successful, but only the ease of use should be considered as covariates to decrease the impact of the difference on results (figure 26, 28).

		Kettle design		Speaker design	
		Mean	non-parametric tests	Mean	non-parametric tests
Visual novelty	Typical	2.50	$p < .001, \text{ sig}$	2.58	$p < .001, \text{ sig}$
	Novel	4.20		5.48	
Attractiveness	Typical	4.39	$p = 0.95, \text{ ns}$	4.12	$p = 0.23, \text{ ns}$
	Novel	4.29		4.36	
Ease of use	Typical	6.07	$p < .01, \text{ sig}$	5.25	$p < .001, \text{ sig}$
	Novel	5.47		4.39	

Figure 26: Manipulation results of visual novelty

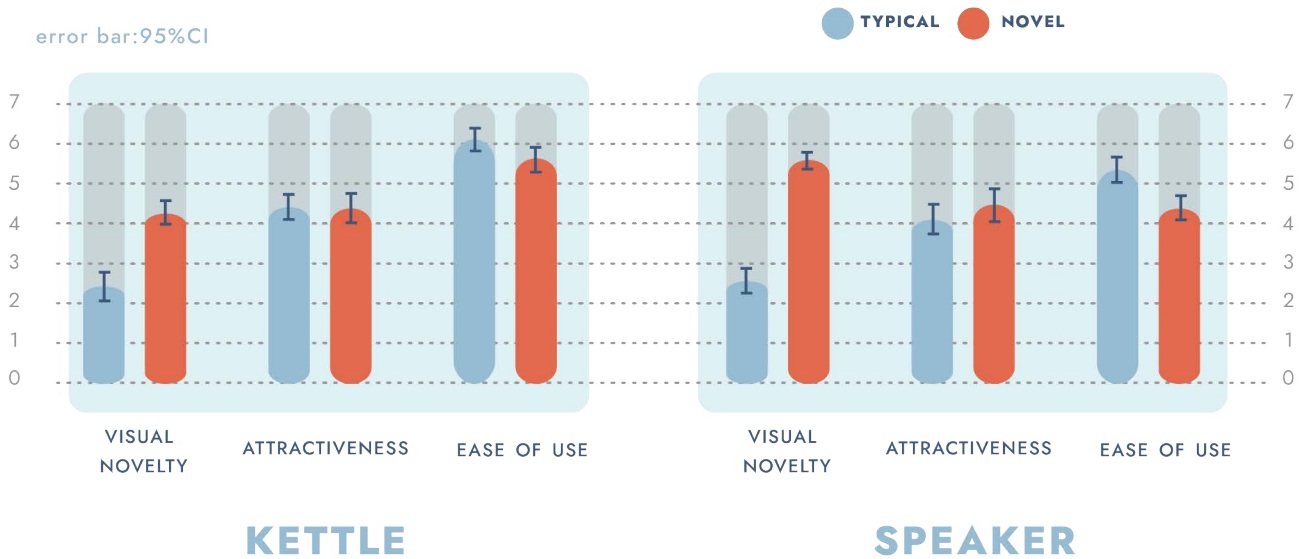
Regarding the scale of brand strength, the strong brand of kettles ( Philips ) was rated as significantly stronger than the weak brand of kettles ( Jocuu ) ( $M_{\text{weak}} = 2.84$ ,  $M_{\text{strong}} = 5.53$ ,  $U = 142.00$ ,  $p < .001$ ). Similarly, participants thought the strong brand of speakers (Sony) was stronger than the weak brand of speakers ( Vanzon ) ( $M_{\text{weak}} = 2.75$ ,  $M_{\text{strong}} = 5.17$ ,  $U = 291.50$ ,  $p < .001$ ). There were two items in the brand strength measurement: brand familiarity and brand likeness. Across product categories, the strong brands were judged to be more familiar ( Brand familiarity: Kettle:  $M_{\text{weak}} = 1.48$ ,  $M_{\text{strong}} = 5.56$ ,  $U = 106.50$ ,  $P <$

$.001$ ; Speaker:  $M_{\text{weak}} = 1.52$ ,  $M_{\text{strong}} = 5.27$ ,  $U = 173.50$ ,  $p < .001$ ) and more favorable (Brand likeness: Kettle:  $M_{\text{weak}} = 4.21$ ,  $M_{\text{strong}} = 5.50$ ,  $U = 748.50$ ,  $P < .001$ ; Speaker:  $M_{\text{weak}} = 3.99$ ,  $M_{\text{strong}} = 5.06$ ,  $U = 1046.50$ ,  $p < .001$ ) than the weak brand. All these analyses confirmed the manipulation of brand strength (figure 27, 28).

		Kettle		Speaker	
		Mean	non-parametric tests	Mean	non-parametric tests
Brand familiarity	Weak	1.48	p<.001, sig	1.52	p<.001, sig
	Strong	5.56		5.27	
Brand likeness	Weak	4.21	p<.001, sig	3.99	p<.001, sig
	Strong	5.50		5.06	
Brand strength	Weak	2.58	p<.001, sig	2.75	p<.001, sig
	Strong	5.53		5.17	

 Figure 27: Manipulation results of brand strength

## Manipulation check of visual novelty based on mean value



## Manipulation check of brand strength based on mean value

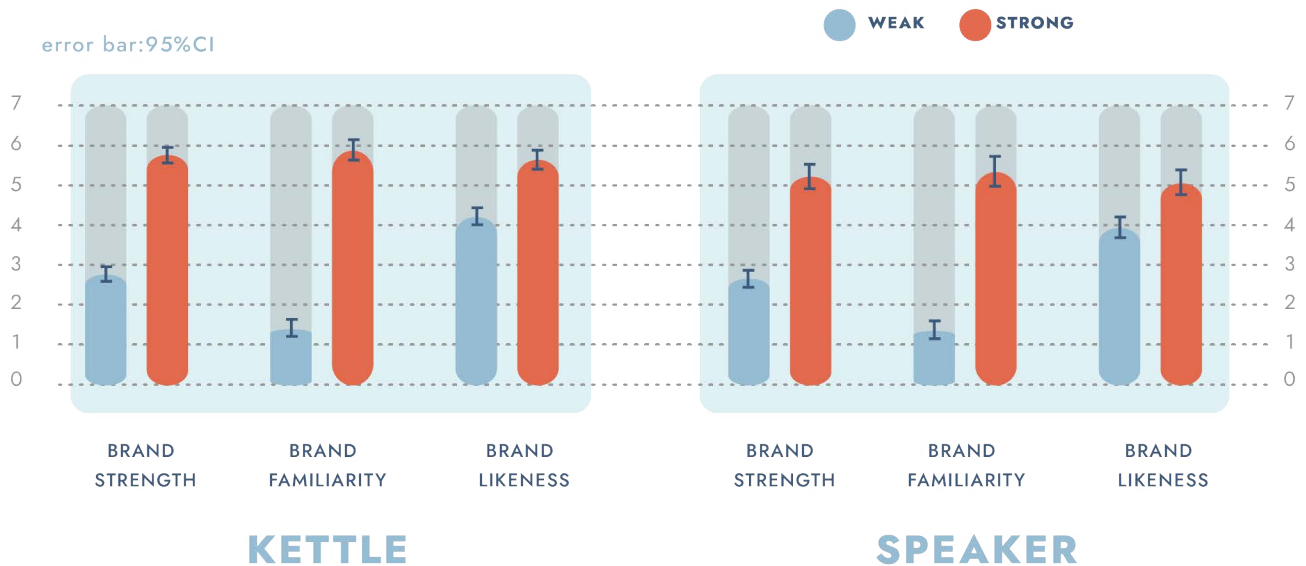


Figure 28: manipulation check of visual novelty and brand strength based on mean value



## 5.2. Effects of visual novelty and brand strength on consumer preferences

To test the effects of visual novelty and brand strength on consumer preference, two way independent ANCOVA was conducted for kettles and speakers, respectively. The dummy variables (re-coded after data collection): visual novelty and brand strength were the independent variables, while consumer preference was the dependent variable. Ease of use and attractiveness were included as covariates, but only attractiveness was significantly related to consumer preference for both categories ( Kettle:  $F(1,127) = 41.12$ ,  $p < .001$ ; speaker:  $F(1,128) = 81.36$ ,  $p < .001$  ). Ease of use significantly impacted consumer preference only for speakers (  $F$

(1,128) = 7.80,  $p < .01$  ). So ease of use was only included in the analysis for speaker. Meanwhile, a large part of the variances of the total data was explained by attractiveness ( Kettle: 40.25 of 172.30; Speaker: 67.51 of 194.26 ) and thus should be included. Moreover, the covariates can ensure that the main effect of product appearance is due to visual novelty, not attractiveness or ease of use. All reported means were adjusted after controlling the impact of attractiveness or ease of use. In addition, the four groups did not differ significantly in age (  $F(3,129) = 0.99$ ,  $p = 0.40$  ) and gender ( Chi-square (3) = 0.630,  $p = 0.89$  ).





No main effects of visual novelty were found for kettles ( $M_{\text{preference-typical}} = 4.53$ ,  $M_{\text{preference-novel}} = 4.59$ ,  $F(1,128) = 0.11$ ,  $P = .75$ ) and Speakers ( $M_{\text{preference-typical}} = 4.28$ ,  $M_{\text{preference-novel}} = 4.19$ ,  $F(1,127) = 0.31$ ,  $p = .58$ ). There was a non-significant effect of brand strength on consumer preference (Kettle:  $F(1,128) = 2.20$ ,  $p = 0.14$ ; Speaker:  $F(1,127) = 2.00$ ,  $p = .16$ ). For both categories, the mean preference for the product of a stronger brand was slightly higher than the mean preference for the product of a weak brand (Kettle:  $M_{\text{preference-strong}} = 4.69$ ,  $M_{\text{preference-weak}} = 4.42$ ; Speaker:  $M_{\text{preference-strong}} = 4.35$ ,  $M_{\text{preference-weak}} = 4.12$ ). The interaction effect of brand strength and visual novelty on consumer preference were not significant (Kettle:  $F(1,128) = 1.55$ ,  $P = .22$ ; Speaker:  $F(1,127) = 0.05$ ,  $p = .82$ ). Figure 28 shows an overview of means of consumer preference in four conditions (The reported means for consumer preference were adjusted after controlling the impact of covariates, while the means of perceived performance risk and perceived product uniqueness were not adjusted).

The amount of product and brand knowledge also influence consumer attitudes (Sujan, 1985). So we repeat the analysis by excluding people who never used or purchased the product. When excluding people who never used the products (remaining participants:  $N_{\text{participants-kettle}} = 124$ ,  $F(1,119) = 1.53$ ,  $p = 0.22$ ;  $N_{\text{participants-speaker}} = 96$ ,  $F(1,90) = 0.00$ ,  $p = 0.95$ ) or never purchased the products (remaining participants:  $N_{\text{participants-kettle}} = 103$ ,  $F(1,98) = 1.38$ ,  $p = 0.24$ ;  $N_{\text{participants-speaker}} = 104$ ,  $F(1,98) = 0.01$ ,  $p = 0.93$ ), the interaction effect were still not significant. To add, we consciously conducted the Anova analysis for kettles when excluding people who never purchased or used the corresponding categories - kettles. The same method goes for speakers.

