

**Drivers of Emotions and Purchase Intention in Virtual Supermarket
Setting: Explore the rule of Mental Imagery, Product Involvement and
Presence**

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SUPERMARKET SETTING: EXPLORE THE RULE OF MENTAL IMAGERY,
PRODUCT INVOLVEMENT AND PRESENCE

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Acknowledgments

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Abstract

In this competitive market, companies more and more pay attention on consumer satisfaction by giving a great experience. Many marketing tools have been used to create the right atmosphere during the shopping experience which should stimulate positive emotions to the individual and consequently influence the purchase intention.

Virtual Reality is one of the tools that marketers have investigated to understand its benefits in consumers' behaviour. Some researches have been made in this field but there is still a lot left to explore. In this vein, the presented dissertation intends to explore how a computer-generated supermarket can affect some factors, that are believed in literature can influence the purchase intention. In order to contribute to the existing literature, this study will analyse the effect of Mental Imagery, Product Involvement and Presence on customer's emotions during a shopping experience and on the purchase intention. The model was tested in the laundry detergent category. Moreover, a moderator analyses was made to evaluate the effect of some variables inherent to this category's consumers.

A virtual scenario was created, and the participants experienced a supermarket with virtual reality. Findings reveal that a virtual atmosphere has impact in consumers experience. Mental imagery has the most significant impact on the emotions generated whereas presence has a strong influence on purchase decision. Oppositely, product involvement has any effect on emotions. In addition, the obsession for laundry products highly decrease the effect of product involvement on purchase intention.

Keywords: Virtual Reality, Purchase Intention, Emotions, Store Atmosphere

JEL Classification System: M310 - Marketing

M390 - Marketing and Advertising: Other

Resumo

No mercado competitivo de hoje, as empresas preocupam-se cada vez mais com a satisfação dos consumidores, proporcionando uma excelente experiência. Várias ferramentas têm sido usadas para criar uma atmosfera eficaz durante a experiência de compra a fim de estimular emoções positivas e consequentemente influenciar a compra.

Realidade Virtual é uma das ferramentas que se tem investigado para perceber quais os seus benefícios no comportamento dos consumidores. Têm sido feitos alguns estudos nesta área, mas ainda há muito por explorar. Neste sentido, esta dissertação pretende investigar como um supermercado virtual pode afetar algumas variáveis que influenciam a intenção de compra. A fim de contribuir para a literatura já existente, este estudo analisa o efeito das Imagens Mentais, o Envolvimento do Produto e Presença nas emoções dos consumidores e na decisão de compra. O modelo foi testado na categoria dos produtos para a lavagem da roupa. Além disso, uma análise de moderadores foi realizada para avaliar o efeito de algumas variáveis inerentes nos consumidores desta categoria.

Foi criado um cenário virtual e os participantes experienciaram um supermercado em realidade virtual. Os resultados revelam que o ambiente virtual tem impacto no comportamento. As Imagens Mentais têm o impacto mais significativo nas emoções geradas enquanto que é a Presença que tem maior impacto na intenção de compra. Por outro lado, o envolvimento com o produto não tem nenhum efeito nas emoções. Além disso, a obsessão por produtos de lavar a roupa diminui a relação entre o envolvimento do produto e a decisão de compra.

Palavras-Chave: Realidade Virtual, Decisão de Compra, Emoções, Ambiente de Loja

Classificação JEL: M310 – Marketing

M390 - Marketing and Advertising: Other

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List of Abbreviations

VR – Virtual Reality

3D – Three Dimensional

PLS - Partial Least Squares

SKU – Stock-Keeping Units

HDD – Hard Duty Detergent

FFI – Fabric Finisher

1. Introduction

One of the main factors that influence consumer behaviour during shopping is store atmosphere. Store atmosphere is “*the effort to design buying environments to produce specific emotional effects in the buyer that enhance his purchase probability*” (Kotler, 1974: 50). Store atmosphere reaches the consumers through their sensory system, in this case through sight, touch, smell and sound. Retailers must know how to stimulate those senses on consumers by modifying some variables, such as music, colour or temperature (Rayburn & Voss, 2013).

Store atmosphere acquired huge importance due to its impact on consumer experience. Customers are starting to value this point more and more during purchase (Edelman & Singer, 2015). Retailers are now realising that the consumer experience they give to their customers is a way to obtain competitive advantage from other brands, so a huge development on this field is being made. To help marketers finding solutions, technology provided important changes and improvements in marketing tools (Shankar *et al.*, 2011). One of them was the implementation of Virtual Reality.

Having Virtual Reality in mind, literature defines this technology as a computer-generated environment where the user feels present in that virtual world (Sutherland, 1970). Virtual Reality has been used for different fields, including Marketing. More and more retailers believe that Virtual Reality is a powerful tool to engage with clients.

This is a topic in need of deeper research, if we are to better understand the benefits Virtual Reality can bring to different companies, specifically by influencing customer experience and purchase intention. However, the impact of Virtual Reality depends on diverse variables, which will be addressed in this study.

1.1 Research Problem

During last years, marketing has suffered a lot of changes, especially regarding the way brands approach their consumers. In fact, consumers are becoming more and more demanding and complex and companies must know how to get with those new type of consumers. To follow up the shoppers, new marketing tools were born, while others were improved. And technology has had a huge contribute on that. Consumers ask more than a simple product or service, they ask for an unique experience with the brand. And this has been the big challenge for marketers.

Literature shows that one way to enhance the consumers' experience is by working on the store atmosphere in order to manipulate the shoppers behave and generate the pretended answers from them. Scientifically, an individual can be manipulated by his sensory factors (such as smell, visual...). Hereupon, retailers must create a store atmosphere that will optimize the consumer behaviour and their decisions, leading a purchase decision.

A lot of opportunities have grown to influence shopper decision. One of the most revolutionary technologies that retailing is trying to implement is Virtual Reality because marketers believe retailing can benefit from it. Indeed, a lot of researchers see the use of Virtual Reality as a promising tool in marketing. But the question is how can brand benefit from it and, on the other hand, how consumer deal with this new approach on their experience. A lot of companies from different markets are testing this new tool and most of them are being successful. The true is consumers feel more entertained and engaged in a store by having a virtual reality experience. However, there is a lack in literature about how this tool can change different factors which influence the consumer experience.

Taken all together a research question emerges: how mental imagery, presence and product involvement influence purchase intention and emotion? And could obsession, perceive similarity and perceive assortment act as moderators between mental imagery, product involvement or presence and purchase intention?

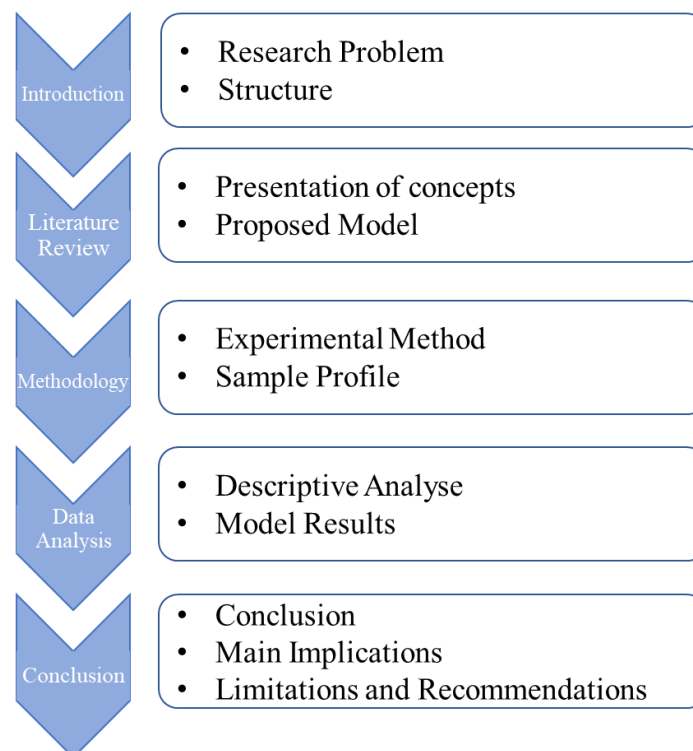
In the current research Virtual Reality is employed to understand whether or not consumers of supermarket laundry products are viewed in a different way. Indeed, as far as we know this is a first attempt to: (a) explore how mental imagery and presence influence purchase intention and emotions in a virtual reality intention simulation a supermarket where laundry products are placed, (b) analyse the moderation effect of obsession with cleanliness on the relationship between mental imagery and purchase intention, between presence and purchase intention and between product involvement and purchase intention, (c) analyse the moderation effect of perceive similarity on the relationship between mental imagery and purchase intention, between presence and purchase intention and between product involvement and purchase intention, and (d) perceive assortment product involvement and purchase intention, (c) analyse the moderation effect of perceive similarity on the relationship between mental imagery and purchase intention, between presence and purchase intention and between product involvement and purchase intention.

1.2 Structure of the thesis

The following paragraphs explain how this thesis is structured and is complemented with the figure 1.

The first chapter includes the introduction, the research problem and the thesis structure. In this chapter it will be found the main topics that will be discussed during the dissertations and also the main purpose of the study. The second chapter consists in the literature review, where the concepts are presented and a deeply exploration is conducted. In addition, the research model is developed, and the hypotheses are formulated. The following chapter regards to the methodology chosen to conduct this research and how the experience was performed. The sample profile and participants socio-demographic characteristics were also introduced. Chapter number four presents the results collected from the experience and data were examined. Finally, in chapter 5 the main conclusions and recommendations from this study are presented.

Figure 1: Research Structure



Source: Author's own source

2. Literature Review

2.1 Consumer Experience

Consumers are more demanding and complex, and the market is reaching high levels of competitiveness (Farias, Aguiar & Melo, 2014). Due to this fact, companies intend to offer a memorable and unique shopping experience (Terblanche, 2018). In fact, consumers “*want to be entertained, stimulated, emotionally affected and creatively challenged*” (Schmitt, 1999 in Farias, Aguiar & Melo, 2014: 94). These sub-experiences together result in the overall customer experience (Brakus, Schmitt & Zarantonello, 2009). An experience occurs when the company has the intention of creating one, resulting in engagement with customers (Hultén, 2011) as they interact with the store itself (Brakus, Schmitt & Zarantonello, 2009). It is essential that companies know how to manage these moments to create unforgettable and extraordinary experiences which stimulate positive responses (Flavián, Ibáñez-Sánchez & Orús, 2018) and, above all, that they learn how to design shopping experiences that enhance the enjoyment during this moment (Kerrebroeck, Brengman & Willems, 2017), because those who enjoy the purchase journey continue to make more purchases, comparing to those who do not (Pantano & Naccarato, 2010).

The way retailers manage store atmosphere has a significant impact on consumer behaviour, and consequently on their shopping experience. This is supported by Rayburn and Voss’ (2013) research, which says the designer of the retail environment seeks to create a space that contributes to a positive shopping experience. Customer experience can be defined, according to literature, as the cognitive, emotional, physical, sensorial and social responses from consumers who are exposed direct and indirectly to differently elements in a store (Brakus, Schmitt & Zarantonello, 2009; Terblanche, 2018), which include variables like music, décor, temperature, light, colours, and other sensory stimulus that enhance those experiences (Morisson, Gan, Dubelaar & Oppewal, 2011). Specifically, Puccinelli *et al.*, (2009) explained that the environmental stimulus influences a consumer’s emotional state directly (e.g., pleasure, arousal, among others), which in turn drives the consumer to show approach or avoidance behaviour (e.g., the willingness to purchase the product or not). Many shopping outcomes can be influenced by those stimuli such as: attitude, approach behaviour, satisfaction or loyalty (Kerrebroeck, Brengman & Willems, 2017).

According to a study conducted by Forrester (2016), improving customer experience is the top priority for 72% of the businesses. In addition, one of the marketing trends outlined in 2018 was providing emotionally engaging customer experience during the purchase journey (Forbes, 2017). The question is how well firms are managing the way customer experience is reshaping itself (Flavián, Ibáñez-Sánchez & Orús, 2018).

Many authors believe that technology can boost customer experience (Flavián, Ibáñez-Sánchez & Orús, 2018; Edelman & Singer, 2015). Besides, some companies have moved from the traditional retail atmosphere to digital solutions at the point of sales (Kerrebroeck, Brengman & Willems, 2017). Studies demonstrated that in-store digital displays have a positive influence on client behaviour and final decision (Dennis *et al.*, 2014). A lot of new technology trends have since appeared, as we will study deeply in the chapter 2.4.

2.1.1 Hedonic vs Utilitarian Value

To go deeper in this field, one must understand the purpose consumers have about going shopping, as well as the value given to them by that experience. Literature divides the shopping purpose into hedonic and utilitarian value. The hedonic or utilitarian value is influenced by perceived overall atmosphere, because the appeal of shopping environment provides both experiential and functional value (Rayburn & Voss, 2013).

The two concepts differ from each other according to the level of enjoyment or avoidance during shopping. On the one hand, hedonic value is related to the level of pleasantness during the experience (Farias, Aguiar & Melo, 2014). In fact, consumers give greater importance to the overall experience than the specific purchase purpose (Rayburn & Voss, 2013). In sum, hedonic value is associated with the multi-sensory aspects - visual, music, arousal, among others - the consumer is exposed to during his experience (Farias, Aguiar & Melo, 2014). The utilitarian value, on the other hand, is defined by Babin & Attaway (2000) as the instrumental shopping desire, that is, when an individual has a specific purchase purpose and intends to obtain the product in the most efficient and effective way (Rayburn & Voss, 2013). This type of value has a bigger impact on shoppers “*with more of a rule-based and functional orientation*” (Babin & Attaway, 2000: 97) and “*driven by instrumental concerns with experiential concerns centred on avoiding hassles or perceived efforts*” (Rayburn & Voss, 2013: 401). In spite of these differences and the importance of both, retailers tend to understand consumer behaviour from a hedonic perspective.

