



Master Thesis

New products: the importance of product characteristics in the buying process depending on the product type

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Date: 15th November 2016

Abstract

Successful new product introduction is difficult to achieve, the new product failure rate is substantial and it involves high costs for the company, which makes it crucial to know what is important for consumers when they buy a new product. This thesis contributes to the new product performance literature and it reverses the common perspective from managerial viewpoint to customer viewpoint. It studies the differences in consumer buying behaviour and the relative importance of product characteristics (product advantage, product compatibility with needs, product value, product innovativeness, and product brand). Its main focus is the effect of product type (utilitarian vs hedonic) on the trade-offs between the perceived importance of different product characteristics, and how this effect is moderated by consumer product category knowledge and consumer innovativeness. To analyse these relationships, primary data was collected through an online survey with 150 respondents, who were randomly divided into two treatment groups. Analysis of variance was conducted to study the suggested hypotheses. Due to the overall insignificant results of the study, the hypotheses were rejected apart from one that was partially confirmed. Consumer product category knowledge was found to moderate the effect of product type on the importance of product value: with utilitarian products, product value is more important when consumer knowledge is high, while the opposite is true for hedonic products. According to the outcomes of the study, product type has no impact on the relative importance of product characteristics and these relationships are not moderated by consumer innovativeness. Another interpretation of these results could be that the chosen methodology is not the best way to study the theoretical and conceptual framework.

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1. Introduction

1.1. Problem definition and research objectives

New product introduction is a very important and challenging process for a company's overall performance and it can be studied from two perspectives: the company's side and the consumer's side. The innovation process starts with the company generating a creative idea and developing a concept for a product. This is followed by the new product development process, which transforms the idea into a product ready for the marketplace, after which the product is finally launched (Annacchino, 2003; Trott, 2008).

New or upgraded products are launched into the market on a daily basis, but successful new product introduction is hard to achieve and the failure rate is significantly high (Crawford, 1977). New product performance is measured by financial objectives, market share objectives, or technical objectives (Montoya-Weiss and Calantone, 1994). The new product failure rate is defined as: 'the percent of new products actually introduced to the market and then fail to meet commercial objectives of the business unit that launched the product' (Castellion and Markham, 2012 p.976). There is a constant debate on this rate's figure, ranging from around 35% to up to 80-90% and depending on the industry. According to Castellion and Markham (2012), the 80-90% rate is an 'urban legend' and the actual rate determined by empirical studies is around 40%. Because of these significant figures and the high costs of new product failure, it is very interesting to study what accounts for these substantial rates and how companies can decrease them.

For instance, if we take a look at the consumer electronics industry, what are the reasons behind the major failure of the Windows phone compared to the success of the iPhone that has become a bestseller and an icon? Some of these reasons are related to consumers' buying behaviour, how they perceive the new product and its characteristics, and how this fits with their needs. Launched as an alliance between Microsoft and Nokia, the Windows phone failed to offer a clear competitive advantage over the other already well-established smartphone alternatives - Apple's iOS and Google's Android (Heisler, 2015; Bort and Rosoff, 2016). It also failed to meet the need of consumers that wanted to have access to a certain range of popular applications when they buy a smartphone (Blass, 2016). These reasons provoked its failure and led to some serious consequences: the annual output of Windows smartphones was cut, thousands of former Nokia employees were laid off, and the entire Microsoft's purchase was written off as an impairment charge (Blass, 2016).

Product characteristics – the elements related to the offering – are one of the categories of key drivers of new product success (Henard and Szymanski, 2001). This set of new product

performance determinants is chosen as the focus of this study due to its close and direct relationship with customer perception of the new product and its offering, the consumer decision-making process and the final choice whether to buy the company's recently launched product. The way customers perceive this category of determinants in an offering of a new product that they have no prior information about and how they assess their relative importance is crucial because this is afterwards translated into sales of the product; and sales, in turn, are one of the key measures of a product's success.

Product characteristics include the following factors: whether the new product offers a competitive advantage over other existing alternatives; whether this product matches the actual needs of consumers; whether consumers are willing to pay a high price for this product; and whether consumers want a highly innovative product with the latest features available (Henard and Szymanski, 2001). Apart from the product characteristics, the brand and its perceived importance will also be analysed here. The brand can be a very important determinant of the purchase decision when buying a new product and its perceived importance can vary depending on the product category.

When consumers need to make a choice, they usually perform trade-offs, for example, between a product's quality and value. These trade-offs could be different depending on the type of product – utilitarian, which is more practical and goal-oriented, and hedonic, which is more sensory, experiential and affective (Dhar and Wertenbroch, 2000). Differentiating these two types of products can reveal whether there are any key differences in how customers perceive the importance of product characteristics in the buying process and which product characteristics are most important in each case. It is interesting to explore the differences in what can account for new product success depending on the product type.

However, these expected differences may not always exist to the same extent because consumer product category knowledge and consumer innovativeness can have an influence over the expected relationships. These two personal characteristics can affect each consumer's perception of what is important in the buying process. Therefore, taking into account the moderating effect of the level of consumer product category knowledge and consumer innovativeness, investigates on a deeper level whether different product characteristics are indeed of greater importance for each type of product or whether this effect is diminished by the suggested moderation. Some personal characteristics (such as gender and age) could also lead to differences in the results, therefore their effect is also taken in account by including them as control variables.

Taking everything aforementioned into account, the research question of this study can be defined as follows:

What is the effect of product type (utilitarian vs hedonic) on the relative importance of product characteristics and how is this effect moderated by consumer product category knowledge and consumer innovativeness?

1.2. Scientific and managerial relevance

This study aims at contributing to the academic literature on new product performance because its main goal is to determine the relative importance of product characteristics when consumers are buying a new product. Previous meta-studies on new product performance conclude that there is still much space for further research before the determinants of new product success are clear (Montoya-Weiss and Calantone, 1994; Henard and Szymanski, 2001). Therefore, more research in this topic could be very beneficial by confirming theories and coming up with new insights about variations in consumer buying behaviour. Moreover, Henard and Szymanski's article that serves as a basis of this study points out that more research on the contextual factors and their modifying impact on new product success drivers could be conducted. Thus, this research adds to the existing literature on this topic by differentiating two types of products – utilitarian and hedonic – to see the contextual differences. Furthermore, differentiating the type of consumers (more or less knowledgeable and more or less innovative) could provide other new important and interesting insights.

In addition, this study analyses aspects of new product performance from a different perspective compared to the majority of the studies on this topic which use data from the point of view of the firm, reflecting managerial perception (Montoya-Weiss and Calantone, 1994; Henard and Szymanski, 2001). Gaining data from a managerial perspective is a popular approach because it is convenient to get information about new products' performance directly from the company. However, data from managerial perspective is often subjective and inadequate, because companies are not willing to share information about failed products, which can make the results biased and with lower internal validity. To produce new interesting and unbiased insights, this study reverses the perspective by using the same set of product characteristics as in Henard and Szymanski's (2001) analysis on new product performance, but the focus here is on customer perception. It is analysed from the customer's side which of the determinants of new product success are most important in the buying process and critical for new product adoption. Moreover, contrary to most of the new product performance studies that take a broad view on all the antecedents, this more narrow and focused approach enables us to separate the product characteristics determinants related to customer perception from other determinants related to the company's internal processes and strategies. In this way, we are able to accumulate more

knowledge particularly on the importance of product characteristics in the buying process from the consumer's side.

Regarding managerial relevance, this research could be useful for companies to understand better what makes consumers buy their new product, depending on what type of product they produce – utilitarian or hedonic. Fresh perspectives on the analysed differentiation can be provided, which can enable managers to design their advertising campaigns better and help them with pricing and promotion strategies (Voss, Spangenberg and Grohmann, 2003). Companies in different industries (depending on the product type) probably need to emphasize on different elements of their new product offering. It is also possible that there could be some surprising insights that differ from existing theory and common expectations. This could bring managers' attention to some product characteristics that are usually neglected in that product class, but are actually essential.

Moreover, a deep and detailed understanding of the customer is essential to product success: because consumers are very heterogeneous with different needs, preferences and personal characteristics, it is very important that a company designs its marketing strategy in a way, so that it can reach and attract the right customers. Differentiating consumers based on their product category knowledge and innovativeness could segment the market and indicate which product characteristics are more important for the most attractive segment of consumers (e.g. more knowledgeable or more innovative), so that the new product offering could be better targeted towards them (Fu and Elliott, 2013). As a result, any particular product could be launched in a way so that it will be better perceived by potential customers, which can ultimately lead to increased sales and performance of new products.

1.3. Structure of the thesis

A brief overview of the study is provided here. The second chapter of the thesis illustrates the theoretical background on which the thesis is built, together with the proposed conceptual model and the hypotheses. The third chapter describes the research methodology: how the survey is designed, how the variables in the model are measured, and how the data is collected to test the hypotheses. In the fourth chapter, the data is analysed and the hypotheses are tested. Chapter five concludes the study by discussing the results and how they answer the research questions, the associated academic and managerial implications, and the limitations and possibilities for further research.

2. Theoretical Framework

2.1. Product characteristics

2.1.1. Overview

The product characteristics will be analysed as the dependent variables in this study in order to check their relative importance to consumers. To begin with, two meta-analyses on the determinants of new product performance are discussed here. These two articles summarize previous studies on this topic, so they are a good starting point for building the theoretical framework.

Montoya-Weiss and Calantone (1994) conducted a meta-study on the factors that determine new product performance. This study consisted of 47 empirical studies from the 1974-1993 period. The authors grouped their 18 factors into 4 different categories: strategic factors; market environment factors; development process factors; and organizational factors. In their study, the strategic factors group (including product advantage, marketing synergy, technological synergy, strategy, and company resources) was mostly focused on the consumer's side instead of on the company's internal side. They found that among the four most frequently used determinants of new product performance in prior studies were the product advantage and three other development process factors. Producing a superior product tailored to customers' needs was among the top factors, so it will be studied in depth in this research. Overall, Montoya-Weiss and Calantone found that there are large variations in the results of the studies they analysed. Therefore, they stated that the conclusions about the key drivers of new product success and about the impact of the strategic factors on new product performance are still not clear, so further research is necessary.

The unclear conclusions Montoya-Weiss and Calantone's (1994) research and the greater amount of new product performance studies available led to the need for another meta-study to fill in some of these gaps in the literature. Henard and Szymanski (2001) conducted a meta-analysis, which included 61 studies from the 1974-1995 period, to study the factors explaining the differences in new product performance. They combined these 24 determinants into 4 groups (different from those of Montoya-Weiss and Calantone (1994): product characteristics; firm strategy characteristics; firm process characteristics; and marketplace characteristics. Out of all the 24 factors, they found that those that have the highest average impact on new product performance are: product advantage (a product characteristic), market potential (a marketplace characteristic), meeting customer needs (a product characteristic), predevelopment task proficiencies (a firm process characteristic), and dedicated resources (a firm strategy characteristic). Here we can see that three of the groups

had only one representative, while two of the dominant factors fell into the product characteristics group. This proves that product characteristics and how they are perceived is crucial for new product success. This group of factors is particularly relevant to this research and it includes the elements related to the offering: product advantage; extent to which product meets customer needs; product price; product technological sophistication; product innovativeness.

As mentioned in the introduction, product characteristics will be analysed from a different perspective in this study – from the point of view of the consumer. The majority of studies on new product performance are conducted from a managerial perspective or from the company's side (Montoya-Weiss and Calantone, 1994; Henard and Szymanski, 2001), so they take into account factors such as processes and strategies that are internal for the firm. However, measures of perceptual variables from the product characteristics group (such as the extent to which the product meets customer needs) are based on management's perception, which is could be subjective and not always reflecting the real extent (Henard and Szymanski, 2001). Although this is also relatively subjective due to self-reporting issues, in this study consumers' perception of product characteristics and their relative importance will be analysed, which can lead to different results and provide new interesting insights. For example, the product advantage, which is considered as a top factor in new product performance papers, may turn out to be seen as relatively unimportant compared to other product characteristics.

Because this study will be conducted from a consumer's perspective, Henard and Szymanski's perceived technological sophistication of the product factor will not be considered. This factor can classify products as high-tech (using new or advanced technology and developed in a highly technical environment) or low-tech (using simple and traditional technology) (Henard and Szymanski, 2001). It would not be relevant to ask participants to assess this product characteristic, as it is can be seen more as a fact about the product rather than as a perceptual variable. Instead, another dependant variable will be considered here – product brand. This is a very important determinant of consumers' buying behaviour in many cases and it is particularly relevant for the utilitarian/hedonic product differentiation that will be used in this study.

2.1.2. Product advantage

Product advantage is defined as the 'superiority and/or differentiation over competitive offerings' (Henard and Szymanski, 2001 p.364). They included product quality, which is a very important determinant of the consumers' decision-making process, in the product advantage concept. Their product technological sophistication determinant, which will not be

considered as a separate variable here, can also be linked to the product advantage concept, as it is directly related to offering a superior product.

Similarly, according to Cooper (1979; 1994), the key factors that determine new product success are: product advantage, superiority or differentiation, so the most important determinant is having a 'unique superior product'. He characterised superior products as: having unique attributes that the customer cannot get from competitors' offerings; being good value for money; meeting customer needs better than competitors' offerings; being of excellent quality relative to competitors' offerings; having better price-performance characteristics than competitors' offerings; having attributes that can be easily seen as useful and beneficial; and having obvious and easily visible benefits.