Conditions	Kettle design-mean			Speaker design-mean		
	Consumer preference	perceived performance risks	perceived product uniqueness	Consumer preference	perceived performance risks	perceived product uniqueness
Typical-Weak	4.29	3.14	2.98	4.29	4.30	3.29
Novel-Weak	4.57	2.67	3.78	4.09	3.91	4.72
Typical-Strong	4.77	1.85	2.26	4.42	3.11	2.56
Novel-Strong	4.61	2.11	3.27	4.29	3.13	4.79

Means of consumer preference are adjusted as covariates are included

 Figure 29: Means of four conditions



We also tried to conduct several repeated ANCOVA analysis with different variables adding as covariates. Although most results were not significant, but there were still some trends, such as people prefer a typical design or visual novelty had larger effect on preference for a weak brand than a strong brand. To find more information in the data, regression analyses were conducted. The procedure (Process model 1) proposed by Hayes (2013) was used to test the interaction effect of visual novelty and brand strength for kettles and speakers, respectively (figure 30). Mean-centering and HC3 were chosen in the Process. We did not directly use model 8, but firstly use model 1, because we wanted to examine the total interaction effect of visual novelty and brand strength on consumer preference without considering the mediating effect of perceived performance risks and

perceived product uniqueness.

Visual novelty (the continuous variable, not the dummy variable in ANCOVA analysis) was the independent variable, while consumer preference was the dependent variable. We used brand likeness as a moderator, inspired by Landwehr et al. (2012), who used brand liking to measure brand strength in their analysis regarding the interaction between brand and product design on purchase intention of cars. Attractiveness was included as a covariate like the ANCOVA analysis. Attractiveness was significantly related to consumer preference across product categories (Kettle:  $b = 0.37$ ,  $t = 4.39$ ,  $p < .001$ ; Speaker:  $b = 0.37$ ,  $t = 5.83$ ,  $p < .001$ ).

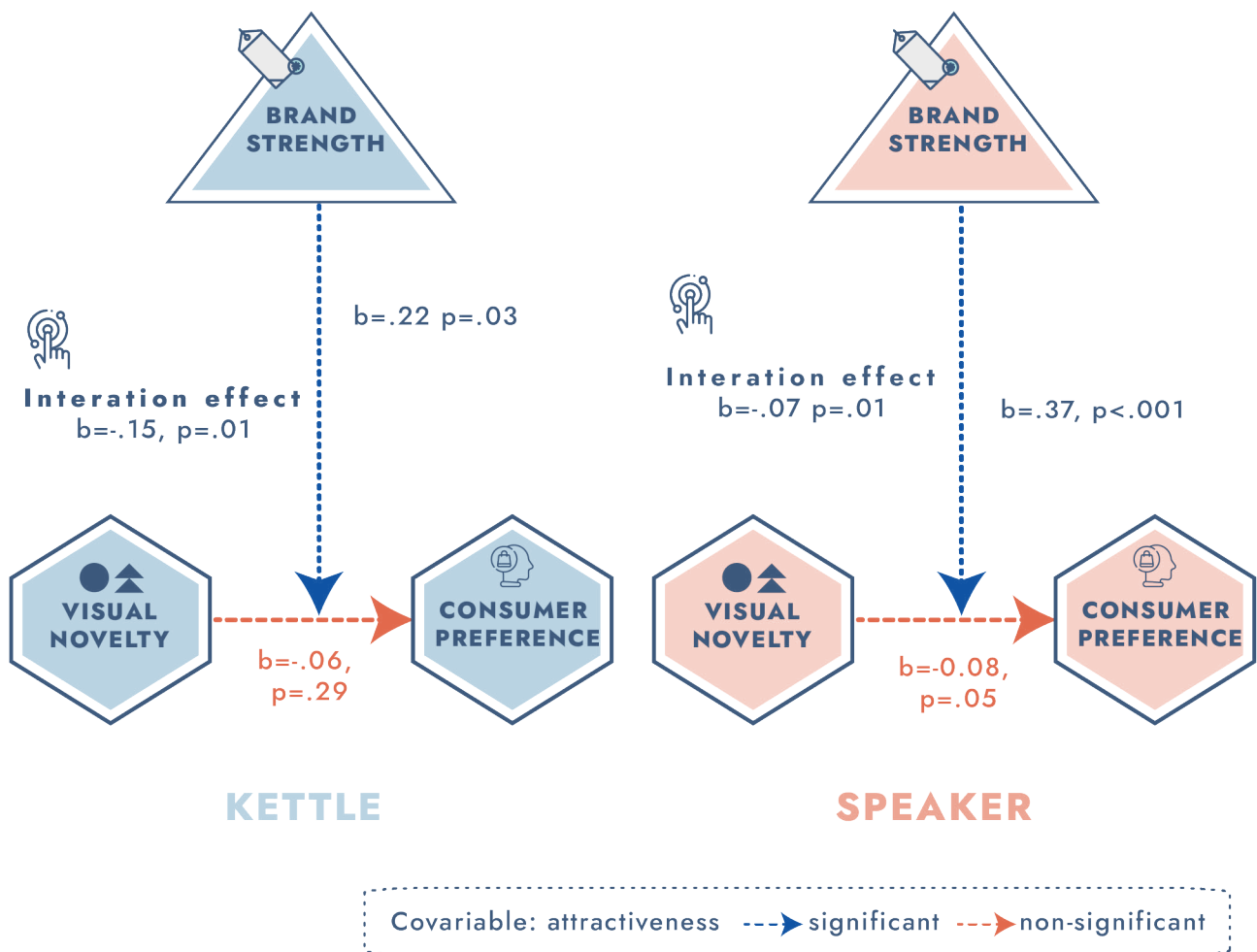


Figure 30: Simple moderation model of speakers and kettles

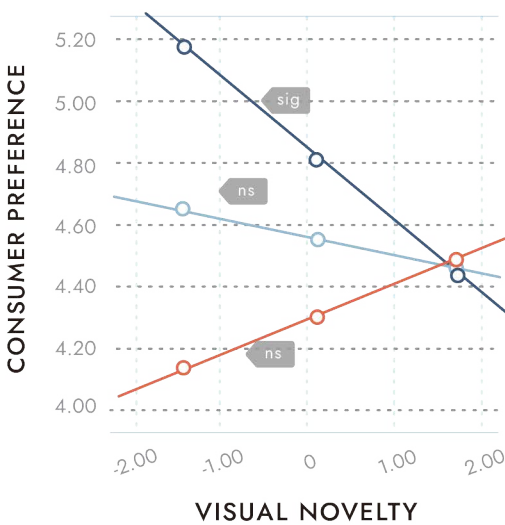
For both categories, brand strength positively and significantly predicted consumer preference ( Kettle:  $b = 0.22$ ,  $t = 2.16$ ,  $p = .03$ ; Speaker:  $b = 0.37$ ,  $t = 4.90$ ,  $p < .001$  ), which means that participants preferred a product of a stronger brand. Visual novelty was not significantly related to consumer preference for speakers (  $b = -0.08$ ,  $t = -1.94$ ,  $p = .05$  and for kettles (  $b = -0.06$ ,  $t = -1.07$ ,  $p = .29$  ).

The interaction effect of visual novelty and brand strength were significant for kettles (  $b = -0.15$ , 95% CI [  $-0.27$ ,  $-0.03$  ],  $t = -2.51$ ,  $p = .01$  ) and speakers (  $b = -0.07$ , 95% CI [  $-0.13$ ,  $-0.02$  ],  $t = -2.50$ ,  $p = .01$  ). Put differently, the effect of visual novelty on consumer preference was moderated by brand strength for both categories (figure 31). To interpret the interaction effect, we need to see the conditional effect of visual novelty

on consumer preference when the moderator of brand strength was set at three value levels ( high, mean, low ) (Hayes, 2013). The results implied that there was a significant and negative relationship between visual novelty and consumer preference when brand strength was higher (1 SD above the mean) ( Kettle:  $b = -0.23$ ,  $t = -2.55$ ,  $p = .01$ ; Speaker:  $b = -0.18$ ,  $t = -2.75$ ,  $p = .01$  ). When the value of brand strength became lower, the negative relationship between visual novelty and consumer preference became weaker and less significant (figure 31). So participants preferred a more typical-looking design when the product was from a stronger brand. This preference for typical appearance was weaker and less obvious when the brand of this product is weaker. To conclude, the interaction effect is confirmed but displayed oppositely from H3. Hence H3 is rejected.

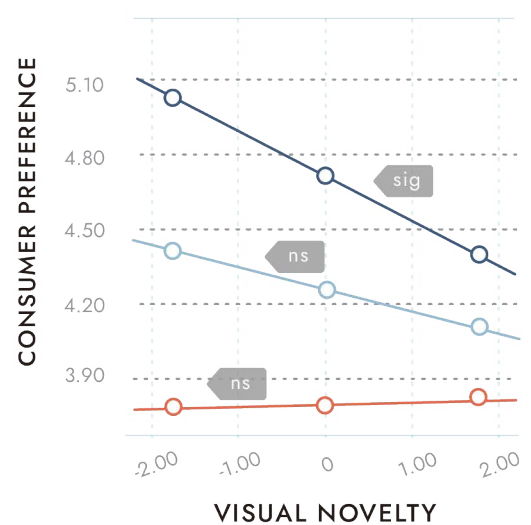
## I N T E R A C T I O N   E F F E C T

- — brand likeness=1.12
- — brand likeness=0
- — brand likeness=-1.12



### KETTLE

- — brand likeness=1.25
- — brand likeness=0
- — brand likeness=-1.25



### SPEAKER

Figure 31: Visualization of the interaction effect of speakers and kettles



## 5.3. Mediating effects

### 5.3.1. Effects of perceived performance risks

To test the mediation effect of perceived performance risks, model 8 of Process was used for kettles and speakers separately (Hayes, 2013) (figure 32). This model proposed direct and indirect effects of X (Visual novelty) on Y (consumer preference) through mediators (two parallel mediators: perceived performance risks and perceived product uniqueness) moderated by a moderator (brand likeness as brand strength) (Hayes, 2013). Attractiveness was included as a covariate. HC3 and mean - centering were selected in the option settings. In this part, the mediation effect of perceived performance risks will be reported., while the mediation effect of perceived product uniqueness will be discussed in the next part.

