



UHASSELT

KNOWLEDGE IN ACTION

Faculty of Business Economics

Master of Management

Master's thesis

Online sensory marketing: Influencing product perceptions through sensory cues

Dzhem Mutaf

Thesis presented in fulfillment of the requirements for the degree of Master of Management, specialization International Marketing Strategy

SUPERVISOR :

dr. Lieve DOUCE



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Disclaimer

This master thesis was written during the COVID-19 crisis in 2020 and 2021. This global health crisis might have had an impact on the (writing) process, the research activities and the research results that are at the basis of this thesis.

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Executive Summary

The immense growth of e-commerce triggered by the COVID-19 pandemic in 2020 illustrates the importance of online presence nowadays. Most of the retailers were urged to close their brick-and-mortar stores and started selling their products only online. Even though online shopping has many advantages, such as convenience, the main barrier is the lack of physical inspection. The brick-and-mortar stores can influence all human senses, whereas, in the online setting, these are limited to visual and auditory senses. To provide a similar experience such as physical stores and simulate the online physical inspection, the marketers use different-sensory-enabling technologies such as pictures, 3D objects, videos, music, etc.

The aim of this research is to investigate the effect of product presentation formats, particularly static images, 3D images and video format on consumers' perceived ownership, ease of imagining the product, and the influence of perceived risk on purchase intentions.

The empirical part of this study was conducted as explorative quantitative research, and the data was collected through a self-administered questionnaire developed in Qualtrics. The survey was distributed using non-probability convenience sampling, and it was sent to all students at Hasselt University via e-mail.

For the scope of this study, printer and stereo set were chosen as utilitarian and hedonic products. The materials for the presentation formats were taken from online retailers and adapted to this study. Three main pictures were chosen to illustrate the static presentation format and 3D format, the video format was approximately 1min. long.

First, the results indicated that the effect of presentation format (static, 3D, video format) on all dependent variables is the same for hedonic and utilitarian goods, which is in line with our expectations. In this study, the dependent variables were financial and performance risk, ease of imagining the product, perceived ownership and purchase intention. The financial and performance risk measured the extent to which the participants felt that buying the product would lead to performance/financial loss. The ease of imagining the product assessed ease of product imagination and how it looks like in a consumption situation. The perceived ownership measured the level of the customer's psychological ownership of the product. The purchase intention evaluated the participant's plan to buy the product in the future.

Second, the participants exposed to the video format perceived less performance risk compared to static and 3D images. This is consistent with the expectations when the product is presented through video, the customers will be able to evaluate the product's performance better, resulting in less perceived performance risk. This effect was not significant for the other dependent variables which might resulted due to some limitations. First, the participants could not evaluate the financial risk and the purchase intention because the price of the products was not published. Second, the video format was approximately 1min. long, which might not be long enough to imagine the product.

Utilitarianism is considered rational and goal-oriented whereas hedonism is a fun-oriented therefore, the customers need more information before buying a utilitarian product. This study found controversial results particularly the purchase intention was significantly higher for utilitarian compared to hedonic goods, meaning that the participant had a higher buying intention for a printer than stereo set. This result might be caused by the fact that the printer is a product that is always used from the students (participants) and especially in current COVID-19 pandemic situation this product might be even more desirable.

Generally, online shopping is considered riskier by consumers than traditional shopping due to the inability to inspect the products. Therefore, high perceived risk negatively impacts the purchase intention. Surprisingly, this study illustrated that the customer's perceived performance and financial risk don't influence their buying intention. This contradicting result might be caused by the fact that the price of the products was not published therefore, it could be hard for participants to evaluate the effect of financial and performance risk on purchase intention.

This research found that the perceived ownership and ease of imagining the product has a significant influence on purchase intention. Particularly, when the customer can easily imagine the product's usage, performance, or enjoyment, then the buying intention will be higher.

The perceived ownership differs from the legal ownership by the fact that the individual doesn't possess the product and has a perception of "mine." The results of this study indicate that the higher individual's perceived (psychological) ownership of the product will lead to more purchases.

This study contributes to the marketing research in several ways. First, it investigates the impact of three presentation formats, namely static images, 3D images, and video format, on several dependent variables: ease of imagining the product, perceived financial & performance risk, perceived ownership, and purchase intention. This kind of extensive research is quite limited, most of the academic studies focus on one or two presentation formats investigating fewer dependent variables. Second, this research also investigates the impact of the aforementioned for hedonic and utilitarian products, which is something new in the marketing literature.

The findings of this research illustrate the importance of presentation formats with a practical application in e-commerce. Based on the results, the marketing managers should consider video format a more effective technique when presenting a product with a high-performance complexity because the customer exposed to the video format perceives less performance risk than static and 3D images. Moreover, the marketing managers should consider that the static and 3D images and video format have the same effect on purchase intention, financial risk, ease of imagining the product, and perceived ownership. Therefore, it might be reasonable to choose static or 3D images when illustrating the products instead of video because the latter will be more expensive. Finally, the managers should consider different creative techniques to increase the customers' perceived ownership and ease of imagining the product because both can significantly positively impact purchase intention.

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1. Introduction

Online shopping has experienced immense growth due to COVID-19 over the 2020 year. In 2019 the global e-commerce growth was 6%, whereas in 2020 - 56% respectively (Salesforce Shopping Index, 2020). Whereas many brick and mortar stores had to close due to the pandemic, the online retailer continued to operate. The current COVID-19 pandemic illustrates the importance of online presence nowadays. During the pandemic, many sectors had to adapt to the new normal; for instance, the restaurant industry, which closed down during the pandemic's peak, has implemented an online ordering system to "survive." Others, such as supermarkets, increased their online presence by adding new products and services (e.g., free delivery) to be more competitive.

Overall, the e-commerce growth calculated to take ten years happened in 3 months (Laberge, Schneider, & Smaje, 2021). Undoubtedly, the companies that have already had a strong web presence were most profitable from this change. The firms without online presence quickly adapted; for example, in Belgium 20 000 new e-stores were created for 2020, which is a 65% increase in the number of online shops (E-commerce Barometer 2020, Belgium).

Online shopping has many advantages to the customers than brick-and-mortar stores, such as convenience, enjoyment, low prices, a wide range of products, 24/7 opening hours (Schroder & Zaharia, 2008; Enders & Jelassi, 2000). The online stores' convenience allows customers to achieve their shopping goals rationally with less effort, time, and money (Schroder & Zaharia, 2008). Through different visual-enabling technologies (discussed in detail in the following pages), the consumers can enjoy their shopping experience (Kim, 2008) with the possibility to browse a wide range of products without being restricted by opening hours (Enders & Jelassi, 2000).

The companies benefit from e-commerce in many ways as well. For example, the online platforms provide an opportunity to the firms to sell the products (online) without significant facility investments, such as physical stores, storage capacity, staff, etc. Moreover, within the online environment, the companies can offer a great variety of products without storage restrictions reaching the customers worldwide, 365 days of the year (Enders & Jelassi, 2000). As a result, the enterprises minimize expenses such as transaction and marketing costs and increase the market share, efficiency, and profitability (Jahanshani, Zhang, Brem, 2013).

2. Problem Definition

The main difference between physical and online stores is the number of human senses influenced, whereas in the brick-and-mortar store, all senses are involved in the online setting these are limited to visual and auditory senses (Block & Disfani, 2018). Therefore, the most significant barrier in online shopping is the lack of physical inspection hence customers' perceived risk (Kerrebroeck, et al., 2017).

According to Forsythe & Shi (2003), perceived risk in online shopping is defined as "*subjectively determined expectation of loss by an Internet shopper in contemplating a particular online purchase.*" Therefore, if some of the important product characteristics in the decision-making process cannot be visualized online and the product evaluation is not sufficient, then the perceived risk is high, resulting in fewer sales (Grewal, Iyer, & Levy, 2004; Kim, 2006).

To provide a similar experience as a physical store and simulate the online physical inspection and reduce the perceived risk, marketers use different sensory-enabling technologies such as pictures, 3D objects, videos, music, icons, etc. (Petit et al., 2019).

3. Research Objective and Research Question

The purpose of this study is to investigate the influence of product presentation format, particularly static images, 3D images, and interactive videos, on consumers' perceived ownership, ease of imagining the product and the influence of perceived risk on purchase intentions for hedonic and utilitarian products.

In order to analyze the research problem, the following research question was formulated:

- How does the presentation format affect the consumer choice for hedonic and utilitarian products in the online environment?

4. LITERATURE REVIEW

1. Stimuli – Organism – Response (S-O-R) framework

Implementing different design elements inside and outside the store might help retailers differentiate themselves and gain a competitive advantage (Baker & Parasuraman, 1994; Block & Disfani, 2018). Turley & Milliman (2000) classifies five different store atmospherics, namely: exterior, interior, layout and design, point of purchase, and human variables. In order to demonstrate and explain the effects of the atmospheric variables, the stimulus-organism-response (S-O-R) framework can be used. Within the S-O-R framework, which was first developed by Mehrabian & Russel (1974), "the environment contains stimuli (S) that cause changes to people's internal, or organismic, state (O), which in turn cause approach or avoidance responses (R)". (Viera, 2013, p.1421). The first part of the framework stimuli (S) contains information load, which is classified into environmental novelty (the person familiarity and predictability within the environment) and complexity (elements or changes in the environment) (Viera, 2013; Donovan & Rossiter, 1994; Mehrabian & Russel, 1994). The second part, organism (O), illustrates the person's primary emotional reaction to the environment (Pleasure, Arousal, or Dominance). The last part, response (R), classifies two types of behavior: approach and avoidance, which is determined by the pleasure and arousal the person encounters (Viera, 2013; Mehrabian & Russel, 1994). Further, the approach and avoidance behavior contain three dimensions, the willingness of environmental exploration, interaction with the others and satisfaction with the environment. Thus, the pleased and aroused person will have a desire to enter the environment, interact with the people there, thus having a satisfaction with the environment. (Viera, 2013; Donovan & Rossiter, 1982).

In the online environment, the individual can experience only three of the traditional store's five sensory atmospherics; therefore, Eroglu et al. (2001) propose an adjusted S-O-R model, which can be applied to the online setting. In this model, the stimulus (S) is represented by two categories. The high task-relevant environment, which includes all online atmospherics related to performing the shopping such as price, pictures & descriptions of the products, etc. The low-task relevant environment comprises the other atmospherics that are not related to the shopping goal (e.g., site background, colors, patterns, fonts, etc.). The authors claim that the PAD typology (Pleasure, Arousal, and Dominance) might not be relevant due to its inability to cover all emotional reactions therefore, they suggest affective and cognitive states in the organism (O).