According to Rogers (1995) and his research on the new product adoption process, the relative advantage of a product is the extent to which a new product is better than the already existing alternatives in terms of functionality, convenience, satisfaction or social status. Rijdsdijk, Hultink and Diamantopoulos (2007) built their relative advantage measurement scale on Rogers' definitions and they describes it as a product that 'offers advantages that are not offered by competing products', is 'superior to competing products' in the eyes of the consumer, and 'solves a problem that cannot be solved with competing products'. The product's relative advantage is among Rogers' five determinants of the consumer's opinion about an innovation together with compatibility, complexity, trialability and observability. He found that when the relative advantage of the product is larger, the adoption time is shorter, whereas when there is no significant difference with existing options, consumers do not recognize the point of buying this particular new solution instead of the existing ones.

The level of product competitive advantage is found to have a positive impact on the level of new product success (Kleinschmidt and Cooper, 1991; Cooper, 1994). According to Henard and Szymanski (2001) and to Ostlund (1974), product advantage is among the most important determinants of new product success. As such a key determinant of new product performance, in this study, the importance of product advantage will be assessed from the perspective of the consumer and compared to the importance of the other product characteristics.

2.1.3. Product compatibility with needs

Product compatibility with needs corresponds to Henard and Szymanski's 'product meets customer needs' factor, defined as the 'extent to which product is perceived as satisfying desires/needs of the customers' (Henard and Szymanski, 2001 p.364). This is one of Henard

and Szymanski's factors that have the highest impact on new product performance. Customer needs and how the product meets them is crucial when consumers are making a purchase decision (Pincus, 2004). Fulfilling the needs of the end-consumers is very important for the success of new products: products that are developed in a way so that they satisfy customer needs better are supposed to be more successful than competitors' products. According to Rogers (1995), compatibility is one of the five factors that determine the consumer's opinion about an innovation and it represents the extent to which a new product fits with the adopter's life and social system. Some of the launched new products tend to have low compatibility and they do not match any needs of the consumers. The higher the compatibility of an innovation, the sooner people get used to it and adopt it.

To launch successful new products, companies need to constantly conduct market research to be able to follow the emerging market trends and customers' changing needs, which should be afterwards reflected into the new products they develop. Therefore, there is even an 'acceptability research' approach that studies the diffusion of new products: consumers indicate whether the new product meets their needs and a new product is designed after that to satisfy these previously unmet needs (Rogers, 1976). However, the majority of new product performance studies measure the extent to which the product meets needs based on management's perception, which is could be a relatively subjective measure (Henard and Szymanski, 2001). In this study, consumers' perception of the importance of how well the product meets their needs will be measured and compared to the other determinants, which can lead to different results and provide new interesting insights.

2.1.4. Product value

According to Henard and Szymanski (2001 p.364), product price is defined as the 'perceived price-performance congruency, i.e. value' of the product and it is among the important determinants of new product success. For better clarity, this variable will be called 'product value' in this study instead of 'product price' to indicate that it relates to the price-performance relationship, not just the price itself. Zirger and Maidique (1990) analysed new product performance in high-tech industries and one of the main factors they found is the product's value to the customer or the price-performance congruency.

Sweeney and Soutar (2001) developed a product value measurement scale and described it as a product that 'is reasonably priced'; 'offers value for money', and 'is a good product for the price'. Good value for money can well differentiate new products. It is based on customers' assessment of the level of benefit they get from a product compared to what they

pay for it. Taking into account the quality, cost, use of resources, convenience, and how suitable it is for the purpose, customers assess whether the product is of good value.

Cooper (1994) combined the determinants product advantage and price-performance congruency, while other researchers analyse them separately. Price-performance congruency can be analysed as an aspect of product advantage, but it should be better regarded as an individual determinant because it includes an economic benefit aspect, so it would be interesting to analyse it separately. Price can influence choice negatively because higher prices affect the consumer's budget negatively, but it can also influence choice positively because it can be perceived as a cue of higher product quality (Rao and Monroe, 1988). Due to these contradictory effects, it will be interesting to see the differences in the importance of product value.

2.1.5. Product innovativeness

This determinant is described as the product's 'perceived newness/ originality/ uniqueness/ radicalness' (Henard and Szymanski, 2001 p.364). Langerak and Hultink (2006) identified product innovativeness as an important factor associated with the correlation between new product sales and development time. Fu and Elliott (2013) also stated that perceived product innovativeness is a crucial factor and that it is positively related to new product adoption rates. Song and Montoya-Weiss (1998) distinguished two types of innovativeness: regarding the novelty of the product compared with the company and its existing products (internally) or compared with the outside world (externally).

The extent of product innovativeness can vary and there are two commonly recognized types of product innovations – radical and incremental (Dewar and Dutton, 1986). Radical innovations are new products that need a high degree of new knowledge – a radical new technology and a way of manufacturing compared to what is necessary for the existing products of the company, while incremental innovations require a low degree of new knowledge – they are improvements of existing products and do not require a new manufacturing technology.

Song and Montoya-Weiss (1998) conducted a research on the relationships between product innovativeness, the new product development process and the performance of the new product. There emerged two contradicting views on the connection between product innovativeness and product success (Song and Montoya-Weiss, 1998; Kleinschmidt and Cooper, 1991). On the one hand, higher product innovativeness increases new product performance, since there are higher differentiation and higher competitive advantage. On the

other hand, lower product innovativeness could increase performance, because of the familiarity and lower uncertainty of less innovative products (emerging markets with unknown demand and unclear requirements often need to be targeted in order to develop very innovative products). Due to these contradictory statements, it will be interesting to analyse the effect on this dependent variable.

2.1.6. Product brand

Apart from Henard and Szymanski's product characteristics, another important determinant of consumers' buying behaviour is the brand. The brand and how it is perceived is a result from the firm's marketing strategy and marketing task proficiency. In the new product development context, it can be referred to the 'marketing synergy' determinant in Montoya-Weiss and Calantone's research, related to activities that develop the brand and brand knowledge – 'the salesforce, distribution, advertising, promotion, market research, and customer service' (1994, p.415). The marketing synergy factor is also present in Henard and Szymanski's (2001) research. However, in this study, the brand will be analysed from a consumer's perspective, so the brand needs to be separated from the firm's internal processes and considered as an individual determinant.

Brand knowledge is what a consumer has experienced and knows about the brand, which is accumulated from marketing activities, personal experience and word of mouth (Keller, 2013). Brand knowledge affects what comes to mind in certain situations, therefore it is very important for consumer choice. Brand knowledge consists of brand awareness and brand image (Keller, 2013). Brand awareness represents how easy and how well the consumer recognizes the brand – it involves brand recognition together with brand recall. Each consumer's brand consideration set has a key role in determining their purchase behaviour. This consists of the brands the consumer is aware of and that are goal-satisfying and accessible in memory (coming to mind) on a certain occasion (Shocker et al., 1991). With the help of brand awareness, consumers are able to make faster purchase decisions, as they do not have the capacity and time to take into account all possible options in a product category and to evaluate them. Because the consideration set is built for a certain purpose, the context or the intended usage are expected to influence the consideration set (Shocker et al., 1991).

The other aspect of brand knowledge is brand image and it is defined as how the brand is perceived, which is determined by the consumer's brand associations that are held in memory (Keller, 2013). Like brand awareness, brand image induces consumers to have preferences for particular brands and helps them in making choice faster. Brand image is

found to be a very important factor in determining the core brand attitude and to have a positive effect on purchase intention. Moreover, when consumers use a branded product, they build emotional connections with the brand. The brand name is found to have a positive impact on the quality, value and willingness to buy perception (Dodds, Monroe and Grewal, 1991). It will be interesting to see for which type of products the brand impact is of greater importance relative to the set of product characteristics.

2.2. Product type (utilitarian vs hedonic)

In their study, Henard and Szymanski indicated that the relationship between the drivers and new product performance is affected by measurement factors (such as using multi-item or single-item scales, subjective or objective performance measures, senior manager or project manager data, short-term or long-term data) or by contextual factors (such as using services or goods, different geographical context, competition in high-technology versus low-technology markets). The product characteristics determinants are typically hypothesized to have positive impact on new product performance, but the results, the significance and the level of impact are different depending on the measurement and contextual factors used. Therefore, it is relevant to check the impact of other contextual factors, such as whether the introduced product is utilitarian or hedonic, which has not been analysed in a new product performance context in prior studies.

By distinguishing primarily utilitarian from primarily hedonic new products, this research will add to the literature by finding out the contextual variation in the product type's impact on the perception of importance of product characteristics – the determinants of new product performance. Due to the completely different nature of these two product types and the different reasons for buying a product, which induces different trade-offs in the consumer decision-making process, there is expected to be a significant variation. Moreover, this product type differentiation is relevant in the new product adoption context: Fu and Elliott (2013) made a similar differentiation between the main reason for consumers to buy new products – functional and symbolic, which can be reflected in these two product types to different extents.

Consumer attitude towards products and brands has two dimensions – utilitarian and hedonic. In different product categories, the utilitarian and hedonic reasons can exist together to different degrees, but product categories tend to be more positively assessed on one of the dimensions, which makes overall attitude towards a product either primarily utilitarian or primarily hedonic (Dhar and Wertenbroch, 2000). The utilitarian component is

based on instrumentality, the usefulness of the product and the accomplishment of a functional or a practical task; the hedonic component is based on the sensory and experiential affect related with the product and how much pleasure or fun it provides. (Batra and Ahtola, 1991; Dhar and Wertenbroch, 2000; Voss, Spangenberg and Grohmann, 2003). Based on the primary benefit they provide, utilitarian products are functional and goal-oriented, whereas hedonic products are more emotional and sensory.

Furthermore, the 'want/should' distinction is valid here: hedonic items are usually subject to 'want' (affective) preferences, while utilitarian products are subject to 'should' (reasoned) preferences (Dhar and Wertenbroch, 2000). Comparing the 'luxuries-wants-hedonic' benefits and the 'necessities-needs-utilitarian' benefits, customers tend to give more importance to utilitarian benefits than to hedonic benefits (Chitturi, Raghunathan and Mahajan, 2008). The product's benefits and the associated goals of utilitarian products are clearer and they are easily quantifiable and justifiable (Kim and Kim, 2014). On the contrary, with hedonic products when consumers make decisions based on feelings and emotions, it is difficult to assess the product advantage and the product can even be perceived as wasteful. Due to self-control issues and feelings of guilt, consumers are even willing to pay a higher price per unit for a 'vice' (hedonic) product than for a 'virtue' (utilitarian) product and get smaller packages in order to be able to limit consumption of 'vice' goods (O'curry and Strahilevitz, 2001).

When evaluating utilitarian and hedonic products, consumers have a different processing strategy in each case: with utilitarian products they engage in deeper-level cognitive and diagnostic information processing and tend to screen all available information, while with hedonic products they adopt affective processing, evaluate products more holistically, superficially consider the obtainable information, and rely on heuristics instead (Klein and Melnyk, 2014). Thus, it is anticipated that the product type has a direct effect on the dependent variables and that different product characteristics would be more important in the buying process for primarily utilitarian and primarily hedonic products: while the product characteristics based on the functionality of the product should be more important for utilitarian products, the brand (a heuristic cue) should more important for hedonic products.

2.3. Consumer product category knowledge

In the new product adoption context, subjective product category knowledge is linked to consumers' ability to evaluate the product and motivation in the decision-making process and it affects the purchase decision towards a new product (Fu and Elliott, 2013). According to Fu and Elliott (2013), it is one of the key factors that affect the adoption of new products. Thus,

when buying a new product from an existing product category, it is expected that consumer product category knowledge influences the effect of the product type on the importance of product characteristics – particularly on the importance of product advantage, product value and product brand.

A set of expectations about what a product category has to offer is developed over time by each consumer (Sujan, 1985). These expectations are based on the most typical category members and include: the attributes that go together, the usual configurations of the attributes and the expected performance levels. According to Alba and Hutchinson (1987), product knowledge involves both consumers' expertise (the ability to successfully complete product-related tasks) and their familiarity with the product (how many product-related experiences the consumer has had), which are connected and positively related. Product knowledge influences consumers' purchase decisions and indirectly determines their purchase intention (Lin and Chen, 2006).

Each consumer has a different level of prior knowledge about a product category and this prior knowledge affects their choices (Malaviya and Sivakumar, 1998). Therefore, this is expected to influence the perception of the relative importance of product characteristics and the brand impact. Consumers with high product category knowledge can retrieve category and brand information from their memory when they need to make a choice, as opposed to consumers with low product category knowledge. Sujan (1985) compared 'knowledgeable' consumers to 'novice' consumers and stated that knowledgeable consumers generate more product-related and attribute-oriented thoughts, fewer simple evaluative thoughts, and they make less extreme evaluations than novice consumers.

According to Alba and Hutchinson (1987), 'novices' do not engage in search extensively and they are unable to make good product comparisons, so brand and attribute awareness that is top-of-mind or other point-of-purchase cues influence their purchase decisions. When assessing an unfamiliar product and its features, their judgements may be based on the similarity between the product with another more familiar product, as they assume that these products do not differ significantly. In contrast, 'experts' are able to recall brand information and they do not tend to select a brand based on advertising-induced salience. Experts have the ability to distinguish decision-relevant and high-quality information from irrelevant product information.