2.2 Customer Journey

As seen before, firms are now focused on creating and delivering positive customer experiences. According to Lemon and Verhoef (2016), customer experience is defined as the entire customer journey with the company over time. This journey is made through multiple touch points in different channels and media. In other words, touch point is the “*customer contact point or a medium through which the firm and the customer interact*” (Neslin *et al.*, 2006: 96) direct or indirectly. The different touch points go from traditional earned media to the store itself (Baxendale, Macdonald & Wilson, 2015). However, the current complexity of touchpoints and the entire customer journey have become a huge challenge for companies, the way they create, manage and attempt to control the experience and journey of each customer.

With all of these developments, the customer decision journey needs to be deeply understood by companies, as well as how it flows. The more companies realise this, the more the journey itself becomes a source of competitive advantage (Edelman & Singer, 2015). According to the same authors, developing the customer journey involves treating it as a product which needs to be actively managed, analysed and measured in order to capture maximum value.

The customer journey is interactive and dynamic. Lemon and Verhoef (2016) divided it into three phases: pre-purchase, purchase and post-purchase. Each phase experiences different touchpoints and the customer decision journey needs to be understood across all phases (Wiesel, Thrstén & Pauwels, 2010).

Regarding Lemon and Verhoef’s theory, the first stage is pre-purchase and involves the interaction with the brand/category/product before the purchase transaction. At this stage, the customer shows behaviours such as search, consideration and recognition. This phase starts when the customer realises the need/goal of the purchase. After this, comes the second stage – purchase – when the customer stops searching and has the interaction with the brand during the purchase itself. Finally, the post-purchase phase includes behaviours such as usage and consumption. This phase is crucial to create engagement with the brand and, above all, define the continuity or discontinuity of their journey. The main challenge for companies is to identify the right touchpoints to reach customers in each phase. In fact, touchpoint strength or importance can vary during the customer decision journey (Baxendale, Macdonald & Wilson, 2015).

To summarise, customer journey is a source for companies to deliver added value to customers and consequently create competitive advantage (Edelman & Singer, 2015). The next challenging step is how to optimize this tool, as technology has become a great driver of it (Flavián, Ibáñez-Sánchez & Orús, 2018)

2.3. Store Atmosphere

More and more purchase choices tend to be influenced not only by products themselves, but also and mainly by the service offered during the shopping experience. Actually, consumers make decisions according to the total product, which includes all product features, such as services, warranties, advertising or store atmosphere (Kotler, 1974). According to Kotler, store atmosphere can be one of the strongest key features of a product, so he defined the “*store atmosphere as a marketing tool*” (Atmospherics as a Marketing Tool, 1974: 48). In a survey, researchers found that 63% of consumers consider store atmosphere a reason to spend more time inside the store and 45% responded they spent more money as a result (Rayburn & Voss, 2013). Now, retailers understand the importance of their store atmosphere on buyer behaviour and make an effort to create a stimulating atmosphere in order to impact consumer feeling (Rayburn & Voss, 2013) and influence their decisions (Farias, Aguiar & Melo, 2014). This is because atmosphere has a strong impact on a customer’s positive but also negative affective arousal, which in turn leads to hedonic or utilitarian shopping value (Babin & Attaway, 2000 in Rayburn & Voss, 2013).

2.3.1 Conceptualization of atmospherics

The past years have witnessed different research attempting to define the concept of “Store Atmosphere”. Beginning with one of the pioneers in this area, atmosphere is “*the effort to design buying environments to produce specific emotional effects in the buyer that enhance his purchase probability*” (Kotler, 1974: 50). In other words, the store should be designed with the specific purpose of creating a planned effect in buyers or potential buyers. In 2000, this definition was reinforced by Turley & Milliman, with the addition of atmosphere variables - external variables, interior, layout, point of sales décor – having a direct impact on cognitive effect of consumers, in turn leading to a behavioural shopping response (Turley & Milliman, 2000). A more recent definition says that “*atmosphere in marketing is a term used to describe the conscious design area in order to create effect on consumers*” (Farias, Aguiar & Melo, 2014: 88).

In literature, different authors agree the consumers can be manipulated by the involved atmosphere. An individual takes an atmosphere in through his senses (Kotler, 1974). Therefore, there are some components in a store that will increase the stimulus of the senses (Farias, Aguiar & Melo, 2014) and influence a particular consumer's sensory experience.

2.3.2 Senses

As mentioned previously, people's thoughts and behaviours are affected involuntarily by sensory experience (Baek, Choo & Lee, 2018). In the case of retail store atmosphere, the main sensory channels are sight, sound, scent and touch (Kotler, 1974). Each sense is stimulated by manipulating different variables (Rayburn & Voss, 2013) categorised by Berman and Evans (1995) into: the exterior of the store, the general interior, the layout and design, and the point of purchase and decoration. However, Rayburn & Ross (2013) included one more category: human variables. These variables are manipulated by, for instance, colours, smell, sights and music (Farias, Aguiar & Melo, 2014; Rayburn & Voss, 2013). The next section will further investigate how a shop atmosphere can stimulate each sense.

2.3.2.1 Visual

Visual consumer perception is one of the most studied dimensions, since retailers believe the visual differentiation of a store is important to compete with other brands (Meißner *et al.*, 2017). The sense of sight can be captured by colour, brightness, size, shapes (Kotler, 1974), movements (Farias, Aguiar & Melo, 2014), lighting (Turley & Milliman, 2000) or décor (Baek, Choo & Lee, 2018).

Regarding colour variables, Farias, Aguiar & Melo (2014: 90) claimed "*colours produce different reactions in individuals (biological, emotional, and draw attention to an object)*", hereupon retailers use colours in store to create the right mood state in consumers. Colours can stimulate purchases, purchasing rates, time spent in store, pleasant feelings, arousal, store and merchandising (Turley & Milliman, 2000). Different authors found which emotions a specific colour seems to stimulate an individual's senses. Bellizzi & Hite (1992) made an important contribution to this area. According to their study, the colours red and blue (opposite colour properties) have a completely different effect on shopping behaviour. On the one hand, red takes us to a negative and tense atmosphere, but is also perceived as an arousing, exciting and stimulating colour (Labrecque & Milne, 2011). On the other hand, the study showed that blue

appeals to a calm, cool and positive atmosphere (Bellizzi & Hite, 1992). In addition, consumers tend to be easily attracted to the shop when it presents warm colours, such as red (Farias, Aguiar, & Melo, 2014). Colour became increasingly relevant for brands, since through colours they can establish an effective visual identity (Labrecque & Milne, 2011), helping to establish their position on consumers' minds.

2.3.2.2 Auditory

Different studies have come to show the massive impact that non-visual dimensions have on consumer behaviour during shopping. A research made by Helmfalk & Hultén (2017) evidenced that although visual stimulus is the most frequently used factor to appeal to consumers, retailers should supplement it with other ones, namely auditory factors. The result would have a superior impact on emotions and behaviour (Helmefalk & Hultén, 2017).

Back to Kotler (1974), the author defined as aural dimensions the volume, the pitch and noise (Hopkins, 1994 in Helmfalk & Hultén, 2017), as "*playing the appropriate background music can help retailers develop atmosphere*" (Farias, Aguiar & Melo, 2014: 91). Music can influence an individual's mental process, which in turn will impact his movements inside the shop (Helmefalk & Hultén, 2017).

Music is an easy cue to control and modify (Spence *et al.*, 2014), so it can open a lot of opportunities to retailers. For example, according the same authors, louder music is more appropriate for inciting rapid behaviour, turning the shopping process more optimal. Another study showed the direct effect of music and behaviour, proving that the right music increases the pleasure level, the time and money spent and consequently the overall satisfaction (Morisson *et al.*, 2011).

2.3.2.3. Smell

Smell is considered the primary stimulus when a person walks into a store (Farias, Aguiar & Melo, 2014) and is influenced by scent and freshness (Kotler, 1974). However, Spence *et al.* (2014) added two important characteristics: the intensity and pleasantness. Scent can be an appealing stimulus to elicit approach behaviours (Spence *et al.*, 2014), by creating a more positive shopping experience.

This sense has a particular feature that sets it apart from the other three. A smell may be related with an association mean (Spence *et al.*, 2014), that is, a scent used in the store can recall a relevant memory to the shopper (Farias, Aguiar & Melo, 2014). Therefore, an emotional bond with the products is easily created.

An important study made by Morrison *et al.* (2011) proved that the right smell has a direct influence on the level of consumer satisfaction regarding the shopping experience. The authors averred that the store aroma increase the pleasure and consequently the time and money spent.

Despite being an important key for retailers to achieve specific objectives, the scent dimension must be congruent with the store and the identity of the brand (Spence *et al.*, 2014). Otherwise, it can impact the shopping experience negatively, inviting bad memories when the consumer is exposed to that specific smell (Farias, Aguiar & Melo, 2014).

2.3.2.4. Tactile

The last important channel inside the store is tactile dimension. Again, Kotler (1974) defined the key factors which influence this sense: softness, smoothness and temperature. Later in 2013, King, Block and Hadi added three more characteristics: texture, weight and hardness. Tactile atmosphere has gained importance because researchers have found that shoppers tend to buy a product if they touch it first (Spence *et al.*, 2014). Nevertheless, this topic still lacks research, contrary to the other three senses. In addition, available literature is quite divided on this subject.

The most influential aspect regarding touch is temperature, because people are very sensitive to this stimulus. To prove it, research was conducted to analyse the impact of a warm and a cold environment and shows that consumers respond differently to them (King, Block & Hadi, 2013). According to the authors, when exposed to cold temperatures, people tend to behave more emotionally and in a hedonic way than in a warm environment. In fact, in a warmer store, consumers act with utilitarian decision making.

2.4 Emerging Technologies in Shopping Experience

The new Marketing era became a huge challenge for retailers. The field of retailing suffered a lot of changes mainly due to technologies. Consequently, consumer behaviour is also different from past years (Grewal, Nordfält & Roggeveena , 2017). Nowadays, consumers are more demanding and became more complex. However, technologies are not the only driver of this

change. According to Shankar *et al.* (2011), there are other three important drivers: economy, regulation and globalization. On this research we will focus only on technology.

Retailing is shifting from traditional marketing to a modern in-store practises where the omnichannel is the key (Souidena & Ladharia, 2018). The same authors agree that reaching this omnichannel model involves the use of multichannels and, additionally, the increase of shopper touchpoints (Shankar *et al.*, 2011). This multichannel environment is enhanced by some new technology development such as advanced mobile devices and interfaces, powerful search engines, online social networking (Shankar *et al.*, 2011), physical in-store locations, mobile web (Souidena & Ladharia, 2018) and also virtual and augmented reality (Grewal, Nordfält & Roggeveena, 2017). Slowly, retailers are trying to establish contact with their clients by converging offline and online channels.

The purpose behind this change is how it will impact consumer behaviour and their shopping experience. The use of these innovations intends to help customers make a good purchase decision, feel less time pressure, increase their satisfaction and pleasure, feel more engaged and make efficient and quick purchases (Grewal, Nordfält & Roggeveena, 2017)

Although this new experience approach brings a big opportunity for brands, it is also a field that is difficult to develop and needs a lot of study in the years ahead.

2.4.1 Virtual Reality

In response to these new trends, companies have developed strategies in order to be relevant to customers and competitive in the market. Smart technology can enhance the quality of a shopping experience (Kerrebroeck, Brengman & Willems, 2017). One of those key transformations uses Virtual Reality.

Virtual Reality has offered a large potential for a long time, but those opportunities are just beginning to come true, not only by the hands of retailers but also by the ones of shoppers. The new form of technology based on reality is a way to enhance sensory perceptions, if well used (Grewal, Nordfält & Roggeveena, 2017). Though marketing experts see the evolution of Virtual Reality with high hopes for companies, there are no clear guidelines as to how they should integrate it on their marketing mix (Boyd & Koles, 2018). So, more research is needed to understand the potential of this tool.

The term “Virtual Reality” began early with the visionary Sutherland (1970), who believes Virtual Reality is a model of real world in real-time, in which the user feels like it as a reality they can manipulate directly and realistically. After that, various authors came up with different definitions, complementing each other. However, a few years later, Steuer (1992) gave us a more scientific approach, defining Virtual Reality as a stimulated environment in which the individual experiences telepresence, that is, the person feels present in a virtual world. In VR, the user emerges in a computer-generated environment where it is possible to perceive, act and interact with a three-dimensional world (Borawskaa, Borawskib & Łatuszyńska, 2018). Kerrebroeck, Brengman and Willems (2017) also contributed to this concept, referring to it as computer-based technology that engage with the human senses (vision, hearing, among others...) and consequently create the feeling of being there. Summing up, VR is a three-dimensional world with realistic sensations, which is able to stimulate a physical presence of environments that actually exist (Farshid *et al.*, 2018).

Virtual Reality is based on three key characteristics: immersion, interactivity (Boyd & Koles, 2018; Kerrebroeck, Brengman & Willems, 2017; Meißner, Pfeiffer & Oppewal, 2017) and the ability to create real-time engagement (Boyd & Koles, 2018). Firstly, when exposed to a virtual environment, the individual experiences the sense of immersion or presence within that environment (Loomis & Blascovich, 1999). In other words, the user feels like being there and escaping or becoming isolated from the real world (Kerrebroeck, Brengman & Willems, 2017). Beside immersion, VR provides a very dynamic environment (Boyd & Koles, 2018), which is important to create consumer involvement. According to Steuer (1992), the user is able to participate by modifying form and content of the environment in real time.

2.4.2 Virtual Reality as Marketing Tool

At first, Virtual Reality was being used in areas like gaming and entertainment, but the tool quickly extended to other areas, like education and tourism (Marasco *et al.*, 2018). Eventually, it was also used in marketing. Professionals realised its impact in consumer engagement and especially in their shopping experience. As a result, companies have used that in order to make the purchase more entertaining and convenient. For example, one of the biggest retailers in the UK, Tesco, is testing the opportunity of having a virtual retailing environment (Corriea, 2014 in Meißner *et al.*, 2017). The company believes that with this technology they can change consumer behaviour.