Moreover, two moderators are included in that S-O relationship. The involvement which is illustrated as a personal relevance of the online shopping and the atmospheric responsiveness which refers to the online atmospherics and their influence on the customer behavior. The last part of the S-O-R model, response (R), contains the same elements as the framework developed by Mehrabian & Russel (1974), namely approach and avoidance. Further, the approach behavior in the online environment will lead to site revisit, time and money spent online, and exploration of the offerings in the online setting (Eroglu et. al 2001).

2. The DAST (Design – Ambient – Social – Trialability) framework

According to Roggeveen, Grewal et al. (2020), the existing frameworks are concentrated mainly on in-store customer experience; however, the researchers claim that out-of-store experience should also be included as part of the customer journey thus, they propose DAST framework. The first element of the framework is Design (D) which includes functional design (layout, signs, customer comfort) and aesthetic design (style, color, text, accessories, presentation). The out-of-store design cues comprise site/app structure, site navigation, and selection process. The in-store Ambient (A) factors influence subconsciously consumers via lightning, smell, music, or temperature, and in the external environment, those atmospherics are classified as the zoom in/out, brightness and contrast of the product pictures and site, fonts (Baker et al. 2002; Roggeveen, Grewal et al. 2020). The Social (S) factor includes the employees and the other customers in the store. Particularly, crowding negatively affects customer behavior, whereas the employee's presence will impact the consumer's store quality perception and satisfaction. (Baker & Parasuraman, 1994; Turley & Milliman, 2000). In the outside environment, the Social elements are considered as the consumer's review, comments, or feedback on the website or social media (Roggeveen, Grewal et al. 2020). The Trialability (T) as its name would suggest, contains the experience before purchase which customer gain throughout product samples with an impact on all five sensory cues. In the online setting the trialability can be simulated via different multisensory devices such as virtual reality (VR) and augmented reality (AR) influencing only auditory and visual cues (Roggeveen, Grewal et al. 2020). The authors suggest Cognitive and Affective states as the mediators emphasizing that the latter should include more emotions from different combinations of intensity and valence.

3. Sensory Marketing

The highly competitive environment urges many companies to look for different marketing tools besides the traditional ones to differentiate their brands and products. One of these methods is called "sensory marketing" and is defined as "*marketing that engages the consumers' senses and affects their perception, judgement and behavior*" (Krishna, 2012, p.332). According to Hulten, Broweus et al., (2009) sensory marketing is a new epoch in marketing where the all five human senses will be in the focus of companies' marketing strategies. Following this, the five senses in sensory marketing are illustrated as touch sense, taste sense, sight sense, smell sense, and the sound sense. (Hulten, Broweus et al., 2009).

The popularity of online shopping, which is associated with accessibility and efficiency, has been challenging the traditional (physical) stores that successfully differentiate themselves with the possibility of impacting all human senses, which in the online environment is not possible (Block & Disfani, 2016). The biggest online retailer worldwide, Amazon, has been expanding rapidly since 2015 through acquiring and opening different brick-and-mortar stores. According to Addy & Watkins, (2020), throughout this expansion, Amazon is trying to provide a shopping experience that is not

delivered online. The low prices and big discounts are not efficient enough against the rising competition among the retailers, thus implementing different design elements inside and outside the store might help retailers differentiate themselves and gain a competitive advantage. Therefore, creating an enjoyable shopping experience will positively impact consumers' buying decisions, time spent in the store, and attitudes toward the store (Baker & Parasuraman, 1994; Block & Disfani, 2018). The atmospherics are even more important for in-service companies (e.g., banks, restaurants, hotels) because the customers are experiencing the service inside the firm's physical facility. Therefore, well-designed environmental cues can increase customer satisfaction and employee motivation, satisfaction, and productivity (Bitner, 1992).

According to Turley & Milliman (2000), five different retail atmospheric elements exist, namely: exterior, interior, layout and design, point of purchase, and human variables which are experienced not solely but in combination (e.g., the consumer can hear the store music and smell the scent simultaneously) (Ballantine et al. 2010).

The customers' first store impression is gained from the exterior environment, which can also impact their decision to visit the store or not. Thus, an impressive exterior can differentiate the store, attract customers and express the brand image (Block & Disfani, 2018). The main exterior atmospherics include the windows, the entrance, the design & architecture of the building, the area around the store & parking (Turley & Milliman, 2000).

The effect of interior atmospherics has been investigated by many researchers, and this group includes fourteen variables as the most popular are: temperature, wall coverings, cleanliness, lighting, color, scent, and sound (the last three cues are discussed in detail in the following pages) (Turley & Milliman, 2000). The store lighting can enhance the customer entertainment and influence the product's quality perception as the warm light might illustrate the product as being higher in quality and increase its attractiveness, whereas the cold light will have the opposite effect. (Otterbring et al. 2014; Balantine et al. 2010).

The design and layout can shape the consumers' attitudes towards the store. The layout, which provides convenience to the customer (e.g., fast movement in the store), will enhance the shopping experience. Moreover, the good design will increase the consumers' store quality perception, whereas the poor design will have the opposite effect resulting in less shopping enjoyment (Baker et al. 2002). The in-store atmospherics can impact the consumers' price perception as well. For instance, the power aisle which has been used in many discount stores and is described as "*display of large quantities of a relatively small number of SKUs with the goal of creating an impression that the products are available at very low prices*" (Burns & Smith, 1996, p.9) is a good strategic goal to increase sales.

According to Turley & Milliman (2000), the human variables category includes privacy, density, customer characteristics, and employee characteristics & uniforms and is divided into two areas, the consumer's influence and employees' influence. The store crowding negatively affects customers' attitude towards the store, whereas the employee's presence will impact the consumers' store quality

perception and satisfaction. Particularly, the prestigious store personnel are considered as a well-dressed, cooperative while the discount store employee as a casually dressed, non-cooperative. (Baker & Parasuraman, 1994; Turley & Milliman, 2000). Moreover, a few employees present in the store may cause frustration among the customers, affecting their store perceptions (Baker et al. 2002).

The buying decision is mainly influenced by the customers' senses and emotions, sensory marketing can unconsciously influence the customer's purchase intention for new or existing products affecting their emotions and senses (Nadanyiova et al., 2018; Lindstrom, 2005). Furthermore, the companies can use sensory marketing as a tool to create a personal relationship with their customers affecting their emotions, thus creating a sensory experience (Hulten, Broweus et al., 2009). Sensory marketing can help the firms to build consumer loyalty and trust if it's applied properly, moreover the intensity of the stimulus plays a vital role as if more senses are influenced at the same time, then the customer perception is more intense (Nadanyiona et al., 2018).

3.1 Sight sense

The sight sense is seen as the most powerful sense, it is responsible for 80 percent of the information that the human being receives from the environment, including factors such as light, patterns, colors, product and store designs etc. (Shabgou et al., 2014; Erenkol & Merve, 2015). Many companies and organizations use color to differentiate their brands and attract customer's attention, for instance, Facebook & Twitter are blue, Netflix & Coca-Cola are red, McDonalds is yellow. Each color has different perception, for example, red is associated with "strong, dangerous, cozy", blue with "cool-calm, respectful" , yellow with "luxury and wealth", and individuals can easily recognize the brand by its color even if they don't see the complete logo (Erenkol & Merve, 2015). Furthermore, the colors can have an impact on humans' emotions and moods, as cool and warm colors might have different effects (Zhou & Aitamer, 2011).

The store appearance is also an important factor in consumers perception towards the brand as many firms try to create an attractive store atmosphere. The most important visual stimuli of the store are the layout, design, exterior and interior, as the most senses are triggered by the interior variables, which in turn influence the consumer behavior (sales or time spent in the store) (Berman & Evans, 1995; Erenkol & Merve, 2015).

3.2 Sound sense

The sound sense is the most investigated human sense and has been used since the last century in mass marketing (TV and radio) (Hulten, Broweus et al., 2009; Erenkol & Merve, 2015). The music can have a numerous influence on a consumer's behaviors such as purchases, moods, time spent and waiting time in the store and the impact can vary due to different variables such as customer age, music tempo and volume (Eroglu et al., 2005; Erenkol & Merve, 2015). The music tempo has

a considerable effect on the customer's purchase intention and overall time spent in the store. For instance, slow tempo music increases the time spent in the store and the sales by 38%, on the other hand fast music can increase the customer arousal and makes them to leave earlier (Milliman, 1982; Leigeois & Rivera, 2011). For that reason, it is important that the sound will match the store environment. For example, the slow tempo music could be used during the evenings in the restaurants to increase the time spent and sales, whereas the fast tempo – in the fast food restaurants where the customers will leave quickly resulting in increased customer turnover (Hulten et al., 2009). Moreover, when the type of the music is matched with the product (e.g. French wine store plays a French music) this will positively affect the sales (Nadanyiona et al., 2018). The sound sense is also used effectively in advertising, aiming to influence the customer's memory and increase the desirability of the products (e.g. the sound of sparkling Coca-cola bottle when someone opens it) (Nadanyiona et al., 2018).

3.3 Touch sense

The touch sense plays an important role in consumer's product evaluation, giving the individual an opportunity to inspect the product in detail by getting information regarding the weight, roughness, smoothness, temperature of the product and making a purchase decision (Erenkol & Merve, 2015). Customers make assumptions regarding the quality of the product by touching it. For instance, the weight of the product impacts the overall assumption, if the product is heavy, then it is considered of a high quality (Nadanyiona et al., 2018). Visual observations cannot provide the necessary information for the purchase decision thus, stores should allow customers to touch and evaluate the products resulting in an increased emotional attachment (Zhou & Aitamer, 2011).

3.4 Smell sense

The smell sense generates seventy-five percent of our emotions and feelings, and the human being is capable to memorize 10 000 smells and recall 65% of them after a year (Erenkol & Merve, 2015). Thus, smell sense has an essential role in our daily life and can positively impact people's feelings and moods (Hulten et al., 2009). It has a practical application in marketing specifically, it can be used to differentiate the product, increase sales, and time spent in the store or improves products evaluation (Leigeois & Rivera, 2011). When a pleasant scent is used in stores, consumers evaluate the products and the store more favorably and increase their willingness to revisit it (Zhou & Aitamer, 2011). The smell sense is considered as a cheap marketing technique to improve customer's perception, and so as to be successful it should be congruent with other conditions of the environment (e.g., Christmas scent during a Christmas) otherwise, it can have a negative effect (Zhou & Aitamer, 2011; Leigeois & Rivera, 2011).