According to Fu and Elliott (2013), Petty and Cacioppo's (1979) Elaboration Likelihood Model can be linked to consumers' product knowledge concept. The persuasion process can result

from a thoughtful consideration of relevant attributes (central route) or from associations with different positive or negative cues (peripheral route). More knowledgeable consumers tend to use the central route – they rely on the cognitive evaluation of new products and engage in thoughtful considerations. Less knowledgeable consumers use more often peripheral cues such as other people's recommendations or the brand name (Fu and Elliott, 2013).

According to Park and Lessig (1981), consumers can be divided into three groups depending on their product familiarity: a person with no information-search experience, no usage experience and no ownership has low familiarity; a person with information-search experience and/or usage experience but no ownership has moderate familiarity; a person with information-search experience, usage experience and ownership has high familiarity. Moderate-familiarity consumers rely less on price and brand name than low-familiarity or high-familiarity consumers. Low-familiarity consumers rely more on the non-functional dimensions of price and brand name than on the functional dimensions. Moderate-familiarity consumers rely more on the functional dimensions of price and brand name than on the non-functional dimensions. High-familiarity consumers rely both on the non-functional dimensions of price and brand name and on the functional dimensions. Consumers with high prior knowledge about the category are able to make decisions based on value maximization, whereas consumers with low prior knowledge cannot perform trade-off contrasts regarding product attributes (Malaviya and Sivakumar, 1998). Consumers with moderate prior knowledge level are able to perform trade-off contrasts but unable to make value maximization choices.

2.4. Consumer innovativeness

Consumer innovativeness is directly related to consumers' new product adoption process, so it can be considered as another factor that expected to affect the product type's impact on the importance of product characteristics – particularly on the importance of product innovativeness. Rogers and Shoemaker (1971) defined innate consumer innovativeness as the extent to which a person adopts innovations relatively earlier compared to other people in his/her social system. Similarly, according to Midgley and Dowling (1978), the concept consumer innovativeness captures the extent to which a person is receptive to new ideas and makes innovative choices, not influenced by other people's communicated experiences. Consumer innovativeness is a personality trait that is correlated with innovative behaviour, which can be measured. Innovative behaviour tends to be affected by the favourability and time of the situation when the information is communicated and received and by the individual's interest in the particular product category.

Vandecasteele and Geuens (2010) distinguished customer innovativeness into different types based on different motivations for consumer innovativeness: functional, hedonic, social and cognitive. The reason behind functional innovativeness is the new product's functional value – how useful, reliable, good-quality, and efficient the product is. What determines hedonic innovativeness is emotional value and stimulation – how exciting, fun, enjoyable and providing pleasure the product is. Social innovativeness is determined by the product's social value and public image power – whether you can be different, unique, prestigious, high-status, and demonstrating your sense of belonging and success by having the product. What accounts for cognitive innovativeness is the achievement and epistemic values as well as intellectual stimulation – if the product enhances a person's knowledge, understanding, intelligence, and logical thinking. Vandecasteele and Geuens' findings stated that hedonic, functional and cognitive innovativeness types are usually motivated intrinsically, whereas social innovativeness is motivated extrinsically. Another distinction is that social, hedonic and cognitive types of innovativeness need positive reinforcement, while functional innovativeness needs negative reinforcement. The authors also argued that a really innovative person needs to score high not only on one of these four dimensions, but on multiple of them.

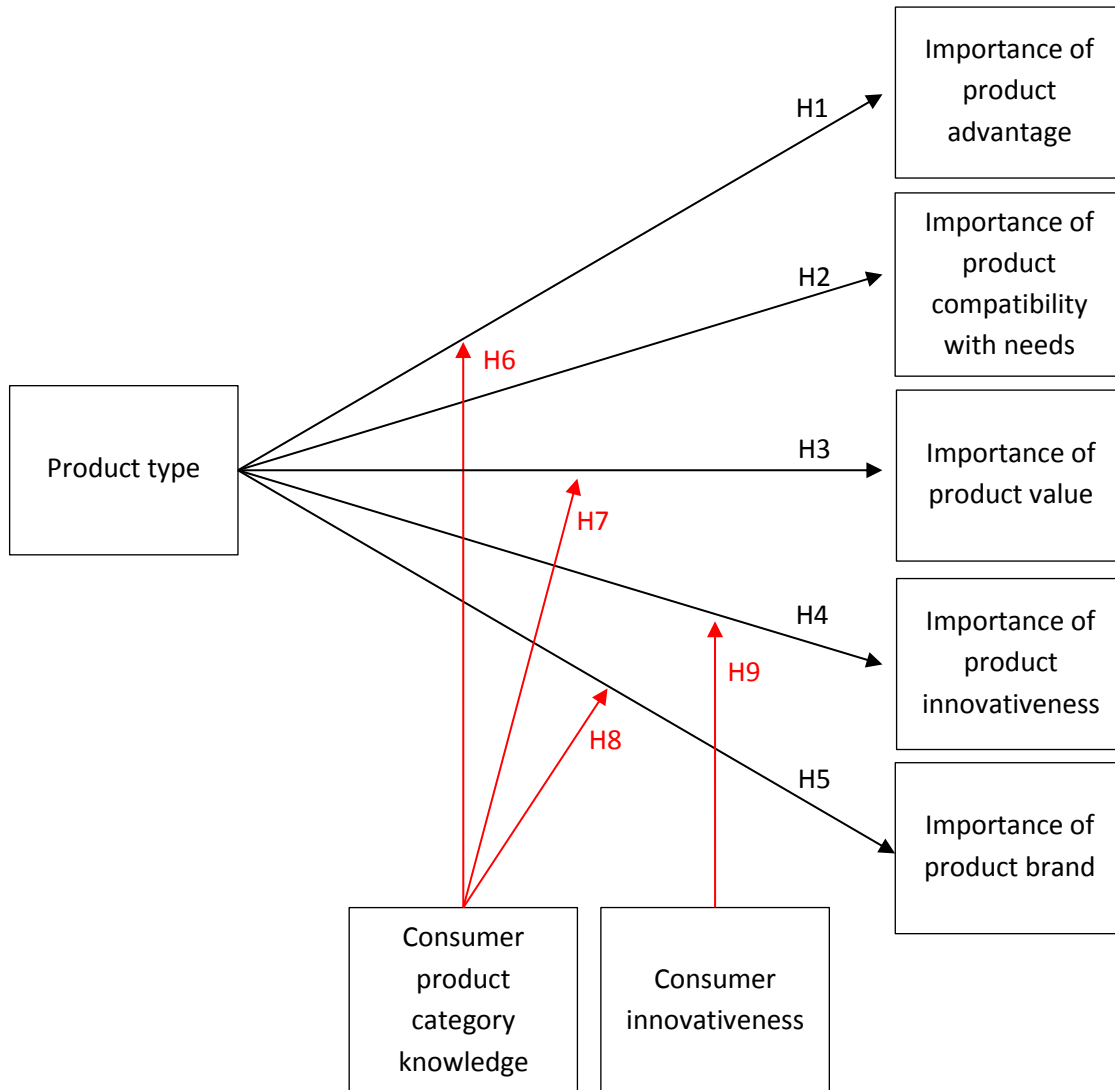
The differences in consumer innovativeness are found to lead to differences in purchase behaviour. According to Goldsmith and Hofacker (1991), innovators are typically the first to purchase a recently introduced product, they have greater interest in the product and product category knowledge, own more products in the certain category, and are expected to discuss the product category with other people. Steenkamp and Gielens (2003) generated interesting findings on products' trial probability. They found that consumer innovativeness has a positive influence on trial probability and it is stronger for more innovative products, for products with higher average feature and display activity, for products with higher relative price and with a stronger brand. Consumer innovativeness' effect is also found to be stronger for product categories that involve impulse buying to a greater extent and it is weaker when there is higher advertising expenditure on average.

A particularly relevant article for this study is Flynn and Goldsmith's (1999) – they linked the consumer product knowledge concept to consumer innovativeness and consumer purchase behaviour. They differentiated between subjective knowledge (how much people think they know about the product) and objective knowledge (how much people know about a product in reality) and argued that subjective knowledge indeed has a positive effect on consumer innovativeness and consumer purchase behaviour: when subjective knowledge about the product category is higher, new product adoption is found to be faster.

2.5. Conceptual framework and hypotheses

Based on the aforementioned theoretical background, the relationships between the variables are hypothesized to be as follows (Figure 1):

Figure 1. Summary of the framework



The expected effects of product type on each of the five dependent variables will be discussed first. Product type is anticipated to have an effect on the importance of product advantage because the product advantage is to what extent this new product is superior to competitive solutions (Henard and Szymanski, 2001) and its importance is expected to be assessed differently depending on the product type. With utilitarian products, the product's benefits and the associated goals are clearer and they are easily quantifiable and justifiable, as opposed to hedonic product situations, in which it is difficult to assess the product advantage and the product can even be perceived as wasteful (Kim and Kim, 2014).

Moreover, to assess a product's advantage, consumers need to pay attention to the more functional and practical aspects of the available information, which is usually done when buying a utilitarian product and not with hedonic products – in such a situation this type of information tends to be ignored (Klein and Melnyk, 2014). Hence, it is expected that the product advantage should be more important for utilitarian products than for hedonic products. Thus, the following hypothesis can be proposed:

H1: The product advantage is more important for utilitarian than for hedonic products.

The second relationship included in the model is between product type and the importance of product compatibility with needs – again, there are expected to be differences between the cases of utilitarian and hedonic products. The importance of the compatibility between the product and the consumer's personal needs is anticipated to be higher for utilitarian products if we consider the comparison between the 'luxuries–wants–hedonic' benefits and the 'necessities–needs–utilitarian' benefits (Chitturi, Raghunathan and Mahajan, 2008). Customers tend to give more importance to utilitarian benefits than to hedonic benefits because utilitarian products are directly related to consumers' 'needs': utilitarian products have clearer goals, so it is easier for consumers to relate these goals to particular needs. On the contrary, hedonic products are associated with consumers' 'wants', not with their needs, which makes hedonic products consumption harder to justify; it can even provoke feelings of guilt (O'curry and Strahilevitz, 2001). Therefore, it is more difficult to assess whether a hedonic product meets particular needs, so less importance is expected to be given to that product characteristic in the case of hedonic products. The following hypothesis is suggested:

H2: The product compatibility with needs is more important for utilitarian than for hedonic products.

The product type is expected to have a significant effect also on the importance of product value (price-performance congruency) because people are expected to have a different willingness to pay for these two types of products. Perceptions of luxury and expensiveness tend to be transferred to hedonic products (Huettl and Gierl, 2012), which can justify a higher price for this type of products. Moreover, consumers are willing to pay a higher price per unit for a 'vice' (hedonic) product than for a 'virtue' (utilitarian) product and get smaller packages in order to be able to limit consumption of vice goods due to self-control issues and feelings of guilt (O'curry and Strahilevitz, 2001). Therefore, we can say that people are willing to pay a higher price for hedonic products, while with utilitarian products, they are more willing to save

on the price and buy a product that is good value for money. Consequently, the importance of product value should be higher for utilitarian products than for hedonic products. The following hypothesis is proposed:

H3: *The product value is more important for utilitarian than for hedonic products.*

The arguments why the product type is expected to have an impact on the importance of product innovativeness will be discussed here. Product innovativeness is the relative newness and radicalness of the product compared to what already exists in the marketplace (Henard and Szymanski, 2001). Similarly to the product advantage, consumers need to focus on the functional aspects of a new product to assess its innovativeness, so it is logical that these attributes will be more important in the case of utilitarian products compared to hedonic products. With utilitarian products, consumers pay attention to the more functional and practical aspects of the available information – diagnostic information that is relevant to the associated consumption goal, which is not true in the case of hedonic products (Klein and Melnyk, 2014). Therefore, it is expected to be easier and more relevant to assess the innovativeness of a utilitarian product, so more importance is expected to be given to this new product success determinant when the consumer is buying a utilitarian product. This brings us to the insight that:

H4: *The product innovativeness is more important for utilitarian than for hedonic products.*

Due to the key differences in the nature of utilitarian and hedonic products, product type is assumed to influence the perceived importance of the product brand as well. As opposed to utilitarian products, hedonic products are not so goal-oriented and practical but more pleasure-oriented and experiential, so consumers more often make decisions based on feelings and emotions (Kim and Kim, 2014). When consumers use a branded product, they build emotional connections with the brand; hence, it can be concluded that a brand is more important in the case of a hedonic product. Moreover, when buying a hedonic product, consumers do not take into account all the practical information available (as with utilitarian products), but they tend to make choices based on subjective heuristics (Klein and Melnyk, 2014). The product brand can be regarded as a heuristic cue that facilitates the decision-making process. This is another argument why the product brand should be considered more important for hedonic new products than for utilitarian new products. Based on these reasons, the following hypothesis is proposed:

H5: *The product brand is more important for hedonic than for utilitarian products.*

Moderation effects. After discussing the hypotheses on the effect of product type on the dependent variables, consumer product category knowledge and consumer innovativeness will also be added to the model as moderators because they are expected to influence the proposed relationships. The moderation effect of consumer product category knowledge on the relationship between product type and the importance of product advantage, product value and product brand will be analysed. The moderation effect of consumer innovativeness on the relationship between product type and the importance of product innovativeness will also be studied here. No moderation effect on the impact of product type on the importance of product compatibility with needs will be discussed due to the already large number of formulated hypotheses and the lack of a clear relationship.