Looking at the impact of VR in shopping experience more closely, retail atmosphere is changing to digital solutions which enhance the stimulus at the point of sales much more (Kerrebroeck, Brengman, & Willems 2017). A study made by Marasco *et al.* (2018) concluded that by having a Virtual Reality Experience before choosing a country destination, users had a positive and noteworthy influence on their behavioural intentions.

Specifically, a Virtual Reality experience combines multiple sensory channels (Borawskaa, Borawskib & Łatuszyńska, 2018), which leads to high engagement with shoppers and therefore has a positive impact on attitudes and approach behaviour (Kerrebroeck, Brengman & Willems, 2017). According these last authors, it is possible to name specific benefits from this technology in order to influence consumer behaviour. They are: the feeling of being there, creating value by having an enjoyable experience, inducing positive emotions, impacting brand perception, influencing purchase intention, and enhancing brand experience. Before that, Sands, Oppewala & Beverlan (2015) have already concluded that there is a direct link between positive emotions and shopper behaviour. In fact, when the experience incites a positive emotion, people tend to stay longer inside the store, which generates more sales and increases the intention of returning.

In conclusion, although requiring a more research, the use of virtual reality has been shown as a potential and promising technology to companies and it can bring a range of benefits.

2.5. Proposal model and hypotheses development

2.5.1 Product involvement

Few studies have been made regarding the impact of product involvement in consumer experience. However, some authors have developed definitions for this concept. One of the pioneers on this matter was Zaichkowsky (1984: 342) who defined Product Involvement as “*A person’s perceived relevance of the object based on inherent needs, values, and interests*”. In other words, this means that product can play an important and different role for each consumer (Porral, Vega & Mangin, 2018). Indeed, product involvement reflects the amount of interest, attention, excitement and motivation of the consumer toward a product (Porral, Vega & Mangin, 2018). The involvement differs from consumer to consumer, depending on personal factors, choices and product significance (Peng *et al.*, 2019). Very briefly, product involvement has to do with the customer perceived value (Peng *et al.*, 2019).

The level of involvement differs from product to product in a scale of low to high involvement. The degree varies depending on the effort that consumers put into getting the product, the time invested in the decision-making process, the financial and social risk of the purchase (Porral, Vega & Mangin, 2018) and the engagement experience itself (Cowan & Ketron, 2019). The level of consumer involvement influences the importance that the person gives to the product, the amount of information search (Porral, Vega & Mangin, 2018) and the decision behaviour (Peng *et al.*, 2019). When it comes to products with high level of involvement, consumer attention is stronger (Beverde & Goodwin, 2017), so they show greater interest in searching information about the product (Cowan & Ketron, 2019) and comparing the attributes from different products in the same category (Porral, Vega & Mangin, 2018). According to the same authors, consumers are willing to invest time in making a decision, becoming a more complex process. Actually, with a high involvement, customers tend to make decisions based mainly on cognitive attributes, which means that a particular consumer depends on more rational judgments (Peng *et al.*, 2019) in order to avoid risk. When a person is highly involved with a product, the expectation of value increases and he becomes more sensitive to price.

According to Porral, Vega & Mangin (2018), consumers create a higher level of involvement with products that generate positive and pleasant emotions. Many other authors believe that involvement and emotion are linked. On the other hand, the more the customer gets involved with the product, the more the experience elicits stronger emotions, either positive or negative, driving to satisfaction or dissatisfaction.

Many authors believe that the involvement that a consumer develops with a product has a huge influence on his behaviour and decision making.

2.5.2 Mental Imagery

Since early on, Mental Imagery has been studied by many researchers. In neuropsychology this is defined as “*quasi-perceptual experience manifested in the form of sensory, picture-like representations in the human mind, generated in the absence of true stimuli*” (Bogicevic *et al.*, 2019: 56). According to Miller, Hadjimarcou and Miciak (2000), it is an activation of perceptual knowledge stored in a long-term memory and related to a personal experience. With these characteristics, marketers believe that Mental Imagery can be a stimulus for consumers. Indeed, the presence in an imagined situation can bring various outcomes

between the consumer and the brand, such as attention, memory, positive feelings or behavioural responses (i.e. purchase intention) (Ha, Huang, & Park, 2019). Because of that, this matter has gained extreme importance in literature.

Mental Imagery can be evoked in different ways. Babin, Burns & Biswas (1992) were one of the first to study this topic. According to them, there are three traditional ways to evoke mental imagery: pictures, concrete words and instructions. It is believed pictures have a superior impact on mental imagery (Ha, Huang & Park, 2019). Many scientists proved that visual information is easier to remember than the verbal dimension. On the other hand, concrete words are a way for people to easily create the imagery on their mind. That is why the use of concrete words in advertising is so important (Babin, Burns & Biswas, 1992). Finally, when a person receives specific instructions to imagine, the mental imagery is stimulated. Even though those are the main factors found by research to stimulate mental imagery, nowadays there are new types and more technological ways to help. For example, three-dimensional images and virtual reality (Bogicevic *et al.*, 2019), digital games or mobile ads (Ha, Huang & Park, 2019).

Regarding the dimensions that characterise Mental Imagery, it is defined as a multidimensional process. Through the years, various theories appeared with new types of dimensions. However, it is now possible to conceptualise the process like this (Miller, Hadjimarcou & Miciak, 2000): quantity, vividness, valence and modality.

Firstly, quantity or elaboration (Bogicevic *et al.*, 2019) relates the number of images formed on someone's mind and memory activation, when exposed to an image (Yoo & Kim, 2014). Vividness is concerning to the quality of images generated and how intense they are in one's mind (Miller, Hadjimarcou & Miciak, 2000), which means clarity, vibrance and distinctiveness. These dimensions are believed by many authors to be the main drivers of Mental Imagery (Ha, Huang & Park, 2019). However, effective tone has a huge influence too, since it reflects the emotional meaning of the recall memory and provokes the individual's emotional reaction (Yoo & Kim, 2014). Imagery can be evoked by different types of sensory stimulus: tactile, visual, auditory, olfactory or gustatory. This dimension is called modality (Miller, Hadjimarcou & Miciak, 2000).

Analysing all Mental Imagery characteristics, it is believed in literature that there is a relationship between mental imagery and consumer behavioural intentions (Yoo & Kim,

2014). According to the study conducted by the same authors, the imagery environment provokes positive emotions during the shopping experience, because these stimuli affect the cognitive, affective and emotional responses to marketing messages (Miller, Hadjimarcou & Miciak, 2000).

2.5.3. Emotional states

People have different experiences everyday by consuming products and those experiences elicit many emotions. Those emotions may influence the overall satisfaction and the opinion of the consumer. One of the most common and oldest definitions of emotion is from Mehrabian and Russel (1974), who state emotions are a multi-component phenomenon with multi-component responses, including a set of behavioral and physiological reactions and subjective feelings, that is, the reactions an individual has to a given stimulus. Other authors have developed definitions for this concept through the years. In fact, emotions are stimulated by specific situations, and that occurs instantaneously (Belverde & Goodwin, 2017). When it comes to the marketing field, marketers believe that a product or an experience elicit emotional reactions, which they call consumption emotions (Porrall, Vega & Mangin, 2018; Ferrarini *et al.*, 2010).

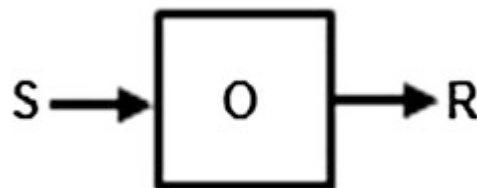
Emotional reactions refer to positive or negative feelings toward a product (Belverde & Goodwin, 2017) and consequently the pleasantness or unpleasantness during the experience (Porrall, Vega & Mangin, 2018). These emotional reactions result in liking or disliking, and this is how the consumer creates his own judgement (Belverde & Goodwin, 2017). Moreover, emotions not only represent the reaction of a specific experience, but also the assessment and evaluation of that moment (Porrall, Vega & Mangin, 2018).

In fact, we experience a range of emotions through different media. Hereupon, emotions are a key driver to engage with the different experiences we are exposed to (Mullins & Sabherwal, 2018). On the other hand, cognition refers to the way the mental activity acquires and processes the knowledge obtained during the experience (Anderson, 2000) through attention and memory (Mullins & Sabherwal, 2018). These two components can influence decision making.

Mehrabian and Russel (1974) designed a model – SOR (stimulu-organism-response) – to prove that human response to stimuli is completely linked to organism component. This model appears as an extension of the Woodworth model (1954). The new model answered what

mediates S and R, in other words, what happens between stimulation and response. And the answer is the organism (O), more properly, the sense organs, the nervous system and the muscular system, which includes perception, emotion, judgement, thinking and motivation (Buxbaum, 2016). According to the same authors, the interpretation that the organism gives to a stimulus influences the emotional state, the interaction and the resulting behaviour. Figure 2 shows how the model works.

Figure 2: S-O-R Model



Source: Buxbaum (2016)

According to Mehrabian and Russel (1974), there are three pillars which influence the model: pleasure, dominance and arousal. These dimensions correspond to the emotional responses and indicate peoples' state of feeling (Bakker *et al.*, 2014; Mehrabian & Russel, 1974). Initially, Mehrabian and Russel (1974) defined pleasure simply as negative or positive feeling toward a stimulus. Later, Mehrabian A. (1996) established new connotations to pleasures, such as excitement, relaxation, love and tranquility versus cruelty, disinterest and boredom. More recent studies defined this dimension as an effective reaction to a stimulus, determining the level of satisfaction and happiness of the individual (Kaltcheva & Weitz, 2006). Regarding dominance, this term refers to the feeling of control or lack of it due to a physical or social barrier (Mehrabian & Russel, 1974). Many adjectives are related to this dimension, for example dominant, controlling, influential, among others... (Thayer, 1967). Arousal is based on a physiological activity inherent to a stimulus (Bakker *et al.*, 2014; Rojas & Camarero, 2006). Attentiveness, awakeness or alertness are some of the feelings measured by this dimension.

2.5.4 Purchase intention

The purchasing process may be influenced by several factors. Marketing researchers need to study and identify those specific factors. That is why more and more studies have been made in order to understand what influences this decision.

To begin with, it is necessary to clarify the meaning of purchase intention. “*Purchase intention is a kind of decision-making that studies the reason to buy a particular brand by consumer*” (Mirabi, Akbariyeh & Tahmasebifard, 2015: 268). Hsiao & Chen (2018) defined the concept as the likelihood of a customer to purchase a specific product, after evaluation (Younus, Rasheed, & Zia, 2015). The definition seems to be simple. However, the process of customer decision is very complex and usually depends on the behavior, perceptions and attitudes of consumers. Moreover, before the final purchase intention, the customer goes through six strages: awareness, knowledge, interest, preference, persuasion and finally purchase (Mirabi, Akbariyeh & Tahmasebifard, 2015).

Purchase intention is affected by several factors (Younus, Rasheed & Zia, 2015) and many authors come up with different opinions. For example, a study conducted by the same authors proved that there is a positive correlation between purchase intention and factors such customer knowledge, celebrity endorsement, product packaging and perceived value. Price also has a huge impact on the final purchase decision (Lee, Cheng & Shih, 2017). Customer attitude through product branding is also very important (Hsiao & Chen, 2018), because if the individual has a positive attitude, there is a higher probably that they will buy.

To sum up, marketers need a clear strategy to understand the reasons that lead the customer to buy a specific product and leverage the purchase intention and VR become a potential effective marketing tool for that. An investigation conducted by Suh and Lee (2005) concluded that using VR can influence the purchase intention.

2.5.5 Moderators

2.5.5.1 Obsession

It is scientifically proven that people can be addicted to some activities, such as shopping, which leads to enjoyable moments for the individuals and, in higher stages, to compulsions and pre-addictive behaviours (Aikon, Bee & Walker, 2018). In other words, these behaviours can move from passion to obsession. In psychology, “*addictive behaviour is characterized by cravings, dysfunctional emotional responses, a lack of self-control, and an inability to recognize harmful consequences*” (Aikon, Bee & Walker, 2018: 69).

Marketing has had a huge impact in facilitating consumption addiction (Martin *et al.*, 2013). According to same authors, addiction is defined from a marketing perspective as a chronic and repetitive behaviour with a desire for immediate gratification. Furthermore, compulsive buying is defined as consistent and habitual behaviour (Aikon, Bee & Walker, 2018).

Consumption addiction is defined as a set of stages where the individual moves from non-user to addiction, and marketing can influence it in several stages. The four identified stages are: non-use, non-addictive, near-addiction and, finally, addiction (Martin *et al.*, 2013). Charlton (2002) believes that each stage develops through time according to the following dimensions: time spent and frequency of engaging in the behaviour, degree of self-control exerted by the individual, impulses, enjoyment of the behaviour and degree of negative consequences or harmful outcomes.

2.5.5.2 Personality Traits

The way people shop can be influenced by the personality of each shopper. Individual personality has been studied since early years. Two authors, Rammstedt & John (2007), created the model “Big Five Personality”, based on the latest theory constructed by John, Donahue & Kentle (1991). The dimensions are divided in: Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness. Each of these personality traits may vary when exposed to Virtual Reality (Kerrebroeck, Brengman & Willems, 2017) and influence customer behaviour negatively or positively (Malkoça, 2011).

Many authors believe these five dimensions impact behaviour differently (DeNeve & Cooper, 1998). The authors defined each dimension concerning their impact. Firstly, Agreeableness and Conscientiousness relate to satisfaction and happiness. Whereas Agreeableness focuses on the quality of the moment, Conscientiousness is related to goal-directed tasks and self-control. Secondly, Extraversion and Neuroticism influence the positive or negative emotional effect, where positive effect is correlated with extraverted people and negative effect with neuroticism. Specifically, extraverted people tend to be happier since they are active, have fulfilling social relationships, energetic and assertive. On the contrary, neurotic people live more anxious and worried, usually feel depressed and communicating with others does not come easy to them (Malkoça, 2011). Finally, Openness to Experience is the most controversial trait, which includes the following components: intelligence, culture, creativity, broad interests and cognitive complexity.