4. Sensory – enabling technologies (SETs)

Online purchasing is considered riskier by the consumers than traditional shopping, due to the inability to inspect the products (Kim & Forsythe, 2008; Grewal, Iyer, & Levy, 2004). For instance, some of the product characteristics cannot be illustrated online (e.g., quality, material), resulting in non-sufficient product evaluation and increased customer perceived risk. Therefore, marketers use different SET's technologies to provide a similar experience as a physical store and simulate the online physical inspection and reduce the perceived risk (Kim & Forsythe, 2008). Sensory enabling technologies (SET) are *"technologies providing sensory input in the online shopping environment as a proxy for sensory experiences encountered in direct product examination and include both product visualization technologies (visual support) and haptic interfaces (tactile support)."* (Kim & Forsythe, 2009, p.1101). According to Kim (2006) alongside with reducing the perceived risks, SET's can also increase the online shopping entertainment thus fulfilling the hedonic motives which result in increased time spent on a website and more sales.

4.1 Visual enabling technologies

The visual-enabling technologies are the most common technologies used by marketers and contain pictures, icons, font, videos, 3D objects, VR and AR environments (Petit et al., 2019; Algharabat et al., 2017; Jin, 2009). They can be used to improve the web atmosphere (Jarovnik 2016; Petit et al., 2019) thus reducing the perceived risk and increasing consumer enjoyment (Kim, 2008). A Web store with an attractive design (e.g., good interface) will create a better consumer experience and positive attitude, resulting in increased turnover and website revisit (Karimov et al., 2011; Wu et al., 2013). On the other hand, an inferior design might confuse the customers and create a negative attitude towards the brand resulting in reduced time spent in the e-store and fewer sales (Karimov et al., 2011; Montoya-Weiss et al., 2003). According to Wu et al. (2013), the online store layout design can affect the emotional arousal of the consumers and the attitude toward the site. Moreover, the layout's convenience can impact the consumer's perceived quality (Manganari et al., 2011).

The background music and color in the website can also affect the emotional arousal of the consumers, particularly the fast tempo music and warm background color result in more excitement and enjoyment, whereas the slow tempo music and cool background color has less effect on customer's feelings (Cheng et al., 2009).

The online stores do not possess three of the traditional store's five sensory appeals, but they have the advantages such as flexibility and space (Eroglu et al., 2001). It is essential that the e-stores represent (online) some of the product characteristics so that the consumers can make better product evaluation thus feeling less risk during the purchasing process and even increasing their enjoyment. (Kim & Forsythe, 2008; Grewal et al., 2004).

A study conducted to investigate the impact of the 2D view, virtual try-on, and 3D view on the consumers' attitude and behavior found significant results. Specifically, the 2D view was considered useful and easy but not enjoyable, on the other hand 3D view was perceived as the same as 2D (useful and easy) and more entertaining (Kim & Forsythe, 2008). The 3D view can provide the possibility to rotate the product and evaluate it from all angles. These technologies can provide more product information making customers feel safe regarding their purchase and even increasing their experience resulting in more sales (Kim & Forsythe, 2008). The 3D and 2D formats can also be effective in advertising, particularly the former can increase the persuasiveness to the geometric products, whereas the latter can be successful in advertising for material products (Choi & Taylor, 2014).

The fast development of digital devices gave rise to the Augmented reality (AR) technology to be implemented in the marketing realms. The AR was developed four decades ago, but due to insufficient technology advancement it was not widely used by marketers and consumers (Brenngman et al., 2019). Nowadays, most of the devices are capable of running AR apps and according to the researchers the augmented reality has the potential to become the predominant technology in the next five to ten years (Brenngman et al., 2019). One of the users' popular AR apps is virtual try on which can be ran via mobile devices or website. The consumers can create "virtual mirrors" via uploading their photo to the website or by choosing the existing model and seeing how the product fits them thus affecting the product examination which would be a positive if only consumers upload their favorite pictures (Cho & Schwarz, 2012).

Moreover, the individuals can use the augmented reality apps via their smartphones to see how the new furniture is situated in the home. This technology can increase the consumer experience and enjoyment and give more details regarding the product thus reducing the perceived risk (Brenngman et al., 2019; Dacko, 2017; Spreer & Kallweit, 2014; Baier et al., 2015). Furthermore, the mobile AR apps can increase perceived ownership perception resulting in a positive attitude toward the product and sales (Brenngman et al., 2019).

4.2 Haptic – enabling technologies

By means of haptic-enabling technologies (HET), customers interact with the online content haptically via interfaces such as mice and touch screens (Petit et al., 2019). Initially, the purpose of HET products was to increase the interaction between the people and the virtual environment, and they have been mainly used in the medical sector, for instance, during the surgery where the doctors may use haptic devices and perform the operation through the screen (Oh & Yoon, 2014). With the rapid technological change, the HET are expected to gain more popularity in the next years, and nowadays they can be found in almost every household and in different devices such as smartphones, tablets, PC's (Oh & Yoon, 2014). According to Comscore (2019), the users spend more than 70 percent of their online time on mobile devices, in some countries such as Indonesia this involvement reaches more than 90%.

Haptic-enabling technologies can impact the consumer's product choice and influence their purchase intentions. In a study conducted by Brasel and Gips (2015) to investigate the effect of mouse and touchscreen on consumer's behaviors, the researchers found a different impact of the aforementioned. Particularly, when the study participants had to choose a hotel in Paris, the touchscreen users considered the tangible elements of the room and the internal information sources as crucial in the decision-making process. On the other hand, the mouse users considered intangible elements and user reviews as an important part of the decision process (Brasel & Gips, 2015).

According to Shen et al., (2016) the HET can also impact the consumers' preference, particularly in their study they found that the touchscreen users prefer the hedonic option instead of utilitarian one. Furthermore, the direct touch can increase the physical evaluation of the products by creating a feeling of touching the real product and generating psychological ownership (Brasel & Gips, 2014). Additionally, the touchscreen compared with the mouse device can impact the consumers' experience by creating a positive shopping engagement, thus affecting the purchase intention (Chung, 2016).

4.3 Multi-sensory enabling technologies

The integration of multisensory is supported by semantic congruency and cross-modal correspondences. The semantic congruency illustrates situations where two stimuli have the same meaning, for example, cowing sound with a picture of a cow, whereas the cross-modal correspondences is defined as a "*more general tendency for a feature, or attribute (e.g., larger/smaller objects), in one sensory modality to be matched (or associated) with a sensory feature, or attribute (e.g., lower/higher-pitched sounds) in another* (Petit et al., 2019, p.51, Spence & Gallace, 2011). According to Petit et al. (2019) the semantic congruency can impact the visual search, particularly when the product package color is congruent with the flavor (e.g yellow/lemon), the consumers find the products online faster (Velasco et al., 2015). Furthermore, the online search time decreases when the sound is semantically congruent with the product, for instance, the sound of sparkling soda with soda (Knoeferle et al. 2016). The semantic congruency can improve product evaluation (Petit et al., 2019), and increase the perception of some product attributes. In a study conducted by Zampini & Spence (2004), the researchers found that the perception of crispness and freshness of potato chips can be enhanced by sounds providing this biting action.

5. Hedonic and utilitarian motivations

The hedonic and utilitarian motivations are the main two reasons for shopping as utilitarianism is illustrated as rational and goal-oriented (To et al., 2007), in contrast hedonism is considered as "*related to fun and playfulness rather than to task completion, and thus it reflects the experiential side of shopping*" (Scarpi, 2012, p.54). According to Li et al. (2020), the utilitarian products are rational, planned and customers seek for the "value for the money" (Zeithaml, 1988; Overby & Lee,

2006) and make their judgements based on convenience and time savings (Overby & Lee, 2006) which requires more information to be processed to make the purchase decision. Additionally, the characteristics of the utilitarian products are easy to compare increasing the price sensitivity of the consumers and reducing the brand differentiation (Li et al., 2020). On the other hand, customers enjoy the shopping process when buying a hedonic product (To et al., 2007), therefore these purchases are considered more fun-oriented, which requires less information to be processed hence only simple signs and heuristics are enough to make the purchase decision (Li et al., 2020).

A study investigating the consumer motivations to online shopping, found that 71% of the consumers' last purchase was planned and associated with convenience, lack of sociality, informativeness, selection (Woldinbarger & Gilly, 2001) and price-savings (Overby & Lee, 2006). A good website design, which is easy to use, simple and convenient with useful content, can increase the return visit rate for a customer seeking a utilitarian product (Scarpi, 2012). Further, when buying hedonic products, the consumers find online shopping less entertaining and preferable than brick and mortar stores, and associate it with values such as adventure, authority and status (To et al., 2007). Therefore, a website with music, different colors, and videos might be more appealing to these customers resulting in a repeated site visits, customer satisfaction and purchase intention (Scarpi, 2012).

6. Mental Imagery (ease of imagining the product) and Perceived (psychological) ownership

Mental imagery is a process in which individuals' ideas, memories, and feelings are processed in the persons' working memory and include two dimensions: elaboration and quality. An elaboration illustrates the number of images aroused in mind whereas the quality – their vividness, intensity, sharpness, appeal and clarity (Yoo & Kim, 2014). In the online setting when the product evaluation is not complete, the mental Imagery plays a vital role, as high level of it may help the customer to get enough information and make a purchase (Yoo & Kim, 2014). Different presentation formats such as static images, 3D images, or videos can stimulate the mental imagery process in the consumer's mind. In addition, 3D images or Videos may be more effective than Static images due to the richer information and vividness these formats provide (Wu et al., 2020), consequently:

H1: The 3D presentation format will increase the ease of imaging the product compared to static presentation format for hedonic goods as well as utilitarian goods.

H2: The video format will increase the ease of imaging the product compared to (a) the static presentation format and (b) the 3D presentation format for hedonic goods as well as utilitarian goods.

H3: The higher mental imagery will lead to higher purchase intention.

The **perceived (psychological) ownership** differs from legal ownership by the fact that the individual may not be the owner of the object and have a perception of "mine." In addition, the researchers claim that the perceived ownership date from our childhood, where children assert that the object is "theirs" without legal ownership (Pierce et al. 2003; Brengman et al., 2018). In the online setting, the perceived ownership can be increased by asking individuals to imagine its performance, usage, enjoyment (Brengman et al., 2018), therefore:

H4: The 3D presentation format will increase the perceived ownership compared to static presentation format for hedonic goods as well as utilitarian goods.