The moderation effect of consumer product category knowledge on the relationship between product type and the dependent variables will be discussed first. Low-familiarity consumers rely less on the functional dimensions of the product compared to high-familiarity consumers, so it will be more difficult for them to assess products' advantages and disadvantages (Park and Lessig, 1981). Contrasted with consumers with high product category knowledge, consumers with low product category knowledge are unable to make good product comparisons (Alba and Hutchinson, 1987) and to perform trade-off contrasts related to product attributes (Malaviya and Sivakumar, 1998), so they will be unable to properly assess the advantage or superiority of a certain product compared to other alternatives. Therefore, expected impact of product type on the importance of product advantage (higher for utilitarian than for hedonic products) is assumed to be lower when the consumer does not have sufficient knowledge about the product category. This leads us to the following hypothesis:

H6: *The effect of product type on the importance of product advantage is moderated by consumer product category knowledge: when consumer product category knowledge is higher, product type has an effect on the importance of product advantage; when consumer product category knowledge is lower, this effect is decreased.*

Consumer product category knowledge can also have a moderation effect on the relationship between product type and the importance of product value. Consumers with high prior category knowledge are able to make decisions based on value maximization, as opposed to consumers with low prior knowledge that are not able to properly assess whether the product is good value for money (Malaviya and Sivakumar, 1998). Moreover, consumers with lower familiarity with the product category tend to rely less on price cues because they cannot get

any useful information from these price cues about the expected price-performance relationship, so they rely more on other heuristics cues such as a brand or a store name (Dodds, Monroe and Grewal, 1991). Based on these arguments, the suggested impact of product type on the importance of product value (higher for utilitarian than for hedonic products) should be lower when the consumer is not knowledgeable enough about the product category. Therefore, the following hypothesis is proposed:

H7: *The effect of product type on the importance of product value is moderated by consumer product category knowledge: when consumer product category knowledge is higher, product type has an effect on the importance of product value; when consumer product category knowledge is lower, this effect is decreased.*

The level of product category knowledge is expected to moderate also the effect of product type on the importance of the product brand because consumer product category knowledge negatively influences the importance of the product brand. Consumers with low product category knowledge are not able to make adequate product comparisons, so top-of-mind brand awareness plays a key role in their purchase decisions (Alba and Hutchinson, 1987). When consumers are less familiar with the product, they rely more on heuristic cues such as the brand name than on price cues (Dodds, Monroe and Grewal, 1991). However, when consumers are knowledgeable and familiar with the product category, they do not rely on the brand to a great extent and it can be regarded as an unimportant cue about the quality and value of the product. The suggested impact of product type on the importance of product brand (higher for hedonic than for utilitarian products) should be lower and may even be eliminated when the consumer is too knowledgeable about the product category.

H8: *The effect of product type on the importance of product brand is moderated by consumer product category knowledge: when consumer product category knowledge is lower, product type has an effect on the importance of product brand; when consumer product category knowledge is higher, this effect is decreased.*

The expected moderation effect of consumer innovativeness on the impact of product type on the importance of product innovativeness will also be discussed here. Consumer innovativeness is the extent to which a person is receptive to new ideas, makes innovative choices and adopts innovations comparatively earlier than other people in their social circle, which is a personality trait that is correlated with innovative behaviour (Midgley and Dowling, 1978; Rogers and Shoemaker, 1971). According to Goldsmith and Hofacker (1991), innovators are typically the first to purchase a recently introduced product, especially if it is a

radical innovation – a very innovative product. Therefore, it is expected that consumer innovativeness would positively influence how important the relative innovativeness or newness of the product is. If the consumer is not innovative enough, this product characteristic may simply not matter to the consumer and he/she may not be willing to adopt an innovative product at all because it can be unfamiliar and involve higher uncertainty. Thus, the expected impact of product type on the importance of product innovativeness (higher for utilitarian than for hedonic products) may not exist when the consumer is not an innovative enough person. This suggests the following relationship:

H9: The effect of product type on the importance of product innovativeness is moderated by consumer innovativeness: when consumer innovativeness is higher, product type has an effect on the importance of product innovativeness; when consumer innovativeness is lower, this effect is decreased.

3. Methodology

3.1. Research design

To answer the research questions and test the hypotheses, primary data was collected and used for this study. For the pretest and for the main survey, an online survey was the most convenient way to collect the data. Because objectively-measured numerical data was collected through a survey and it was afterwards statistically analysed, this can be regarded as a quantitative study. According to Hanson and Grimmer (2007, p.59), quantitative research 'puts forward a numerical representation of issues and seeks to pin the world down with definite statements', and it is a dominant research type.

Experimental design is the way you plan to conduct the experiment: the factors are the variables you manipulate and the levels are their fixed values (Kuhfeld, Tobias and Garratt, 1994). Experimental design was the most appropriate research design to measure causality in the hypotheses. When an experiment is conducted, one or several of the independent variables are manipulated and data on the dependent variables is gathered, while everything else is controlled to be the same across different treatment groups (Kirk, 2013). In the main part of the study, only one variable (the independent variable – product type) was manipulated and this variable had two fixed values – utilitarian or hedonic product type. Two treatment groups of equal size were formed, so that each group referred to only one of the two conditions and there was one product per group shown to respondents – either utilitarian or hedonic. In addition, every respondent was randomly assigned to only one of the groups. This was done to incorporate between-subjects design in the experiment, which simply means manipulating the independent variable through treatment. The between-subjects design makes it sure that responding for a condition tested earlier does not influence responding for another condition, which can happen if within-subjects design is used (Kirk, 2013). Therefore, between-subjects design was preferable here.

The manipulation of the product type was done by showing a specific product category to the respondents as an example of either a utilitarian or hedonic product type. This was a suitable approach because it made the whole task more specific, clear and less abstract, so it was easier for respondents to assess the importance of product characteristics in these two cases. Still, some key words defining each product type ('instrumental, functional and goal-oriented' for utilitarian; 'associated with experiential consumption, fun, pleasure and excitement' for hedonic) were also shown to the respondents, in order that the weight was not solely given to the certain product category, used as an example. This kept the task relatively broad, so that it could lead to generalizable conclusions for the whole product type,

not just the product category. Moreover, no picture of the example product categories was shown to prevent the respondents from focusing too much on the particular product category when answering the questions.

3.2. External and internal validity

External validity is to what degree the results of the experiment are expected to be true beyond the experimental setting (Kirk, 2013). An experiment via an online survey is not conducted in the natural setting in which respondents would have to buy and assess a new product, so external validity would be limited but still higher than in a laboratory experiment. In order to achieve higher external validity, the respondents were put in a carefully described scenario to resemble the actual buying process as much as possible. By using the constant sum scaling method, the measurement of the dependent variables was designed to be similar to consumers' trade-offs in their decision-making process.

However, there could be selection bias since a convenience sample was used: people easy to reach (predominantly students) were invited to fill in the survey, so the sample cannot be representative of the entire population and this could also limit the external validity (Ferber, 1977). To account for the relatively young and not so diverse sample, age and gender were included as control variables in the analysis. Another factor that can limit external validity in such an online survey is the social desirability bias: due to self-reporting, the respondents can answer in a way that they think would be better perceived by others as it follows social norms, so the results would not completely reflect the reality (Jo et al., 1997). This type of bias was decreased here by informing the participants that their answers would be strictly anonymous and confidential, so that they would share their true opinion.

Internal validity is to what degree the results of the experiment are attributable to the experimental manipulation (Kirk, 2013). With the chosen experimental design, the internal validity is supposed to be relatively high, as the causal variable (product type) was isolated from other irrelevant independent variables that would interfere. Nevertheless, an online survey cannot achieve as high internal validity as a laboratory experiment, because the respondents are in their own environment, where there could be some different external factors involved. For example, the respondents could be involved in another activity while filling in the survey or something could interrupt them. In order to increase internal validity, the online survey was not designed to be too long and repetitive, so that the respondents would not get bored or distracted and this would not affect their answers to the questions. Moreover, the pretest sample was different from the one for the main survey because mixing the respondents could bias the results.

What could limit internal validity is the common method bias, which is present when common methods are used to measure several constructs; this results in false effects not because of the constructs themselves but because of their measurement. Using the same method, the same context to measure each variable, and the same participants as a source could cause common method bias (Rindfleisch et al., 2008). To decrease the common method bias, two different measurement methods were used in the main survey: constant sum question type was used to measure the dependent variables, while Likert scale questions were used for the moderators. The independent variable product type was not measured in the main survey together with the dependent variables, which also decreased the bias.

Furthermore, multi-item scales were used for measuring the two moderating variables and for the pretest to decrease the bias in this experiment. The results that multi-item produce are supposed to be more reliable than results from single-item scales: multi-item scales consist of more than one items, which need to be summed or averaged, and they take into account more aspects of the construct (Baumgartner and Homburg, 1996). Moreover, with a multi-item scale it is more likely to capture the differences among participants' responses, because it is a more detailed measure than a single-item scale. Besides, the order of the eight products in the pretest was randomized for each respondent to limit the bias in the responses.

3.3. Pretest

The first stage of this study was a pretest related to the independent variable – product type. This pretest was needed to confirm that the products in each group are perceived to be reflecting the expected product type. According to the pretest results, one product was chosen per product type and this product was the one that best fits the product type according to the participants.

A total of 8 products (4 per group) that had been used in prior research on hedonic/utilitarian products were shown to the respondents in a randomized order. Including a higher number of products would have resulted in the pretest being too long and repetitive. The chosen products were expected to be relevant to both genders and the majority of consumers.

Table 1. Utilitarian/ hedonic product categories used in the pretest

Utilitarian	Hedonic
Laptop (Crowley et al, 1991); Travel suitcase (Crowley et al, 1991); Cooking oil (Crowley et al, 1991); Toothpaste (Laurent and Kapferer, 1985)	Perfume (Drolet et al, 2007); Watch (instead of Jewellery in Crowley et al, 1991); Ice cream (Crowley et al, 1991); Potato chips (Crowley et al, 1991)

Then the respondents had to give an answer to several statements about each of the products. Based on that, each product was categorised as primarily hedonic/utilitarian. For this purpose, the first pretest of Drolet, Williams, and Lau-Gesk, (2007) was adopted. Respondents had to rate each product category on a 4-item 7-point Likert scale (see Appendix 1, Question 1).

After checking the reliability of the scale and the underlying factors, related to the utilitarian and hedonic dimensions, it was measured how the products were perceived on average by the respondents. This resulted in products being regarded as: 1) primarily utilitarian, 2) primarily hedonic, 3) both utilitarian and hedonic, 4) neither utilitarian nor hedonic (Crowley et al, 1991). The procedure of Crowley et al (1991) for categorizing products was adopted here – the 8 product were plotted on a two dimensional hedonic/utilitarian product map. For the purposes of the study, we needed to have a clear differentiation between these two product types, so the product that scored the highest on the utilitarian component (but not on the hedonic component) and the product that scored the highest on the hedonic component (but not on the utilitarian component) had to be chosen. To achieve this, Crowley’s method enabled better visualisation of these two dimensions, which made it easier to compare the products and to select the right ones.

3.4. Main survey and the measures of the variables

3.4.1. Dependent variables

The respondents were put in a scenario and then the *constant sum scaling* approach was used for measuring the dependent variables. This direct approach asked individuals to assess the importance of a set of dimensions by dividing 100 points between all the attributes to reflect their relative importance (Louviere and Islam, 2008; Malaviya and Sivakumar, 1998). This measurement method was preferable here, because it can be seen as analogous to the real consumer decision-making process, as it captures trade-offs and compromises. An advantage of this approach over, for example, a Likert scale question, is

that is makes respondents really think about their decisions because they cannot select all attributes as very important. Therefore, a constant sum scale should produce a more meaningful result. Another advantage of the constant sum scale is that it was significantly less time-consuming, repetitive and boring for respondents to answer this question compared to answering multi-item Likert scale questions for each of the five product characteristics. Here the constant sum scaling methodology of Louviere and Islam (2008, p.910) was replicated and slightly adjusted:

‘You are going to buy a product from a category that is primarily **instrumental, functional** and **goal-oriented**, such as **toothpaste**. You are considering a product that is **new** on the market. Please allocate 100 points among the 5 product characteristics listed below that research suggests matter to people when they buy a new product. The more important a feature is to you, the more points it should receive.’

Moreover, the product characteristics variables were explained to the respondents before they need to rate them. Henard and Szymanski’s (2001) definitions of the included product characteristics were provided for this purpose because they are short and clear but they were also adapted to be easier to understand (see Appendix 2, Question 1).

3.4.2. Consumer product category knowledge

Product knowledge can be measured based on how much a person knows about a product (objective knowledge) or on how much they think they know about the product (subjective knowledge) (Park and Lessig, 1981). Here the second (self-reporting) approach was used due to better feasibility. This subjective approach gives information about consumers’ biases and heuristics in evaluating choices and decisions. Subjective knowledge is different from objective knowledge only when consumers are under-confident or over-confident about the level of their real knowledge (Brucks, 1985). However, it is highly correlated with objective knowledge and it is based on objective knowledge: people’s perception of what they know depends on what they really know and their self-confidence about this knowledge (Rao and Monroe, 1988), so subjective knowledge is a useful measure as well.

