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TRABAJO DE FIN DE GRADO
MARKETING AND PSYCHOLOGY TO
BETTER UNDERSTAND CONSUMER
BEHAVIOUR

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1. ABSTRACT

This dissertation explores the multidisciplinary intersection of marketing and psychology with the primary objective of analysing the impact of both disciplines on consumer behaviour. Acknowledging that consumption is often driven by subconscious impulses, the study also aims to determine whether individuals respond coherently to their experiences when questioned about factors influencing their choices.

The research examines seven key variables: attention, emotional engagement, motivation, brand awareness, memory, novelty and purchase intention. Following a conceptual analysis, an empirical study was conducted with 45 university students who underwent a 5-minute Virtual Reality (VR) immersion in a digital supermarket. Data collection paired direct observation with a quantitative survey.

Findings reveal that while the examined variables significantly impact consumer behaviour, there are profound discrepancies between consumers' conscious self-reporting and their observed actions. Ultimately, the study concludes that traditional marketing research should be complemented with more advanced tools to accurately capture the consumers' true decision-making process.

Keywords: Marketing, Psychology, Consumer behaviour, Virtual reality, Supermarket

2. INTRODUCTION

This dissertation is framed within the significant transformations that marketing has undergone in recent decades. During this period, the discipline has transitioned from a traditional focus on isolated transactions and the “4 Ps”, to a broader, relationship-based perspective that emphasizes the relevance of the long-term connection between companies and individuals. In this context, the primary objective of this research is to analyse the intersection of marketing and psychology to better understand consumer behaviour, identifying some of the cognitive and emotional factors that dictate purchasing decisions.

To achieve this objective, the work is structured around several specific goals. The paper seeks to conceptualize and contextualize the evolution of marketing and psychology related to consumer issues, establishing how their integration has given rise to empirical disciplines like neuromarketing. Likewise, real cases of applied psychology in Business-to-Consumer (B2C) marketing are examined, analysing renowned studies of the perception of food (organic versus popular brands) and experiments on non-

logical consumption preferences (Coca-Cola versus Pepsi). The theoretical framework examines the ways in which human decisions are constantly conditioned by subconscious associations and environmental stimuli rather than logical analysis. The core of this research involves the explanation and examination of this paper's key variables, which are attention, emotional engagement, motivation, brand awareness, memory retention, novelty and purchase intention.

Beyond these conceptual goals, another objective is formulated: to determine whether people respond coherently to their experience when questioned about the factors that impact their consumption behaviour. Specifically, the study aims to evaluate whether individuals truly understand the effects of deliberately designed marketing stimuli on their behaviour, or if there is a significant disconnect between their conscious self-reporting and their actual behavioural patterns.

Regarding the research methodology, the study on the one hand has a theoretical component based on a review of academic literature to build the conceptual framework. On the other hand, an empirical part adopted a quantitative and observational nature through a quasi-experiment involving 45 university students. It consisted of a 5-minute immersion using Virtual Reality Headset in a digital supermarket environment, during which the researcher recorded participants' actual behaviour using an observational sheet. Subsequently, participants completed a 33-question survey based on 5-point Likert scales, designed to contrast their conscious perceptions against the reactions they genuinely manifested towards the stimuli of the immersion.

Finally, the paper is structured to guide the reader, articulating theory with empirical evidence through a well-defined chapter structure. Thus, Chapter 3 establishes the conceptual framework, defining the marketing-psychology convergence, the impact on the consumer and the applied case studies. Chapter 4 details the methodological design of the empirical study. Subsequently, Chapter 5 thoroughly explains the results obtained from the survey and observational sheet. The paper closes with Chapter 6, dedicated to final conclusions, business recommendations and the limitations of the quasi-experiment, followed by Chapter 7, which contains the Bibliography.

3. CONCEPTUAL FRAMEWORK

3.1 Marketing and Psychology

3.1.1 The Role of Marketing and Current Consumer-Related Issues

Before focusing on the main topic of this dissertation, it is essential to explain the concept of marketing. It is key to understand that the definition of marketing has unceasingly changed and evolved through time as the discipline did.