H5: The video format will increase the perceived ownership compared to (a) the static presentation format and (b) the 3D presentation format for hedonic goods as well as utilitarian goods.

H6: The higher perceived ownership will lead to higher purchase intention.

7. Product presentation format and perceived risk

The lack of physical inspection remains the most significant barrier in online shopping (Kim & Forsythe, 2008) therefore, presenting all product characteristics online is considered as a critical factor to the success of the e-stores (Jiang & Benbasat, 2007). The customers prefer to receive all information regarding the product to make the right purchase decision (Jian & Benbasat, 2007) otherwise, the intangibility can result in high return rates with an impact on the company's profit (Kim & Song, 2012). According to SaleCycle (2018), the return rates to online stores is around 25%, as the main reasons mentioned are that the products do not match descriptions, and the customers don't like the products. Overall, the returns have a negative effect as 20 percent of the companies are willing to increase the price to cover the cost of return and almost 60 percent admit that they face problems with the day-to-day business process due to the returns (SaleCycle, 2018).

The inability of direct product contact can cause less customer enjoyment, which is considered as an essential part of the shopping experience (Childers et al., 2001), and as a result many e-stores may implement different technologies to cope with these issues (Overmans & Poels, 2015). The product presentations can provide the necessary information needed to capture the customer's attention and influence their purchase decision. In order to be successfully implemented, the product presentations should fulfill three important aspects: "*Images of the product (a) in its closest representation of end use, (b) displayed in conjunction with similar items, and (c) from various angles such as front and back*". (Park et al., 2005, p. 697). The 2D and 3D product images can perform those aspects, and particularly the 3D view can provide the possibility to rotate the product and inspect the product from all angles thus reducing the perceived risk and increase the customer experience (Kim & Forsythe, 2008). The product presentation effectiveness is influenced by the functional mechanisms of the presentations, such as vividness and interactivity (Jiang & Benbasat,

2007). In the literature, interactivity is described as “*the extent to which users can participate in modifying the form or content of a mediated environment in real time*” (Steuer 1992, p.84), and it can ensure better product evaluation (e.g. showing how the product can be used) with a positive impact on the purchase decision (Jiang & Benbasat, 2007). The presentation vividness can provide more product information and increase customer engagement (Jiang & Benbasat, 2007).

The online shopping is considered riskier by the consumers than traditional shopping, because of the inability to inspect the products (Kim & Forsythe, 2008; Grewal, Iyer, & Levy, 2004). Therefore, eighty percent of the customers are unwilling to adopt online purchasing due to the lack of product examination (Chang & Wu, 2012). During the purchasing process, each person can experience different types and levels of risk (Bhatnagar et al., 2000), including product risk, security risk, privacy risk (Doolin et al., 2005), financial risk (Bhatnagar et al., 2000), and emotional risk (psychological & social risk) (Chang & Wu, 2012; Chaudhuri, 2000). Even though the perceived security, privacy, and financial risk are not resulting from the purchase decision, these are important in influencing the consumers’ attitudes toward the Internet (Doolin et al., 2005). On the other hand, the product risk is associated with the product functionality (e.g., the product performance, quality etc.) (Bhatnagar et al., 2000) and purchase decision (Doolin et al., 2005). The perceived risk increases for technologically complex products, expensive and ego-satisfying products (Bhatnagar, 2000), and products with little information (Bhatnagar & Ghose, 2004). For instance, the consumers’ risk will be higher for a car rather than a book purchase. Further, the consumers exposed to more information regarding the product or alternatives will experience less perceived risk (Bhatnagar & Ghose, 2004), therefore the product presentations are good alternatives to provide the necessary information and decrease the perceived risk (Park et al., 2005). Consequently, the following hypothesis were developed:

H7: The 3D presentation format will lead to less perceived performance risk compared to static presentation format for hedonic goods as well as utilitarian goods.

H8: The video format will lead to less perceived performance risk compared to (a) the static presentation format and (b) the 3D presentation format for hedonic goods as well as utilitarian goods.

H9: The 3D presentation format will lead to less perceived financial risk compared to static presentation format for hedonic goods as well as utilitarian goods.

H10: The video format will lead to less perceived financial risk compared to (a) the static presentation format and (b) the 3D presentation format for hedonic goods as well as utilitarian goods.

8. Product presentation and purchase intention

An interesting and attractive product presentation can provide a good store experience, therefore have a positive impact on purchase intention (Park et al., 2005). The presentation interactivity which is "*the extent to which users can participate in modifying the form or content of a mediated environment in real time*" (Steuer, 1992, p.84) can influence the consumers' attitude toward the store thus increasing the buying intention. In a similar vein, the vividness provides more product information increasing the consumers' engagement and resulting in more sales (Jiang & Benbasat, 2007). According to Park et al. (2005), the dynamic presentation format (products in motion) has a positive impact on the purchase intention and might affect the perceived risk and mood. Therefore,

H11: The 3D presentation format will lead to higher purchase intention compared to static presentation format for hedonic goods as well as utilitarian goods.

H12: The video format will lead to higher purchase intention compared to (a) the static presentation format and (b) the 3D presentation format for hedonic goods as well as utilitarian goods.

9. Perceived risk and purchase intention

The perceived risk is considered by consumers as the biggest hurdle in the decision-making process (Chang and Wu, 2012), due to the inability of physical product inspection (Kim & Forsythe, 2008). The customers perceive the online setting as riskier than the brick and mortar stores (Lee & Tan, 2003), which has a negative effect on the purchase intention (Akhlaq & Ahmed, 2015; Ariffin et al., 2018). Moreover, the shoppers who experience higher risk online might seek more product information before the purchase decision (Chang & Wu, 2012), which is delivered by different sensory-enabling technologies such as visual-enabling, multi-sensory and haptic – enabling technologies (Kim & Forsythe, 2008). The perceived risk has an impact on the attitude towards the online store and purchase intentions, particularly the consumers exposed to high levels of risk will spend less money and time in the online setting (Doolin et al., 2005). Consequently, reducing the perceived risk through providing the necessary product information will lead to more site visits, increased shopping enjoyment, and purchase intention (Kim & Forsythe, 2008).

H13: The lower perceived performance risk will lead to higher purchase intention.

H14: The lower perceived financial risk will lead to higher purchase intention.

5. Conceptual Model

The independent variable is presentation format whereas the dependent variables are perceived ownership, ease of imagining the product, perceived risk, and purchase intention (Fig.1). This model is both for hedonic and utilitarian products.

In order to test the effect of Perceived Ownership, Ease of Imagining the product, and Perceived Risk on Purchase Intention, the former was considered as independent variables and the latter as dependent variable (Fig.1)

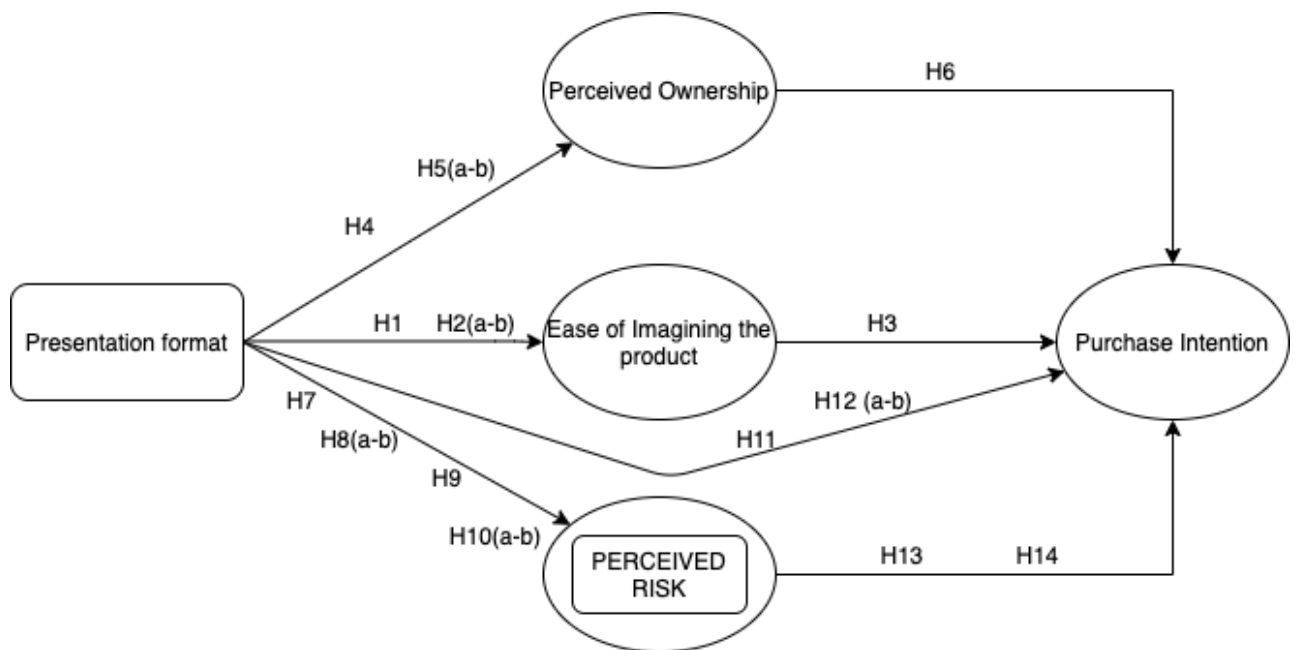


Figure 1 – Conceptual Model

6. Research Design

The aim of this research is to investigate the influence of product presentation format, specifically static images, 3D images and interactive videos on consumers' perceived risk for hedonic and utilitarian products and consequently the influence of perceived risk on purchase intention.

For the purpose of this study, printer and stereo set were chosen as utilitarian and hedonic products. The materials for the presentation format were taken from online retailers and adapted to this study. Three main pictures were chosen to illustrate the static presentation format and 3D format. Above the pictures/video a text with a small introduction and product description with 4 features was included. The video format was 1:15 min. for printer and 0:44 seconds for the stereo set, respectively. Overall, three presentation formats were available for the utilitarian product (printer), namely static images (represented by three pictures), 3D images (represented by three pictures), and video format. The exact amount of presentation formats and pictures applied for the hedonic product (stereo set). The respondent was exposed to only one of the six presentation formats via randomizer.