A commonly used scale for measuring subjective knowledge is the one of Flynn and Goldsmith (1999). A key advantage of this scale is that it is not too long but at the same time relatively more detailed than, for example, the commonly used one of Brucks (1985). The scale consists of 5 questions, rated on a 7-point Likert scale (see Appendix 2, Question 2).

After checking the reliability of the scale, the mean value of the responses to these questions was taken to form one scale. To simplify the analysis, this was followed by a *median split* to divide respondents at the middle value of the dataset into two groups: the higher half and the lower half. This led to consumer product category knowledge being a categorical variable with two values: higher product category knowledge and lower product category knowledge. Splitting Likert-scale-measured data into two groups at the median value is a method used in other academic studies: e.g. in Barone, Shimp and Spratt (1999) and in Giese and Sojka (1998). According to Giese and Sojka (1998), the median split is an acceptable and reliable categorization method. A key advantage of this method is that it results in an almost equal number of respondents into each of the two groups, which is necessary for conducting the analysis. Furthermore, having a categorical moderator made it very convenient and straightforward to study the moderation effects of consumer product category knowledge by conducting an Analysis of variance (discussed in depth in Chapter 4). Still, the analysis was run also with a quartile split instead of a median split to see whether this would produce different results. This procedure again transformed consumer knowledge into a categorical variable but it split it into 4 groups.

3.4.3. Consumer innovativeness

To measure consumer innovativeness, Steenkamp and Gielens' (2003) consumer dispositional innovativeness scale was used. It consists of 8 questions, rated on a 7-point Likert scale (see Appendix 2, Question 3). This scale was chosen due to the large enough number of questions measuring the same construct, which makes it more likely to have reliable results. After the responses had been collected, the reliability of the scale was checked and the mean value of the responses to these questions was taken to form one scale. After that, the above-mentioned median split method was applied here again. This resulted in consumer innovativeness being a categorical variable, consisting of the following two groups of respondents: with higher consumer innovativeness and with lower consumer innovativeness. Again, the analysis was conducted also with a quartile split that divided consumer innovativeness into 4 groups to check if this would influence the outcome.

After the collection of the responses for the pretest and for the main survey was done, SPSS was used to examine the relationships between the variables, suggested in the formulated hypotheses. SPSS is a commonly used statistical software for marketing research tasks and it provides a variety of statistical tests that can be used to test different relationships. Therefore, it was an appropriate tool that produces reliable data overviews and results, and it was used to study the nine hypotheses of the study.

4. Data Analysis and Results

4.1. Pretest results

A small pretest with 17 respondents (53% students; 65% female; average age: 24) was conducted via Qualtrics, following the methodology described in the previous chapter. For each of the eight products, Principal components analysis (PCA) was performed. This is a widely used method to analyse the hidden structure of the data and to find the underlying correlated factors (components) behind the used scale. Through orthogonal transformation, this procedure transforms a set of probably correlated observations into principal components – a smaller number of variables that are not linearly correlated (Janssens, 2008). The first principal component accounts for the most of the variability, while each following extracted component accounts for the highest possible variance as long as it is orthogonal to the previous components.

For each of our eight products (except from toothpaste), the PCA extracted 2 components, having Eigenvalues higher than 1. These 2 components reflected the utilitarian component and the hedonic component of the products, which confirmed our initial expectations that question 1 and question 3 are correlated, while question 2 and question 4 are also correlated. In Appendix 3, the Component matrices, together with the questions belonging to each component group, can be found. In the case of the product toothpaste, only one component (with Eigenvalue higher than 1) was extracted but component 2 had an Eigenvalue also close to 1 (0.937). Still, the Correlation matrix showed that question 1 and question 3 were correlated, while question 2 and question 4 were also correlated, which again confirmed our initial expectations.

After the PCA confirmed that questions 1 and 3 formed the utilitarian component, while questions 2 and 4 formed the hedonic component, Cronbach's Alpha was used to measure the reliability of the scale: whether the questions that form the scale actually measure the same construct (Peterson, 1994). Running the analysis for the eight products altogether is preferable here than doing it for each product separately. If this was done separately, the Cronbach's Alpha model would not have been a suitable reliability measurement method because the reliability statistics was already sensitive to the number of items in the scale (only 2 in this case) and a very small sample size (17 respondents) would have made it even more sensitive. Thus, here the data was restructured from a wide form into a long form, resulting in 136 observations (17 respondents * 8 products). The Alpha value of 0.837 for the utilitarian component, based on questions 1 and 3 (Table 2), and the Alpha value of 0.889 for

the hedonic component, based on questions 2 and 4 (Table 2), were regarded as sufficient to prove the reliability of the scale (Peterson, 1994).

Table 2. Reliability statistics – Utilitarian component & Hedonic component

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Utilitarian	0.837	0.839	2
Hedonic	0.889	0.889	2

Table 3. Item statistics – Utilitarian component & Hedonic component

	Item	Mean	Std. Deviation	N
Utilitarian	Mainly logical or objective	4.79	1.854	136
	Based mainly on functional facts	4.93	1.720	136
Hedonic	Based a lot on feeling	4.24	1.888	136
	Based mainly on emotions	3.94	1.981	136

Subsequently, the mean scores of each of the components were computed. The resulting mean scores had a value range from 2.50 to 6.44 (Table 4 and Table 5). The means of the utilitarian and hedonic components of the products were then compared.

Table 4. Means of the utilitarian component of the eight products

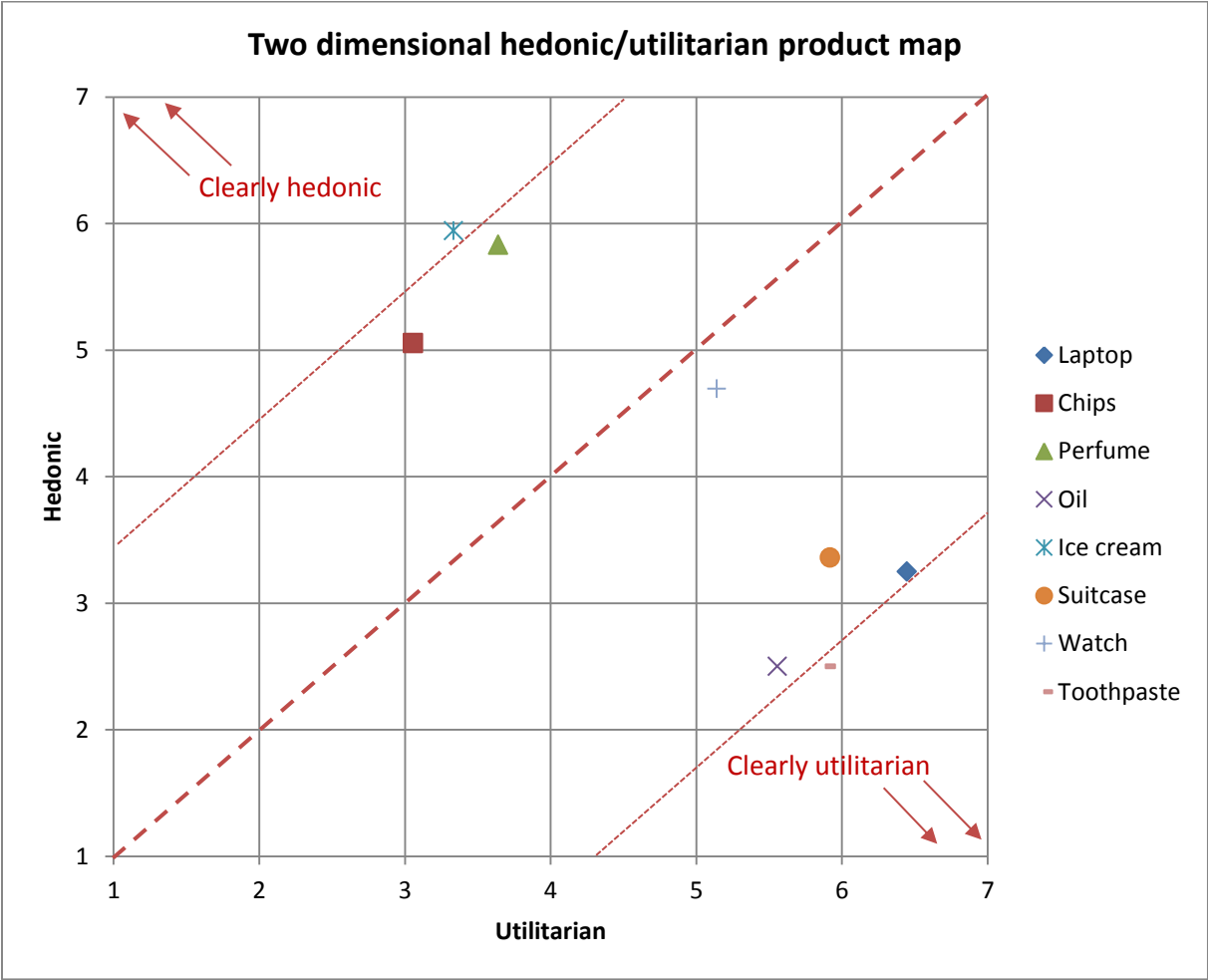
	Laptop	Chips	Perfume	Oil	Ice cream	Suitcase	Watch	Toothpaste
Mean	6.4444	3.0556	3.6389	5.5556	3.3333	5.9167	5.1389	5.8889
N	17	17	17	17	17	17	17	17
Std. Deviation	0.53930	1.41306	1.19811	1.04162	1.42457	0.73264	1.05448	0.75840

Table 5. Means of the hedonic component of the eight products

	Laptop	Chips	Perfume	Oil	Ice cream	Suitcase	Watch	Toothpaste
Mean	3.2500	5.0556	5.8333	2.5000	5.9444	3.3611	4.6944	2.5000
N	17	17	17	17	17	17	17	17
Std. Deviation	1.64719	1.40261	0.92355	1.12459	0.68361	1.40174	1.34097	1.21268

As in Crowley et al (1991), the means were also plotted on the two dimensional map for better visualization (Figure 2). A 45-degree line was drawn, so that the products on the line were equally utilitarian and hedonic. The products above that line were more hedonic, while the products under the line were more utilitarian. Therefore, the products in the upper left corner were the clearly hedonic ones and the products in the lower right corner were the clearly utilitarian ones. As expected, cooking oil, laptop, toothpaste, and travel suitcase were seen as utilitarian products, whereas potato chips, ice cream and perfume were perceived as hedonic. The product watch was seen as both utilitarian and hedonic (it was very close to the 45-degree line) – even more utilitarian, contrary to the initial expectations. To conclude, the most clearly hedonic product was ice cream and the most clearly utilitarian product was toothpaste (laptop scored higher on the utilitarian component but also much higher on the hedonic component, so it should not be selected). Thus, ice cream and toothpaste were the products chosen for the main survey.

Figure 2. Two dimensional hedonic/utilitarian product map of the eight products



After toothpaste and ice cream were chosen as the two products for the main survey, an Independent-samples t-test was conducted to check whether these two products are statistically different from each other regarding their utilitarian and hedonic components. According to the results in Table 6 and Table 7, the Sig. value of 0.000 (lower than 0.05) proved that the two groups are statistically different from each other regarding both their utilitarian and hedonic components.

Table 6. T-test Utilitarian component – Toothpaste (1) & Ice cream (2)

	N	Mean	Std. Deviation
Product 1	17	5.8889	0.74755
Product 2	17	3.3333	1.29833

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	Sig. (2-tailed)	Mean Difference
Equal variances assumed	8.557	0.006	- 7.609	0.000	-2.5556

Table 7. T-test Hedonic component – Toothpaste (1) & Ice cream (2)

	N	Mean	Std. Deviation
Product 1	17	2.5000	1.07187
Product 2	17	5.9444	0.70450

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	Sig. (2-tailed)	Mean Difference
Equal variances assumed	8.508	0.006	- 11.534	0.000	-3.4444

4.2. Data collection & descriptive statistics

Due to its user-friendliness, Qualtrics was chosen as the platform for conducting the main survey. About 5-7 minutes were necessary for filling out the survey. The number of respondents that took part in the main survey was 150 (75 per condition). In Table 8, the demographic details of the sample are presented. Apart from the demographics of the full dataset, it can be also seen how the groups exposed to either the utilitarian or the hedonic conditions differed from each other. Overall, there were no major differences to be found.

Table 8. Demographics

	Full dataset	Utilitarian condition	Hedonic condition
N	150	75	75
Gender	Male: 42% Female: 58%	Male: 41.4% Female: 58.6%	Male: 42.7% Female: 57.3%
Age	Mean: 26.55 Min: 17 Max: 56	Mean: 25.96 Min: 19 Max: 56	Mean: 27.13 Min: 17 Max: 55

Nationality	Dutch: 8%	Dutch: 5%	Dutch: 11%
	Other European: 80%	Other European: 82%	Other European: 78%
	Non-European: 12%	Non-European: 13%	Non-European: 11%
Education	High school: 15.3%	High school: 14.7%	High school: 16%
	HBO/MBO: 2.2%	HBO/MBO: 2.6%	HBO/MBO: 4%
	Bachelor's degree: 46.7%	Bachelor's degree: 48%	Bachelor's degree: 45.3%
	Master's degree: 33.3%	Master's degree: 33.3%	Master's degree: 33.3%
	PhD: 1.3%	PhD: 1.3%	PhD: 1.3%

4.3. Results

4.3.1. Hypotheses 1 – 5

For hypotheses 1 – 5, we needed to find the effect of product type on each of the dependent variables. The dependent variables in this study took values from 0 to 100, so they were ratio variables. The independent variable product type was a categorical variable that had only two values – utilitarian or hedonic product type. Therefore, Analysis of variance (one-way ANOVA) was a straightforward way to study the effect of the utilitarian/hedonic product type on each of the dependent variables. The ANOVA determined whether there were any differences in the means between the two groups.