Replicating the results of the previous moderation analyses of model 1, the analysis of model 8 confirmed the significant interaction effect of visual novelty ( Kettle:  $b = -0.15$ ,  $t = -2.63$ ,  $p = .01$ ; Speaker:  $b = -0.07$ ,

$t = -2.21$ ,  $p = .03$  ). Also, the conditional effect was similar to that of the previous analysis (see figure 31). The indirect effect of visual novelty on consumer preference via perceived performance risks with brand strength as a moderator was not significant for kettles ( 95% CI [ - 0.01, 0.01 ] ) and speakers ( 95% CI [ - 0.02, 0.01 ] ), as the 95% confidence interval crossed zero, meaning that the mediating effect of perceived performance risks was not supported.

When excluding people who never used the products (Kettle: 95% CI [ - 0.03, 0.02 ] ; Speaker: 95% CI [ - 0.02, 0.01 ] ), or never purchased the products ( Kettle: 95% CI [ - 0.02, 0.01 ] ; Speaker: 95% CI [ - 0.03, 0.01 ] ), the mediating effect of perceived performance risks were not significant. Hence H2 is rejected.



When looking into details of this analysis of model 8, brand strength was significantly and negatively related to perceived performance risk across product categories ( Kettle:  $b = -.55$ ,  $t = -6.55$ ,  $p < .001$ ; Speaker:  $b = -.52$ ,  $t = -5.93$ ,  $p < .001$  ), which means that stronger brands are perceived with fewer risks. Especially for speakers, perceived performance risks significantly and negatively predicted consumer preference (  $b = -0.15$ ,  $t = -2.70$ ,  $p = .01$  ). Therefore, perceived performance risk may serve as a mediator between brand strength and consumer preference for speakers but not for kettles. Additionally, the relationship between visual novelty and perceived performance risks is not significant ( kettle:  $b = .05$ ,  $t = 0.84$ ,  $p = .40$ ; Speaker:  $b = 0.07$ ,  $t = 1.19$ ,  $p = .24$  ). Hence there is no support for the argument that low levels of visual novelty can decrease perceived performance risks.

### 5.3.2. Mediating effects of perceived product uniqueness

The indirect effect of visual novelty on consumer preference via perceived product uniqueness moderated by brand strength was not significant for kettles ( 95% CI [ -0.03, 0.03 ] ) and speakers ( 95% CI [ -0.01, 0.01 ] ), which means perceived product uniqueness was not a significant mediator for the interaction effect of brand strength and visual novelty on consumer preference.

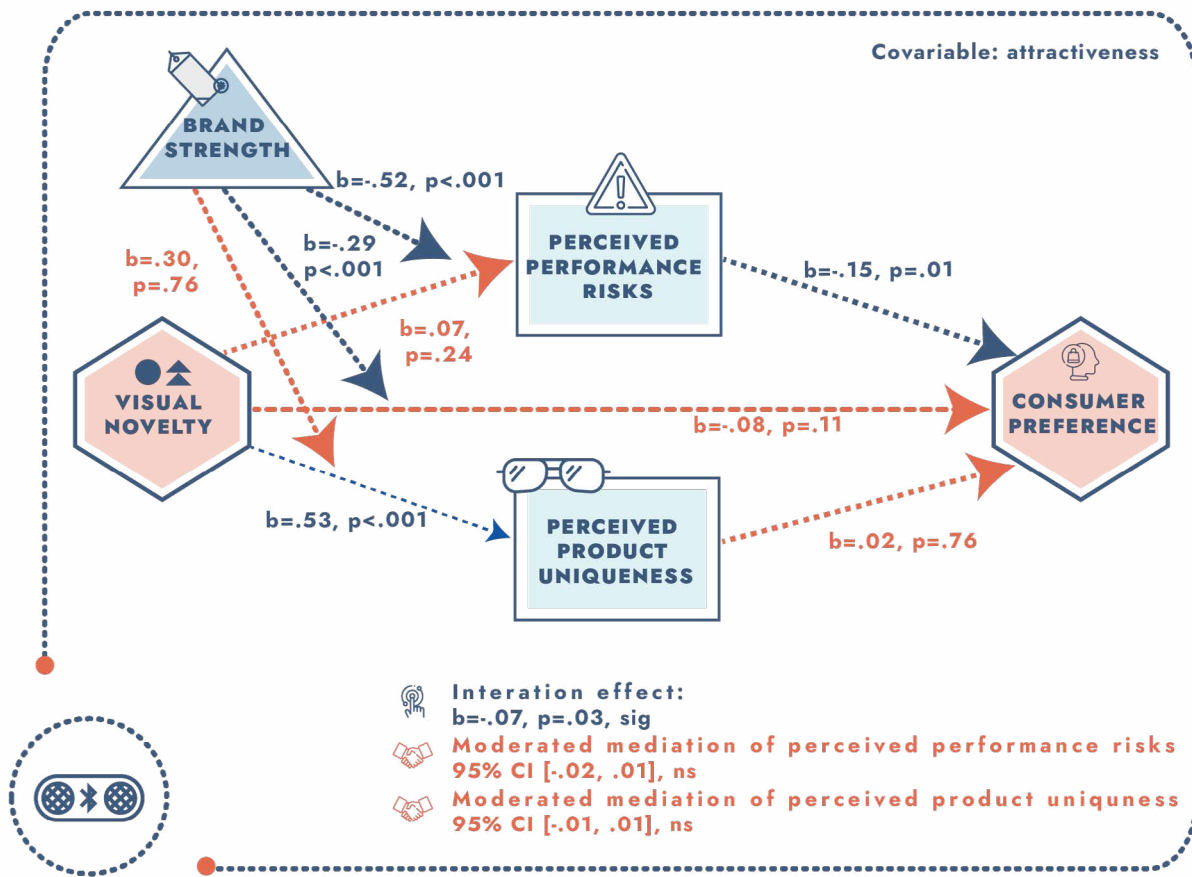
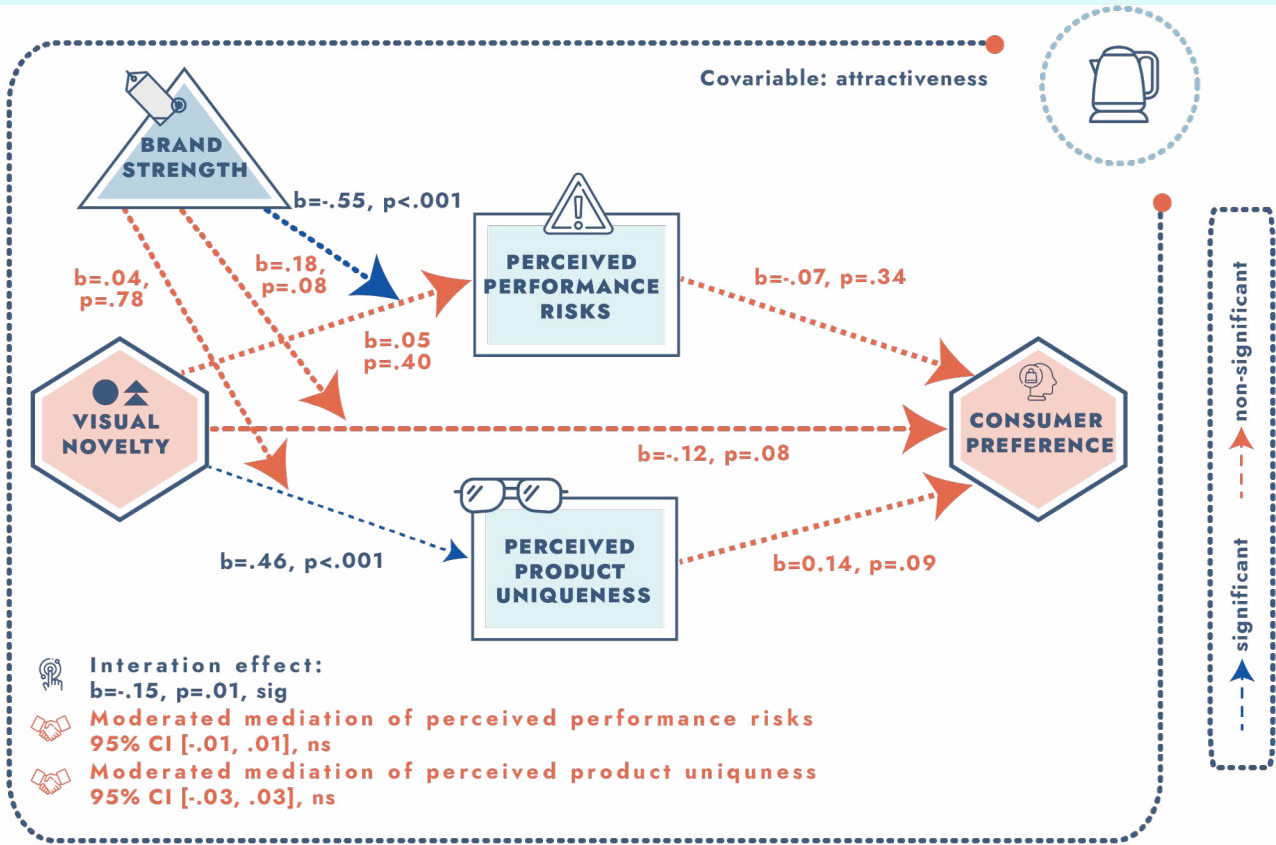
visual novelty significantly and positively


predicted perceived product uniqueness across product categories ( Kettle:  $b = 0.46$ ,  $t = 5.37$ ,  $p < .001$ ; Speaker:  $b = 0.53$ ,  $t = 7.73$ ,  $p < .001$  ), indicating that higher levels of visual novelty gave the users more possibility to express their uniqueness and distinctiveness. However, perceived product uniqueness could not significantly predict consumer preference for both categories ( kettle:  $b = 0.14$ ,  $t = 1.73$ ,  $p = 0.09$ ; Speaker:  $b = 0.02$ ,  $t = 0.31$ ,  $p = .76$  )

CVPA and need for uniqueness influence the importance that people attach to visual novelty in product evaluations and thus influence consumer preference for products. People with low CVPA or low need for uniqueness may not think the value to express themselves and satisfy sensory pleasure induced by visual novelty is important to them. Hence, we replicated the analysis by separately exclude people with low CVPA ( CVPA  $\leq 3^*$ , 124 participants remained ) or need for uniqueness ( Need for uniqueness  $\leq 3^*$ , 62 participants remained), which showed that the moderated mediating effect of perceived product uniqueness was still not significant for kettles ( CVPA  $> 3$ : 95% CI [ -0.04, 0.03 ] ; Need for uniqueness  $> 3$ : 95% CI [ -0.03, 0.05 ] ) and speakers( CVPA  $> 3$ : 95% CI [ -0.01, 0.01 ] ; Need for uniqueness  $> 3$ : 95% CI [ -0.04, 0.01 ] ). Hence H 1 is rejected.

\*.The number is set to insure there are enough participants remained after excluding people. For example, the number of remaining participants with CVPA higher than 4 is 97, such number for need for uniqueness higher than 4 is 21. These remaining participants may not be enough for such experiment.