6.1 Questionnaire development and data collection

The survey consisted of eleven questions measuring four variables on a seven-point Likert scale (1=strongly disagree, 7=strongly agree). After seeing the product picture or video (via randomizer), the participant was first questioned about the ease of imaging the product through three items. Particularly, the variable EASE OF IMAGING THE PRODUCT measured the ease of product performance imagination and how it looks like in a consumption situation (Stone & Gronhaug, 1993). The variable PERCEIVED OWNERSHIP was assessed by means of three items the level of psychological ownership towards the product (Peck & Shu, 2009). The PURCHASE INTENTION construct measured the customer's plan to purchase a particular product or service in the future (Orus et al., 2017). This was the only question that had different choices 1=very unlikely, 7=very likely. The last variable was PERCEIVED RISK, which analyzed the financial and performance risk of buying the product. The survey sequence was as follows: Easy of imaging the product, Perceived Ownership, Purchase intention, Perceived risk, and the survey ended with demographic questions such as Gender, Age, and Employment status. In table 1, all variables and items are given

Variable	Source	Item
Ease of imaging the product	Stone and Grønhaug (1993)	After seeing the product, it is easy for me to image how the product would perform

		<p>After seeing the product, it is easy for me to picture myself using the product</p> <p>After seeing the product, it is easy for me to picture myself enjoying the product</p>
Perceived ownership	Peck and Shu (2009)	<p>I feel like I own this product</p> <p>I feel like this is my product</p> <p>I feel a very high degree of personal ownership of this product</p>
Perceived risk (financial and performance)	Chang and Wu (2012)	<p>I think that purchasing this product on this Web site would probably lead to a performance loss for me because the product would be inconsistent with my expectations.</p> <p>As far as I'm concerned, if this performance loss happened to me, it would be very important.</p> <p>I think that purchasing this product on this Web site would probably lead to a financial loss for me because of such things as its poor warranty, high delivery costs, or high transaction costs when I transfer money to the seller.</p> <p>As far as I'm concerned, if this financial loss happened</p>

		to me, it would be very important.
Purchase intention	Orus, Gurrea and Flavian (2017)	How likely would you be to purchase the product?
<i>Table 1: Questionnaire Development</i>		

The data was collected through a self-administered questionnaire which was developed in Qualtrics. The survey was distributed using non-probability convenience sampling, and it was sent to all students at Hasselt University via email. The participant was required to answer all questions (force response), and it was allowed to finish the survey later. As compensation, the participant had a chance to win a 25 euros bol(.)com gift voucher by leaving his/her email address (not compulsory) at the end of the survey. The winner was randomly selected via wheelofnames(.)com and the session was recorded.

6.2 Sample

The questionnaire was active for one week in April 2021 and filled in by 303 respondents, among which 107 responses were incomplete or inaccurate. After the data cleaning process, 196 responses were left for further analysis. The gender distribution was almost equal with a slight difference of one percent between Males and Females (Fig.2).

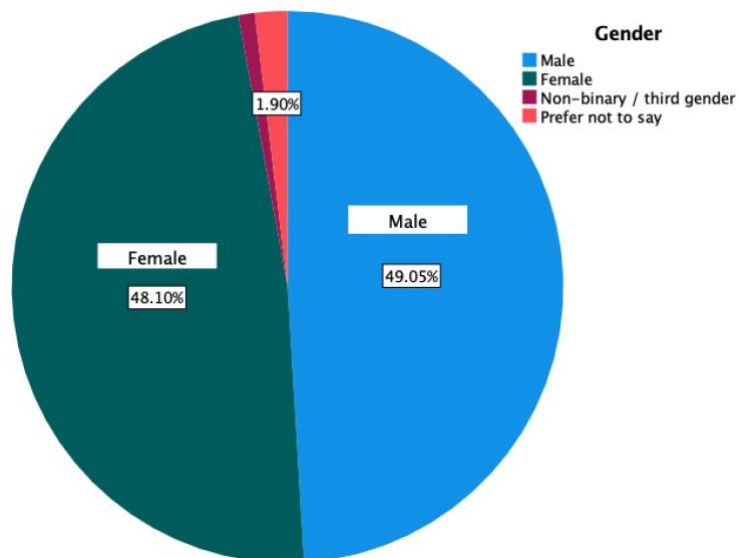


Figure 2: Gender Distribution

Most of the respondents were students (85.7%), and 13.8% indicated that they are employed, which can be explained by the fact that the survey also reached Hasselt University staff members (Fig.3).

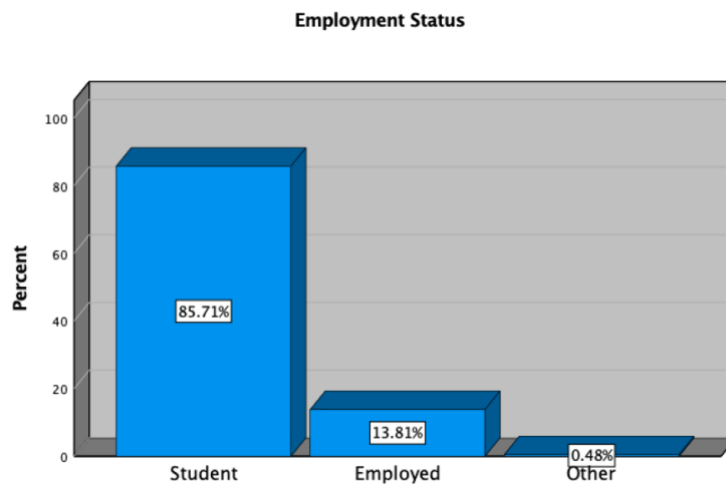


Figure 3: Employment Status

The age distribution was mostly concentrated in the 18-24 age group. The 18 years old was a predominant group with 34 responses (16.2%), followed by 19 years old with 32 answers (15.2%) and 20 years old with 25 responses (11.9%). The 25+ age groups were 23.1% of all entries received and the average age distribution was 22.

7. Data analysis

7.1 Factor Analysis

The factor analysis describes the relationship between variables in terms of underlying, random quantities, named factors (Johnson & Wichern, 1998). In the data collection process, many items can measure one construct, and through factor analysis, these items can be reduced to a few called factors. In this research, eleven items taken from the literature and adapted to this study measured four constructs. Therefore, there was an expectation these items will belong to the same factor thus, Confirmatory Factor Analysis (CFA) was employed to confirm the expectations. In line with CFA, the Principal Components Analysis approach and Varimax Rotation were chosen. Moreover, Bartlett's test of sphericity and Kaiser-Meyer Olkin's (KMO) tests were conducted to indicate the appropriateness of the items for Factor analysis. The KMO values of more than 0.5 and small values less than 0.05 of Bartlett's test of sphericity will indicate that Factor analysis is appropriate. Further, the variable is unidimensional when the eigenvalue is greater than 1, and the variance explained is at least 60%.

The construct measuring Perceived Ownership consisted of three items. The Kaiser-Meyer Olkin (KMO) index (0.660) and Bartlett's Test of Sphericity ($\chi^2=191.102$, $p<.001$) demonstrated that the Factor Analysis is appropriate. The eigenvalue for Factor 1 was 2.1 and 70 percent of the variance indicating that the factor is unidimensional.

The Ease of Imagining the Product construct included three items. The Kaiser-Meyer Olkin (KMO) index (0.750) and Bartlett's Test of Sphericity ($\chi^2=374.745$, $p<.001$) confirmed that it is suitable to use Factor Analysis. The eigenvalue for Factor 1 was 2.5 and 83% of the variance meaning that the factor is unidimensional.

The Perceived risk construct consisted of four items, particularly measuring Performance and Financial Risk but the KMO index (0.512) and Cronbach alpha (0.574) indicated that Factor analysis is not appropriate thus these variables will be used separately in the analysis.

Construct	Number of Items	Eigenvalue 1	Variance %
Perceived Ownership	3	2.517	83.895
Ease of Imagining the Product	3	2.109	70.295

Table 2 - Factor Analysis

7.2 Cronbach's Alpha

The Cronbach's Alpha is used to measure the internal reliability of the construct and only multi-item questions can be analyzed. The values above 0.7 indicate that the construct is reliable and acceptable.

Construct	Number of Items	Cronbach's Alpha
Perceived Ownership	3	0.903
Ease of Imagining the Product	3	0.767

Table 3: Cronbach's Alpha

The results show that the construct Perceived Ownership has excellent internal consistency and Ease of Imagining the product has an acceptable internal consistency; therefore, both constructs meet the reliability requirements (Table 2).

7.3 Multivariate Analysis of Variance (MANOVA)

Multivariate Analysis (MANOVA) was used to analyze the effect between two independent variables on two or more dependent variables. In this research, the product types (hedonic or utilitarian) and the presentation formats (static images, 3D images, video format) are the independent variables, whereas the financial risk, purchase intention, performance risk, ease of imagining the product and perceived ownership are the dependent variables.

Multivariate tests	Wilk's Lambda
Presentation format	.042
Product type	.001
Presentation format * Product type	.227

Table 4: Multivariate Analysis of Variance (MANOVA) - 1

The MANOVA was conducted to test H1, H2 (a-b), H4, H5(a-b), H7, H8 (a-b), H9, H10(a-b), H11, H12(a-b). The results indicated that there is no significant interaction effect between the product type and presentation formats on the combined dependent variables $F(10,372) = 1.303, p = .227$; Wilks' $\Lambda = .933$. Therefore, H1, H2 (a-b), H4, H5(a-b), H7, H9, H10(a-b), H11, H12(a-b) are not supported (Table 6).

Next, the main effects of presentation format and product type are discussed. The purchase intention was significantly different for product type ($F=22.248, p=.001$), particularly higher for utilitarian product ($M=4.82, SD=1.111$) compared to hedonic product ($M=3.85, SD=1.682$). Moreover, the performance loss was different for presentation format ($F=3.929, p<.021$), specifically, between the static images ($M=3.51, SD=1.307$) and video format ($M=2.94, SD=1.263, p=.013$) and 3D images ($M=3.41, SD=1.364$) and video format ($M=2.94, SD=1.263, p=.041$). Therefore, the participants exposed to the video format perceived less performance risk compared to 3D and static images thus Hypothesis 8 (a-b) is supported.

Although the MANOVA showed a non-significant interaction effect, the interaction effect for every dependent variable is examined for exploratory purposes. Therefore, the interaction effect was statistically significant between presentation format and product type for the dependent variable ease of imagining the product ($F=3.067, p=.049$). Particularly, it was different between the static images ($M=4.92, SD=1.22$) and video format ($M=5.71, SD=0.81, p=.046$) for utilitarian product. Thus, the respondents exposed to the video format were able to better imagine the product (printer) compared to static and 3D images.