Before running the ANOVAs, the following ANOVA assumptions were checked and fulfilled: the independent variables were ratio variables and the observations were independent from one another (Janssens, 2008). The Shapiro-Wilk test was used to assess normality. All the Sig. values were higher than 0.05, meaning that all dependent variables were approximately normally distributed for the two product groups. In addition, the Levene's test for homogeneity of variances was used to check whether the error variances were homogeneous and the Sig. values higher than 0.05 confirmed it.

First, the effect of product type on the importance of product advantage was checked:

H1: *The product advantage is more important for utilitarian than for hedonic products.*

In Table 9, the results of the ANOVA can be found. The means of the importance of product advantage for each of the two groups were calculated. As expected, the mean of product advantage was higher for the utilitarian group (product type 1) compared to the hedonic group (product type 2). However, the ANOVA produced a Sig. value of 0.786 (higher than 0.05), so the results were not statistically significant. It was concluded that the importance of

product advantage did not differ depending on the product type and Hypothesis 1 was rejected.

Table 9. ANOVA – Product advantage

	N	Mean	Std. Deviation
Utilitarian (1)	75	17.9600	11.36191
Hedonic (2)	75	17.4933	9.59219
Total	150	17.7267	10.48162

	Sum of Squares	F	Sig.
Between Groups	8.167	0.074	0.786

The next effect that was checked was of product type on the importance of product compatibility with needs:

***H2:** The product compatibility with needs is more important for utilitarian than for hedonic products.*

The results of the ANOVA can be found in Table 10. The means of the importance of product compatibility with needs for each of the two groups were compared. Contrary to initial expectations, the mean of product compatibility with needs was lower for the utilitarian group (product type 1) compared to the hedonic group (product type 2). Moreover, the ANOVA produced a Sig. value of 0.519 (higher than 0.05), so the results were not statistically significant. It was concluded that the importance of product compatibility with needs did not differ depending on the product type and Hypothesis 2 was also rejected.

Table 10. ANOVA – Product compatibility with needs

	N	Mean	Std. Deviation
Utilitarian (1)	75	28.3733	13.11258
Hedonic (2)	75	29.8533	14.89848
Total	150	29.1133	14.00649

	Sum of Squares	F	Sig.
Between Groups	82.140	0.417	0.519

Then, the effect of product type on the importance of product value was studied:

H3: *The product value is more important for utilitarian than for hedonic products.*

In Table 11, the results of the ANOVA are presented. The means of the importance of product value for each of the two groups were calculated. As expected, the mean of product value was higher for the utilitarian group (product type 1) compared to the hedonic group (product type 2). However, the ANOVA produced a Sig. value of 0.573 (higher than 0.05), so the results were not statistically significant. It was concluded that the importance of product value did not differ depending on the product type and Hypothesis 3 was also rejected.

Table 11. ANOVA – Product value

	N	Mean	Std. Deviation
Utilitarian (1)	75	25.1467	11.93982
Hedonic (2)	75	24.0533	11.74146
Total	150	24.6000	11.81399

	Sum of Squares	F	Sig.
Between Groups	44.827	0.320	0.573

The product type's effect on the importance of product innovativeness was also checked:

H4: *The product innovativeness is more important for utilitarian than for hedonic products.*

The results of the ANOVA can be found in Table 12. The means of the importance of product innovativeness for each of the two groups were compared. Contrary to initial expectations, the mean of product innovativeness was lower for the utilitarian group (product type 1) compared to the hedonic group (product type 2). Moreover, the ANOVA produced a Sig. value of 0.203 (higher than 0.05), so the results were not statistically significant. It was concluded that the importance of product innovativeness did not differ depending on the product type and Hypothesis 4 was rejected as well.

Table 12. ANOVA – Product innovativeness

	N	Mean	Std. Deviation
Utilitarian (1)	75	12.3733	7.40484
Hedonic (2)	75	14.3467	11.14341
Total	150	13.3600	9.48066

	Sum of Squares	F	Sig.
Between Groups	146.027	1.632	0.203

Subsequently, Hypothesis 5 was also tested:

H5: The product brand is more important for hedonic than for utilitarian products.

In Table 13, the results of the ANOVA are presented. The means of the importance of product brand for each of the two groups were compared. Contrary to the suggested hypothesis, the mean of product brand was higher for the utilitarian group (product type 1) compared to the hedonic group (product type 2). In addition, the ANOVA produced a Sig. value of 0.348 (higher than 0.05), so the results were not statistically significant. It was concluded that the importance of product brand did not differ depending on the product type and Hypothesis 5 was also rejected.

Table 13. ANOVA – Product brand

	N	Mean	Std. Deviation
Utilitarian (1)	75	16.1467	13.02772
Hedonic (2)	75	14.2533	11.56777
Total	150	15.2000	12.31467

	Sum of Squares	F	Sig.
Between Groups	134.427	0.886	0.348

For hypotheses 1 – 5, as there were several dependent variables, a Multivariate analysis of variance (one-way MANOVA) was also used to simultaneously study the effect of the utilitarian/hedonic product type on the dependent variables. The MANOVA determined whether there were any differences in the means between the two groups.

The MANOVA assumptions were fulfilled: the dependent variables were at least interval-scaled and the observations were independent and randomly taken. And it has to be checked whether the dependent variables are multivariate normally distributed for the utilitarian and for the hedonic product type groups (Janssens, 2008). Again the Shapiro-Wilk test was used to check the normality of the residuals; the dependent variables were all approximately the normally distributed in each of the two groups.

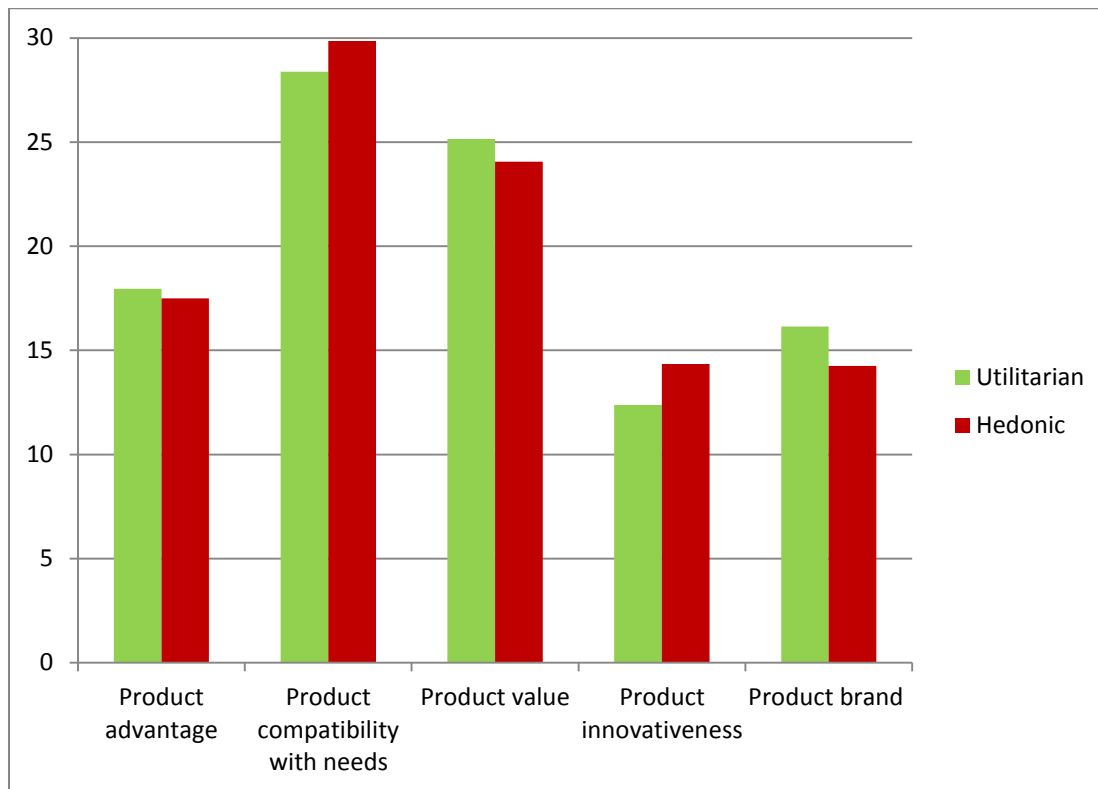
After checking these assumptions, the MANOVA analysis was run and it again produced a Sig. value of 0.371 (higher than 0.05), so the results of the MANOVA were not statistically significant (Table 14). It was concluded that the importance of product advantage, product compatibility, product value, product innovativeness, and product brand did not differ depending on the product type. Therefore, hypotheses 1 – 5 were all rejected.

Table 14. MANOVA – all five dependent variables (Wilks' Lambda test)

Effect	Value	F	Sig.	Partial Eta Squared
Intercept	0.018	2023.317	0.000	0.982
Product type	0.971	1.076	0.371	0.029

Furthermore, the Tests of Between-Subjects Effects showed how the separate dependent variables differed for the independent variable. In Figure 3, the means of each dependent variable according to the product type are presented, so that they could be compared. Among the top 3 product characteristics, chosen as most important, were respectively: product compatibility with needs, product value, and product advantage. However, all the Sig. values were above 0.05 (the same values as with the separate ANOVAs), thus product type was not found to have a significant effect on each of the dependent variables. Still, it is possible that with better manipulation of the independent variable or with a larger sample size, the captured differences could have been proved to be significant.

Figure 3. Comparison of the dependent variables' means according to the product type



4.3.2. Control tests – Age and Gender

In addition to the one-way MANOVA, the effect of age and gender was also taken into account in the analysis. These variables were included into the analysis as covariates and controlled for by running a MANCOVA (Analysis of covariance). First, the continuous variable age was included as a covariate. The Sig. values were higher than 0.05, so controlling for age did not produce any significant and meaningful results. Second, the categorical variable gender was added as a covariate but it again generated insignificant results. Moreover, if we again look at Table 6, containing the descriptive statistics of the two treatment groups, we can see that there were no major differences in the demographics between the two groups.

4.3.3. Hypotheses 6 – 8

Hypotheses 6 – 8 studied the moderating effect of consumer product category knowledge. First, this moderating variable had to be transformed into the appropriate form for the analysis. Items 2, 4 and 5 of the multi-item scale were recoded into the reverse value. Then the Cronbach's Alpha was measured to check the reliability of the scale. The Alpha value of 0.845 (Table 15) was regarded as sufficient to prove the reliability of the scale (Peterson, 1994).

Table 15. Reliability statistics – Consumer product category knowledge

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.845	0.846	5

After the reliability of the scale was checked, the mean value of the 5 items forming the scale was taken. Subsequently, the median split procedure was performed. Consumer product category knowledge's median value of 4.20 was used to split the variable into two groups: low (with a value of 0) and high (with a value of 1), which made consumer product category knowledge a categorical variable. The low group consisted of 73 cases, while the high group – of 77 cases. As a robustness check, a quartile split (instead of a median split) was also performed to test hypotheses 6 – 8 and to see whether this would produce different results. This procedure transformed consumer knowledge into a categorical variable and it split it into 4 groups. The outcome was roughly the same as with the median split procedure (see Appendix 4).

For the relationships H6 – H8, a 2x2 Analysis of variance (ANOVA) was used to test each of these hypotheses separately. This was an appropriate method because the dependent variables were ratio variables, while the independent variable and the moderator were categorical variables. ANOVA was the most convenient way to test these relationships and to find the main effect on the dependent variables. The moderation effect was the interaction between the categorical independent variable and the categorical moderator, which resulted in four separate conditions (Table 16).

Table 16. ANOVA conditions for Hypotheses 6 – 8

	Consumer product category knowledge - Low	Consumer product category knowledge - High
Product type - Utilitarian	Utilitarian; Low	Utilitarian; High
Product type - Hedonic	Hedonic; Low	Hedonic; High

The following ANOVA assumptions were checked and fulfilled: the independent variables were ratio variables and the observations were independent from one another (Janssens, 2008). Again the Shapiro-Wilk test was used to check the normality of the residuals; the

dependent variables were all approximately the normally distributed in each of the four groups. In addition, the Levene's test for homogeneity of variances was used to check whether the error variances were homogeneous and the Sig. values higher than 0.05 confirmed it.

To have an equal amount of cases in each of the 4 groups for the ANOVAs, a few cases per group were randomly selected and not included into the analysis. As a result, there were 35 cases per group. As a robustness check, the analysis for hypotheses 6 – 8 was conducted with the full dataset as well and this led to similar results (see Appendix 5).

First, the moderation effect on the importance of product advantage was checked:

***H6:** The effect of product type on the importance of product advantage is moderated by consumer product category knowledge: when consumer product category knowledge is higher, product type has an effect on the importance of product advantage; when consumer product category knowledge is lower, this effect is decreased.*

Before discussing this moderating effect, the direct effect of consumer product category knowledge on the importance of product advantage was checked by running an ANOVA (Table 17). The Sig. value of 0.811 was higher than 0.05, therefore this effect was found to be insignificant.