Liu (2017); Nicolau and others (2014) reviewed different approaches that have attempted to define this discipline, noting that because the patterns of business and technology are in constant evolution, the meaning of marketing remains subject to change and difficult to integrate in one static definition. Early perspectives, like the one in Bartel's paper (1951), viewed marketing as a distributive system for commodities and services, lacking an emphasis on the social ingredients of the transactions or the exchange process itself. Moreover, Bartels' study (1968) expanded on his previous view, by highlighting the critical role of transaction flows and market separations, while also mentioning ethics as an existing constraint that needed to be known. Also, the contributions of Shelby D. Hunt were instrumental in transitioning marketing from a part of business practice to a social science of its own. Hunt (1978) introduced the "three-dichotomies model" to establish a measurable boundary for the field, categorizing marketing activities into profit versus nonprofit, micro versus macro and positive versus normative dimensions. This differentiation was created to distinguish between activities aimed at financial gain and those that exclude the search of an economic profit, to separate the study of small units from the bigger organizations and to discern between the use of existing phenomena to create marketing strategies and the attempt to prescribe what organizations should do based on a value judgment. By systematizing the scope of the discipline, Hunt paved the path for a broader yet more precise definition of marketing.

Grönroos (1994) studied the need for a radical change in the marketing theory paradigm, stating that the Marketing Mix 4 Ps (Product, Price, Place and Promotion) were obsolete to the then current and future market demands. The author explained that the classical scope focused on single and isolated transactions through external stimuli, approaching the audience as external parts of the company. This perspective was already out of date at the end of the 20th century. On his paper, Grönroos ended up defending a change to a relationship-based marketing.

This view meant a change in the way of interacting with potential consumers, as the companies are supposed to no longer focus just on transactions, but rather on the relationships with individuals. Only when having established long and healthy relationships with the audience, stable and constant transactions will follow.

This goes perfectly with the long-term focus for success in a business, which nowadays is in danger. Today's society often bases consumption decisions on fast and expiring trends. This means that when a business reaches success, it is short-lived before falling into oblivion. Even though, these expiring businesses can sometimes turn out to be an interesting opportunity, for most businesses the goal should be to establish themselves in the market and become a true example for other competitors in the industry.

Finally, in the AMA's or American Marketing Association website (2026) the concept of marketing is defined as "the activity, set of institutions, and processes for creating, communicating, delivering, and

exchanging offerings that have value for customers, clients, partners, and society at large". This definition includes elements that are central to modern academic discussion, including the concept of customer orientation and a broader scope when mentioning society.

With all this, Liu (2017, p.1) defended a value-centred definition that states that "marketing is the activities and value creation processes that facilitate exchanging offerings within the domain of business and benefit the society at large". This statement shows that marketing has shifted from a tool used in business transactions to a discipline of its own, essential for organizational goals and society's well-being.

3.1.2 The Role of Psychology and Current Consumer-Related Issues

Boring (1995) affirmed that Wilhelm Wundt (1832-1920) was the first person that could be called a psychologist, as it was him that defended psychology as an independent discipline, and it was also him that opened the first experimental psychology laboratory in Leipzig, Germany back in 1879.

Although the concept of psychology was already common in the 18th century it was not until mid-19th century that psychology emerged as a branch independent of philosophy, as it previously was closely intertwined with metaphysical concepts. However, once it started being considered as a different scientific discipline, limitless fields of study started to emerge.

To become its own discipline, psychology had to combine the study of physiological aspects through experiments that measured people's natural reactions to stimuli, and the study of the cultural aspects of societies and mankind. So, psychology is a fusion between social sciences and natural sciences.

The early relation of psychology with metaphysical aspects can be appreciated in the origin of the term as it comes from the Greek *psyche* (soul or mind) and *logos* (study or reason). However, the advance of science and technology has converted this vision into a reality-focused study with tangible and measurable aspects.

Colman (2019) defended the inexistence of a generally accepted definition of psychology. Some may define it as the study of behaviour or the science of behaviour, but that definition is too shallow, as it does not mention the underlying unobservable processes that determine behaviour. Therefore, Colman (2019, p. 1299) gave his own definition of psychology as "the science of the nature, functions, and phenomena of behaviour and mental experience".