The Openness to Experience may be the main driver to accept or not accept Virtual Reality. In fact, the personality differences among shoppers influences the adoption of a given technology (Mahatanankoon, 2007). For exemple, an important trait too, studied by the same authors, is Personal Innovativeness - in other words, the willingness of try something new, as well as the desire for new experiences. Innovative customers tend to look for different ways to shop.

For this study, it is important we understand how the individual's traits impact the exposure to Virtual Reality.

2.5.5.3 Perceived Assortment

Assortment represents one of marketing mix components for a retailer, so it is a tool to acquire new customers and also retain them (Bauer, Kotouc & Rudolph, 2012) and for shoppers, assortment can be a crucial factor in store choice. Heurepon, providing the correct assortment of products and services is a challenging function for retailers (Levy & Weitz, 2008). Shortly, the assortment choice has a huge influence on a retailer's long term sales and profit.

The definion of assortment correponds to the composition of product mix in a specific category (Bauer, Kotouc & Rudolph, 2012), according to these two dimensions: breadth and depth (Pizzi & Scarpi, 2016). The first dimension refers to the number of brands and

the second one to the number of stock-keeping units (SKUs) present in the store. This research focuses on grocery categories and customer perception of laundry care assortment (e.g. HDD and FFI) and to understand how customers perception of assortment is influenced when exposed to VR. In the case of the detergents category, the number of SKUs is determined mainly by the scoop, package size, purpose and smell. In grocery retailing, supermarkets try to sell a high level of different products to reach different targets.

When a consumer goes to a shop, he expects to find the right mix of products, at the right place, at the right time, with the best price and promo offer (Gruen & Shah, 2000) and this leads to the perceived assortment by the consumer. The latest research on this field proved that the actual size of the assortment (Pizzi *et al.*, 2019) or the number of SKUs are no longer the main driver to develop the perceived assortment (Pizzi & Scarpi, 2016). According to Bauer, Kotouc & Rudolph (2012: 12) the assortment perception is defined as the “*consumer’s summary subjective overall judgement of an offered in a particular (...) store*”. Each customer develops a different perception. There are other dimensions which influence the level of assortment size perceived by each shopper, for example price (Pizzi *et al.*, 2019), product quality (Valenzuela, Raghbir & Mitakakis, 2013), the way the assortment is organized and displayed (Pizzi & Scarpi, 2016), variety (Bauer, Kotouc & Rudolph, 2012) or shopping orientation (Pizzi *et al.*, 2019).

As far as shopping orientation is concerned, as was discussed before, the value given by the customer is divided into Utilitarian and Hedonic (Rayburn & Voss, 2013). When the consumer is motivated by an instrumental goal (utilitarian value), he prefers smaller and specific products assortment (Aydinli, Gu & Pham, 2012). This type of consumers look for an efficient and quick shopping experience, so they intend to minimize shopping time (Pizzi *et al.*, 2019) with a shorter perceived assortment. Nevertheless, the hedonic consumer tries to explore the shopping environment and search for freedom of choice (Pizzi *et al.*, 2019) as well as satisfy the variety and curiosity seeking (Pizzi & Scarpi, 2016). Hence, the shopping experience will be satisfactory when they perceive a larger assortment size (Aydinli, Gu & Pham, 2012).

2.5.5.4 Perceived Similarity

Up to this point, we have been describing the benefits and usage for VR. Actually, marketers are trying to offer customers higher interactive experiences and consequently lead to purchase intention (Suh & Lee, 2005). Virtual experiences, by simulating immersion, influence the feeling evoked. However, some recent studies have appeared to explore the possibility of some negative effects that VR may bring.

The main objective of VR is, as described above, to simulate a real world using a computer-generated scenario, where users feel like they are in another place in real time, without leaving the actual place (Berg & Vance, 2017). It occurs when there is a high level of interaction and vividness (Coyle & Thorson, 2001) and seems it is real.

Perceived similarity occurs when people perceive the VR experience as being very similar to the physical experience (Deng, Unnava & Lee, 2019) and consider it as a substitute. People think that virtual reality can fulfill their needs with a similar quality but lower cost. By believing that VR experience substitutes reality, the interest for actual experience can decrease.

But there are some factors that can moderate this effect, for example product involvement. Deng, Unnava and Lee (2019) conducted a study to prove this theory. According to them, in experiences with products with a high level of involvement, people are able to discern the virtual and the real. Summarising, in this case using VR increases the desire of real experiences.

2.6 Framework

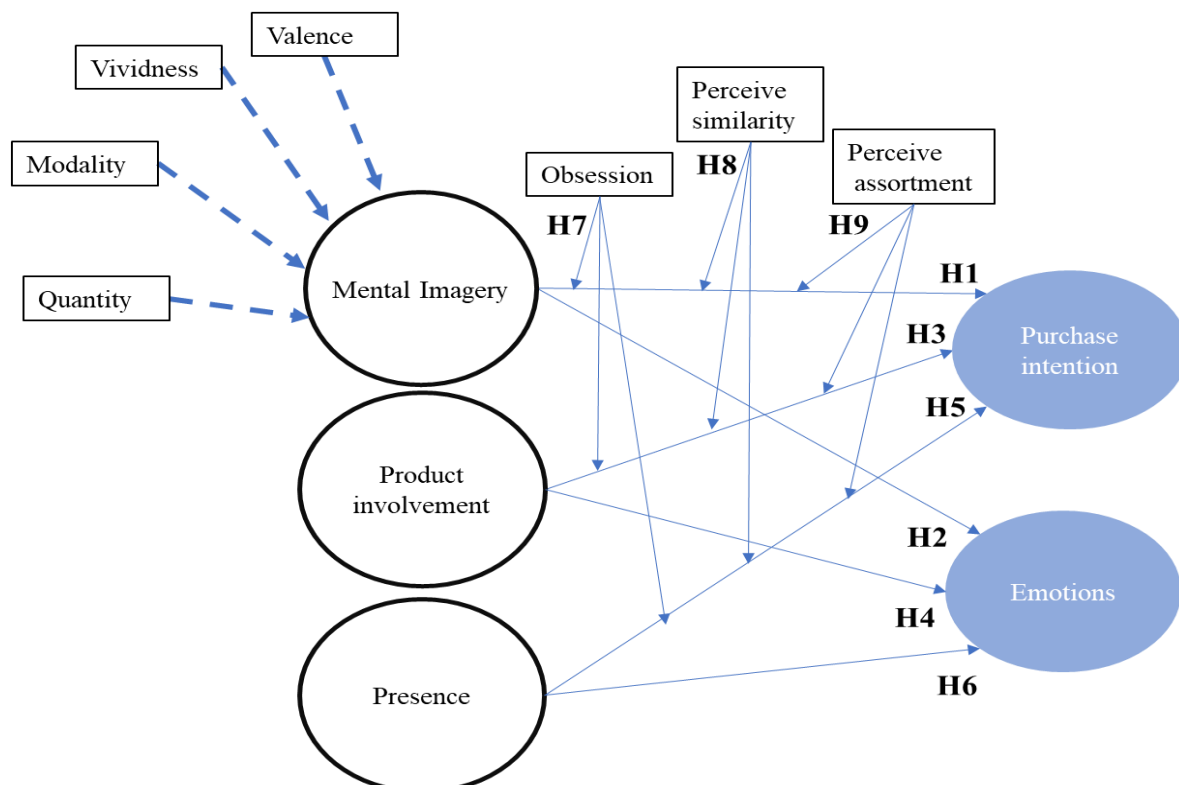
Within the customer journey, the experience inside the store (e.g., a supermarket) has been evolving, having in attention the whole atmosphere lived by customers. With the introduction of merging technologies in a customer experience process - like VR - the way customers live and feel in the virtual worlds became more relevant for both researchers and practitioners. The proposed model (see figure 3), is based on the cognitive emotion theory. This theory explains how emotions can influence an individual's response, as mentioned on chapter 2.5.3.

By analysing each topic of Literature Review and linking with the initial objectives for this research, we can create the model to follow. The current model proposes that perceived similarity, obsession and product assortment will influence the mental imaginary, product involvement and presence, which, in turn, have an impact on emotions and the intentions to purchase or recommend. In this vein, in the following lines the main constructs are explained.

From this framework (see figure 3), we may suggest eight hypotheses.

As found on literature, Mental Imagery occurs when cognitive responses are stimulated and so that images on humans' mind are generated (Bogicevic *et al.*, 2019) related with previous experiences. By stimulating the behaviour it is believed that emotions and purchase intention are generated. Based the previous authors' model, virtual reality is a tool to enhance mental imagery. So, the first two hypotheses can be formulated:

Figure 3: Framework



Source: Author's own creation

H1: Mental imagery is positively associated to Purchase Intention

H2: Mental imagery is positively associated to Emotions

Product involvement is believed as one of the most important factors in consumers' behaviours. So, it is important to understand how to communicate with products with different levels of involvement, because it influences the way customers want to engage with the brands (Porral, Vega & Mangin, 2018). Based on this information, it is expected that:

H3: Product involvement is positively associated to Purchase Intention

H4: Product involvement is positively associated to Emotions

The feeling of presence brought out by the virtual reality stimulus usually creates a highly involvement with the store atmosphere (Boyd & Koles, 2018). People can experience the feeling of escaping and telepresence without moving (Kerrebroeck, Brengman & Willems, 2017) and influence their behaviour. Based on this the following hypothesis arise:

H5: Presence is positively associated to Purchase intention

H6: Presence is positively associated to Emotions

There is a lot of research supporting the argument that customer decision making can be moderator by different variables. In this study three moderators are considered as significant in the relationship between mental imagery/product involvement/presence and purchase intention, specifically in supermarket environments. Obsession is a key factor on this model because this cognitive issue leads to compulsive purchases (Aikon, Bee & Walker, 2018). The level of telepresence during the experience can impact the interest of the virtual experience or even the actual (Deng, Unnava & Lee, 2019) and consequently in the purchase intention. The perceived assortment is an important decision variable during a shopping experience (Levy & Weitz, 2008) so if not well used in the virtual world it will impact significantly the customer decision. Hereupon, the following hypotheses are formulated:

H7: Obsession moderates the relationships between Mental imagery and Purchase intention (H7a), Product involvement and Purchase intention (H7b) and Presence and Purchase intention (H7c)

H8: Perceive similarity moderates the relationships between Mental imagery and Purchase intention (H8a), Presence and Purchase intention (H8b) and Product involvement and Purchase intention (H8c)

H9: Perceive assortment moderates the relationships between Mental imagery and Purchase intention (H9a), Product involvement and Purchase intention (H9b) and Presence and Purchase intention (H9c)

3. Methodology

After defining the proposed model for this study and the nine research hypotheses, it is important to define which methodology is proposed to test it. The present framework intends to investigate the effect of product involvement and product assortment in the mental imagery and the emotions created and how it will lead to a product intention and recommendation, towards a virtual scenario.

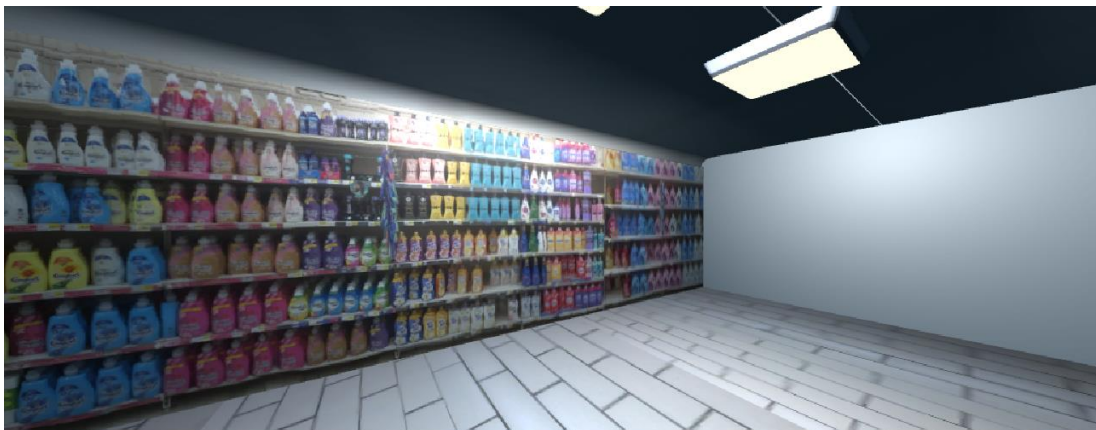
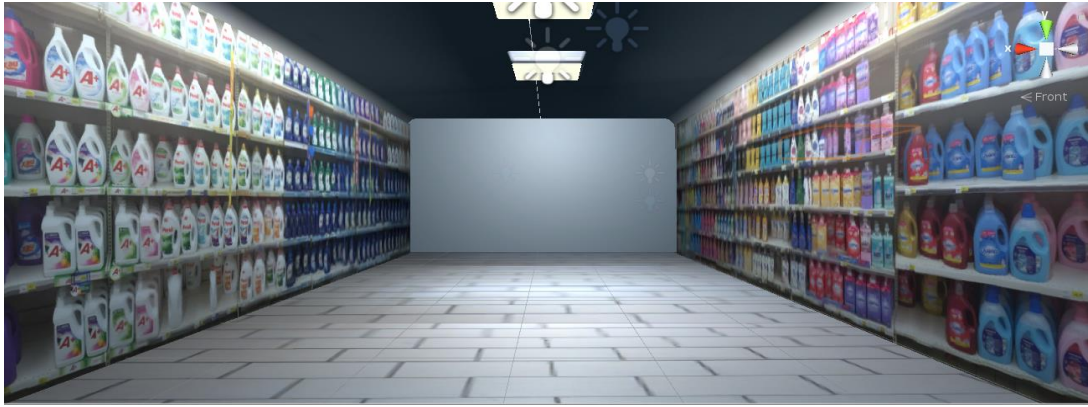
On the one hand, a quasi-experimental between-subjects design was implemented to test the research hypotheses. The quasi-experimental manipulation comprised a virtual grocery store, using Virtua Reality. On the other hand, a quantitative method was followed, by a questionnaire in order to study the variables statistically. The questionnaire was related to a Virtual Reality experience.