Table 17. ANOVA – direct effect of consumer product category knowledge on product advantage

	Sum of Squares	F	Sig.
Between Groups	6.429	0.057	0.811

Then a two-way ANOVA was conducted to study the moderation effect. In Table 18, the means of product advantage for each of the four groups can be found. As expected, the mean of product advantage was higher when consumer product category knowledge was higher for the hedonic product type (2). Contrary to expectations, the mean of product advantage was higher when consumer product category knowledge was lower for the utilitarian product type (1).

Table 18. Descriptive statistics – Product advantage

Product type	Consumer knowledge	Mean	Std. Deviation	N
Utilitarian (1)	Low (0)	19.4000	12.60065	35
	High (1)	17.0857	10.15576	35
Hedonic (2)	Low (0)	16.0857	7.93863	35
	High (1)	19.2571	11.12322	35

Moreover, the Tests of Between-Subjects Effects (Table 19) showed that the Sig. values of the independent variables (product type and consumer product category knowledge) and the interaction term were above 0.05, thus the moderating effect of consumer product category knowledge on the studied relationship was insignificant and Hypothesis 6 was rejected.

Table 19. Tests of Between-Subjects Effects – Product advantage

	Sum of Squares	F	Sig.
Intercept	45144.257	402.477	0.000
Product type	11.429	0.102	0.750
Consumer knowledge	6.429	0.057	0.811
Product type * Consumer knowledge	263.314	2.348	0.128

The next analysed moderation effect was on the importance of product value:

***H7:** The effect of product type on the importance of product value is moderated by consumer product category knowledge: when consumer product category knowledge is higher, product type has an effect on the importance of product value; when consumer product category knowledge is lower, this effect is decreased.*

Before analysing this moderation, the direct effect of consumer product category knowledge on the importance of product value was checked by running an ANOVA (Table 20). The Sig. value of 0.768 was higher than 0.05, therefore this effect was found to be insignificant.

Table 20. ANOVA – direct effect of consumer product category knowledge on product value

	Sum of Squares	F	Sig.
Between Groups	12.600	0.087	0.768

Subsequently, the moderation effect was analysed. In Table 21, the means of product value for each of the four groups can be found. As expected, the mean of product value was higher when consumer product category knowledge was higher for the utilitarian product type (1). Contrary to expectations, the mean of product value was higher when consumer product category knowledge was lower for the hedonic product type (2).

Table 21. Descriptive statistics – Product value

Product type	Consumer knowledge	Mean	Std. Deviation	N
Utilitarian (1)	Low (0)	23.4000	12.04941	35
	High (1)	26.4857	11.84799	35
Hedonic (2)	Low (0)	26.3429	13.42286	35
	High (1)	22.0571	10.36380	35

The Tests of Between-Subjects Effects (Table 22) showed that the Sig. values of the main effects were above 0.05, so they were not statistically significant. However, the interaction term had a Sig. value of 0.071 (lower than 0.10), so it was statistically significant at the 10% level. This means that when product type and consumer product category knowledge are combined, they have an effect on the importance of product value. With utilitarian products, the importance of product value is higher when consumer knowledge is high. However, with hedonic products, the importance of product value is higher when consumer knowledge is low. Thus, Hypothesis 7 was partially confirmed.

Table 22. Tests of Between-Subjects Effects – Product value

	Sum of Squares	F	Sig.
Intercept	84525.714	589.909	0.000
Product type	19.314	0.135	0.714
Consumer knowledge	12.600	0.088	0.767
Product type * Consumer knowledge	475.457	3.318	0.071

The moderation effect on the importance of product brand was also checked:

***H8:** The effect of product type on the importance of product brand is moderated by consumer product category knowledge: when consumer product category knowledge is lower, product type has an effect on the importance of product brand; when consumer product category knowledge is higher, this effect is decreased.*

Before analysing this moderating effect, the direct effect of consumer product category knowledge on the importance of product brand was checked by running an ANOVA (Table 23). The Sig. value of 0.736 was higher than 0.05, therefore this effect was found to be insignificant.

Table 23. ANOVA – direct effect of consumer product category knowledge on product brand

	Sum of Squares	F	Sig.
Between Groups	17.857	0.114	0.736

Then the moderating effect on the importance of product brand was checked. In Table 24, the means of product brand for each of the four groups can be found. As expected, the mean of product brand was lower when consumer product category knowledge was lower for the hedonic product type (2). Contrary to expectations, the mean of product brand was lower when consumer product category knowledge was higher for the utilitarian product type (1).

Table 24. Descriptive statistics – Product brand

Product type	Consumer knowledge	Mean	Std. Deviation	N
Utilitarian (1)	Low (0)	16.6857	15.86852	35
	High (1)	15.6286	10.01201	35
Hedonic (2)	Low (0)	13.3143	10.37750	35
	High (1)	15.8000	13.04472	35

The Tests of Between-Subjects Effects (Table 25) showed that the Sig. values of the independent variables (product type and consumer product category knowledge) and the interaction term were above 0.05, thus the moderating effect of consumer product category knowledge on the studied relationship was insignificant and Hypothesis 8 was rejected too.

Table 25. Tests of Between-Subjects Effects – Product brand

	Sum of Squares	F	Sig.
Intercept	33017.857	209.668	0.000
Product type	89.600	0.569	0.452
Consumer knowledge	17.857	0.113	0.737
Product type * Consumer knowledge	109.829	0.697	0.405

4.3.4. Hypothesis 9

Hypothesis 9 studied the moderating effect of consumer innovativeness:

H9: The effect of product type on the importance of product innovativeness is moderated by consumer innovativeness: when consumer innovativeness is higher, product type has an effect on the importance of product innovativeness; when consumer innovativeness is lower, this effect is decreased.

First, this moderating variable had to be transformed into the appropriate form for the analysis. Items 1, 3, 4, 6 and 8 of the multi-item scale had to be recoded into the reverse

value. Then the Cronbach's Alpha was measured to check the reliability of the scale. The Alpha value of 0.758 (Table 26) was regarded as sufficient to prove the reliability of the scale (Peterson, 1994). However, the analysis showed the Alpha would be higher if item 1 was deleted, so item 1 was removed from the scale, which resulted in Cronbach's Alpha with a value of 0.792.

Table 26. Reliability statistics – Consumer innovativeness

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.758	0.764	8

After the reliability of the scale was checked, the mean value of the 7 remaining items was taken. Subsequently, the median split procedure was performed. Consumer innovativeness' median value of 3.8571 was used to split the variable into two groups: low (with a value of 0) and high (with a value of 1), which made Consumer innovativeness a categorical variable. The low group consisted of 73 cases, while the high group – of 77 cases. As a robustness check, a quartile split (instead of a median split) was also performed to test Hypothesis 9 and to see whether this would lead to different results. This procedure also transformed consumer innovativeness into a categorical variable and it split it into 4 groups. The outcome was similar to the one with the median split procedure (see Appendix 4).

Similarly to Hypotheses 6 – 8, a 2x2 Analysis of variance (ANOVA) was used to test this hypothesis. The moderation effect was again the interaction between the categorical independent variable and the categorical moderator, which resulted in four separate conditions (Table 27).

Table 27. ANOVA conditions for Hypothesis 9

	Consumer innovativeness - Low	Consumer innovativeness - High
Product type – Utilitarian	Utilitarian; Low	Utilitarian; High
Product type – Hedonic	Hedonic; Low	Hedonic; High

The following ANOVA assumptions were checked and fulfilled: the independent variables were ratio variables and the observations were independent from one another (Janssens, 2008). The Shapiro-Wilk test was used to check the normality of the residuals; the dependent

variables were all approximately the normally distributed in each of the four groups. The Levene's test for homogeneity of variances was used to check whether the error variances were homogeneous and the Sig. values higher than 0.05 confirmed it.

To have an equal amount of cases in each of the 4 groups for the ANOVA, a few cases per group were not included into the analysis on a random basis. As a result, there were 34 cases per group. As a robustness check, the analysis for Hypothesis 9 was conducted with the full dataset as well and led to similar results (see Appendix 5).

Before analysing this moderating effect, the direct effect of consumer product category knowledge on the importance of product brand was checked by running a one-way ANOVA (Table 28). The Sig. value of 0.418 was higher than 0.05, therefore this effect was found to be insignificant.

Table 28. ANOVA – direct effect of consumer product category knowledge on product brand

	Sum of Squares	F	Sig.
Between Groups	60.890	0.660	0.418

Subsequently, the two-way ANOVA analysis was run to study the moderation effect. In Table 29, the means of product innovativeness for each of the four groups can be found. As expected, the mean of product innovativeness was higher when consumer innovativeness was higher for the hedonic product type (2). Contrary to expectations, the mean of product innovativeness was higher when consumer innovativeness was lower for the utilitarian product type (1).

Table 29. Descriptive statistics – Product innovativeness

Product type	Consumer innovativeness	Mean	Std. Deviation	N
Utilitarian (1)	Low (0)	12.2647	7.46835	34
	High (1)	11.9412	6.98891	34
Hedonic (2)	Low (0)	13.4412	11.86845	34
	High (1)	16.4412	10.86331	34

The Tests of Between-Subjects Effects (Table 30) showed that the Sig. values of the main effect of consumer innovativeness and the interaction term were above 0.05, so they were statistically insignificant. Nevertheless, the main effect of product type on product brand had a Sig. value of 0.085 (lower than 0.10), so it was significant at the 10% level. Due to the insignificant interaction that represented the moderation effect, Hypothesis 9 was also rejected.

Table 30. Tests of Between-Subjects Effects – Product innovativeness

	Sum of Squares	F	Sig.
Intercept	24867.066	273.646	0.000
Product type	273.890	3.014	0.085
Consumer innovativeness	60.890	0.670	0.415
Product type * Consumer innovativeness	93.890	1.033	0.311

5. Discussion and Conclusions

5.1. General discussion

This study addressed the following research question on customer perception of new product characteristics:

What is the effect of product type (utilitarian vs hedonic) on the relative importance of product characteristics and how is this effect moderated by consumer product category knowledge and consumer innovativeness?

Based on prior literature on new product performance and new product adoption, the hypotheses of the thesis were formulated. Due to the major differences between utilitarian and hedonic products and in the purpose of buying a utilitarian or hedonic product, it was expected that this would result in different trade-offs between the importance of product characteristics (product advantage, product compatibility with needs, product value, product innovativeness, and product brand). However, as the results of the study were insignificant, the suggested hypotheses were rejected. According to the outcomes of the study, product type has no impact on the relative importance of product characteristics. Regarding the moderation effect of consumer product category knowledge on these relationships, only Hypothesis 7 was partially confirmed: consumer product category knowledge was found to moderate the effect of product type on the importance of product value. The expectations that product value is more important when consumer knowledge is higher were confirmed for utilitarian products but not for hedonic products. Regarding the moderation effect on these relationships, no effect of consumer innovativeness was found.

Therefore, clear conclusions were not reached and more research is needed in this area. A good understanding of consumers' buying behaviour and needs is crucial for the success of new products, so the proposed conceptual framework should be applied to other product categories and through other methods. This could generate significant and meaningful results that could be used by both researchers and marketers. In the following section, it is explained more extensively what the results of the study mean in an academic and managerial contexts.

5.2. Academic and managerial implications

Regarding academic relevance, this study was supposed to come up with new insights about the differences in consumer buying behaviour and the relative importance of product characteristics when consumers are buying a new product. Therefore, it contributed to the

new product performance literature and extended Henard and Szymanski's research by adopting their constructs in a new context. To produce new and less biased insights, this study reversed the common perspective of new product performance studies. It switched it from managerial perspective to customer perspective: which new product success determinants are important in the buying process according to customers, not considering the company's internal processes and strategies.

In order to find new contextual differences, two types of products – utilitarian and hedonic – were differentiated. Furthermore, consumers were also differentiated according to the level of their product category knowledge and their innovativeness. However, the results of the study were not significant and the suggested hypotheses were rejected, except from one that was partially confirmed. No impact of product type and of the two studied consumer characteristics on the importance of product characteristics was found, apart from the moderation effect of consumer knowledge on the relationship between product type and the importance of product value. The results of the study could mean that the independent variable and the moderators are not important factors in the consumer decision-making process and that they do not lead to significant differences in the perception of the relative importance of product characteristics. But another more likely interpretation could be that the chosen methodology of the research is not suitable to study the theoretical and conceptual framework. Therefore, other methodologies should be designed and adopted in following studies on this topic.

Regarding managerial relevance, the intention of this study was to check on what product characteristics companies need to focus when they launch a new product, depending on the type of product they produce – utilitarian or hedonic. This could have been relevant in the process of designing an advertising, pricing, and promotion strategies for a new product offering. As no significant differences depending on the product type were found, no such conclusions can be made based on this study. Paying more attention to a particular product characteristic was found to be equally relevant for both utilitarian and hedonic product offerings, but this outcome could be due to the limitations of the study.