 Figure 32: model 8 of kettles and speakers



## 5.4. Comparing results for the product categories

The mean difference in the visual novelty manipulation is bigger for speakers than kettles (figure 34), implying a stronger manipulation effect for speakers than kettles.

Perceived performance risks, brand sensitivity, utilitarian motivations and expressive motivations were not normally distributed. Therefore, to test the differences between speakers and kettles, non-parametric tests (2-related sample tests) were conducted for the following analyses.

In general, the perceived performance risks of kettles and speakers were lower than the (neutral) scale middle ( $M_{\text{kettle}} = 2.54$ ,  $M_{\text{speaker}} = 3.61$ ), suggesting that participants associate relatively low risks with the performance quality for these two categories. Speakers were perceived with significantly higher performance risks than kettles ( $z = -7.28$ ,  $p < .001$ ).

As for brand sensitivity, participants thought that the brand was more important when purchasing a Bluetooth speaker than an

electric water kettle ( $M_{\text{kettle}} = 3.14$ ,  $M_{\text{speaker}} = 4.23$ ,  $z = -6.986$ ,  $p < .001$ ), suggesting that participants were more inclined to purchase a well-known brand for speakers than kettles. For kettles, the brand sensitivity was below the scale middle, indicating that many participants considered brands not to be important for this category.

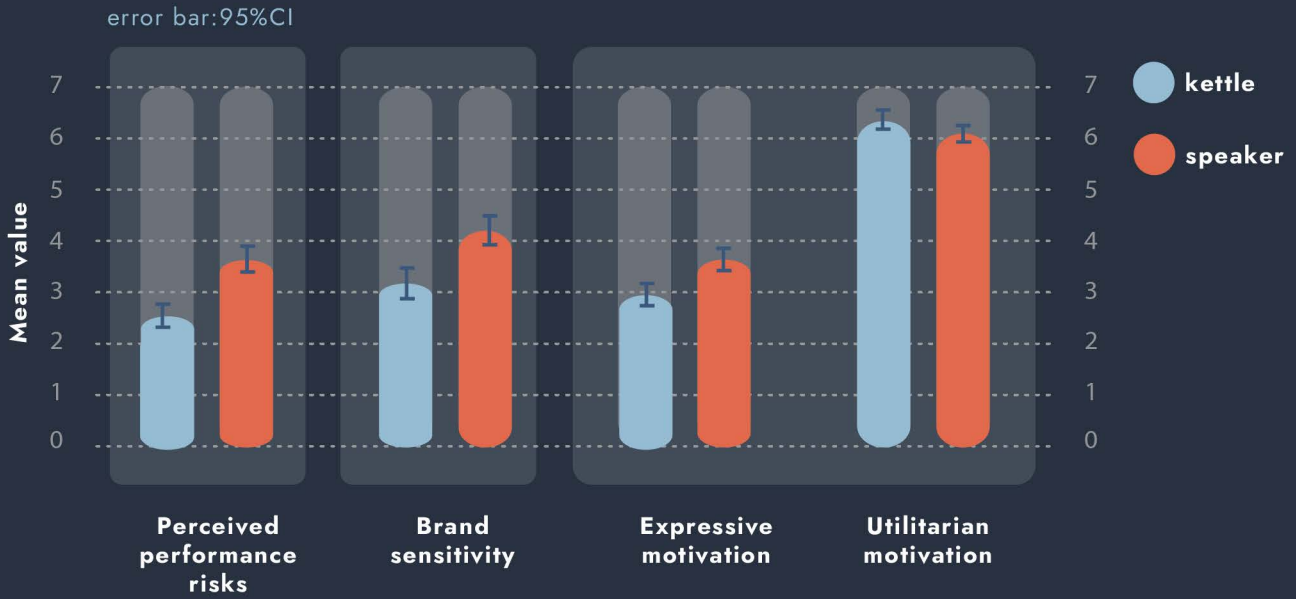
Regarding the purchase motivations, participants were generally driven by high utilitarian motivation ( $M_{\text{kettle}} = 6.33$ ,  $M_{\text{speaker}} = 6.10$ ) and low expressive motivations ( $M_{\text{kettle}} = 2.96$ ,  $M_{\text{speaker}} = 3.64$ ).

This data seems to deviate a bit from the predefined requirements for kettles and speakers that people have both utilitarian and expressive need in purchasing decisions, as these two purchase motives are largely imbalanced. People are driven more by utilitarian needs. See Figure 33 for an overview of the differences between the categories.



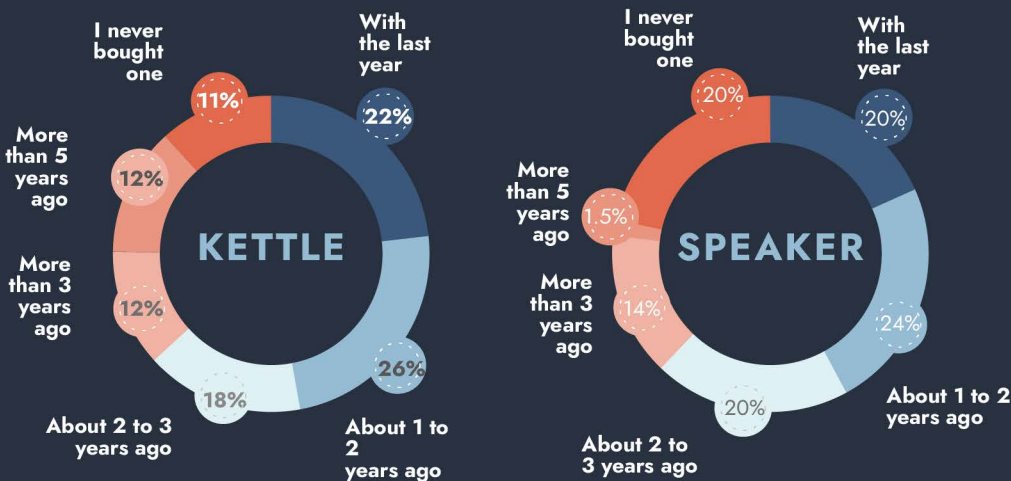
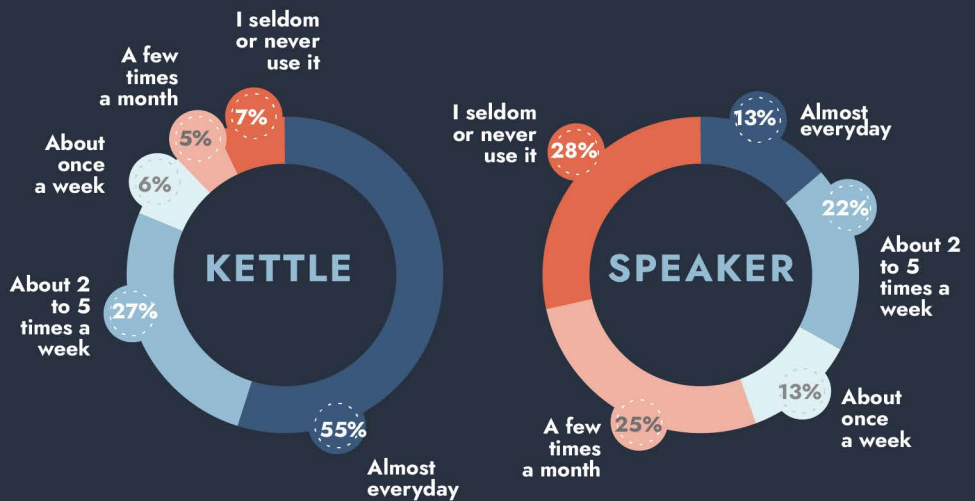


# DIFFERENCES OF PRODUCT CATEGORIES



## USAGE FREQUENCY

The usage frequency levels of kettles were generally higher than speakers. More than half of the participants used electric kettles almost everyday and very few people never used it. As for speakers, only 13% of people used Bluetooth speakers everyday. The most large population (28%) never used it. In general, most participants had prior usage experience with these two categories



## PURCHASE TIME

More people had purchase experience for kettles (89%) than speakers (80%). More than half of the participants purchased an electric kettle (66%) or a Bluetooth speaker (64%) within 3 years.

Figure 33: Visualizations of the analysis of product categories



# 6

## CONCLUSION AND DISCUSSION



The present research investigates the joint influence of visual novelty and brand strength on consumer preference for products with both utilitarian and expressive importance. Contrasting to the original hypothesis, stating that people prefer a more novel design for a strong brand than a weak brand, the results suggest that people more strongly prefer a typical-looking product for a strong brand than a weak brand. Moreover, the preference for a typical design is weaker and less significant for a weak brand.

The mediating effect of perceived performance risks between the joint influence of visual novelty and brand strength on preference is not supported. This research finds that visual novelty is not significantly related to perceived performance risks, which means low levels of visual novelty are not able to decrease people's concerns regarding the functional benefits of products effectively.

Similarly, perceived product uniqueness failed to mediate the joint effect of brand strength and visual novelty on consumer preference. Although high levels of visual novelty can assist people in the expression of personality and distinguishing from others, it did not serve as an added value for the purchase of the relatively utilitarian products used in this study.





## 6.1. The interaction effect between visual novelty and brand strength



*The results showed that people tended to prefer a more typical-looking product, especially for a strong brand than a weak brand.*

Hypothesis 3, as the core hypothesis, stating that when purchasing a product with both expressive and utilitarian importance, consumers prefer a more novel design for a strong than a weak brand, was rejected. The research results suggested that people tended to prefer a more typical-looking product, and even more so for a strong brand than a weak brand. This effect is the complete opposite from the one predicted in hypothesis 3.

Hence, several questions may be raised: Why did people prefer a more typical looking design for a strong brand when choosing speakers and kettles? Why was this preference for typicality weaker and less significant for a weak brand?







Our findings seem to contrast with that of Heitmann, Landwehr, Schreiner and van Heerde (2020). By using the actual market share data of American cars across 13 years, the authors found that brands with high relevant stature (well established, strong, and favorable memory traces, similar to strong brands) have more tolerance for deviations from the segment prototype design (similar to novel design) and benefit more from consistent (and thus recognizable) brand designs, while brands with low relevant stature (unfamiliar, weak memory traces, similar to weak brands) can gain more market share by a familiar design (similar to typical design) that is similar to the product design of other market players. Although we did not include the brand typicality (consistency with the brand design) in the present research, we consciously avoided recognizable iconic brand design when searching and testing product stimuli in the pretests. So the brand typicality should be kept neutral in our research settings. The possible answer for this conflict could lie in the differences in research stimuli. A car has both high expressive and utilitarian importance for consumers (Landwehr et al., 2012; Fischer et al., 2010; Ratchford, 1987). Besides the utilitarian needs, such as safety or energy consumption, consumers also pursue prestige, the expression of social status, or exclusiveness in cars (Creusen, 2015; Fischer et al., 2010). Our research results confirmed that a higher level of visual novelty could help users to express their uniqueness. Hence for cars, people would feel favorable towards more novel designs if performance needs are met, which is the case for strong brands.