3.1 Virtual Reality Experience

The respondents are regular shoppers who were selected to test a virtual shopping. A virtual scenario was created where the participant experienced a virtual supermarket. It is possible to see below the final result of the scenario:

Figure 4: Virtual Supermarket





Source: Author's own creation based on Oculus Rift software

In appendix 1 can be find more figures from the scenario.

The scenario displayed the product assortment, prices and promotions. Participants were requested to wear a machine named Oculus Rift, which includes an appropriate oculus to emerge in a virtual world and two motion sensors that detect the movement. Besides, a computer with the software to design the virtual scenario was used. The virtual supermarket

was based on an existing shelf layout and real brands in order to resemble the physical experience. The laundry care category was chosen, specifically, HDD – Hard Duty Detergent – and FFI – Fabric Finishers. It is important to refer that to ensure maximum fidelity and allow participants to do the correct comparison, the virtual planogram was based on an existing shelf layout and real brands (Pizzi *et al.*, 2019). Furthermore, the point of sales environment was reproduced, such as shelves, floor and lighting.

Firstly, participants were asked if they had ever been to a supermarket. If the answer was affirmative, they were able to participate in the experience and were given an explanation about what the experience was. From that moment on, they started the experience and emerged in a virtual supermarket and they were free to finish the experience whenever they wanted. After that, they were able to fill out the questionnaire (see appendix 2).

3.2 Questionnaire

The main objective of this paper is to relate the different variables and study cause-effect. For that reason, as mentioned in the previous chapter, a questionnaire was used on Google Forms. This way, people could answer it online and choose where to do it.

The questionnaire includes 10 questions, which were adapted from previous studies to ensure the reliability of the study but modified to be accurate for this purpose (Peng *et al.*, 2019). To get deeper knowledge about the difference that Virtual Reality can make in a shopping experience, the first two questions were related to the individual's experience in a physical store (Pizzi *et al.*, 2019). After that, the questions emerge on the virtual experience itself. Specifically, the first question was about the involvement with a supermarket, using a 7-point Likert scale (adapted from Deng, Unnava & Lee, 2019). To better analyse that question, it asked how often the participant goes to a supermarket (own source). Afterwards, the moderators were also studied: traits of personality (based on the Big Five Personality Theory from Rammstedt & John, 2007); perceived assortment (adapted from Pizzi *et al.*, 2019); laundry obsession (adapted from Aikon, Bee & Walker, 2018) and perceived similarity (adapted from Deng, Unnava & Lee, 2019). The emotions felt during the experience were also measured through a 7-point Likert scale (adapted from Deng, Unnava & Lee, 2019). The level of 'presence' in the virtual world was adapted from Kerrebroeck, Brengman & Willems (2017) and the mental imagery's dimension - quantity, vividness, valence and modality – from Miller, Hadjimarcou & Miciak

(2000). Finally, the main variable, purchase intention, was measured (adapted from Spears & Singh, 2014).

In addition, participants were asked about their gender, age and education, in order to create and analyse a sample profile, as it will be study next.

3.3 Sampling Profile

People were invited to participate in this test voluntarily and anonymously. One thing that all of them had in common is the fact they had already been in a supermarket and were exposed to a laundry detergent linear.

In the last part of the questionnaire, socio-demographic characteristics were captured to better understand the participant’s behaviour. The sample consists in 108 participants, where 73 are female (67.6%, mean age=31.96) and 35 are male (32.4%, mean age=31.83) (see table 1). The average age of the total respondents is 31.92 (range: 18-69 years old).

Table 1: Sociodemographic Data - Gender

		Frequency	Percentage (%)
Gender	Female	73	67.6
	Male	35	32.4
	Total	108	100

Source: Author’s own creation based on SPSS outputs

In terms of education level, 35.2% of the participants have Bachelor Degree and 34.3% have Master Degree/Doctored/PhD, while 21.3% have Elementary/Secondary Education and only 9.3% have Vocational Training.

Table 2: Sociodemographic Data – Education Level

		Frequency	Percentage (%)
Education level	Elementary/Secondary Education	23	21.3
	Vocational Training	10	9.3
	Bachelor Degree	38	35.2
	Master Degree/ Doctorated/PhD	37	34.2
	Total	108	100,0

Source: Author’s own creation based on SPSS outputs

Another relevant item for this study regards to the frequency that the customer goes to the supermarket to buy these types of products. In the table 3, it is possible analyse the respondents' behaviour. In fact, 55.6% of the participants buy laundry products monthly, whereas 26.9% goes biweekly. The average is 2.73, where, after coding in SPSS, 2 corresponds to "Biweekly" and 3 to "Monthly".

Table 3: Sociodemographic Data – Frequency to the supermarket

		Frequency	Percentage (%)
How many times go to the supermarket	Every two months	2	1.9
	Monthly	60	55.6
	Biweekly	29	26.9
	Rarely	4	3.7
	Weekly	9	8.3
	Semianually	3	2.8
	Quarterly	1	0.9
	Total	108	100

Source: Author's own creation based on SPSS outputs

It is also interesting compare how male and female are familiar with this category, by knowing how many times each one of the groups goes to the supermarket. For that, it was run a crosstab with those two variables (see appendix 3). Concluding, 75% of the participants who goes "Rarely" to the supermarket are male. On the other hand, 68.8% who goes "Monthly" are female.

Participants were selected by having in mind to obtaining a sample sufficiently varied in age, gender and educational level.

4. Data Analyse

The following chapter aims to present the main results from the data analysis based on the quantitative data collected. For this study two different software were used in order to obtain different types of results. Are there IBM SPSS Statistic version 25 and SmartPLS 3.0.

The first part of analyse was conducted by SPSS 25 to obtain the sample profile and descriptive analyse for all variables. All the data was transported to the software and tests were performed.

The next step was testing the hypothesis defined on literature review and for that PLS (the partial least squares) was conducted. In a simple way, this method defines the cause relationship between variables or in a more complex explanation models the structural paths. Besides that, the model also measures the contribute of each variable (Chin, Marcolin & Newsted, 2003). The combination of principal component analysis and regression explains the variance of the constructs in the model (Chin, Marcolin & Newsted, 2003). PLS is accurate for this study since is used for constructs under condition of nonnormality and for small-medium sample sizes.

Using the guideline proposed by Becker *et al.* (2012), the analysis was conducted on two levels: the first-order constructs level and second-order construct level. The latter correspond to Mental Imagery with four factors: Vividness, Quantity, Valence and Modality

4.1 Descriptive Analyse

The first step to analyse the collected data is conducting descriptive statistical analyses of each variable described in chapter 2.6. For this study it will be used mean and standard deviation, to provide simple summaries about the sample and the measures. This first analyse is a support for conducting further statistic.

For each question was necessary to create a new variable, by computed mean of each mean corresponding to that variable.

Each variable analyse is complemented by a table with the values conducted through SPSS software.

Product Involvement

The first variable to be studied is the product involvement. The question is composed by 4 items presented in the table 4. The item with a highest average value is **PI1** (mean= 5.39). On contrary, item **PI3** has the lowest average with a value of 3.69. Regarding to standard deviation, the values are very similar for all items, excluding **PI1** with the lowest value of 1.65.

The new construct **PI** presents an average value of 4.54 and a standard deviation of 1.49.

Table 4: Descriptive Analyses – Product Involvement

	Mean	Std Deviation
PI1: For me, going to the supermarket is important	5.39	1.65
PI2: For me, going to the supermarket is a concern	4.66	1.87
PI3: For me, going to the supermarket means a lot to me	3.69	1.89
PI4: For me, going to the supermarket matters to me	4.41	1.94
CONSTRUCT PI	4.54	1.49

Source: Author’s own creation based on SPSS outputs

Perceived Assortment

The next variable corresponds to Perceived Assortment (PA). The question is composed by 5 items presented in the table 5. The item with a highest average value is **PA1** (mean=5.82). On contrary, item **PA5** has the lowest average with a value of 4.59. Regarding to standard deviation, **PA2** shows the lowest value of 1.22.

The new construct **PA** presents an average value of 5.42 and a standard deviation of 1.08.

Table 5: Descriptive Analyses – Product Assortment

	Mean	Std Deviation
PA1: The supermarket had many options to choose from	5.82	1.25
PA2: The products were well organized in the shelf	5.81	1.22
PA3: The way the products were organized is appealing	5.47	1.29
PA4: I found what I was looking for	5.41	1.42
PA5: The assortment was too large	4.59	1.85
CONSTRUCT PA	5.42	1.08

Source: Author's own creation based on SPSS output

Perceived Similarity

The following variable is Perceived Similarity (**PS**). The question is composed by 2 items presented in the table 6. The item with a highest average value is **PS2** (mean=4.74). On contrary, item **PA5** has the lowest average with a value of 3.72. Regarding to standard deviation, **PS1** shows the lowest value of 1.85, however the item **PS2** shows a very similar value, 1.89.

The new construct **PS** presents an average value of 4.23 and a standard deviation of 1.41.

Table 6: Descriptive Analyses – Perceived Similarity

	Mean	Std Deviation
PS1: Seeing the supermarket assortment physically would feel the same as seeing it via VR	3.72	1.85
PS2: Visiting the Virtual Supermarket would have aspects that make it different from visiting physically	4.74	1.89
CONSTRUCT PS	4.23	1.41

Source: Author's own creation based on SPSS output

Emotions

The variable emotion is composed by 4 items presented in the table 7. The item with a highest average value is **EM2** (mean=5.71). On contrary, item **EM3** has the lowest average with a value of 5.38. Regarding to standard deviation, **EM1** shows the lowest value of 1,44. Both **EM3** and **EM4** present the same standard deviation value ($\alpha=1.64$)

The new construct **EM** presents an average value of 5.57 and a standard deviation of 1.38.

Table 7: Descriptive Analyses – Emotions

	Mean	Std Deviation
EM1: The virtual supermarket is fun	5.65	1.36
EM2: The virtual supermarket is interesting	5.71	1.44
EM3: The virtual supermarket is exciting	5.38	1.64
EM4: The virtual supermarket is appealing	5.54	1.64
CONSTRUCT EM	5.57	1.38

Source: Author's own creation based on SPSS output

Presence

The variable Presence is composed by 6 items presented in the table 8. The item with a highest average value is **PRE1** (mean=5.59). On contrary, item **PRE2** has the lowest average with a value of 4.23. Regarding to standard deviation, **PRE1** shows the lowest value of 1.50.

The new construct **PRE** presents an average value of 5.04 and a standard deviation of 1.17.

Table 8: Descriptive Analyses – Presence

	Mean	Std Deviation
PRE1: I felt I was in the virtual supermarket	5.59	1.50
PRE2: I forgot I was in the middle of an experience	4.23	1.87
PRE3: My body was in the room, but my mind was inside the virtual supermarket	5.34	1.53
PRE4: The supermarket seemed to me "somewhere I visited" rather than "something I saw"	5.03	1.70
PRE5: I forgot about my immediate surroundings when I was navigating through the supermarket	4.84	1.79
PRE6: When the experience ended, I felt like I came back to the 'real world'	5.21	1.78
CONSTRUCT PRE	5.04	1.17

Source: Author's own creation based on SPSS output

Purchase Intention

The variable Purchase Intention is composed by 4 items presented in the table 9. The item with a highest average value is **Pin3** (mean=5.00). On contrary, item **Pin4** has the lowest average with a value of 4,44. Regarding to standard deviation, **Pin1** shows the lowest value of 1.55.

The new construct **Pin** presents an average value of 4.71 and a standard deviation of 1.46.

Table 9: Descriptive Analyses – Purchase Intention

	Mean	Std Deviation
Pin1: High purchase interest	4.71	1.67
Pin2: I was intended to buy	4.69	1.80
Pin3: Probably bought it	5.00	1.55
Pin4: Definitely bought it	4.44	1.89
CONSTRUCT Pin	4.71	1.46

Source: Author's own creation based on SPSS output

Obsession

The variable Obsession is composed by 5 items presented in the table 10. The item with a highest average value is **OB5** (mean=4.81). On contrary, item **OB3** has the lowest average with a value of 3.09. Regarding to standard deviation, **OB1** shows the lowest value of 1.85.

The new construct **OB** presents an average value of 3.68 and a standard deviation of 1.60.

Table 10: Descriptive Analyses – Obsession

	Mean	Std Deviation
OBS1: Much of my life centres around the consumption of laundry	3.11	1.85
OBS2: I think about laundry all the time	3.94	2.04
OBS3: I find it difficult to stop watching, reading or talking about sport	3.09	2.02
OBS4: The urge to laundry is strong	3.45	1.99
OBS5: Consuming laundry products is something I cannot live without	4.81	1.95
CONSTRUCT OBS	3.68	1.60

Source: Author's own creation based on SPSS output

Mental Imagery - Quantity

The variable Quantity is composed by 3 items presented in the table 11. The item with a highest average value is **MiQt2** (mean=4.19), very similar to **MiQt** (mean=4.18). On contrary, item **MiQt2** has the lowest average with a value of 4.19. Regarding to standard deviation, **MiQt1** shows the lowest value of 1.84.

The new construct **MiQt** presents an average value of 3.95 and a standard deviation of 1.08.