Moreover, differentiating consumers based on their product category knowledge and innovativeness could have indicated which product characteristics are more important for the most attractive segment of consumers (e.g. more knowledgeable or more innovative), so that the new product offering could be better targeted towards them, which can ultimately lead to increased sales and performance of new products. Again, no clear impact of these consumer characteristics on the studied relationships was found, so it can be concluded that focusing

on certain product characteristics would be equally attractive for both more and less knowledgeable and more and less innovative consumers. Still, according to the results, the importance of product value is higher when consumer knowledge is high and the product is utilitarian. Thus, companies producing utilitarian products should focus on offering products that are good value for money in order to attract more knowledgeable consumers. However, the importance of product value is higher when consumer knowledge is low and the product is hedonic. Companies producing hedonic products would attract less knowledgeable consumers if they offer a product that is good value for money. This could be due to the association of hedonic products with wants and luxury, which could justify a higher price, and due to the fact that more knowledgeable consumers are aware of this.

5.3. Limitations and directions for future research

As the insignificant results suggest, the methodology of this study has a number of limitations that could have influenced the research and its outcomes. One of the main limitations of this study is the measures of the dependent variables. The constant sum scaling method was chosen here because it captures trade-offs and compromises, which makes it similar to the real consumer decision-making process. Besides, it is less time-consuming and repetitive than having multi-item 7-point Likert scales for each of the 5 dependent variables. However, it is possible that the respondents interpreted these concepts in different ways even though clear definitions were provided. This could have been less likely if multi-item scales were used. Thus, for future research in the area, multi-item scales measuring the dependent variables are recommended, as they could lead to more accurate and meaningful results.

Another limitation regarding the measures is that the moderating variables (consumer product category knowledge and consumer innovativeness) were measured through self-reported scales. These scales were used here for the feasibility of the study but the results they produce can differ from the real values. Therefore, scales measuring the actual consumer product category knowledge and consumer innovativeness (developed by people with expert knowledge in the area) could be implemented in future research for more reliable results. Moreover, the impact of other moderators could be analysed in future studies. For example, other factors that can lead to differences in the perception of product characteristics' relative importance include: disposable income, personality type, or lifestyle type.

What could be another reason behind the insignificant results is that the manipulation may not be strong enough to capture the existing differences. This could be improved by using within-subjects design, because it has higher statistical efficiency: each respondent's

answers under one treatment could be compared to his/her answers under another treatment. Still, the carry-over effect of within-subjects design could bias the results, so the experiment needs to be designed carefully in a proper way.

Furthermore, the chosen two products for the main survey match the definitions of the two product types and were selected based on the pretest participants' perception of the products. However, as toothpaste and ice cream are both low-involvement products, associated with low risk and low costs, the consumer is not so engaged in the decision-making process and does not assess the advantages and disadvantages of the product carefully enough (Lin and Chen, 2006). This may have prevented the respondents from assessing the relative importance of the product characteristics properly and this could be the reason behind the insignificant differences between the two groups. For that reason, choosing product categories that are associated with higher involvement (such as the other products included in the pretest: laptop, travel suitcase, perfume or watch) is recommended for future research. This could lead to more meaningful results, as the constructs would fit better with the products and they would be perceived as more relevant.

Another possible limitation of the study is that not enough attention was given to the fact that its focus is supposed to be on products that are new on the market. This was clearly stated in the scenario presented to the respondents but might have been overlooked by some people. Still, the included product characteristics are the determinants of new product success according to the theoretical framework. This makes the study's conclusions relevant in the new products context. But in future studies another approach could be used: real products that have just been launched into the marketplace and that consumers are not too familiar with, could be assessed regarding their product characteristics. This can generate new insights because it is a different approach. It would also make the study less abstract, so that it would be easier for the respondents to assess the relative importance of the factors. Another good approach would be conducting a field study because it would analyse the consumer decision-making process when buying a new product in a more realistic manner.

Finally, a convenience sample was used in this study, which can limit external validity of the results. The mean age was relatively low (26-27 years) and not many people from older age groups took part. In addition, the participants were well-educated, which is also not representative of the entire population. Therefore, in future studies more random samples should be taken, so that the sample would include more diverse profiles and it would be representative of the population. This would make the produced results would be more generalizable.

Appendix

Appendix 1. Pretest questions

Dear participant,

This is a small survey for my Master Thesis in Marketing. It should take you around 5 minutes to answer the questions. Thank you very much for your time and input!

Best regards,
Inna Arabadzhieva

Question 1. Please indicate how much you agree with the following statements for each of the 8 products (Example: Laptop).

	Strongly disagree						Strongly agree
The decision to buy a laptop is mainly logical or objective. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The decision to buy a laptop is based a lot on feeling. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The decision to buy a laptop is based mainly on functional facts. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The decision to buy a laptop is based mainly on emotions. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please answer the following questions.

Question 2. What is your gender?

- Male
- Female

Question 3. What is your age?

Question 4. Are you a student?

- Yes
- No

Appendix 2. Main survey questions

Dear participant,

This survey is part of my Master Thesis in Marketing and its main focus is the importance of product characteristics in the buying process. It should take you no more than 10 minutes to answer the questions. Your responses are anonymous and confidential.

If you have any questions regarding this study, you can contact me at: 427523ia@student.eur.nl.

Thank you for participating!

Best regards,
Inna Arabadzhieva

Question 1. Please read carefully the following scenario:

Group 1: You are going to buy a product from a category that is primarily **instrumental**, **functional** and **goal-oriented**, such as **toothpaste**. You are considering a product that is **new** on the market.

Group 2: You are going to buy a product from a category that is associated with **experiential consumption**, **fun**, **pleasure** and **excitement**, such as **ice cream**. You are considering a product that is **new** on the market.

Please allocate 100 points among the 5 product characteristics listed below that research suggests matter to people when they buy a new product. The more important a feature is to you, the more points it should receive.

Product advantage (Superiority and differentiation of the product over other competitive product offerings)

Product compatibility with needs (Extent to which the product is perceived as satisfying and matching your desires and needs)

Product value (Congruence/ consistency/ match between the price and the performance of the product)

Product innovativeness (Newness, originality, uniqueness and radicalness of the product)

Product brand (The brand name that identifies the product, communicates its concept, and differentiates it from competitive products)

Question 2. Please indicate how much you agree with the following statements.

	Strongly disagree							Strongly agree
I know a lot about products such as toothpaste (ice cream). (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not feel very knowledgeable about products such as toothpaste (ice cream). (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Among my circle of friends, I'm one of the 'experts' on products such as toothpaste (ice cream). (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compared to most other people, I know less about products such as toothpaste (ice cream). (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When it comes to products such as toothpaste, I really don't know a lot (ice cream). (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 3. Please indicate how much you agree with the following statements.

	Strongly disagree							Strongly agree
When I see a new product on the shelf, I'm reluctant to give it a try. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In general, I am among the first to buy new products when they appear on the market. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I like a brand, I rarely switch from it just to try something new. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am very cautious in trying new and different products. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am usually among the first to try new brands. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I rarely buy brands about which I am uncertain how they will perform. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy taking chances in buying new products. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I do not like to buy a new product before other people do. (8)

Please answer the following questions.

Question 4. What is your gender?

- Male
- Female

Question 5. What is your age?

Question 6. What is your nationality?

Question 7. What is your highest completed education?

- High school
- HBO
- MBO
- Bachelor's degree
- Master's degree
- Doctorate degree

Appendix 3. Principal components analysis – Component Matrices

Rotated Component Matrix^a

	Component	
	1	2
Laptop-The decision to buy a laptop is based a lot on feeling.	,941	
Laptop-The decision to buy a laptop is based mainly on emotions.	,891	
Laptop-The decision to buy a laptop is based mainly on functional facts.	-,613	,378
Laptop-The decision to buy a laptop is mainly logical or objective.		,958

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Rotated Component Matrix^a

	Component	
	1	2
Potato Chips-The decision to buy chips is based mainly on functional facts.	,925	
Potato Chips-The decision to buy chips is mainly logical or objective.	,883	
Potato Chips-The decision to buy chips is based a lot on feeling.		,900
Potato Chips-The decision to buy chips is based mainly on emotions.		,840

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Rotated Component Matrix^a

	Component	
	1	2
Perfume-The decision to buy a perfume is based a lot on feeling.	,906	
Perfume-The decision to buy a perfume is based mainly on emotions.	,785	-,301
Perfume-The decision to buy a perfume is based mainly on functional facts.		,928
Perfume-The decision to buy a perfume is mainly logical or objective.	-,423	,749

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Rotated Component Matrix^a

	Component	
	1	2
Cooking oil-The decision to buy cooking oil is based mainly on emotions.	,927	
Cooking oil-The decision to buy cooking oil is based a lot on feeling.	,858	
Cooking oil-The decision to buy cooking oil is mainly logical or objective.		,853
Cooking oil-The decision to buy cooking oil is based mainly on functional facts.		,839

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Rotated Component Matrix^a

	Component	
	1	2
Ice cream-The decision to buy ice cream is based a lot on feeling.	,939	
Ice cream-The decision to buy ice cream is mainly logical or objective.	-,790	,315
Ice cream-The decision to buy ice cream is based mainly on functional facts.		,919
Ice cream-The decision to buy ice cream is based mainly on emotions.	,391	-,625

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Rotated Component Matrix^a

	Component	
	1	2
Travel suitcase-The decision to buy a travel suitcase is based a lot on feeling.	,922	
Travel suitcase-The decision to buy a travel suitcase is based mainly on emotions.	,904	
Travel suitcase-The decision to buy a travel suitcase is mainly logical or objective.		,828
Travel suitcase-The decision to buy a travel suitcase is based mainly on functional facts.		,813

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Rotated Component Matrix^a

	Component	
	1	2
Watch-The decision to buy a watch is based a lot on feeling.	,909	
Watch-The decision to buy a watch is based mainly on emotions.	,880	
Watch-The decision to buy a watch is mainly logical or objective.		,841
Watch-The decision to buy a watch is based mainly on functional facts.		,754

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Component Matrix^a

	Component
	1
Toothpaste-The decision to buy toothpaste is based mainly on emotions.	,891
Toothpaste-The decision to buy toothpaste is based a lot on feeling.	,877
Toothpaste-The decision to buy toothpaste is mainly logical or objective.	-,617
Toothpaste-The decision to buy toothpaste is based mainly on functional facts.	-,343

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Appendix 4. Robustness check for hypotheses 6 – 9 – quartile split

Between-Subjects Factors		N
Product type	Utilitarian (1)	75
	Hedonic (2)	75
Consumer knowledge	Quartile 1	36
	Quartile 2	37
	Quartile 3	36
	Quartile 4	41

H6: Tests of Between-Subjects Effects – Product advantage

	Sum of Squares	F	Sig.
Intercept	45486.321	400.860	0.000
Product type	8.295	0.073	0.787
Consumer knowledge	11.708	0.034	0.991
Product type * Consumer knowledge	239.495	0.704	0.551

H7: Tests of Between-Subjects Effects – Product value

	Sum of Squares	F	Sig.
Intercept	89579.065	635.965	0.000
Product type	22.052	0.157	0.693
Consumer knowledge	15.209	0.036	0.991
Product type * Consumer knowledge	677.747	1.604	0.191

H8: Tests of Between-Subjects Effects – Product brand

	Sum of Squares	F	Sig.
Intercept	33534.306	214.873	0.000
Product type	130.748	0.838	0.362
Consumer knowledge	124.816	0.267	0.849
Product type * Consumer knowledge	153.669	0.328	0.805

Between-Subjects Factors		N
Product type	Utilitarian (1)	75
	Hedonic (2)	75
Consumer innovativeness	Quartile 1	39
	Quartile 2	34
	Quartile 3	38
	Quartile 4	39

H9: Tests of Between-Subjects Effects – Product innovativeness

	Sum of Squares	F	Sig.
Intercept	26672.484	300.043	0.000
Product type	164.102	1.846	0.176
Consumer innovativeness	281.242	1.055	0.371
Product type * Consumer innovativeness	327.388	1.228	0.302

Appendix 5. Robustness check for hypotheses 6 – 9 – full dataset

Between-Subjects Factors		N
Product type	Utilitarian (1)	75
	Hedonic (2)	75
Consumer knowledge	Low (0)	73
	High (1)	77

H6: Tests of Between-Subjects Effects – Product advantage

	Sum of Squares	F	Sig.
Intercept	46758.598	422.436	0.000
Product type	10.977	0.099	0.753
Consumer knowledge	4.469	0.040	0.841
Product type * Consumer knowledge	196.830	1.778	0.184

H7: Tests of Between-Subjects Effects – Product value

	Sum of Squares	F	Sig.
Intercept	91152.523	655.855	0.000
Product type	34.970	0.252	0.617
Consumer knowledge	30.592	0.220	0.640
Product type * Consumer knowledge	429.602	3.091	0.081

H8: Tests of Between-Subjects Effects – Product brand

	Sum of Squares	F	Sig.
Intercept	34409.741	225.117	0.000
Product type	140.467	0.919	0.339
Consumer knowledge	1.465	0.010	0.922
Product type * Consumer knowledge	143.520	0.939	0.334

Between-Subjects Factors		N
Product type	Utilitarian (1)	75
	Hedonic (2)	75
Consumer innovativeness	Low (0)	73
	High (1)	77

H9: Tests of Between-Subjects Effects – Product innovativeness

	Sum of Squares	F	Sig.
Intercept	26739.198	298.715	0.000
Product type	155.872	1.741	0.189
Consumer innovativeness	99.811	1.115	0.293
Product type * Consumer innovativeness	77.033	0.861	0.355

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