Besides the differences in purchase motivations, the product stimuli used in our study and Heitman et al.'s research also differ in product category prestige, which influences product evaluation (Kim & Petitjean, 2021). Kim and Petitjean (2021) showed that people feel more favorable towards a novel wine package from a prestigious category than a standard category. The authors explained that people have more trust in the signals provided by a prestigious category than a standard category, like people shows more trust for a prestige brand than a normal brand, meanwhile, this greater preference for novelty for a prestigious category is because that an atypical design is inferred as higher performance quality. A visually novel product, compared to a visually typical product that use the general design in the market, could reflects more efforts and invests from the companies and thus higher quality (Kim & Petitjean, 2021). Compared to a car that could be regarded as a prestigious category, a Bluetooth speaker and an electric water kettle used in the present research are more like standard categories. Hence, people have less preference for a novel design than a typical design for a Bluetooth speaker or an electric water kettle, but more strongly prefer a novel design for a car, because the high-performance inferred through a novel design is more credible for a car than a speaker or a kettle.

These findings are consistent with Mugge and Schoormans' s finding (2011) that a more novel appearance is perceived with higher performance quality because of high-tech associations. From another perspective, contradicting to the arguments of Kim and Petitjean ( 2021), and Mugge and Schoormans (2011) who thought higher visual novelty is related to high performance quality, we proposed that low level of visual novelty can reduce perceived permanence risks and thus guarantee functionality and performance. It might due to the different dimensions of quality and the extent of a novel design. The other authors focused on the superior value of performance quality compared to general quality and hence a more novel design can provide higher product value, while we addressed the stability of the quality and basic requirements of functionality which can better fulfilled by a typical design.

For example, the Inspiration 7391 laptop of Dell is equipped with strong CPA and many extra added functional value, meanwhile has

thin and light body to ensure portability. Although with many new function and high performamnce, this model has been complained by many users as being unreliable and probelmatic. This example confirmed the two dimensions of quality: reliability (or durability, to ensure the necessary fucntional need) and superior performance (added value, comparing to the basic functions). A novel design can better fullfill the need for superior performance, while a typical design can better ensure the reliability of the performance. In addition, Mugge and Schoormans (2011) manipulate the visual novelty in a subtle way (by changing colors). So, in general, their novel products look typical , but with a novel feature (color). Accordingly, if a product is designed in a typical appearance which is within the acceptance of the public, but have increased novel features, the product could be perceived with increased quality. To confirm this argument, further research will be required.

### Comparison of visual novelty between categories

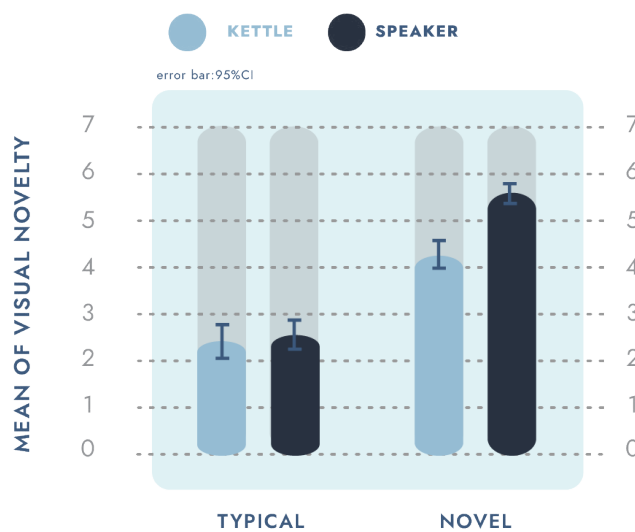


Figure 34: comparison of visual novelty manipulation between kettles and speakers





## 6.2. The mediating effect of performance perceived risks



*"People did not use visual typicality as a strategy to decrease perceived performance risk"*

The moderated mediating effect of perceived performance risks was not supported. It seems that visual novelty is not a preferred cue to infer the perceived risk regarding performance and functionality, no matter whether a product is from a strong or weak brand. Hence the suggestion by Ladwein

(1998) to use visual typicality as a strategy to decrease perceived performance risk and the findings of Celhay and Trinquencoste (2015) that people are more likely to choose a typical design under high risks than low risks were not supported.



Firstly, It might be because the perceived performance risks attached to kettles and speakers are relatively low and thus the risk reduction value of visual novelty is not obvious. Even when people who never purchased and used kettles or speakers were excluded separately from the data, the mean of the perceived performance risks were kept almost unchanged and still lower than the middle scale ( $M_{\text{kettle}}=2.53$ ,  $M_{\text{speaker}}= 3.61$ ).

Secondly, Celhay and Trinquécoste (2015) manipulated the perceived risk separately by giving different purchase situations, making the perceived risks associated with the different purchase situations differ in an obvious way. Therefore more typical designs were chosen under high risks than low risks. Similarly, Landwehr et al. (2012) manipulated the perceived performance risks independent of the manipulation of brand strength and product design when testing whether the perceived performance risks moderated the interaction effect of brand strength and product design on purchase intent. The authors let two groups read two different articles. One stated that different car brands had large quality differences, while the other stated that different car brands had similar quality, suggesting either small or big differences in performance risk. Hence, if there would have been independent manipulations of perceived performance risk in the present research, a more significant effect of visual novelty on perceived performance risks might have been found.

On the other hand, there is a significant negative effect of brand strength on

perceived performance risks. It supports the risk reduction function of brands proposed by Fisher et al. (2010), meaning that people think that a product is more likely to work properly, satisfactorily, and reliably when it is manufactured by a strong brand than a weak brand. It might also support Page and Herr's (2002) findings that people have more positive quality perceptions towards a product of a strong brand than a weak brand, as a strong brand offers protection against negative information about a product. The results also explain a possible mediating effect of perceived performance risks between brand and consumer preference for speakers, not for kettles. Also, according to the results, the negative relationship is more significant for speakers than kettles (see figure 32). It may be because kettles are perceived with lower performance risks than speakers and people are more sensitive to brands for speakers than kettles (see figure 33, differences of product categories).

To conclude, perceived performance risks can not explain the preference for low visual novelty when it is paired with a weak brand, as people tended to not use visual typicality as a cue to reduce possible performance risks for their purchase choice in our study. But a brand can indeed reduce people's worries about functional benefits and ensure a certain level of performance quality, as known from the literature (Fischer et al., 2010; Page and Herr, 2002) and confirmed in this study.





## 6.3. The mediating effect of perceived product uniqueness



*This value provided by visual novelty did not account much in the preference for speakers and kettles,*

Higher visual novelty can help people to express and distinguish themselves from others by product uniqueness. But this value provided by visual novelty did not account much in the preference for speakers and kettles, even for people who attached high importance to product aesthetics or have a high need for distinguishing themselves from others. So perceived product uniqueness did not explain the underlying mechanisms of preference for typicality. It may be because kettles and speakers were largely

driven by utilitarian motivation, and people have a limited need for self-expression or differentiation in the purchase of such products (see figure 32, differences of product categories). Even when a product is from a strong brand that guarantees good quality and thus gives people more freedom to choose their preferred appearance, visual novelty was still not influential on consumer product preference.





## 6.4. Theoretical implications

The present research contributes to the literature on the interaction of product appearance and brand on consumer responses (Page and Herr, 2002; Landwehr et al., 2012; Heitmann et al., 2020; Goh et al., 2013; Schnurr, 2017; Rubera, 2015). Most of these previous researches focused on the aesthetics aspect of product appearance, while only a few papers (e.g., Heitmann et al., 2020; Rubera, 2015) investigated how visual novelty, as a relevant dimension of product appearance (Talke et al., 2009; Mugge and Schoormans, 2012a), interact with brands to influence consumer responses. By drawing on the concept of purchase motivations and roles of brands (Park and Young, 1983; Creusen, 1998; Fischer et al., 2010), this research builds a framework to explain consumers' preference for visual novelty with the influence of brand strength, which shows consumer preferences for a typical or novel design are significantly moderated by brand strength. People shows more positive attitudes

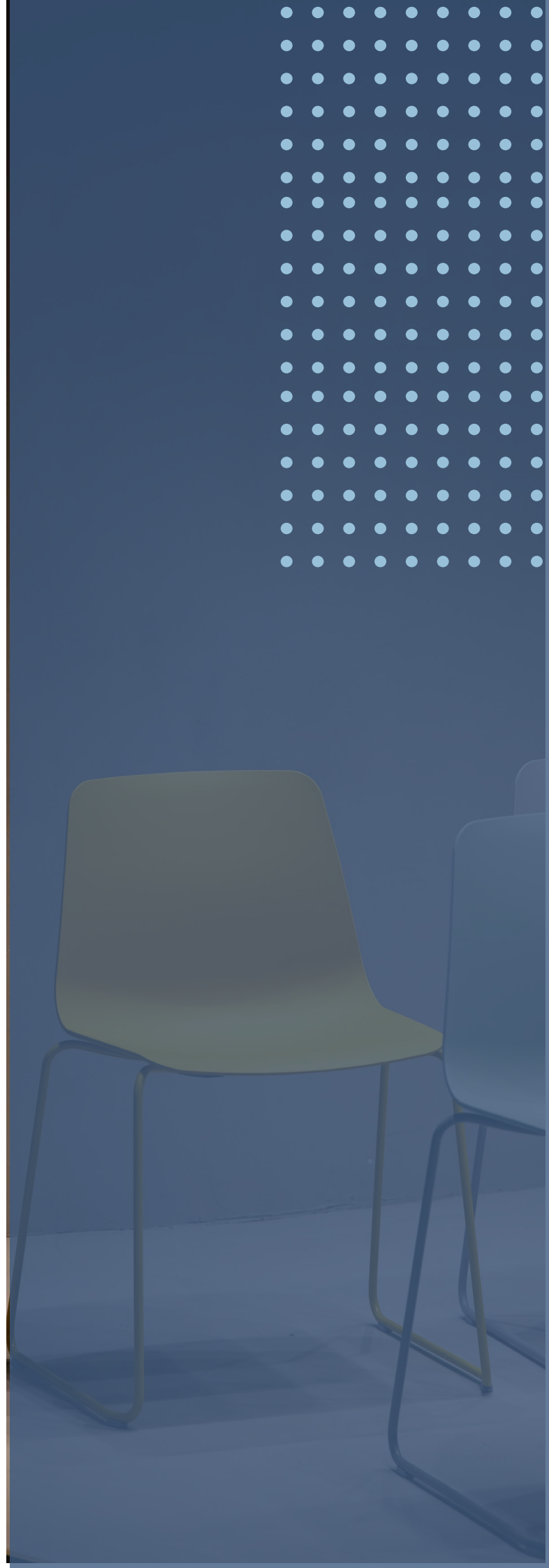
to a typical design for a strong brand than a weak brand in this research, as it could be related to different purchase motivations.