Table 11: Descriptive Analyses – Quantity

	Mean	Std Deviation
MiQt1: While I watched the assortment, many images came to my mind	4.18	1.84
MiQt2: While I watched the assortment, a lot of images came to my mind	4.19	1.59
MiQt3: While I watched the assortment, few images came to my mind	3.49	1.85
CONSTRUCT MiQt	3.95	1.08

Source: Author's own creation based on SPSS output

Mental Imagery - Modality

The variable Modality is composed by 4 items presented in the table 12. The item with a highest average value is **MiMo1** (mean=5.03). On contrary, item **MiMo2** has the lowest average with a value of 3.96. Regarding to standard deviation, both **MiMo1** shows the lowest value of 1.77.

The new construct **MiMo** presents an average value of 4.56 and a standard deviation of 1.36.

Table 12: Descriptive Analyses – Modality

	Mean	Std Deviation
MiMo1: While I watched the assortment, I imagined sounds	5.03	1.77
MiMo 2: While I watched the assortment, I imagined scents	3.96	2.01
MiMo3: While I watched the assortment, I imagined sensations	4.78	1.80
MiMo4: While I watched the assortment, I imagined visual scenes	4.45	1.80
CONSTRUCT MiMo	4.56	1.36

Source: Author's own creation based on SPSS output

Mental Imagery – Vividness

The variable vividness is composed by 7 items presented in the table 13. The item with a highest average value is **MiVi6** (mean=5.64). On contrary, item **MiVi7** has the lowest average with a value of 2.92. Regarding to standard deviation, **MiVi6** shows the lowest value of 1.35.

The new construct **MiVi** presents an average value of 4.76 and a standard deviation of 1.09.

Table 13: Descriptive Analyses – Vividness

	Mean	Std Deviation
MiVi1: The images that come to my mind while I watched were clear	5.14	1.59
MiVi2: The images that come to my mind while I watched were vivid	4.88	1.62
MiVi3: The images that come to my mind while I watched were distinct	5.05	1.61
MiVi4: The images that come to my mind while I watched were shinny	4.96	1.50
MiVi5: The images that come to my mind while I watched were intense	4.73	1.61
MiVi6: The images that come to my mind while I watched were realists	5.64	1.35
MiVi7: The images that come to my mind while I watched were weak	2.92	1.73
CONSTRUCT MiVi	4.76	1.09

Source: Author’s own creation based on SPSS output

Mental Imagery – Valence

The variable Valence is composed by 4 items presented in the table 14. The item with a highest average value is **MiVa3** (mean=5.54). On contrary, item **MiVa4** has the lowest average with a value of 4.99. Regarding to standard deviation, **MiVa1** shows the lowest value of 1.39.

The new construct **MiVa** presents an average value of 5.34 and a standard deviation of 1.35.

Table 14: Descriptive Analyses – Valence

	Mean	Std Deviation
MiVa1: The images that come to my mind while I watched the assortment were pleasant	5.42	1.39
MiVa2: The images that come to my mind while I watched the assortment were good	5.42	1.41
MiVa3: The images that come to my mind while I watched the assortment were positive	5.54	1.41
MiVa4: The images that come to my mind while I watched the assortment were fun	4.99	1.61
CONSTRUCT MiVa	5.34	1.35

Source: Author's own creation based on SPSS output

4.2 Measurement Model Results

Before interpreting the smartPLS 3.0 results for the structural equations, it is necessary to verify if the items measure with precision the respective construct by addressing the measurement model. In other words, this model details the relationships between the measures and the underlying latent variables (Götz, Liehr-Gobbers & Krafft, 2010). The model is tested by evaluating the reliability of the individual measures, the convergent validity and the discriminant validity of the constructs.

At the first-order construct level, item reliability will be accessed. The reliability measures the internal consistency between all the items which belong to a construct (Götz, Liehr-Gobbers & Krafft, 2010). The indicators used are Item Loading, Cronbach's alpha and Composite Reliability. Item loadings should present values above 0.707 and as we can see in appendix 4, all variables values of this study exceed the minimum required. Those values indicate that over 50% of the variance in the observed variable is explained by the construct. Moreover, to be accepted, both Cronbach's alpha and Composite Reliability should be above 0.7 (Hair *et al.*, 2010). The results are shown in the table 15. All composite reliability values are above 0.8. To Cronbach's alpha values, all variables exceeds 0.7. In the case of the construct Presence, $\alpha = 0.675 (\approx 0.7)$, so we accept the value.

Table 15: Measurement Results – First order construct level

	Cronbach's Alpha	Composite Reliability	AVE
Modality	0.800	0.881	0.714
Presence	0.675	0.820	0.608
Product involvement	0.834	0.899	0.748
Purchase intention	0.841	0.893	0.677
Quantity	0.701	0.789	0.514
Valence	0.962	0.972	0.898
Vividness	0.938	0.953	0.802
Emotions	0.926	0.948	0.820

Source: Author's own creation based on smartPLS output

Therefore, all constructs are considered reliable.

The level of items is associated with the measures of the similar construct is called convergent validity (Hair *et al.*, 2010). For this validation, the criteria proposed by Fornell and Bookstein (1982) – Average Variance Extracted (AVE) - was used. According the authors, when the average variance of variables extracted by constructs is above 0.5, indicates the a convergent validity. As it presented in table 15, all the variables have values above 0.5, meaning that most of variance of each indicator is explained by its own construct.

At the second-order construct level, we have the parameter estimates of indicator weights, significance of weight (t-student) and multicollinearity for Mental Imagery's items. Firstly, weight indicator measures the contribution of each item to the variance of the latent variable. According Chin, Marcolin and Newsted (2003) the recommended indicator weight should be above 0.2. In this case, excluding quantity, all the other items presents values equal or above 0.2. As can be seen in table 15, those items show positive beta weight, hereupon they contribute significantly for the latente variable. Even though, Quantity weight equals 0.07, the item shows a positive significance for the variable, so the constuct will be accepted. A high multicollinearity among dimensions would produce unstable estimates and would make it difficult to separate the effect of the individual dimensions on the construct (Petter, Straub & Rai, 2007). The degree of multicollinearity among the formative indicators should be assessed by variance inflation factor (VIF) (Fornell & Bookstein, 1982). The VIF indicates how much an indicator's variance is

explained by the other indicators of the same construct and should be below 3.33, as happen with variables studied, except for Vividness, but the value is only slightly higher, what led us to consider without problem (see table 16). Concluding, the items do not appears to have a multicollinearity problem.

Table 16: Measurement Results – Second order construct level

	Weight	t-value	VIF
Modality	0.20	10.77	2.03
Quantity	0.07	5.78	1.26
Valence	0.41	15.14	3.29
Vividness	0.45	19.24	3.61

Source: Author's own creation based on smartPLS output

The discriminant validity confirms if the construct is not related with other constructs totally different. This analyse will be made by comparing the AVE with the correlation of that construct with another construct. Statistically, the square root of AVE should be greater than the relation between the construct and other constructs in the model (Fornell & Bookstein, 1982). In appendix 5 can be found the discriminant validity table and shows that all criterion has been met.

4.3 Structural Results

In this study a bootstrapping approach (500 samples) was performed to estimate the statistical significance of the effects between each variable and moderators. This nonparametric method is used to obtain the standard errors of the estimates (Chin, Marcolin & Newsted, 2003; Hair *et al.*, 2010).

Concerning the established hypotheses, not all paths coefficients were found significant. Table 20 shows the results for each hypothesis. In fact, at a significant level $p < 0.05$ ($t > 1.96$), hypothesis H1, H2, H3, H5 and H5 are fully supported, only H4 is excluded. Regarding the moderating effects, H7 and H9 are supported, however, H8 is only partial supported.

One last validation must be done. In fact, the model can be invalid in a predictive sense (Chin, Marcolin, & Newsted, 2003). As a result, chi-squared of the Stone-Geisser criterion (Q^2) and level of predictive power (R^2) are used. The first indicator, Q^2 , presents positive values, consequently the relations in the model have predictive relevance. The results of the following

indicator, R^2 , demonstrates a good level of predictive power. Precisely, the modelled construct explained 61.5% of the variance in Purchase Intention and 55.7% in Emotion. The results can be check in the table 17.

Table 17: Structural Results

Construct	Q^2	R^2
Purchase intention	0.344	0.615
Emotions	0.373	0.557

Source: Author's own creation based on smartPLS output

4.4. Moderate Effects

The first results to be studied are the moderator effects. The objective is to understand how the selected moderators (Obsession, Product Similarity and Product Assortment) influence the relationship intensity between the different variables (see table 18). Beginning with Product Similarity (H8), as we can see in table 18, not all paths are significant, specifically for H8a and H8b. The score for Mental Imagery \rightarrow Product Similarity \rightarrow Purchase Intention ($\beta = -0.113$; $t < 1.96$) and Presence \rightarrow Product Similarity \rightarrow Purchase Intention ($\beta = -0.081$; $t < 1.96$) reveals that the moderator does not have effect in both Mental Imagery and Presence variables. However, the same does not happen with H8c, Product Involvement \rightarrow Product Similarity \rightarrow Purchase Intention ($\beta = -0.220$; $t > 1.96$), which indicates that Product Similarity moderates the path. In conclusion, the hypothesis H8 is not totally supported, is only supported by H8c. In the case of Obsession (H7), the score for the following paths: Mental Imagery \rightarrow Obsession \rightarrow Purchase Intention ($\beta = -0.239$; $t > 1.96$); Presence \rightarrow Obsession \rightarrow Purchase Intention ($\beta = -0.220$; $t > 1.96$) and Product Involvement \rightarrow Obsession \rightarrow Purchase Intention ($\beta = -0.243$; $t > 1.96$) reveals the effect of the moderator. For H9, Product Assortment, the scenario repeats. Mental Imagery \rightarrow Product Assortment \rightarrow Purchase Intention ($\beta = -0.152$; $t > 1.96$); Presence \rightarrow Product Assortment \rightarrow Purchase Intention ($\beta = -0.135$; $t > 1.96$) and Product Involvement \rightarrow Product Assortment \rightarrow Purchase Intention ($\beta = -0.107$; $t > 1.96$) indicate significance in the mediating effect of Product Assortment. Therefore, hypotheses H7 and H9 are supported. An important outcome to take from these results is regarding to the negative coefficient beta value for all paths. This means that in the case of moderators have significance, the effect is negative and decrease the intensity of the variables' relationship. This topic will be study deeply in Conclusion chapter.

Table 18: Moderating Effects

Path	Coefficient Beta	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	
M.Imagery -> P.Intention (Moderator Obsession)	-0.239	0.039	6.125	0.000	Significant
Presence -> P.Intention (Moderator Obsession)	-0.220	0.050	4.429	0.000	Significant
P.Involvement -> P.Intention (Moderator Obsession)	-0.243	0.065	3.760	0.000	Significant
Mental imagery -> P.Intention (Moderator Perceive similarity)	-0.113	0.059	1.892	0.059	Not significant
Presence -> P.Intention (Moderator Perceive similarity)	-0.081	0.055	1.465	0.143	Not significant
P.Involvement -> P.Intention (Moderator Perceive similarity)	-0.220	0.052	4.208	0.000	Significant
Mental imagery -> P.Intention (Moderator Perceived assortment)	-0.152	0.042	3.615	0.000	Significant
Presence -> P.Intention (Moderator Perceived assortment)	-0.135	0.048	2.777	0.006	Significant
P.Involvement -> P.Intention (Moderator Perceived assortment)	-0.107	0.046	2.308	0.021	Significant

Source: Author's own creation based on smartPLS output

In table 19 is possible to analyse the direct effects between Mental Imagery/Product Involvement/Presence and Purchase Intention/Emotions, which means that in these results there no effect of any moderator. The first highlight of this analyse in the no existence of significant direct effect between Product Involvement and Emotions ($t < 1.96$), so the hypothesis H4 is not supported. On the other hand, the same variable, Product Involvement, exerts a positive and significant effect on Purchase intention ($t < 1.96$) with a coefficient Beta of 0.203. Moreover, both Mental Imagery and Presence have also a positive direct effect on Purchase Intentions and Emotions. In the case of Mental Imagery, the relationship between Emotions ($\beta = 0.611$) is stronger than Purchase Intentions ($\beta = 0.307$). On the other hand, Presence shows a stronger relationship between Purchase Intentions ($\beta = 0.491$). Hereupon, it is possible to affirm that hypothesis H1, H2, H3, H5 and H6 are supported. The table 20 summarizes all hypothesis.

Table 19: Direct Effects

PATH	Coefficient Beta	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Mental imagery -> P.Intention	0.307	0.096	3.203	0.001
Mental imagery -> Emotions	0.611	0.083	7.349	0.000
P.Involvement -> P.Intention	0.203	0.070	2.918	0.004
P.Involvement -> Emotions	0.029	0.060	0.492	0.623
Presence -> P.Intention	0.491	0.069	7.149	0.000
Presence -> Emotions	0.191	0.058	3.271	0.001

Source: Author's own creation based on smartPLS output

Table 20: Results from hypothesis testing

Hypothesis	Description	Result
H1	Mental imagery is positively associated to Purchase intention	Supported
H2	Mental imagery is positively associated to Emotions	Supported
H3	Product involvement is positively associated to Purchase Intention	Supported
H4	Product involvement is positively associated to Emotions	Not Supported
H5	Presence is positively associated to Purchase intention	Supported
H6	Presence is positively associated to Emotions	Supported
H7	Obsession moderates the relationships between Mental imagery and Purchase intention (H7a), Product involvement and Purchase intention (H7b) and Presence and Purchase intention (H7c)	Supported
H8	Perceive similarity moderates the relationships between Mental imagery and Purchase intention (H8a), Presence and Purchase intention (H8b) and Product involvement and Purchase intention (H8c)	Partially Supported
H9	Perceive assortment moderates the relationships between Mental imagery and Purchase intention (H9a), Product involvement and Purchase intention (H9b) and Presence and Purchase intention (H9c)	Supported

Source: Author's own creation

5. Conclusion and Implications

The present chapter aims to present the main academic and managerial conclusions of the findings obtained through the empirical research linking with previous literature review. The main conclusions may be a contribute for actual researches, so that a theoretical contribution section is approached. Furthermore, the limitations of this study are presented together with crucial suggestions for future research.