What was considered the study of the mystery of the spirit, today is understood as a complex interaction of cognitive processes, behavioural patterns and emotional triggers.

Cherry (2025a, 2025b) made a summary of psychology's history and mentions how the dawn of the 20th century marked a transformative period for the study of human minds, heavily influenced by Sigmund

Freud's psychoanalysis school. This doctrine posited that human actions are frequently the complex results of the unconscious mind, suggesting that the underlying drivers of behaviour often reside beneath the surface of conscious awareness. As psychology began to establish itself as a distinct science, this focus on the internal identity opened the way to countless theories that tried to understand human behaviour.

Then, came behaviourism, a stance that sought to bring empirical rigor to the field by focusing exclusively on observable behaviour. In this view, the internal conscious and unconscious elements that lead an individual to a final decision were relegated to an uncertain and strange area, which did not matter as much as the tangible behaviour did. This made people believe of the human mind as a "black box" that reacted to environmental cues.

The spotlight was eventually challenged in the mid-20th century by a phase known as the cognitive revolution. This theoretical shift bestowed again the focus of study on the human mind, while still watching carefully the observable behaviours. Cherry (2025b) defined cognitive psychology as "the study of internal mental processes—all of the workings inside your brain, including perception, thinking, memory, attention, language, problem-solving, and learning". Thus, this school did not only focus on human conscious processing of stimuli but also studied deeply the internal mental processes.

Ultimately, these three different doctrines; the unconscious depth of psychoanalysis, the empirical focus of behaviourism and the structural clarity of the cognitive revolution, collectively shaped the evolution of consumer-related psychology into the multidisciplinary field that it has become today.

This transformative era of psychology, coupled with the beginning of the implementation of precise and sophisticated technologies applied to psychological experimentation, opened big opportunities for different hypothesis. As the 20th century progressed, the ability to empirically measure human reactions allowed research to move beyond plain speculation to rigorous experimentation that fundamentally altered the understanding of the human mind. Grönroos' (1994) paper was a clear example of the application of these innovations.

3.2 The impact of Marketing and Psychology on consumer behaviour

There is a most important premise that must be followed; human beings are not always rational, not even often.

Marketing and Psychology are two realities with constant exchanges, so there is a need to bridge them correctly by exploring the neural and cognitive architecture that dictates customers' decisions. Not taking into consideration human nature and behaviour patterns and reasonings when trying to reach customers may be the biggest mistake a company can undergo, because at the end, the product or service a

company offers is destined to be received by a third party, that must acknowledge value to the purchase.

Maslow (1970) separated the different human needs in unique sectors of a pyramid, establishing as the base of the pyramid physiological and survival needs such as food and water. However, as the most basic needs are covered new levels of the pyramid are reached.

Figure 3.1 Maslow's pyramid



Source: own elaboration based on Loyola and Vicuña (2015)

These further levels are defined by love and belongingness needs, esteem needs and personal growth and self-fulfilment needs. These needs are closely related to pleasure, feelings, etc. They generate a response from the nervous system, either consciously or unconsciously, that can be measured and studied so that companies can awaken the exact feelings and sensations that they try to when designing marketing strategies.

As individuals obtain pleasure from such needs, they are repeatedly searching for their fulfilment, which makes individuals have a positive attitude towards the products and brands that satisfy them. It is the interconnection of all the possible marketing elements that helps create the essence around a product or a company that will result in the satisfaction of the audience's most personal needs, rather than just focusing on one or some elements that integrate marketing.

The integration of marketing and psychology reveals that human consumptions is not merely a rational exchange of currency for utility, but a sophisticated negotiation that needs to attract the audience not only with the characteristics of the product, but also with the opinions and sensations it awakes on them. Therefore, a certain balance needs to be achieved.

Consumer-behaviour marketing is a specialized focus of marketing efforts that utilises the findings of consumer-focused psychology in aspects like mental processes, behavioural patterns and emotional triggers that affect how individuals select, purchase and use products or services. It seeks to understand the relationship between internal cognitive functions like perception, motivation, etc. and external marketing stimuli to understand the consumption decision.