	Presentation format (Sig.)	Product type (Sig.)	Presentation format * Product type (Sig.)
Perceived Performance Loss	.021	.074	.514
Perceived financial loss	.790	.796	.501
Purchase intention	.326	<.001	.131
Ease of imagining the product	.070	.078	.049
Perceived Ownership	.287	.204	.215

Table 5: Multivariate Analysis of Variance (MANOVA)-2

7.4 Multiple Regression Analysis

Multiple Regression Analysis was conducted to determine the existence and strength of the relationship between the dependent and independent variables, therefore, to test H3, H6, H13, H14. The dependent variable was purchase intention, and the independent variables were perceived performance risk, perceived financial risk, ease of imagining the product, and perceived ownership. The model summary indicates an R Square value of 0.313, meaning that all independent variables account for 30% of the variance of purchase intention. Moreover, the independent variables statistically significantly predict the dependent variable ($F(4,191) = 21.770, p < .001$).

The results of regression analysis indicated that the perceived performance ($p = .069$) and financial ($p = .256$) risk doesn't have a significant effect on purchase intention therefore Hypotheses 13 and 14 are not supported.

The ease of imagining the product has a significant effect on purchase intention ($B = .595, t(191) = 5.95, p < .001$), as one unit increase in the ease of imagining the product will increase the purchase intention by 0.595 units; therefore, Hypothesis 3 is supported.

The perceived ownership also has a significant effect on purchase intention ($B = .190, t(191) = 2.65, p = .009$), specifically one unit increase in perceived ownership will increase the purchase intention by 0.186 units, consequently, Hypothesis 6 is supported.

Hypothesis 1	The 3D presentation format will increase the ease of imaging the product compared to static presentation format for hedonic goods as well as utilitarian goods.	Not supported
Hypothesis 2 (a)(b)	The video format will increase the ease of imaging the product compared to (a) the static presentation format and (b) the 3D presentation format for hedonic goods as well as utilitarian goods.	Not supported

Hypothesis 3	The higher mental imagery will lead to higher purchase intention.	Supported
Hypothesis 4	The 3D presentation format will increase the perceived ownership compared to static presentation format for hedonic goods as well as utilitarian goods.	Not supported
Hypothesis 5 (a)(b)	The video format will increase the perceived ownership compared to (a) the static presentation format and (b) the 3D presentation format for hedonic goods as well as utilitarian goods.	Not supported
Hypothesis 6	The higher perceived ownership will lead to higher purchase intention.	Supported
Hypothesis 7	The 3D presentation format will lead to less perceived performance risk compared to static presentation format for hedonic goods as well as utilitarian goods.	Not supported
Hypothesis 8 (a)(b)	The video format will lead to less perceived performance risk compared to (a) the static presentation format and (b) the 3D presentation format for hedonic goods as well as utilitarian goods.	Supported
Hypothesis 9	The 3D presentation format will lead to less perceived financial risk compared to static presentation format for hedonic goods as well as utilitarian goods.	Not supported
Hypothesis 10 (a)(b)	The video format will lead to less perceived financial risk compared to (a) the static	Not supported

	presentation format and (b) the 3D presentation format for hedonic goods as well as utilitarian goods.	
Hypothesis 11	The 3D presentation format will lead to higher purchase intention compared to static presentation format for hedonic goods as well as utilitarian goods.	Not supported
Hypothesis 12 (a)(b)	The video format will lead to higher purchase intention compared to (a) the static presentation format and (b) the 3D presentation format for hedonic goods as well as utilitarian goods.	Not supported
Hypothesis 13	The lower perceived performance risk will lead to higher purchase intention.	Not supported
Hypothesis 14	The lower perceived financial risk will lead to higher purchase intention.	Not supported

Table 6 - Hypotheses

8. Conclusion and Implications

The aim of this study is to investigate the impact of different presentation formats particularly, static images, 3D images, and video format, on purchase intention, ease of imagining the product, perceived ownership for hedonic and utilitarian products.

The results from MANOVA indicated a non-significant interaction effect between product type (hedonic and utilitarian) and presentation format (static, 3D, video format) on dependable variables perceived financial and performance risk, ease of imagining the product, and perceived ownership. In other words, this means that the effect of presentation format on dependent variables is the same for hedonic and utilitarian goods which is in line with our expectations.

The main effects illustrated that the performance risk was different for presentation format, particularly people exposed to the video format perceived less performance risk. This is consistent with our expectations because when the product is presented via video, the customers will be able to evaluate the product's performance better, resulting in less perceived performance risk. Surprisingly, the impact is not significant for the other dependent variable, meaning that the effect of the video format is the same for the purchase intention, perceived financial loss, ease of imagining the product, perceived ownership, and importance of financial & performance loss. In previous academic studies it was found that the dynamic presentation formats (products in motion), can lead to less perceived risk and have a positive impact on purchase intention (Park et al., 2005) which is partly consistent with this research.

The hedonic and utilitarian motivations are the main reasons for shopping as utilitarianism is rational and goal-oriented, whereas hedonism is related to fun and playfulness. Therefore, the customers need more information before purchasing utilitarian goods. On the other hand, the hedonic goods are fun-oriented thus, less information is enough to make the purchase intention.

This research found controversial results, particularly the purchase intention was significantly higher for utilitarian products than hedonic goods, meaning that the participant had a higher buying intention for a printer than a stereo set. The explanation for this result would be that 86 percent of the participants were students, therefore the printer would be more valuable and necessary especially in the current pandemic situation. The other reasons are discussed in the "Limitations" part. The result also contradicts other academic studies that found the utilitarian goods requires more information to be processed to make the purchase decision compared to hedonic products, which need less information before buying decision (Li et al., 2020; To et al., 2007).

Online shopping is considered riskier by consumers than traditional shopping due to the inability to inspect the products. Therefore, high perceived risk has a negative effect on purchase intention. In this study, the perceived risk was specified as performance and financial risk. The regression analysis indicated that performance and financial risk didn't have a significant effect on purchase intention. This result contradicts a previous academic study, in which it was found that the participants who

experience less perceived risk demonstrate a greater purchase intention (Park et al., 2005; Chang & Wu, 2012). This contradicting result might be caused by the fact that the price of the products was not published therefore, it could be hard for participants to evaluate the effect of financial and performance risk on purchase intention.

Finally, this research found that the perceived ownership and ease of imagining the product significantly affect purchase intention. This means that when the customer can easily imagine the product's performance, usage, or enjoyment, the purchase intention will be higher. This supports previous research by Yoo & Kim (2014), in which it was found that the ease of imagining the product can positively influence behavior intentions such as word-of-mouth and purchase intention.

The perceived ownership differs from the legal ownership by the fact that the individual doesn't possess the product and has a perception of "mine." This study found that the higher individual's perceived (psychological) ownership of the product will lead to more purchases, which is in line with Brengman, Williams & Kerrebroeck (2018) findings.

This study contributes to the marketing research in several ways. First, it investigates the impact of three presentation formats, namely static images, 3D images, and video format, on several dependent variables: ease of imagining the product, perceived financial & performance risk, perceived ownership, and purchase intention. This kind of extensive research is quite limited, most of the academic studies focus on one or two presentation formats investigating fewer dependent variables. Second, this research also investigates the impact of the aforementioned for hedonic and utilitarian products, which is something new in the marketing literature. Consistent with prior research (Park et al., 2005; Li et al., 2020; To et al., 2007; Chang & Wu, 2012; Yoo & Kim 2014; Brengman et al., 2018), the results from this study provide empirical support for the importance of presentation formats and its impact on the different dependent variables.

9. Limitations & Future research

This research encountered several limitations. First, the data was collected among U Hasselt students so that the results cannot be generalized. Second, the participants might have had preferences about the product type, for example, they might have demonstrated a higher purchase intention for a printer (rather than a stereo set) because it is a product that the students always use. The chance to win a gift voucher of 25 euros might also have influence on the responses, as some participants might have had only economic incentives. Additionally, the brand name's popularity and preference might have influenced the responses (even though the participants were exposed to only one product/presentation and were not aware of the other product type). For example, the utilitarian product was the printer Canon whereas the hedonic product was a stereo set Kenwood. Finally, the participants' type of device (touch vs. non-touch) used to fill in the survey might have influenced responses.

As a recommendation for future research, it would be interesting to investigate the effect of presentation formats with new market brands that are not popular, and people are not aware of their existence. Moreover, investigating background music alongside static and 3D presentation formats would be interesting for future research. Further, exploring the impact of the quality of presentation formats would be a good research area, for example the static or 3D pictures taken by amateurs versus static or 3D pictures taken by professionals. Finally, investigating the influence of device type (touch vs non-touch) alongside the presentation formats would be a good recommendation for future research.

10. Managerial Implications

The findings of this research illustrate the importance of presentation formats with a practical application in e-commerce. Based on the results, the marketing managers should consider video format a more effective technique when presenting a product with a high-performance complexity because the customer exposed to the video format perceives less performance risk than static and 3D images. Moreover, the marketing managers should consider that the static and 3D images and video format have the same effect on purchase intention, financial risk, ease of imagining the product, and perceived ownership. Therefore, it might be reasonable to choose static or 3D images when illustrating the products instead of video because the latter will be more expensive. Finally, the managers should consider different creative techniques to increase the customers' perceived ownership and ease of imagining the product because both can have a significant positive impact on purchase intention.

References:

Addy, C., & Watkins, T. (2020, February 21). Now trending - Amazon's brick and mortar expansion of new concept stores. Retrieved March 18, 2021, from <https://www.jdsupra.com/legalnews/now-trending-amazon-s-brick-and-mortar-73302/>

Algharabat, R., et al. (2017). "Three dimensional product presentation quality antecedents and their consequences for online retailers: The moderating role of virtual product experience." *Journal of Retailing and Consumer Services* 36: 203-217.

Ahmed, E. and A. Akhlaq (2015). "Digital commerce in emerging economies." *International journal of emerging markets* 10(4): 634-647.

Baker, J., et al. (1994). "The influence of store environment on quality inferences and store image." *Journal of the Academy of Marketing Science* 22(4): 328-339.

Baker, J., et al. (2002). "The Influence of Multiple Store Environment Cues on Perceived Merchandise Value and Patronage Intentions." *Journal of Marketing* 66(2): 120-141.

Ballantine, P. W., et al. (2010). "Atmospheric cues and their effect on the hedonic retail experience." *International Journal of Retail & Distribution Management* 38(8): 641-653.