5.1 Conclusion and Implications

This research problematic come up with the changes in retailing field and the new necessities to reach and to satisfy the consumers and store atmosphere has been a way to achieve it. That's why this research intends to understand the role of virtual reality in this process. As verified on literature review, atmosphere has a huge impact on purchase intention and emotions (Turley & Milliman, 2000). On the other hand, the way consumer perceived the atmosphere can be manipulate by different variables (Farias, Aguiar & Melo, 2014). However, all this experience varies from market to market (Rayburn & Voss, 2013). For this study, laundry care category was chosen.

Back to the proposed model for this dissertation, the main objective is to understand how Mental Imagery, Product Involvement and Presence may influence consumers' responses, more precisely, purchase intention and emotions, but in a virtual atmospheric context. Moreover, these variables can be moderated or not through Obsession, Perceived Similarity and Perceived Assortment. The results will be discussed next.

Beginning with Mental Imagery, this variable is driven by four different dimensions – quality, vividness, valence and modality and there are those dimensions which will characterize the images that occur when Mental Imagery is activated on one's mind. All those dimensions were studied separately in this research.

There are different ways to stimulate Mental Imagery and the dimensions behave differently depending on the type of the stimuli. Bogicevic *et al.* (2019) states, that in this new and technologic marketing world, Virtual Reality can be a significant stimulus. Besides, other authors come up with the assumption that when evoked, Mental Imagery has an influence on consumer behavioural responses (Yoo & Kim, 2014), in this case purchase intentions and positive emotions.

Through the methodology used and the results obtained is possible to agree with the mentioned authors. On the one hand, the results show that Mental Imagery leads to a purchase intention ($\beta = 0.307$), the positive relationship means that, when in the shopping experiences, and images are evoked to our mind, we tend to be more propitious to buy the product. Thus, mental imagery explains the purchase intention variable and *hypothesis 1 is supported*. Concerning the emotions, the results show that there is a relationship between both ($\beta = 0.611$), which means that, when in the shopping experiences and images are evoked to our mind, the emotional reactions to the stimulus are positive and agreeable. Thus, mental imagery explains the emotions variable and *hypothesis 2 is supported*. It is crucial to highlight that the positive effect of mental imagery in emotion was the strongest direct effect of whole model, pointing out the crucial role that mental imagery may play in the emotions generated. Actually, this result was already expected having in mind the findings obtained in literature review. Emotional responses occur when our cognitive sense is stimulated (Miller, Hadjimarcou & Miciak, 2000) and according Mental Imagery definition, this is exactly what happens when the mental images come to our mind.

Product Involvement regards to the way customer perceive the relevance of a product, brand or category in his needs (Porrall, Vega & Mangin, 2018). The product involvement is not the same for all consumers, besides each consumer has a different level of involvement depending on the product we are talking about. The level of involvement will determinate the consumer attitude towards the product. Researchers believe that brands should approach differently the audience according the level of involvement. This is where Virtual Reality has an important role. According Cowan & Ketron (2019) the use of Virtual Reality, as marketing tool, does not impact likewise for products with different degrees of involvement. In fact, using virtual reality enhance the engagement and communication with customers who are highly involved leading to a product purchase. The previous authors believe that consumers with higher involvement need to be part of the brand.

Through the methodology used and the results obtained is possible to corroborate with the findings of Cowan and Ketron (2019). The results show that Product Involvement leads to a purchase decision ($\beta = 0.203$), the positive relationship means that, when in the shopping experiences, and consumer who is highly involved with the product/brand, tends to be more propitious to buy the product. Thus, product involvement explains the purchase intention variable and *hypothesis 3 is supported*.

It can be explained due to the category chosen for this study – laundry care. This type of category includes products with high involvement level. Consumers of this category mostly look for the maximum information possible, such as benefits, prices, environmental issues, among others... and tend to compare between the different brands which is the best option that will fulfil their needs. This can be confirmed by the results obtained on descriptive analyses. The variable Product Involvement presents a mean of 4.54, meaning that even not totally involved, the sample shows a positive level.

Keeping in mind Product Involvement, another authors come up with other findings. Porral, Vega & Mangin (2018) mentioned the importance of product involvement on emotions. According them, the positive or negative emotions stimulated depend product involvement. On one hand high involvement leads to a positive and pleurant emotions, on the other hand low involvement leads to a negative emotions. This is justified by the fact that people feel more linked with products that elicit to a pleasure emotions rather than unpleasent emotions. In this vein, hedonic value of the product also influences the involvement and the emotions triggered, since in hedonic value people look for pleurant experiences. In Porral, Vega & Mangin (2018) case the products involved are wine (high involvement) and coffee (low involvement).

Through the methodology used and the results obtained, the assumption defended by Porral, Vega & Mangin (2018) was not proven in laundry care context. The results show that Product Involvement does not have significance or influence on emotions. In other words, regardless the level of involvement, in this context, neither positive nor negative emotions are stimulated. Thus, product involvement does not explain the emotions variable and *hypothesis 4 is not supported*.

As mentioned, several times in this report, one of the most important characteristics of virtual reality is the feeling of physical presence in a virtual world. Consequently, the next conclusions aim to accomplish if there are any effect on purchase intention and emotions.

Some authors truly believe that this characteristic is very important for the engagement with customers and consequently leads to positive emotions and also purchase behaviours (Sands, Oppewala & Beverlan, 2015). Marketers found that virtual reality and this feeling of presence can be a tool to enhance sensory perceptions. So, linking with emotional process, when

atmosphere conditions stimulate our senses, the response given by the organism is through emotions.

Probably these associations are the most related with the initial topic of this dissertation – the changes on atmospheric cues in order to offer to the customer a greater shopping experience and most important influence their behaviours. Hence, the virtual atmospheric conditions have been deeply studied for many researches to figure out how consumers behave when immersed in a 3D-world.

Through the methodology used and the results obtained is possible to follow the previous assumptions. The results show that Presence leads to a purchase decision ($\beta = 0.491$), the positive relationship means that, when the consumers feels physical present in a virtual world, tends to be more propitious to buy the product. Thus, presence explains the purchase intention variable and *hypothesis 5 is supported*. Concerning to the impact of presence on emotions, as expected, the relationship is significant and positive ($\beta = 0.191$). This means that, in fact, the interactivity and immersion experienced on virtual supermarket enhances the emotions generated. Thus, presence explains the emotion variable and *hypothesis 6 is supported*. It is crucial to highlight that the positive effect of presence in emotion was the weakness direct effect of whole model, in other words the role that presence may play in the emotions is not the most important in the whole model.

Finally, some findings from both on literature review and the empirical research concluded that the direct relationship between the variables previous discusses can be moderated by obsession, perceived assortment and perceived similarity. This mean that by adding those moderators on the experience the consumer behaviour can be reinforced or reversed.

Aikon, Bee & Walker, (2018) pointed out that a person obsessed with a product tends have compulsive and repetitive purchase behaviours, induced by emotional responses. However this happens in a physical shopping environment. When comes to a virtual environment, the situation changes. Accordind the results obtained, no doubt, that the relationship between mental imagery, product involmente or presence and purchase intention can be significantly moderated by obsession. Thus *hypothesis 7 is fully supported*. The negative coefficient beta values means that when the level of laundry obsession increases the influence of the three variables on purchase intention decrease. In other words, when the consumer is really addicted to laundry care, when exposed to a virtual environment, the variables have a negative influence

on purchase decision and they tend not to buy the product. A participant of this study, who considers himself a really laundry addicted, stated that “I really need to see the products physically and understand if its benefits are what I am looking for. I prefer spend hours on supermarket to see all products rather than be at home and buy it virtually.”

According to the results obtained the relationship between product involvement and purchase intention can be significantly moderated by the perceived similarity. Thus *hypothesis 8b is supported*. The negative coefficient beta value means that when perceived similarity is added to the model the positive relationship between product involvement and purchase intention is disturbed. When the virtual experience is very similar to the real one, people highly involved with the product tends not to be propitious to buy it. We can conclude that they prefer to buy it in the physical store. Even mental imagery and presence are a significant conduct to increase purchase intention, the positive relationship is not influenced by perceived similarity. The results show that this moderator has no significance between variables. Thus *hypothesis 8a and 8c are not supported* and *hypothesis 8 is partial supported*.

The assortment available for a category is a very important factor for customers' choice (Gruen & Shah, 2000; Pizzi & Scarpi, 2016). In the case of laundry care category, the study confirms that perceived assortment is a moderator variable on mental imagery, product involvement and presence and purchase intention. As in the other indirect effects mentioned above, this moderator has a contradictory influence on the relationship, explained by the negative coefficient beta values. Thus *hypothesis 9 is fully supported*. Despite being statistically significant, the indirect effect of perceived assortment on the model were the less meaningful.

5.2 Managerial Implications

The present study and respective empirical analysis bring a very relevant and meaningful conclusions which can have impact on marketing field. The findings highlight the importance of the atmospheric conditions for the overall shopping experience in a specific market. More precisely, the impact of a virtual environment in all customer journey, until the purchase decision.

In order to create a greater experience with a virtual store, managers should study deeply the market where they are inserted and above all the type of consumer and their shopping behaviour. As a matter of fact, virtual reality still be a very new tool that people are not

used to and it must be applied in marketing step by step. On the one hand, consumers need to be educated for this new shift from traditional to innovative marketing. On the other hand, companies need to take the best part of it and surely create the best atmosphere condition to lead positive emotions and finalizing with a purchase decision.

How more involved is the consumer with the product, the more he needs to be engaged with the brand. So, creating the appropriated atmosphere, where the consumer feels immersive and part of the process is a key driver to his satisfaction and increase the purchase intention. And as the study showed, virtual reality as a good effect on it.

For customers, going to a virtual store needs to be a differencing experience, comparing with a physical and common store. The results showed that when the consumer perceive the virtual shop as similar to a physical one, the purchase intention decreases, and emotions are not generated. So, people need to perceive that they are in a virtual and immersive world. This leads us to another important conclusion, the feeling of presence. In fact, raising the effect of presence in another world seems to be a great factor to create positives emotions and consumers' responses.

To sum up, this study comes to emphasize the importance of creating the right atmosphere for a better shopping experience. Marketers must provide a personalized shopping experience given that the different variables that influence the shopper's behaviour.

5.3 Theoretical Contribution

From a theoretical perspective, this study has important contribution for atmospheric store conditions literature. While the importance of virtual stores and consumers' responses has been widely discussed in marketing and management literature, little research has emphasized the significance of particular variables in purchase intention and emotion generated.

Firstly, in a general way, this research is a huge contribute to the last studies about the usage of virtual reality in different fields. Many researches have pointed out how virtual reality changed sectors such as education, tourism, automobiles... and, no doubt, in marketing. In this particular research, we concluded that a virtual environment influences the consumers attitude through a shopping experience and in fact the results were very

positive. Furthermore, this studies also give new and more deeply knowledge about the people who use this technology and the related behavioural intentions.

Secondly, it was possible to verify that are three variables that have direct impact on consumer emotions and purchase intentions. Findings show that mental imagery, product involvement and presence have positive direct effect on purchase intention and emotions, so companies must not careless about how to manage these variables on their shop environment. Yet, it is important to highlight that the most significant and substantial variable, in this specific market, is mental imagery for emotions and presence for purchase intention.

Lastly, this study found the existence of three moderators that modify the intensity of the relationships – obsession, perceived assortment and presence. In practise, when those variables are included on the model, they play a moderating role in the process. The main contribution to the literature goes to the fact that we realize the moderators decrease the intensity of the relationship. This is, when mental imagery/product involvement/presence increase, the purchase intention decreases. However, perceived similarity does not moderate all the paths. The moderator only has impact on the relationship between product involvement and purchase intention.

5.4 Limitations and future research

In spite of the contribute of this study, the results and conclusions should be interpreted according with some specific limitation.

The main constraint of the method regards to the data collection. Firstly, the sampled used is not representative since 108 participants are not enough to understand behaviours. Besides few men were able to participate because it is not easy find men that are used to shop laundry products or know the category. A more extensive and diversified sample could lead to different results. For future researches, a larger sample must be considered.

In addition, it would be interesting to consider doing the experience with participants right after leaving a physical supermarket and compare both shopping experiences. Actually, going person to person with all material to perform the test made it difficult to get more people and the time collecting data was longer and delayed all the process.

Another limitation on this study is the use of the virtual reality program. Due to the inexperience of using it, the scenario was not perfectly similar with a true supermarket. Moreover, other scenarios should be interesting to study, addressed to other markets and understand if the relationship between variables would be modified. To complement the model, other variables should be integrated, such as satisfaction or recommendation.

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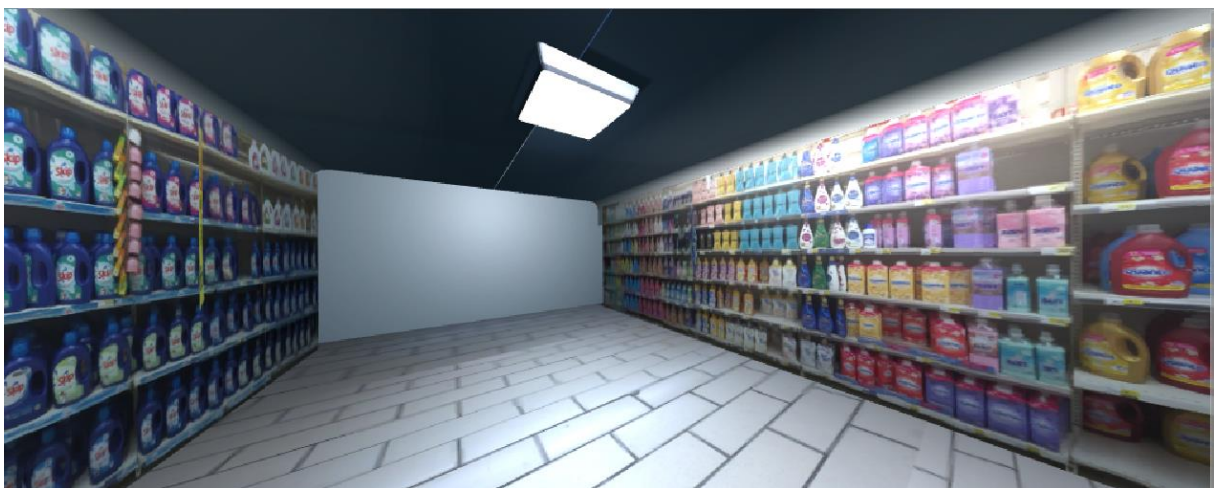
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7. Appendix

Appendix I – Virtual Scenario



Drivers of Emotions and Purchase Intention in Virtual Supermarket Setting





Appendix II – Online Questionnaire



Supermercado Virtual

O meu nome é Carolina Correia e, enquanto aluna do Mestrado em Marketing no ISCTE, estou a desenvolver esta pesquisa no âmbito da minha tese de mestrado.