The development of this relationship between marketing and psychology has led to expertise in the different areas of consumer psychology and one of these areas; is neuromarketing. This concept needs to be explained in detail.

“Neuromarketing is a field of study concerning the application of neuroscientific methods to analyse and understand human behaviour related to markets and marketing activities” (Mansor and Isa, 2020, p.1)

Graph 3.1 Marketing and related disciplines



Source: own elaboration based on Mansor and Isa (2020)

To understand this concept better it is needed to define what neuroscience is. The reputed King's College in London (2026) defines it as the “study of the nervous system”. And the nervous system is the body's command, communication and coordination centre. Its primary role is to receive information from sensory organs, process it and send signals so that the rest of the body reacts to internal or external stimuli.

The nervous system is fundamentally divided into two main sections: the Central Nervous System (CNS) and the Peripheral Nervous System (PNS). The Central Nervous System is the body's “processor” as it analyses information and triggers responses. It is composed of the brain and the spinal cord. On the other hand, the Peripheral Nervous System is made from a network of nerves connecting the CNS to organs, muscles and skin. The PNS is also divided in two parts by their purpose. The Somatic Nervous System controls voluntary actions and the Autonomic Nervous System that controls involuntary actions. The latter is further split into its Sympathetic Side which prepares the body for action, and its Parasympathetic Side which makes the body remain in a state of rest to conserve energy. The brain is the primary focus of neuroscience, but the true answer lies on the integration of all the aspects of the nervous system (Cleveland Clinic, 2022, 2023).

Back to Mansor and Isa (2020), they noted that the neuroscience concept was first grasped in 2002 by Professor Ale Smidts, from Erasmus University in Rotterdam, when he explained how neuroscience tools could be used to measure consumers' subconscious decision-making processes like emotions, needs and desires and their reaction to stimuli, like sound or pictures. With all this, neuromarketing can be defined as the interaction of marketing, psychology and neuroscience.

Consumption decisions tend to be automatic and based on subconscious associations, so, understanding and exploiting the benefits that this compound of neuroscience, marketing and psychology offers, can lead to unexpected prosperity. Even though consumers might believe that they are the ones that solely decide on whether they consume a product, the reality is quite different. Human beings are not always rational, and although individuals believe they make up their own decisions, the reality is quite different to those simple assumptions.

Maldonado and others (2023) highlighted how human decisions are not rational but frequently influenced by biases like the aversion of losing or being overconfident.

Thanks to psychology, human reactions to stimuli can be observed, studied, analysed and sometimes even predicted. This can be beneficial to almost every area of social interaction. As human beings are social creatures, the ability to understand and comprehend others can put the one able to do in a position of advantage, in which everything comes easier.

Therefore, psychology must be implemented in every area of business. Not only when managing human resources, but also with financial markets or in activities like trading or stock management, and certainly with the consumers' decision-making process. The patterns of decision-making can be studied and mastered, so, consequently, marketers utilize this information to their advantage.

Mansor and Isa (2020) also mention some of the neuroscience tools that are employed on the neuromarketing investigations. Traditionally, surveys, simple experiments and group activities were the only possible tools that could be used to gather information about consumer behaviour.

Although, this led to good results and successful findings, these results are too dependent on the participants' honesty and their inability to fully understand the reasoning behind their behaviour. Most of the given answers are based on the conscious part of consumers' mind, which leaves them incomplete, as subconscious responses are not obtained. Therefore, frequently the conclusions from these surveys and experiments are wrong, as often people's ideas differ from their actions.

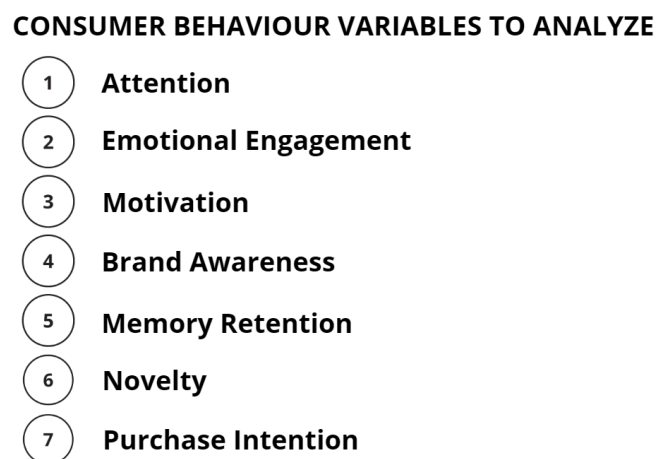
It is crucial to understand the subconscious of consumers. To do so, the main tools that neuromarketing employs can be divided into: the instruments that record the metabolic activity of the brain, which mainly reveals the demand of energy, oxygen and glucose of the brain, instruments that record the electric activity of the brain, which focus on the firing of neurons, and instruments that do not record brain activity.