Barry Berman, Joel R. Evans, (1995). *Retail Management: A Strategic Approach* (6th Edition), New Jersey, Prentice-Hall, Inc, Englewood Cliffs

Baier, D., et al. (2015). Analyzing Online Reviews to Measure Augmented Reality Acceptance at the Point of Sale: The Case of IKEA: 168-189.

Bitner, M. J. (1990). "Evaluating Service Encounters: The Effects of Physical Surroundings and Employee Responses." *Journal of Marketing* 54(2): 69-82.

Bitner, M. J. (1992). "Servicescapes: The Impact of Physical Surroundings on Customers and Employees." *Journal of Marketing* 56(2): 57-71.

Bloch, P. H. and O. Kamran-Disfani (2018). "A framework for studying the impact of outdoor atmospherics in retailing." *AMS Review* 8(3): 195-213.

Brasel, S. A. and J. Gips (2014). "Tablets, touchscreens, and touchpads: How varying touch interfaces trigger psychological ownership and endowment." *Journal of Consumer Psychology* 24(2): 226-233.

Brasel, S. A. and J. Gips (2015). "Interface Psychology: Touchscreens Change Attribute Importance, Decision Criteria, and Behavior in Online Choice." *Cyberpsychology, behavior and social networking* 18(9): 534-538.

Brengman, M., Brengman, M., Willems, K., Willems, K., Van Kerrebroeck, H., & Van Kerrebroeck, H. (2019). Can't touch this: The impact of augmented reality versus touch and non-touch interfaces on perceived ownership. *Virtual Reality : The Journal of the Virtual Reality Society*, 23(3), 269-280.

Bhatnagar, A., et al. (2000). "On risk, convenience, and Internet shopping behavior." *Commun. ACM* 43(11): 98-105.

Bhatnagar, A. and S. Ghose (2004). "Segmenting consumers based on the benefits and risks of Internet shopping." *Journal of Business Research* 57(12): 1352-1360.

Burns, D. J. and P. Smith (1996). "Atmospherics and retail environments: the case of the "power aisle"." *International Journal of Retail & Distribution Management* 24(1): 7-14.

Comscore. (2019, December). *Global State of Mobile*.
<https://www.comscore.com/Insights/Presentations-and-Whitepapers/2019/Global-State-of-Mobile>

Chang, M.-L. and W.-Y. Wu (2012). "Revisiting Perceived Risk in the Context of Online Shopping: An Alternative Perspective of Decision-Making Styles." *Psychology & Marketing* 29(5): 378-400.

Chaudhuri, A. (2000). "A Macro Analysis of the Relationship of Product Involvement and Information Search: The Role of Risk." *Journal of Marketing Theory and Practice* 8(1): 1-15.

Cho, H. and N. Schwarz (2012). "I Like Your Product When I Like My Photo: Misattribution Using Interactive Virtual Mirrors." *Journal of Interactive Marketing* 26(4): 235-243.

Choi, Y. K. and C. R. Taylor (2014). "How do 3-dimensional images promote products on the Internet?" *Journal of Business Research* 67(10): 2164-2170.

Cheng, F.-F., et al. (2009). "The effect of online store atmosphere on consumer's emotional responses—An experimental study of music and colour." *Behaviour & Information Technology* 28(4): 323-334.

Childers, T. L., et al. (2001). "Hedonic and utilitarian motivations for online retail shopping behavior." *Journal of Retailing* 77(4): 511-535.

Chung, S. (2016). *Touch in Computer-Mediated Environments: An Analysis of Online Shoppers' Touch-Interface User Experiences*, ProQuest Dissertations Publishing.

Chung, S., et al. (2018). "Do touch interface users feel more engaged? The impact of input device type on online shoppers' engagement, affect, and purchase decisions." *Psychology & Marketing* 35(11): 795-806.

Dacko, S. G. (2017). "Enabling smart retail settings via mobile augmented reality shopping apps." *Technological forecasting & social change* 124: 243-256.

Doolin, B., et al. (2005). "Perceived Risk, the Internet Shopping Experience and Online Purchasing Behavior: A New Zealand Perspective." *J. Glob. Inf. Manag.* 13: 66-88.

Donovan, R. J., Rossiter, J. R., Marcolyn, G., & Nesdale, A. (1994). Store atmosphere and purchasing behavior. *Journal of Retailing*, 70(3), 283-294.

E-commerce Barometer 2020, Belgium (Rep.). (2021). Retrieved <https://www.thehouseofmarketing.be/e-commerce-barometer-2020-registration>

Enders, A. and T. Jelassi (2000). "The converging business models of Internet and bricks-and-mortar retailers." *European Management Journal* 18(5): 542-550.

Eroglu, S. A., et al. (2001). "Atmospheric qualities of online retailing: A conceptual model and implications." *Journal of Business Research* 54(2): 177-184.

Eroglu, S. A., et al. (2005). "The interaction of retail density and music tempo: Effects on shopper responses." *Psychology & Marketing* 22(7): 577-589.

Erenkol, A. D. and A. Merve (2015). "Sensory marketing." *J Administrative Sci Policy Stud* 3: 1-26.

Forsythe, S. M. and B. Shi (2003). "Consumer patronage and risk perceptions in Internet shopping." *Journal of Business Research* 56(11): 867-875.

Gardner, M. and G. J. Siomkos (1986). "Toward a methodology for assessing effects of in-store atmospherics." *Advances in Consumer Research* 13: 27-31.

Grewal, D., Iyer, G.R. and Levy, M. (2004), "Internet retailing: enablers, limiters and market consequences", *Journal of Business Research*, Vol. 57 No. 7, pp. 703-13.

Hultén, B., et al. (2009). *Sensory marketing*. Hampshire, Palgrave MacMillan.

Jahanshahi, A. A., et al. (2013). "E-commerce for SMEs: empirical insights from three countries." *Journal of Small Business and Enterprise Development* 20(4): 849-865.

Javornik, A. (2016). "Augmented reality: Research agenda for studying the impact of its media characteristics on consumer behaviour." *Journal of Retailing and Consumer Services* 30: 252-261.

Jiang, Z. and I. Benbasat (2007). "The Effects of Presentation Formats and Task Complexity on Online Consumers' Product Understanding." *MIS Quarterly* 31(3): 475-500.

Jin, S. (2009). "The Roles of Modality Richness and Involvement in Shopping Behavior in 3D Virtual Stores." *Journal of Interactive Marketing* 23: 234-246.

Kamalul Ariffin, S., et al. (2018). "Influence of consumers' perceived risk on consumers' online purchase intention." *Journal of Research in Interactive Marketing* 12(3): 309-327.

Karimov, F. P., et al. (2011). "The Effect of Website Design Dimensions on Initial Trust: A Synthesis of the Empirical Literature." *Journal of Electronic Commerce Research* 12: 272.

Kerrebroeck, H. V., Willems, K., & Brengman, M. (2017). Touching the void: Exploring consumer perspectives on touch-enabling technologies in online retailing. *International Journal of Retail & Distribution Management*, 45(7-8), 892-909.

Kim, J. and S. Forsythe (2008). "Sensory enabling technology acceptance model (SE-TAM): A multiple-group structural model comparison." *Psychology & Marketing* 25(9): 901-922.

Kim, J. and S. Forsythe (2009). "Adoption of sensory enabling technology for online apparel shopping." *European Journal of Marketing* 43(9/10): 1101-1120

Kim, J. H., et al. (2009). "Effects of web site atmospherics on consumer responses: music and product presentation." *Direct Marketing: An International Journal* 3(1): 4-19.

Kim, J. (2006). *Sensory enabling technology acceptance model (SE-TAM): The usage of sensory enabling technologies for online apparel shopping*, ProQuest Dissertations Publishing.

Knoeferle, K., et al. (2014). "Multisensory Brand Search: How the Meaning of Sound Guides Consumers' Visual Attention." *Advances in consumer research* 42: 552.

Krishna, A. (2012). "An integrative review of sensory marketing: Engaging the senses to affect perception, judgment and behavior." *Journal of Consumer Psychology* 22(3): 332-351.

Laberge, L., Schneider, J., & Smaje, K. (2021, February 18). How COVID-19 has pushed companies over the technology tipping point--and transformed business forever. Retrieved March 18, 2021, from <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/how-covid-19-has-pushed-companies-over-the-technology-tipping-point-and-transformed-business-forever>

Lee, K. S. and S. J. Tan (2003). "E-retailing versus physical retailing: A theoretical model and empirical test of consumer choice." *Journal of Business Research* 56(11): 877-885.

Li, J., et al. (2020). "Path to Purpose? How Online Customer Journeys Differ for Hedonic Versus Utilitarian Purchases." *Journal of Marketing* 84(4): 127-146.

Liègeois, M. and C. Rivera (2011). Sensory marketing on the natural cosmetics market : The impact on generation X and generation Y.

Machleit, K. A. and S. A. Eroglu (2000). "Describing and Measuring Emotional Response to Shopping Experience." *Journal of Business Research* 49(2): 101-111.

Manganari Emmanouela, E., et al. (2011). "Virtual store layout effects on consumer behaviour: Applying an environmental psychology approach in the online travel industry." *Internet Research* 21(3): 326-346.

Mehrabian, A. and J. A. Russell (1974). *An approach to environmental psychology*. Cambridge, MA, US, The MIT Press.

Montoya-Weiss, M., et al. (2003). "Determinants of Online Channel Use and Overall Satisfaction With a Relational, Multichannel Service Provider." *Journal of The Academy of Marketing Science - J ACAD MARK SCI* 31: 448-458.

Nadanyiova, M., et al. (2018). "Sensory Marketing from the Perspective of a Support Tool for Building Brand Value." *Economics and Culture* 15(1): 96-104.

Oppewal, H., & Timmermans, H. J. P. (1997). Retailer self-perceived store image and competitive position. *International Review of Retail, Distribution and Consumer Research*, 7(1), 41-59.

Orús, C., Orús, C., Gurrea, R., Gurrea, R., Flavián, C., & Flavián, C. (2017). Facilitating imaginations through online product presentation videos: Effects on imagery fluency, product attitude and purchase intention. *Electronic Commerce Research*, 17(4), 661-700.

Otterbring, T., et al. (2014). "Let There be Light! An Initial Exploratory Study of Whether Lighting Influences Consumer Evaluations of Packaged Food Products." *Journal of Sensory Studies* 29(4): 294-300.

Overby, J. W. and E.-J. Lee (2006). "The effects of utilitarian and hedonic online shopping value on consumer preference and intentions." *Journal of Business Research* 59(10): 1160-1166.