A ida ao supermercado é uma atividade que faz parte do quotidiano de qualquer família. Para alguns é uma experiência agradável, onde aos clientes gastam tempo para fazer a melhor decisão. No entanto para outros, esta é uma tarefa realizada por obrigação e onde pretendem minimizar o tempo de escolha e por isso realizam compras rápidas e eficientes.

No entanto, novas formas de fazer compras têm aparecido para tornar esta tarefa mais fácil para alguns e mais entusiasmante para outros. Uma das ferramentas que tem sido estudada nesta categoria é a Realidade Virtual. A Realidade Virtual trata-se de um novo tipo de tecnologia em que é gerado um cenário realístico através de um computador, estimulando os nossos sentidos mesmo tratando-se de um mundo virtual. Através da Realidade Virtual as pessoas podem experienciar a sensação de estarem noutra sítio sem saírem do seu lugar.

Nesta experiência será convidado a ir até um hipermercado virtual, baseado num já existente, onde será estudado o seu comportamento perante a categoria de detergentes para a roupa. Não será necessário efetuar nenhuma compra, é apenas perceber o seu envolvimento com a categoria e o espaço, perante algumas variáveis que serão abordadas no questionário apresentado no final.

Drivers of Emotions and Purchase Intention in Virtual Supermarket Setting

2. Com que frequência vai ao supermercado para comprar produtos da categoria de limpeza de roupa: *

- Semanalmente
- Quinzenalmente
- Mensalmente
- Other:

3. Em seguida encontram-se algumas características que lhe podem, ou não, dizer respeito (1 - Discordo totalmente; 7 - Concordo totalmente). Vejo-me como uma pessoa... *

	1	2	3	4	5	6	7
Reservada	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Confiável	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tendencialmente preguiçosa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relaxada e lido bem com o stress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Com poucos interesses artísticos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sociável e Extrovertida	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Critica com os outros	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rigorosa no trabalho	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nervosa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Com uma imaginação muito criativa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Avalie o sortido presente na loja virtual (1 - Discordo totalmente; 7 - Concordo totalmente). *

	1	2	3	4	5	6	7
A loja tinha muitas opções por onde escolher	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Os produtos estavam bem organizados na prateleira	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A forma como os produtos estavam organizados é apelativa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encontrei facilmente o que precisava	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Drivers of Emotions and Purchase Intention in Virtual Supermarket Setting

A loja tinha uma variedade demasiado vasta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
--	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

5. Durante a experiência no supermercado foi convidado a visitar a categoria dos detergentes para a roupa. Exprese a sua opinião em relação ao seu consumo de produtos para lavar roupa (1 - Discordo totalmente; 7 - Concordo totalmente). *

	1	2	3	4	5	6	7
--	---	---	---	---	---	---	---

Grande parte da minha vida é centrada na limpeza da roupa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Penso em lavar a roupa várias vezes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
É difícil para mim parar de ver, procurar ou falar de produtos de limpeza da roupa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
O impulso em lavar a roupa é forte	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Consumir produtos para lavar a roupa é algo que eu não consigo dispensar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
--	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

6. Teve a oportunidade de experienciar uma nova forma de ir ao supermercado – através de Realidade Virtual. Comparando com uma ida a um supermercado físico, descreva a semelhança (ou não), das duas formas de fazer compras (1 - Discordo totalmente; 7 - Concordo totalmente). *

	1	2	3	4	5	6	7
--	---	---	---	---	---	---	---

Ver o sortido na loja física é igual ao ver em Realidade Virtual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ver o sortido em Realidade Virtual traz características que não sentimos na loja física	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Descreva as suas emoções durante a experiência virtual. (1 - Discordo totalmente; 7 - Concordo totalmente). O supermercado virtual é... *

Drivers of Emotions and Purchase Intention in Virtual Supermarket Setting

	1	2	3	4	5	6	7
Divertido	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interessante	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entusiasmante	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apelativo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. A Realidade Virtual permite-nos, sem nos deslocarmos, entrar num mundo virtual em tempo real, onde podemos interagir e sentir que estamos fisicamente presentes. Após a sua experiência, descreva a sensação de presença no mundo virtual (1 - Discordo totalmente; 7 - Concordo totalmente). *

	1	2	3	4	5	6	7
Senti que estava dentro do supermercado virtual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Esqueci-me que estava no meio de uma experiência	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
O meu corpo estava na sala, mas a minha mente estava dentro do	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

O meu corpo estava na sala, mas a minha mente estava dentro do supermercado virtual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
O supermercado virtual parecia um local que eu estava a visitar em vez de um local que eu estava apenas a ver	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Esqueci-me daquilo que estava à minha volta enquanto andava pelo supermercado virtual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quando a experiência acabou senti que tinha voltado ao mundo real	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Uma ida ao supermercado tem sempre como intuito finalizar numa compra de um ou mais artigos. Perante a sua experiência, descreva a sua intenção de comprar algo da categoria em estudo em condições de realidade virtual (1 - Discordo totalmente; 7 - Concordo totalmente). *

Drivers of Emotions and Purchase Intention in Virtual Supermarket Setting

9. Uma ida ao supermercado tem sempre como intuito finalizar numa compra de um ou mais artigos. Diante a sua experiência, descreva a sua intenção de comprar algo da categoria em estudo em condições de realidade virtual (1 - Discordo totalmente; 7 - Concordo totalmente). *

	1	2	3	4	5	6	7
Muito interesse na compra	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tinha intenções de comprar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provavelmente compraria	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compraria de certeza	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

BACK NEXT

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Supermercado Virtual

* Required

Ao usar Realidade Virtual as imagens criadas na nossa mente são estimuladas e vistas de diferente forma.

Nas questões abaixo irá descrever de que forma essas imagens foram estimuladas (1 - Discordo totalmente; 7 - Concordo totalmente).

Em relação ao número de imagens que vinham à mente, enquanto via o sortido... *

	1	2	3	4	5	6	7
Muitas imagens vieram à minha mente	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Algumas imagens vieram à minha mente	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poucas imagens vieram à minha mente	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Drivers of Emotions and Purchase Intention in Virtual Supermarket Setting

Em relação aos sentidos que eram estimulados em mim, enquanto via o sortido consegui imaginar... *

	1	2	3	4	5	6	7
Vários sons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vários cheiros	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Várias sensações	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Diferentes imagens na minha mente	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Em relação à qualidade da imagem, as imagens que vinham à minha mente enquanto olhava para o sortido eram *

	1	2	3	4	5	6	7
Claras	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nítidas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Distintas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brilhantes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intensas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Realistas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fracas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Em relação à interpretação que dei, as imagens que vinham à minha mente enquanto olhava para o sortido eram *

	1	2	3	4	5	6	7
Agradáveis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Boas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Positivas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Divertidas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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The image shows a survey form titled "Supermercado Virtual". At the top, there is a red horizontal bar. Below it, the title "Supermercado Virtual" is displayed in a bold, black font. A small red asterisk indicates that the following fields are required. The first field is "Idade *", which is followed by a text input box containing the placeholder text "Your answer". The second field is "Género *", which includes three radio button options: "Mulher", "Homem", and "Outro". The third field is "Educação *", which includes four radio button options: "Básico/Secundário", "Ensino profissional", "Licenciatura/Bachelor", and "Pós-Graduação/Mestrado/PhD". The form is set against a light beige background with a dark grey header bar at the top.

Supermercado Virtual

* Required

Idade *

Your answer

Género *

Mulher

Homem

Outro

Educação *

Básico/Secundário

Ensino profissional

Licenciatura/Bachelor

Pós-Graduação/Mestrado/PhD

Appendix III – Crosstab gender*how many times goes to the supermarket

Gender	Women	Count	How many times goes to the supermarket						Total
			Every two months	Monthly	Biweekly	Rarely	Weekly	Semianually	
Women	Count	0	41	21	1	6	3	1	73
	% in Gender	0,0%	56,2%	28,8%	1,4%	8,2%	4,1%	1,4%	100,0%
	% in How many times goes to the supermarket	0,0%	68,3%	72,4%	25,0%	66,7%	100,0%	100,0%	67,6%
	% of Total	0,0%	38,0%	19,4%	0,9%	5,6%	2,8%	0,9%	67,6%
Men	Count	2	19	8	3	3	0	0	35
	% in Gender	5,7%	54,3%	22,9%	8,6%	8,6%	0,0%	0,0%	100,0%
	% in How many times goes to the supermarket	100,0%	31,7%	27,6%	75,0%	33,3%	0,0%	0,0%	32,4%
	% of Total	1,9%	17,6%	7,4%	2,8%	2,8%	0,0%	0,0%	32,4%
Total	Contagem	2	60	29	4	9	3	1	108
	% em Gender	1,9%	55,6%	26,9%	3,7%	8,3%	2,8%	0,9%	100,0%
	% in How many times goes to the supermarket	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
	% of Total	1,9%	55,6%	26,9%	3,7%	8,3%	2,8%	0,9%	100,0%

Appendix IV – Item Loadings

	Mental imagery	Modality	Presence	Product involvement	Purchase intention	Quantity	Valence	Vividness	Emotions
PI1	0.109	0.007	0.146	0.846	0.367	0.095	0.182	0.060	0.089
PI2	0.174	0.138	0.181	0.877	0.276	0.025	0.160	0.186	0.260
PI3	0.198	0.314	0.150	0.872	0.243	0.031	0.203	0.123	0.085
Pint1	0.591	0.540	0.542	0.520	0.879	0.443	0.530	0.528	0.502
Pint2	0.486	0.391	0.703	-0.001	0.804	0.744	0.452	0.386	0.455
Pint3	0.614	0.562	0.508	0.344	0.784	0.254	0.604	0.531	0.638
Pint4	0.385	0.209	0.599	0.256	0.821	0.677	0.302	0.388	0.271
VALENC1	0.936	0.720	0.482	0.157	0.536	0.383	0.971	0.829	0.695
VALENC3	0.898	0.624	0.403	0.166	0.524	0.383	0.958	0.798	0.667
VALENC4	0.818	0.621	0.443	0.289	0.578	0.329	0.891	0.688	0.565
VALENEC2	0.954	0.729	0.488	0.186	0.562	0.382	0.967	0.869	0.677
emoti1	0.610	0.558	0.478	0.226	0.480	0.211	0.601	0.534	0.912
emoti2	0.706	0.593	0.515	0.236	0.584	0.343	0.651	0.668	0.931
emoti3	0.717	0.569	0.516	0.103	0.562	0.293	0.710	0.657	0.950
emoti4	0.598	0.409	0.519	0.066	0.434	0.238	0.521	0.645	0.824
moda1	0.459	0.731	0.106	0.043	0.335	0.027	0.445	0.288	0.337
moda2	0.676	0.862	0.419	0.181	0.453	0.320	0.573	0.553	0.512
moda3	0.796	0.929	0.415	0.146	0.517	0.315	0.741	0.641	0.603
presenc2	0.711	0.600	0.879	0.218	0.605	0.585	0.630	0.658	0.590
presenc3	0.256	0.152	0.729	0.146	0.336	0.267	0.124	0.351	0.316
presenc4	0.348	0.109	0.835	0.071	0.670	0.767	0.267	0.369	0.369
quant1	0.491	0.289	0.722	0.035	0.638	0.997	0.394	0.455	0.305
quant1	0.491	0.289	0.722	0.035	0.638	0.997	0.394	0.455	0.305
quant2	0.036	0.041	0.171	0.189	0.055	0.882	0.013	0.022	0.014
quant2	0.036	0.041	0.171	0.189	0.055	0.882	0.013	0.022	0.014
vivi1	0.928	0.647	0.558	0.219	0.555	0.430	0.844	0.953	0.654
vivi2	0.817	0.533	0.594	0.016	0.508	0.438	0.698	0.888	0.595
vivi3	0.814	0.538	0.579	0.266	0.441	0.396	0.684	0.898	0.623
vivi4	0.783	0.370	0.552	0.101	0.478	0.442	0.702	0.882	0.544
vivi6	0.868	0.631	0.430	0.027	0.519	0.320	0.831	0.853	0.680
vivi6	0.868	0.631	0.430	0.027	0.519	0.320	0.831	0.853	0.680

Appendix V – Discriminat validity: Fornell-Larcker Criterion

	Modality	Presence	Product involvement	Purchase intention	Quantity	Valence	Vividness	Emotions
Modality	0.845							
Presence	0.399	0.780						
Product involvement	0.156	0.185	0.865					
Purchase intention	0.526	0.711	0.349	0.823				
Quantity	0.289	0.727	0.021	0.635	0.717			
Valence	0.712	0.480	0.208	0.579	0.391	0.948		
Vividness	0.613	0.604	0.142	0.560	0.452	0.843	0.895	
Emotions	0.591	0.560	0.175	0.573	0.303	0.689	0.693	0.905