Many of these tools are expensive and not easily accessible. Moreover, the results obtained are described in clinical terms, so a careful study of the way to understand and interpret them is compulsory so that the gathered data becomes useful to the initial marketing goals.

Thanks to the discovered information by the implementation of these tools, several consumer behaviour indicators can be measured. Some of the main indicators that can be tracked and controlled are emotional engagement, memory retention, motivation, purchase intention, novelty, attention and brand awareness. These elements are the variables that will be treated in this paper.

Heightened emotional engagement is directly proportional to the perceived intensity of an experience. Within the field of neuromarketing, this serves as one of the critical predictors for consumer behaviour. By analysing brainwave activity during stimuli exposure, researchers can measure the ‘encoding level’—a metric that reflects how effectively a message is being memorized. When high emotional resonance coincides with strong memory encoding, the likelihood of purchase intention increases significantly. Furthermore, the success of a campaign often hinges on innovation; novel stimuli enhance attractiveness and persuasion, which guide the audience to a final consumption decision. Ultimately, the synergy between attention and emotion is what drives long-term message retention and effective decision-making. Therefore, a clear and effective design of the marketing stimuli is essential to ensure its own success, which relies on the ability to attract the audience to purchase the marketed products.

Figure 3.2 Consumer-behaviour variables to analyse



Source: own elaboration based on Mansor and Isa (2020)

3.2.1 Attention

Teixeira (2014) addressed the growing challenge of declining audience attention towards traditional marketing methods. Since the birth of technological devices, such as computers, telephones, etc. individuals are constantly being in the receiving end on never-ending stimuli. It is such the number of stimuli they face daily, that people have subconsciously started giving less attention to these campaigns. That constant overstimulation, added up with the fight between companies to retain people’s attention

has driven up the cost they are willing to pay for better marketing conditions. But the return on these investments is declining, which makes the option in competing with the same system but higher costs an unreasonable choice.

The solution is to create adapted and conscious marketing campaigns according to the needs that are trying to be satisfied, the available attention for the given market, the best strategy available, and finally, to capture it all in the marketing content.

Teixeira mentioned alternatives to the high cost of attention, such as lean marketing, in which companies create and distribute their own content or they outsource this process. Even though it may be a risky decision, as the return on investment may vary significantly, today we are constantly encountering content like this with influencers.

Teixeira also mentioned the need to adapt the marketing content to the attention requirements of the sell. This means to shape the ads to work under low levels of attention or to create ads that increase the level of attention.

No single advertisement achieves everything. For multitaskers, high-quality ads are the least effective, as they do not receive the full message sent in a well-thought ad. Action-driven ads are the most adequate for them, as while multitasking they can easily purchase the advertised good or service.

Also, driving traffic and driving sales marketing campaigns are not the same. As the first ones might make the viewer get to the website but might not be persuasive enough to close a sell, and the latter might be good to close the sell, but not to get the audience to the website.

3.2.2 Emotional engagement

Today, more than ever, individuals are subjected to a continuous flow of stimuli and external influences. Great and thorough-thinking marketing is not just a finite event encountered by potential consumers, much rather it exerts a lasting impact on the audience. As the marketers' goal is to appeal to the audience's attention, memory, feelings, provoking on the viewer a subconscious image of the product and the company, so that when the time to purchase their product comes, the potential consumer at least considers it as an acceptable and reasonable choice.