In addition, this research didn't support the theory of regulatory focus or hedonic dominance (Berry, 1994; Aaker & Lee, 2001; Chitturi et al., 2007), which propose that when a product meets the basic functional need (for example, guaranteed by a strong brand), people will favor a hedonically superior one (e.g., a more attractive or more novel-looking product). Accordingly, It might indicate that the applications of the regulatory focus theory or hedonic dominance is restricted to certain categories that have a certain level of expressive importance to people or certain situations when people are exposed to the products multiple times (Zajonc, 1968; Landwehr et al., 2012;).



The findings also confirmed the popular notion of preference for prototype that the more a product is a typical representative of the category, the more people prefer it, because people feel more familiar with a typical design and thus generate more positive responses to it (Zajonc, 1968; Celhay & Trinquécoste, 2015). This present research found that people tend to prefer a more typical design for both a strong and a weak brand.

The findings also support the performance risk reduction value of brands, which is realized by providing rich information to help people to make inferences about utilitarian benefits of products (Fischer et al., 2010; Page and Herr, 2002; Landwehr et al., 2012).





## 6.5. Practical implications

Several implications can be provided for product design and brand management when developing and launching new utilitarian products. Strong brands may gain more positive consumer feedback by designing their product in a typical appearance. In addition, as a strong brand itself provides value by reducing the risks associated with product performance and increase consumers' confidence in their product choices, the recognizability of a strong brand might be as important as the product design (Heitmann et al., 2020). Instead of making their products exactly resemble the design of other market players, a strong brand can design their product in a generally typical look with some novel details. Put differently, utilitarian products can be designed in a way in which people think it looks very familiar and typical at first glance, in the meantime, they can easily recognize the brand it belongs to. These novel details can assist in creating an iconic and recognizable brand design increasing the recognizability of a brand in the long run, which means creating a strong brand's own prototype in a category. Phillips is a good example that successfully makes

use of this 'typical yet novel' strategy, which is also advised by Hekkert et al. (2003). The authors found people prefer most for the products with the optimal combinations of visual novelty and typicality. The electric water kettles of Philips have low levels of visual novelty but with some delicate differences in the form design compared to the designs of other market players, which make them look familiar as well as easily recognized as from Philips (figure 35). This design strategy might contribute to its top sales performance ( ranking as one of the best-selling products in its category) in several online shopping platforms. It would be even better If these novel details are designed to provide more functional benefits, since people are highly concerned with the practical benefits when purchasing utilitarian products. Meanwhile, strong brands can assign more resources and efforts in product design development than weak brands, as people have more attention to product design if it comes from a strong brand than a weak brand (Landwehr et al., 2012).





For a weak brand, it might be better to put less effort into the product designs when developing utilitarian products but invest more in increasing brand awareness or communicating quality, as the results indicates that people prefer a strong brand over a weak brand, which is also showed by other research (Page and Herr, 2002; Landwehr et al., 2012). Besides, a weak brand can also invest in other aspects like technology, or functional features as a strategy to compete with a strong brand because utilitarian benefits are the main

concern for people. As for the design style, a weak band could still gain a more favorable consumer response by offering its product in a typical appearance because the results indicate a weak negative relationship between visual novelty and consumer preference.



Figure 35 : Electric water kettles of Philips sold in the market





## 6.6. Limitations, recommendations, and future research

Although we carefully designed the experiments and took deliberate considerations into all factors that might influence the results, there are still several limitations in this research and future research could be recommended.

The first limitation might lie in the manipulation of visual novelty. According to the mean values of visual novelty, the differences of visual novelty between the typical design and the novel design are not so big (see figure 26). Especially, The ratings of the novel designs were close to the middle scale, which means that people think the novel design are not very novel. This might result in weaker effect of visual novelty on consumer preference, or weaker effect of perceived product uniqueness. Although non-parametric tests confirmed that the novel design was significantly more novel than the typical design, the extend of differences between mean values of visual novelty could also be important. Also in our study, it turned to be much harder to choose a novel design than a typical design, as there were less options available for novel design. Hence the future

research could pay more attention to the novel design and choose the novel design with much higher rating than the neutral rating.

In addition, independent manipulation of perceived performance risks can be recommended. As discussed before, the non-significant mediating effect of perceived performance risks might be due to the low perceived performance risks attached to the product categories. Therefore researchers can manipulate the perceived performance risks independent of brand strength and visual novelty to enhance the perceptions of performance risks and thus observe a more significant effect of this variable. For example, researchers can create certain purchase or usage scenarios to enhance the risk perceptions (Celhay &Trinquecoste, 2015), or letting participants read an article stating that products from weak brands and strong brands differ a lot or little in quality (Landwehr et al., 2012).



Finally, the product categories used in the present research deviate from the predefined selection criteria about purchase motivations. Based on the prior experience with electric water kettles and Bluetooth speakers, we classified them into products with both utilitarian and expressive importance to people, which, however, turned out to be products with mainly utilitarian importance to people. Accordingly, a pretest to select the proper product categories might be recommended for further researches or similar researches on this topic. Moreover, if the chosen product category is almost fully driven by utilitarian motivations (e.g., sander, electric drill), instead of the present stimuli which have some extent of expressive importance to people, the results might differ a bit. A more significant negative relationship between visual novelty and consumer preference when a product is from a weak brand might be observed, as people might be highly concerned about the functional aspects

of a product, which could also increase the impact of the perceived performance risks. Several authors found, under high-risk situations, people have more favorable responses towards a more typical design (Celhay & Trinquocoste, 2015; Ladwein, 1998). When coupled with the fact that weak brands can hardly provide any information about functional performance and high-risk purchase situation, the chance for choosing a typical design when it is from a weak brand would be even higher.

In this research, we didn't discuss the possible consumer response for a product with mainly expressive importance to people, like sunglasses or handbag (figure 36, 37), which might differ a lot from a product with mainly utilitarian importance.

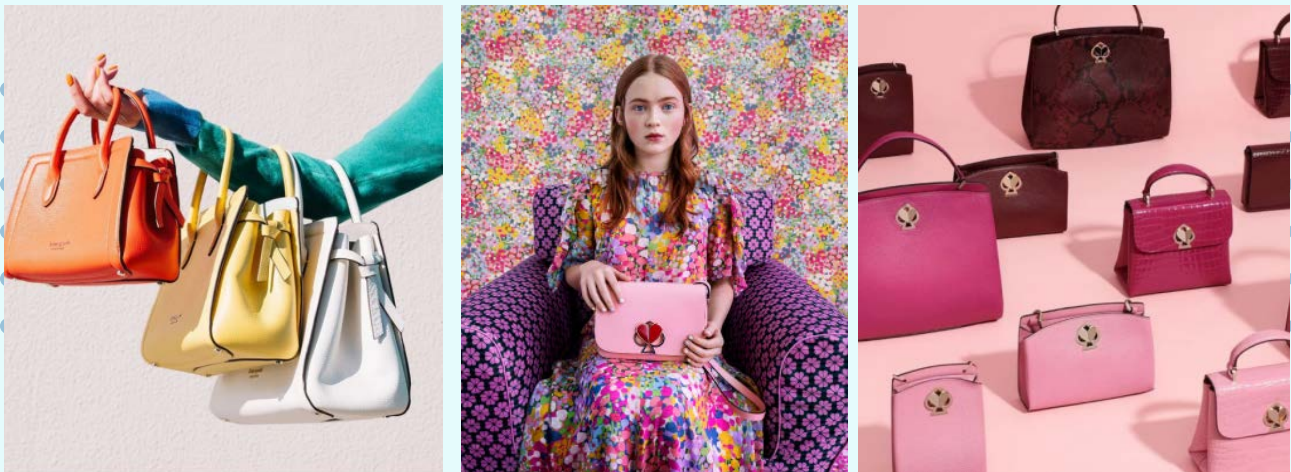


Figure 36: Designer bags by Kate spade - examples of expressive products

When purchasing an expressive product, people are mainly concerned with goals of fostering self-image, demonstrating social status, or satisfying sensory enjoyment. Because these goals seem to be very personal, the joint effect of visual novelty and brand strength on consumer preference might be largely influenced by personality differences, such as people's need for uniqueness or design dominance proposed by Byun, Jones, & Wooldridge (2018) (refer to that people attach more values to product design than any value provided by brands). CVPA seems to be related to design dominance, as both of them emphasize that people assign high importance to product aesthetics in product evaluations. However, design dominance examines the relative importance of product aesthetics to the importance of brand, while CVPA refers to the absolute value people attach to product appearance, without comparison with other factors (Bloch et al., 2003).

People with a higher need for uniqueness are more likely to distinguish themselves from others and thus prefer a visually novel product. People with higher design dominance have less loyalty to a brand but

tend to select from a wide range of brands to satisfy their aesthetic preferences (Byun et al., 2018). Byun et al. (2018) found that need for uniqueness is positively related to design dominance, meaning people who pursue a higher need for uniqueness are more design-driven, while people who have a low need for uniqueness are concerned more with the value of brands. When people are more design-driven, they would have less loyalty to brands but seek the product design they like from any brand. Hence, it might suggest that people who are design-driven would prefer a novel design because of a high need for uniqueness, no matter the product is from a weak or strong brand. The authors also showed that people who are brand-driven have less need for uniqueness and thus are more likely to be satisfied by the product design provided by their preferred brand (a strong brand). Within their preferred brand, people might still seek a typical or novel design according to their preference (Byun et al., 2018). Therefore, when purchasing an expressive product from a weak brand, people with low levels of design dominance might prefer either a novel or typical design.



Figure 37 : Chanel transparent PVC bags - novel design of expressive products

However, our research seems to have different findings. Our results showed that CVPA can positively and significantly predicted need for uniqueness ( $B = 0.42$ ,  $t(131) = 4.87$ ,  $p < .001$ ,  $R^2 = 0.36$ ), meaning that people attach higher importance to product design also have a higher need for uniqueness. It supports the arguments of Byun et al. (2018). But our results also showed there was no significant relationship between need for uniqueness and brand sensitivity ( Kettle:  $B = 0.16$ ,  $p = 0.20$ ); Speaker:  $B = 0.14$ ,  $P = 0.21$ ), meaning people have lower need for uniqueness did not attach higher importance to brand. In addition, there was a weak and positive correlation between CVPA and brand sensitivity (Kettle:  $r_s = 0.24$ ,  $p < .01$ ; Speaker:  $r_s = 0.31$ ,  $p < .001$ ). It means that people who attached higher importance to product aesthetics may not attach more value to brand, which contradicts Byun et al. (2018)'s findings.

It may be because that participants attach low importance to brands for the product categories used in our research, while Byun et al. (2018) used the neutral brands and products (no products or brands presented in their tests) which people could give higher importance to. But, to investigated the actual effect of visual novelty and brand strength on consumer preference for expressive products, future research is required. In addition, , how visual novelty and brand strength interact to affect consumer preference comparing among several types of product (categorized by purchases motivations) could be interesting future research.