Overmars, S. and K. Poels (2015). "How product representation shapes virtual experiences and re-patronage intentions: the role of mental imagery processing and experiential value." *The International Review of Retail, Distribution and Consumer Research* 25(3): 236-259.

Oh, J.-C. and S.-J. Yoon (2014). "Validation of Haptic Enabling Technology Acceptance Model (HE-TAM): Integration of IDT and TAM." *Telematics Informatics* 31: 585-596.

Park, J., et al. (2005). "On-line product presentation: Effects on mood, perceived risk, and purchase intention." *Psychology & Marketing* 22(9): 695-719.

Peck, J., Shu, S., & John Deighton served as editor and Stephen Nowlis served as associate editor for this article. (2009). The effect of mere touch on perceived ownership. *The Journal of Consumer Research*, 36(3), 434-447.

Petit, O., et al. (2019). "Digital Sensory Marketing: Integrating New Technologies Into Multisensory Online Experience." *Journal of Interactive Marketing* 45: 42-61.

Pierce, J. L., Kostova, T., & Dirks, K. T. (2003). The State of Psychological Ownership: Integrating and Extending a Century of Research. *Review of General Psychology*, 7(1), 84-107.

Roggeveen, A. L., et al. (2020). "The DAST Framework for Retail Atmospheric: The Impact of In- and Out-of-Store Retail Journey Touchpoints on the Customer Experience." *Journal of Retailing* 96(1): 128-137.

SaleCycle. (2018). The SaleCycle Ecommerce Stats Report: 2018 Edition. <https://www.salecycle.com/2018-stats-report/>

S. (n.d.). Salesforce Shopping index. Retrieved March 18, 2021, from <https://public.tableau.com/profile/salesforcecommercecloud#!/vizhome/SalesforceShoppingIndex/SalesforceShoppingIndex>

Sarkar, A., et al. (2020). "Attractive and facilitating store atmospheric stimuli." *International Journal of Retail & Distribution Management* 48(4): 363-379.

Schröder, H. and S. Zaharia (2008). "Linking multi-channel customer behavior with shopping motives: An empirical investigation of a German retailer." *Journal of Retailing and Consumer Services* 15(6): 452-468.

Shen, H., et al. (2016). "Computer Interfaces and the "Direct-Touch" Effect: Can iPads Increase the Choice of Hedonic Food?" *Journal of Marketing Research* 53(5): 745-758.

Spreer, P. and K. Kallweit (2014). "Augmented Reality in Retail: Assessing the Acceptance and Potential for Multimedia Product Presentation at the PoS." *Transactions on Marketing Research* 1: 20-25.

Spence, C. and A. Gallace (2011). "Multisensory design: Reaching out to touch the consumer." *Psychology & Marketing* 28(3): 267-308.

Scarpi, D. (2012). "Work and Fun on the Internet: The Effects of Utilitarianism and Hedonism Online." *Journal of Interactive Marketing* 26(1): 53-67.

Shabgou, M. and S. M. Daryani (2014). TOWARDS THE SENSORY MARKETING: STIMULATING THE FIVE SENSES (SIGHT, HEARING, SMELL, TOUCH AND TASTE) AND ITS IMPACT ON CONSUMER BEHAVIOR.

Steuer, J. (1992). "Defining Virtual Reality: Dimensions Determining Telepresence." *Journal of communication* 42(4): 73-93.

Stone, R. N., & Grønhaug, K. (1993). Perceived risk: Further considerations for the marketing discipline. *European Journal of Marketing*, 27(3), 39-50.

To, P.-L., et al. (2007). "Shopping motivations on Internet: A study based on utilitarian and hedonic value." *Technovation* 27(12): 774-787.

Turley, L. W. and R. E. Milliman (2000). "Atmospheric Effects on Shopping Behavior: A Review of the Experimental Evidence." *Journal of Business Research* 49(2): 193-211.

Velasco, C., et al. (2015). "Searching for flavor labels in food products: the influence of color-flavor congruence and association strength." *Frontiers in Psychology* 6(301).

Vieira, V. A. (2013). "Stimuli-organism-response framework: A meta-analytic review in the store environment." *Journal of Business Research* 66(9): 1420-1426.

Wolfenbarger, M. and M. C. Gilly (2001). "Shopping Online for Freedom, Control, and Fun." *California Management Review* 43: 34 - 55.

Wu, W.-Y., et al. (2013). "How can online store layout design and atmosphere influence consumer shopping intention on a website." *International Journal of Retail & Distribution Management* 42: 4-24.

Wu, L., Chen, K., Chen, P., & Cheng, S. (2014). Perceived value, transaction cost, and repurchase-intention in online shopping: A relational exchange perspective. *Journal of Business Research*, 67(1), 2768-2776.

Wu, J., Wang, F., Liu, L., & Shin, D. (2020). Effect of online product presentation on the purchase intention of wearable devices: The role of mental imagery and individualism-collectivism. *Frontiers in Psychology*, 11,

Yoo, J., & Kim, M. (2014). The effects of online product presentation on consumer responses: A mental imagery perspective. *Journal of Business Research*, 67(11), 2464-2472.

ZAMPINI, M. and C. SPENCE (2004). "THE ROLE OF AUDITORY CUES IN MODULATING THE PERCEIVED CRISPNESS AND STALENESS OF POTATO CHIPS." *Journal of Sensory Studies* 19(5): 347-363.

Zeithaml, V. A. (1988). "Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence." *Journal of Marketing* 52(3): 2.

Zhou, Q. and G. Aitamer (2011). Motives and Guidance for the Use of Sensory Marketing in Retailing : The Case of Nature a DÈcouvertes.

APPENDIX

SURVEY

(INTRODUCTION)

Dear participant,

My name is Dzhem Mutaf, and I am a master's student in International Marketing Strategy at Hasselt University. For my master thesis, I am examining the influence of sensory cues on consumer behavior.

Therefore, I am inviting you to participate in this research by completing the survey. The questionnaire will require approximately 5 min. to complete.

*** By participating in this research, you also have a chance to win a bol.com voucher worth 25 euros, in case you want to win the prize you should complete the questionnaire and leave your e-mail address at the end of the survey. This information only will be used to contact the winner! ***

Thank you in advance for your participation!

(AFTER INTRODUCTION THE PARTICIPANT IS EXPOSED TO ONE OF THE PRESENTATION FORMATS)

PRESENTATION FORMAT: PRINTER - STATIC IMAGES, 3D IMAGES, VIDEO FORMAT *(The description of the printer is the same for all presentation formats).*

Imagine you need a new printer which you will use in your work or studies. When browsing on a webshop, you find the Pixma TS8350 and you are considering buying this printer. On the webshop, you find the following product information and pictures of the product. Please take a look at the product description and the pictures below and answer the questions.

Product description:

- All-in-one printer (which means you can also scan and copy in addition to printing).
- Wi-Fi connectivity (Canon PRINT app, AirPrint (iOS) and Mopria (Android), and 5Ghz support)
- Memory card compatibility (Print photos stored on SD cards).
- 10.8cm touchscreen (10.8cm colour touchscreen with a user-friendly interface)



Static images of the Printer



3D images of the Printer



Video of the Printer

(AFTER INTRODUCTION THE PARTICIPANT IS EXPOSED TO ONE OF THE PRESENTATION FORMATS)

PRESENTATION FORMAT: STEREO SET - STATIC IMAGES, 3D IMAGES, VIDEO

(The description of the stereo set is the same for all presentation formats)

Imagine you need a new stereo set which you will use for entertainment. When browsing on a webshop, you find the KENWOOD M420 and you are considering buying this stereo set. On the webshop, you find the following product information and pictures of the product. Please take a look at the product description and the pictures below and answer the questions.

Product description:

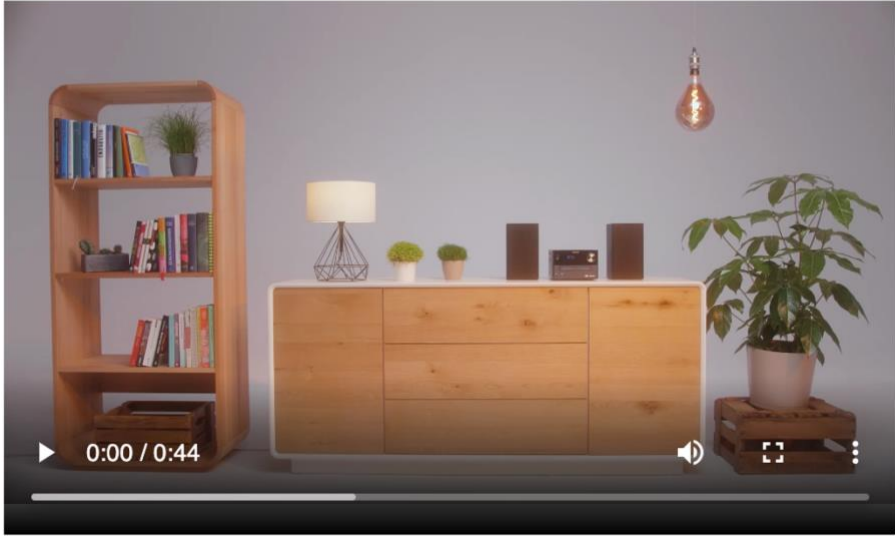
- Compact Hi-Fi System
- Bluetooth for wireless Audio Streaming
- DAB+ and FM tuner with RDS
- Programmable CD player and USB input
- Infrared remote control for controlling all functions



Static Images of the Stereo set



3D images of the stereo set



Video of the Stereo set

SURVEY QUESTIONS:

After seeing the product, it is easy for me ...

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
to imagine how the product would perform	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to picture myself using the product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to imagine myself enjoying the product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate how much you agree with the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
I feel like I own this product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel like this is my product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel like a very high degree of personal ownership of the product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How likely is it that you would purchase this product?

- Very unlikely
- Unlikely
- Somewhat unlikely
- Neither unlikely nor likely
- Somewhat likely
- Likely
- Very likely

Please indicate how much you agree with the following statements.

Strongly Disagree Disagree Somewhat Disagree Neither Agree nor Disagree Somewhat Agree Agree Strongly Agree

I think that purchasing this product on this Web site would probably lead to a performance loss for me because the product would be inconsistent with my expectations.

As far as I'm concerned, if this performance loss happened to me, it would be very important.

I think that purchasing this product on this Web site would probably lead to a financial loss for me because of such things as its poor warranty, high delivery costs, or high transaction costs when I transfer money to the seller.

As far as I'm concerned, if this financial loss happened to me, it would be very important.

Please indicate disagree on this line