It is also important to understand the potential consumers' profile. As attention is a limited resource, there is a need to adapt the marketing campaigns to these profiles so that certain emotional triggers will be spike, consequently capturing the audience's interest. In today's internet the virality of a campaign is highly dependent on the capacity to reflect on the audience's situation, as it has been proven that content sharing by the own customers is one of the most important ways to let the company and products be

known.

Jaramillo and others (2024) discussed the need to adapt to customer's preferences. This study focused on the marketing aspect around the food industry, and it described how all consumption decisions are highly influenced by emotions. Therefore, marketers are obligated appeal to that part of human nature.

The paper showed that companies need to improve their knowledge and abilities to reach the public, so that people form a positive opinion of the company and the products it offers. And after having formed a positive image of the company on the audience's brain, they will be subconsciously guided to consume the products the firm offers. However, it is crucial to adapt the marketing strategies depending on the industry they are a part of and the customers' expectations and desires. As there are different kinds of needs, different aspects of individuals' characters must be aroused.

Jaramillo and others (2024) clearly proved this statement. Especially, in the case of nourishment needs, as the survey of this paper was about the food industry. This paper's survey clearly showed that quality, health and the related benefits of the products are the main desirable conscious quality aspects expected by the audience. This can be clearly appreciated with the increasing concern for natural products and ingredients. Therefore, companies should attempt to adapt their product portfolio and their marketing campaigns so that they focus on highlighting these aspects.

However, when searching for luxury product whether clothing, cars, watches, etc. even though quality is an important part of the product, it is not close to the most essential one. That main aspect of the product is the image, aura, identity, perception or whoever people decide to call it. Luxury marketers focus on evoking a feeling of uniqueness to those who purchase their product. They make their companies and brands, small and select communities in which the members are always the main characters.

It is a process and no parts can be skipped. It is essential that campaigns appeal to the audience's main interests, so that they capture their attention, and they feel excited about the product. That will lead to a favourable image of the brand, and when the opportunity comes, the audience's subconscious will finish the job with the choosing of the marketed product.

Babu (2014) underlined one basic principle of human nature. People always prefer something easy and less time consuming in their busy life.

This study also mentioned culture as an essential part of an individual's identity. Culture is a combination of traditions, character, behaviour and self-identification of a group of human beings. It is impossible to remove the culture out of a human-being. Every understanding process is influenced by the culture of the receiver and the culture of the message-sender. In short, culture is a hugely important aspect of oneself, and it is so rooted in one's character that it stands at the subconscious responses.

In fact, psychological studies show that when facing a consumption decision, the potential consumer faces three phases of approval, which are: the individual, the societal and the situational. Regularly, only if the decision is correct for each one of these three aspects the final choice to make a purchase will be made. This means that marketers must pay careful attention to each level.

Graph 3.2 The three phases of consumer approval



Source: own elaboration

Another psychological-related issue that should always be studied related to the personal aspects of the potential consumers, is the lifestyle of the consumers. This does not mean just to define on a simple level the target group, with simple characteristics such as age, job, race...

The lifestyle goes beyond that and focuses on a deeper level to understand why consumers behave as they do. This includes studying the lifestyle people have, the reasons why they choose that way of living, the way they consume, and the view people have of themselves and others.

3.2.3 Motivation

Another area in which psychological study applied to marketing has a major impact in is motivation, as it is highlighted in Gherasim and Gherasim (2020) and Maldonado and others (2023). Motivation can be defined as the motives or reasons that determine the performance of an act or a conduct, in this case, consuming.

Gherasim and Gherasim (2020) demonstrated that there are many approaches to classify and explain motivation. One of the most important classifications is the one that separates between the reasons that create that motivation. It is common to think that motivation is almost limited for hedonic reasons, like wanting to be admired or envied by others. This often makes people obsess with a bigger house or a better car. But motivation has many faces. People can be motivated to consume certain goods out of other aspects like necessity, moral obligations, the characteristics of the product, prices or by the transparency in which the product is presented.

As a related continuation to the previous variable, it is interesting to mention the classification of the forms of motivation depending on human personality, which separates between cognitive motivation and affective motivation. While cognitive motivation focuses on objective aspects like the products characteristics, affective motivation is related to the fulfilment of needs and the arousal of feelings, which can be positive like praise or encouragement and negative, like urgency or blame.