# 7

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# 8

## APPENDIX



# 8.1. Pretest questionnaire

The following part we will show the pretest questionnaires used in our research. There are two versions of pretest questionnaires (one for kettles and one for speakers). Two versions follows the same structures and use the similar wording. The one for kettles will be demonstrated as an example.



## Welcome to this survey on the design and brands of electric water kettles!

We would like you to evaluate 15 electric water kettle designs and 9 water kettle brands. This questionnaire will take you approximately 8 minutes to complete. The aggregated results will be used for scientific research and publication.

Your answers will be completely confidential and anonymous, no personal information by which you can be identified will be gathered. There are no right or wrong answers and you can stop the questionnaire at any time.

This study is conducted by researchers at Delft University of Technology. If you have any questions, you can email [Y.Zhang-26@student.tudelft.nl](mailto:Y.Zhang-26@student.tudelft.nl). Thank you for participating.

Dr. Mariëlle Creusen and Ir. Sijia Bakker-Wu (researchers at TU Delft)  
Yang Zhang (graduation student)

**I have read the information above and agree to participate in this questionnaire**

Yes ( the survey can be proceeded)

No ( the survey will be ended directly)

## Image overview

### Overview of electric water kettles

First, you will be asked to evaluate these 15 pictures of electric water kettles (brand information has been removed). On the next pages, you will be asked to evaluate each water kettle on how typical and how unusual/usual it looks for a water kettle, how pretty it looks to you, and how easy to use you think it is.

The prices of these electric water kettles are in the same range and they have similar features (such as boil dry protection, automatic opening, water-level indication).



**Kettle 1**

- Similar questions will be repeated 14 times with different images. The order will be randomized



**What do you think of this water kettle design?**

not very typical-looking for an electric water kettle

very typical-looking for an electric water kettle

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
unusual-looking									usual-looking
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ugly									beautiful
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
not very easy to use									very easy to use

**Kettle 15**

**Do you recognize this electric water kettle?**

No

Yes, I have seen this specific water kettle before, but I do not recognize the brand.

Yes, I recognize the brand of this water kettle. Please write the brand name below.

## Brand overview

### Overview of brands of electric water kettles

These are 9 brands of electric water kettles. On the next pages, you will be asked whether you know the brand and whether you like it.

PHILIPS

JOCUU

P L I N T<sup>®</sup>

emerio<sup>®</sup>

Tefal<sup>®</sup>

BRAUN

OVENTE<sup>®</sup>

Solis

 BOSCH

## Brand 1

- Similar questions will be repeated 8 times with different brands. The order will be randomized

BRAUN

Please rate your judgements about this brand.

## Brand 9

very unfamiliar



dislike a great deal



very familiar



like a great deal





## • Demographics

**Finally, the last part of the questionnaire! You will answer some questions about yourself.**

**How often do you use an electric water kettle?**

- (Almost) Everyday
- About 2 to 5 times a week
- About once a week
- A few times a month
- I seldom or never use it

**How long ago have you purchased an electric water kettle?**

- Within the last year
- About one to two years ago
- About two to three years ago
- More than 3 years ago
- More than 5 years ago
- I never bought one

**How many years have you lived in the Netherlands?**

- Less than 1 year
- Between 1 and 2 years
- Between 2 and 5 years
- More than five years

**What is your gender?**

- Male
- Female
- Other

**What is your age?**

• End

## PS: introduction for speakers

The text of this part is different from the one of kettles

### Overview of Bluetooth speakers

First, you will be asked to evaluate these 15 pictures of Bluetooth speakers (brand information has been removed). On the next pages, you will be asked to evaluate each speaker on how typical and how unusual/usual it looks for a Bluetooth speaker, how pretty it looks to you, and how easy to use you think it is.

Bluetooth speakers are portable speakers that you can use in or outside your home. You can stream music from your smartphone, tablet, or laptop to a Bluetooth speaker. The prices of these Bluetooth speakers are in the same range and they have similar features (such as a 10-hour battery life, and waterproofing).



## 8.2. Main study questionnaire

In this part, we will show the main study questionnaire used in our research. There are four conditions: typical design-weak brand, typical-strong, novel-weak, novel strong. The condition of typical-strong will be use as an exmaple to demonstrate the questionnaire. The order of kettles and speakers are randomized. Here, we use kettle-speaker order.



### Opening statement

#### Welcome to this survey!

**We would like you to evaluate an electric water kettle and a Bluetooth speaker.  
Please take your time to fill in this questionnaire, it will take you about 8 minutes.**

**Your answers will be completely confidential and anonymous, no personal information by which you can be identified will be gathered. There are no right or wrong answers and you can stop the questionnaire at any time.**

**This study is conducted by researchers at Delft University of Technology. The aggregated results will be used for scientific research and publication. If you have any questions, you can email [Y.Zhang-26@student.tudelft.nl](mailto:Y.Zhang-26@student.tudelft.nl).**

**Thank you for participating!  
Dr. Mariëlle Creusen and Ir. Sijia Bakker-Wu (researchers at TU Delft)  
Yang Zhang (graduation student)**

**I have read the information above and agree to participate in this questionnaire**

Yes ( the survey can be proceeded)

No ( the survey will be ended)

**Consumer preference**

Several questions will now be asked about your opinion of this electric water kettle (on this and the next pages). The price and features (e.g., boil dry protection) are similar to the majority of electric water kettles.



Brand name:

**PHILIPS**

**How much do you prefer this electric water kettle compared to other electric water kettles on the market?**

I do not prefer it at all        I strongly prefer it

**If you would buy an electric water kettle, would you consider to buy this one?**

Definitely not        Yes, definitely

**What is your overall opinion of this water kettle?**

Very negative        Very positive

Perceived  
performance  
risks



Brand name:

**PHILIPS**

**I think this water kettle would be a risky purchase, in the sense that it may not work properly.**

Strongly disagree        Strongly agree

**I am unsure if this water kettle performs satisfactorily.**

Strongly disagree        Strongly agree

**I am concerned about the reliability of this water kettle.**

Strongly disagree        Strongly agree

Perceived  
product  
uniqueness



Brand name:

**PHILIPS**

**This product reflects its user's uniqueness.**

Strongly disagree        Strongly agree

**This product helps to express its user's personality.**

Strongly disagree        Strongly agree

**This product would help the user in establishing a distinctive image.**

Strongly disagree        Strongly agree

visual novelty  
check



Brand name:

**PHILIPS**

**What do you think of this water kettle design?**





Not original	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	Original
Ugly	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	Beautiful
Not very typical-looking for an electric water kettle	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	Very typical-looking for an electric water kettle
Not very easy to use	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	Very easy to use

**consumer preference**

Several questions will now be asked about your opinion of this Bluetooth speaker (on this and the next pages). The price and features (e.g., 10-hour battery life) are similar to the majority of Bluetooth speakers.



Brand name:

**SONY**

How much do you prefer this Bluetooth speaker compared to other Bluetooth speakers on the market?

I do not prefer it at all         I strongly prefer it

If you would buy a Bluetooth speaker, would you consider to buy this one?

Definitely not         Yes, definitely

What is your overall opinion of this Bluetooth speaker?

Very negative         Very positive

Perceived performance risks



Brand name:

**SONY**

**I think this Bluetooth speaker would be a risky purchase, in the sense that it may not work properly**

Strongly disagree        Strongly agree

**I am unsure if this Bluetooth speaker performs satisfactorily.**

Strongly disagree        Strongly agree

**I am concerned about the reliability of this Bluetooth speaker.**

Strongly disagree        Strongly agree

Perceived product uniqueness



Brand name:

**SONY**

**This product reflects its user's uniqueness.**

Strongly disagree        Strongly agree

**This product helps to express its user's personality.**

Strongly disagree        Strongly agree

**This product would help the user in establishing a distinctive image.**

Strongly disagree        Strongly agree

visual novelty  
check



Brand name:

**SONY**

What do you think of this Bluetooth speaker design?

Not original	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Original
Ugly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Beautiful
Not very typical-looking for a Bluetooth speaker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very typical-looking for a Bluetooth speaker
Not very easy to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very easy to use

Additional questions about kettles-strong brand

brand  
strength

We will now ask some additional questions about electric water kettles.

**PHILIPS**

Please rate your judgements for this brand of electric water kettles.

Very unfamiliar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very familiar
Dislike very much	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Like very much

purchase  
frequency

**How often do you use an electric water kettle?**

- (Almost) Everyday
- About 2 to 5 times a week
- About once a week
- A few times a month
- I seldom or never use it

purchase  
time

**How long ago have you purchased an electric water kettle?**

- Within the last year
- About one to two years ago
- About two to three years ago
- More than 3 years ago
- More than 5 years ago
- I never bought one

Brand  
sensitivity

**How important do you think the brand is when purchasing an electric water kettle? Please rate your agreement on the following statements.**

	Strong disagree
When I purchase an electric water kettle, the brand plays—compared to other things—an important role	<input type="radio"/>
When purchasing an electric water kettle, I focus mainly on the brand	<input type="radio"/>
To me, it is important to purchase an electric water kettle from a well-known brand	<input type="radio"/>
The brand plays a significant role as to how satisfied I am with an electric water kettle	<input type="radio"/>

## Purchase motivations

What are your motivations if you would buy an electric water kettle?  
Please rate your agreement on the following statements.

	Strong disagree
It is important to me that an electric water kettle looks appealing	<input type="radio"/>
An electric water kettle would help me to express my personality	<input type="radio"/>
It is important to me that an electric water kettle helps me in establishing a distinctive image	<input type="radio"/>
To me, an electric water kettle is mainly a practical product	<input type="radio"/>
It is mainly important to me that an electric water kettle performs well	<input type="radio"/>

## Brand strength

We will now ask some additional questions about Bluetooth speakers.

# SONY

Please rate your judgements for this brand of Bluetooth speakers.

Very unfamiliar              Very familiar  
Dislike very much              Like very much

**Purchase frequency**

**How often do you use a Bluetooth speaker?**

- (Almost) Everyday
- About 2 to 5 times a week
- About once a week
- A few times a month
- I seldom or never use it

**Purchase time**

**How long ago have you purchased a Bluetooth speaker?**

- Within the last year
- About one to two years ago
- About two to three years ago
- More than 3 years ago
- More than 5 years ago
- I never bought one

**Brand sensitivity**

**How important do you think the brand is when purchasing a Bluetooth speaker? Please rate your agreement on the following statements.**

When I purchase a Bluetooth speaker, the brand plays—compared to other things—an important role

When purchasing a Bluetooth speaker, I focus mainly on the brand

To me, it is important to purchase a Bluetooth speaker from a well-known brand

The brand plays a significant role as to how satisfied I am with a Bluetooth speaker



## Purchase motivations

What are your motivations if you would buy a Bluetooth speaker? Please rate your agreement on the following statements.