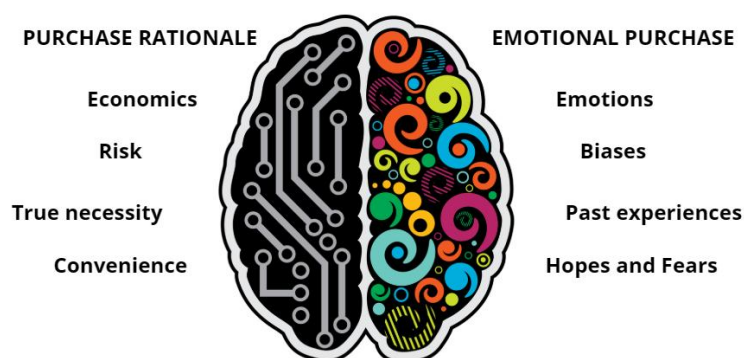
When receiving information, the human brain has a complementary process of capturing and interiorising that stimuli. Some may believe people receive the information at face-value and then they make an opinion for themselves. But that is a short-sighted view.

Human beings possess something that makes them unique and conditions most of their decisions. Humans feel. The limbic system, which is about 10% of the brain is responsible for the nourishment of emotions and its effects. Denying the response the limbic system has when receiving stimuli and its consequences in the method in which that data is treated would be ignoring one of the most important functions of the human brain and its potential consequences.

Therefore, business-centred psychology must focus on a wide variety of facets. That leads to marketers always trying to trigger certain aspects to nourish the potential consumer's motivation.

Moreover, Maldonado and others (2023) also briefly explained the need of the framing effect. When making decisions, people are often influenced by the given presentation of the options. It is logical to decide in favour of what seems to be the most positive option, but, one should question if that option really is the best one, or if only its marketers have understood better than others what the audience is looking for, and they have decided to orient their presentation towards that which is wanted to be heard.

Figure 3.3 Stimuli assimilation



Source: own elaboration based on Maldonado and others (2023)

3.2.4 Brand awareness

The American Marketing Association (2026) defines brand as “any distinctive feature like a name, term,

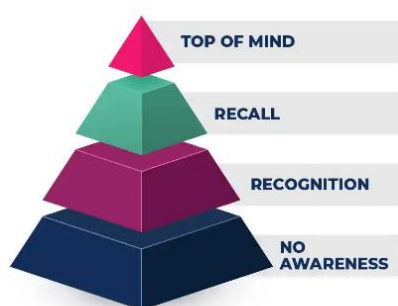
design, or symbol that identifies goods or services”. Frequently the brand is considered the essence of a business, as it is the representation of the characteristics that make a business or a product recognizable and unique. Business with a strong brand have a strong advantage over their competitors, because even though they may compete in the same sector, the flare and consumer engagement that a successful brand image can evoke, will separate the company from those competitors that do not give enough attention to how the company and its products are presented. It is no secret that consumers are attracted to companies with a brand they relate to and companies they know, instead of businesses they are not familiar with.

Mokhtar and others (2018) explained that brand awareness is the most significant dimension of brand equity. It serves as the foundation upon which other brand assets, like brand image and the perception of quality are built. The importance of awareness lies in the mentioned familiarity effect. In a crowded market, awareness acts as a filter, a customer who is familiar with a brand will have fewer doubts about purchasing from that brand again.

Brand awareness relates to the strength of the brand's presence for the audience, while brand image is closely related to the impressions linked to the brand name. These aspects are interrelated; the one needs the other; however, it is undeniable that the base for a successful brand, is the brand's simplest concept and identity.

The Brand Awareness Pyramid illustrates the specific stages of that mental climb. It begins with No Awareness, where the brand is a total stranger to the audience. As visibility grows, it moves to Recognition, where cues like a logo trigger a sense of familiarity. This evolves into Recall; when the consumers can identify the brand unaided. Ultimately, the goal is the Top-of-Mind status, where the brand becomes the immediate, subconscious first choice.

Figure 3.4 The Brand Awareness Pyramid



Source: reebootonline.com

Chovanová and others (2015) clarified that brands' perception is stored in the consumer's subconscious

and will later have an important influence in other factors of the decision-making process, like the memory retrieval or the emotional engagement.