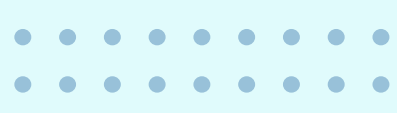
It is important to me that a Bluetooth speaker looks appealing	
A Bluetooth speaker would help me to express my personality	
It is important to me that a Bluetooth speaker helps me in establishing a distinctive image	
To me, a Bluetooth speaker is mainly a practical product	
It is mainly important to me that a Bluetooth speaker performs well	

## CVPA

In the last part of this survey we will ask some questions about the importance of product's design and brands for you in buying products and some basic information.

Please rate your agreement on the following statements.

	Strong disagree
I enjoy seeing displays of products that have superior designs	<input type="radio"/>
A product's design is a source of pleasure for me	<input type="radio"/>
I see things in a product's design that other people tend to pass over	<input type="radio"/>



I have the ability to imagine how a product will fit in with the designs of other things I already own

When I see a product that has a really great design, I feel a strong urge to buy it

• **Need for uniqueness**

**Please rate your agreement on the following statements.**

	Stro disa
The more commonplace a product or brand is among the general population, the less interested I am in buying it	(
I actively seek to develop my personal uniqueness by buying special products or brands	(
I have often violated the understood rules of my social group regarding what to buy or own	(
Having an eye for products that are interesting and unusual assists me in establishing a distinctive image	(
I often try to avoid products or brands that I know are bought by the general population	(



## • Demographics

### How many years have you lived in the Netherlands?

Less than 1 year

Between 1 and 2 years

Between 2 and 5 years

More than five years

### What is your gender?

Male

Female

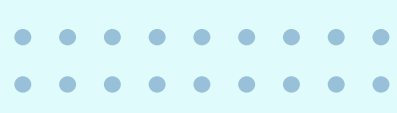
Other

### What is your age?

## 8.3. Images of stimuli in big sizes



**Kettle  
images  
used in the  
pretest**



**speaker  
images  
used in the  
pretest**



Stimuli used for four conditions in the main study



Brand name:  
**PHILIPS**



Brand name:  
**SONY**



Brand name:  
**JOCUU**



Brand name:  
**Vanzon**



Brand name:  
**PHILIPS**



Brand name:  
**SONY**



Brand name:  
**JOCUU**



Brand name:  
**Vanzon**



# 8.4. Project brief

DESIGN  
FOR OUR  
future

4785



## IDE Master Graduation

### Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:

- The student defines the team, what he/she is going to do/deliver and how that will come about.
- SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

**! USE ADOBE ACRobat READER TO OPEN, EDIT AND SAVE THIS DOCUMENT**

Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

#### STUDENT DATA & MASTER PROGRAMME

Save this form according the format "IDE Master Graduation Project Brief\_familyname\_firstname\_studentnumber\_dd-mm-yyyy". Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1 !

family name	<u>Zhang</u>	Your master programme (only select the options that apply to you):
initials	<u>Y</u> given name <u>Yang</u>	IDE master(s): <input type="radio"/> IPD <input type="radio"/> Dfl <input checked="" type="radio"/> SPD
student number	<u>4349695</u>	2 <sup>nd</sup> non-IDE master: _____
street & no.	_____	individual programme: _____ (give date of approval)
zipcode & city	_____	honours programme: <input type="radio"/> Honours Programme Master
country	_____	specialisation / annotation: <input type="radio"/> Medisign
phone	_____	<input type="radio"/> Tech. in Sustainable Design
email	_____	<input type="radio"/> Entrepreneurship

#### SUPERVISORY TEAM \*\*

Fill in the required data for the supervisory team members. Please check the instructions on the right !

** chair	<u>Marielle Creusen</u>	dept. / section: <u>DOS/MCR</u>
** mentor	<u>Sjia Bakker-Wu</u>	dept. / section: <u>DOS/MCR</u>
2 <sup>nd</sup> mentor	_____	_____
organisation:	_____	_____
city:	_____	country: _____
comments (optional)	This graduation topic contains two parts: brand strength and consumer perception of visually novel product, covered by Sjia (Branding) Marielle(Consumer perception of product design) .	

Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v.



Second mentor only applies in case the assignment is hosted by an external organisation.




Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.

Procedural Checks - IDE Master Graduation

**APPROVAL PROJECT BRIEF**

To be filled in by the chair of the supervisory team.

chair Marielle Creusen date 2-3-2021 signature 

**CHECK STUDY PROGRESS**

To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair. The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: 24 EC  
 Of which, taking the conditional requirements into account, can be part of the exam programme 24 EC

List of electives obtained before the third semester without approval of the BoE

YES all 1<sup>st</sup> year master courses passed

NO missing 1<sup>st</sup> year master courses are:

ID4350-16 Design Strategy Project (12 EC)  
 (ID4350 Design Strategy Project (6 EC) momenteel in keuzeruimte)

name J. J. de Bruin date 04-03-2021 signature JdB

**FORMAL APPROVAL GRADUATION PROJECT**

To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked \*\*. Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks ?
- Does the composition of the supervisory team comply with the regulations and fit the assignment ?

Content:  APPROVED  NOT APPROVED

Procedure:  APPROVED  NOT APPROVED

Student has now completed the course. The MSc 1 is complete with this.

comments

name Monique von Morgen date 16/3/2021 signature MvM

Brand strength and consumer perception of visually novel design project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 15 - 02 - 2021 23 - 07 - 2021 end date

**INTRODUCTION \*\***  
 Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

To achieve successful new product development, product managers and designers need to understand how consumers evaluate the product. Product appearance is regarded as an important determinant in consumers' evaluation process (Bloch 1995, Crilly et al. 2004). The visual design -or appearance- of a product influences consumer perception and preference (Creusen, 2015). Based on the appearance of a product, consumers make associations, such as its functional performance, quality, ease of use, or safety (Mugge and Schoormans, 2011). The visual appearance of products can also communicate the values of the brand (Creusen, 2015).

Novelty refers to the deviation in a product appearance from the current design state of the product category. Prior researches have suggested that a more novel looking design is perceived to have greater performance quality, as it is associated with technological advancements (Mugge and Schoormans, 2012). Several factors influence consumers' perception based on product appearance, specifically novel product appearance, such as type of consumers, purchase motivation, or brand strength (Creusen, 2015). However, how Brand strength influences the evaluation of consumers for visually novel products receives little research.

Brand strength is an important signal for product quality. Using their prior experience with the brand, consumers can make predictions about the overall quality and attributes of the product. Consumers tend to buy well-known brands (strong brand strength) for an expensive product or product that are used to demonstrate their social status (Fischer, Völckner & Sattler, 2010). More familiar (not novel) looking products are perceived to have less purchase risk, as they are looking more reliable to consumers (Celhay and Trinquocoste, 2015; Schnurr, 2017; Mugge and Dahl, 2013). Consumers may perceive more risk when buying a weak (as opposed to a strong) brand, as they are less certain of a sufficient level of quality. As a result, consumers may prefer a more typical looking product for a weak brand than a strong brand.

This research will examine how brand strength influences consumers' perception of a visually novel product, and how it differs for different product categories.

space available for images / figures on next page



**Personal Project Brief** - IDE Master Graduation

introduction (continued): space for images



image / figure 1: Two Kettles (cheap, low- importance product) with a novel look and a typical look



image / figure 2: Two cars( Expensive, high-importance product) with a novel look and a typical look

**PROBLEM DEFINITION \*\***

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

Several factors influence how product appearance impacts consumer product evaluation, such as product category-related factors, the type of consumers, or brand strength (Creusen, 2015). Among them, the influence of brand strength receives little research. The level of novelty affects the perceived performance quality of a product positively (Mugge & Schoormans, 2011). In this project, the joint effect of visual novelty and brand strength on consumer perception (preference) and how this effect differs for different product categories will be investigated.

Several research questions may be asked.

Research question 1: Whether brand strength influences the consumer perception (preference) of visually novel products

Research question 2: How brand strength influences the consumer perception (preference) of visually novel products

Research question 3: Whether the effect of brand strength on consumer perception of visually novel product differs for different product categories.

Research question 4: How this effect differs for different product categories

**ASSIGNMENT \*\***

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... . In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

In this project, I will look into how brand strength and visual novelty interact to influence consumer perception of the products. The final results will give insights to designers, product managers, and brand managers about how brands should determine the level of visual novelty of new products in NPD processes.

I will first do an extensive literature review on the topics of the influence of brand strength and visual novelty on consumer perception, and then formulate the research questions that I want to dig into. After that an experiment will be designed to test the research questions.

Based on the results of the experiment, the relationship of brand strength and visual novelty on consumer perception will be discovered and the contribution to the literature and implication for further research will be given. Moreover, recommendation of product design strategy for various brands in the market and for different product categories will be given.

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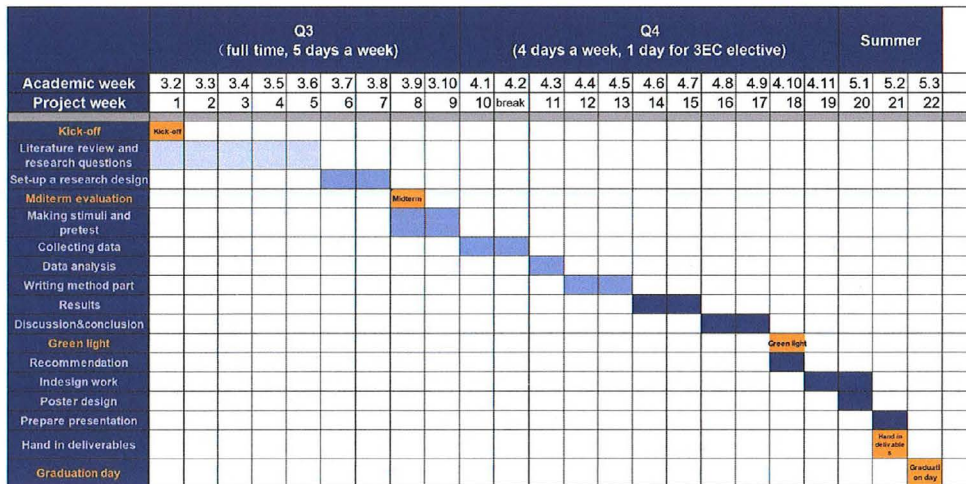
**PLANNING AND APPROACH \*\***

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 15 - 2 - 2021

23 - 7 - 2021

end date





**MOTIVATION AND PERSONAL AMBITIONS**

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, ... . Stick to no more than five ambitions.

**Motivation:**

I am interested in brand related project, so I set up the research project on the topic 'brand strength and consumer perception of visually novel product'. I want to prove the competences of formulating research questions, conducting research design (SPD project), SPSS data analysis (SPD quantitative). I want to deepen my ability of leadership, project management, and stakeholder management (Design strategy project).

**Ambitions**

1. I want to deepen my knowledge in doing an academic research.
2. I want to gain in depth knowledge on relationship of consumer perception of product appearance and brand
3. I want to gain the ability of speed reading of English academic articles.
4. I want to improve my English academic writing to a higher level.

**FINAL COMMENTS**

In case your project brief needs final comments, please add any information you think is relevant.