For a business to succeed, it is essential to focus on building a brand, as it will eventually be one of the most powerful and organic forms of consumer attraction and retention the business will ever have. Creating and establishing a brand identity, is one of the more efficient ways of creating significant and everlasting marketing content. It allows businesses to differentiate themselves in a crowded marketplace, turning a functional product into an emotional experience that resonates with the audience.

A perfect example for the development of a brand can be appreciated today in the Spanish clothing sector, with the emergence of Nude Project. This business seems to have made the relationship with the consumer its primary focus, rather than the transactions. Through influencer marketing, catchy slogans, highly detailed stores, pop-up stores, social media interactions and other strategies they have created a brand image for their business, and more importantly, they have become a household name, that their audience recognizes and understands.

3.2.5 Memory retention

Kayabas and Macar (2017) stated how the human brain capability to store memories of past events is strongly related to the intensity of the emotions aroused by the event. As lately marketing has focused mainly on consumers, it is essential to create a lasting reminder of a product or brand. Therefore, companies must try to generate the desired first impressions, as often the first impression will determine the potential reach of the product.

The possibilities for a product to be remembered can be enhanced when psychological discoveries are implemented in the marketing strategies. There is a phrase that shows the importance of people's perception when trying to enter the audience's memory "If marketing is a battle of perception, not product, then the mind takes precedence over the marketplace." (Ries and Trout, 2002, p.15).

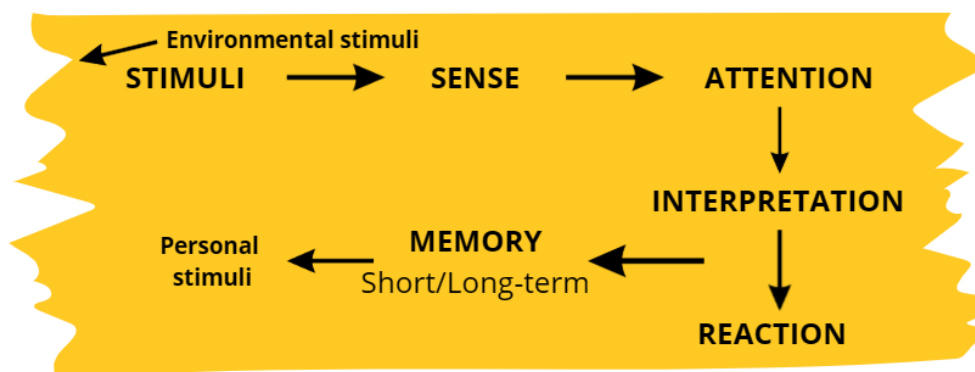
Humans are under constant stimuli, so, not every piece of information is contemplated. Only important or at least appealing stimuli are consciously received, and later worthy of entering people's memories. Therefore, those stimuli need to awaken certain brain functions that will facilitate the memorisation process. Moreover, the message should be simple and designed to tickle consumers' interests rather than focus just on the product. For instance, powerful images or catchy slogans are more than enough to attract the audience and make them remember the product.

Short and long-term memory are only at the end of a process which starts with the exposure to stimuli and the activation of the needed senses to perceive the information; it is important for marketers to study and understand the senses that they want to captivate. Then comes the attention and interpretation as it

is vital for the stimuli to appeal to the audience.

Finally, the consumer would form an opinion of the product and the possibility of a future purchase depending on the strength of the neural encoding and the emotional resonance established during the exposure.

Figure 3.5 The process of memory activation



Source: own elaboration based on Kayabas and Macar (2017)

Thankachan and Yadalam (2018) provided a critical empirical look at how neuromarketing techniques affect consumer behaviour. The study isolated specific stimuli to measure their individual impact on a consumer's ability to store the information. The research showed how advertisements that employed neuromarketing techniques in audio triggers, visual positioning or in colour and imagery were significantly more attractive and were retained better in consumers' memory. Although these tactics were found useful in memory retention, when attempting to develop a brand image these efforts are not necessarily integrated into the brand's core identity, which remains a more complex, long-term objective within the marketing process.

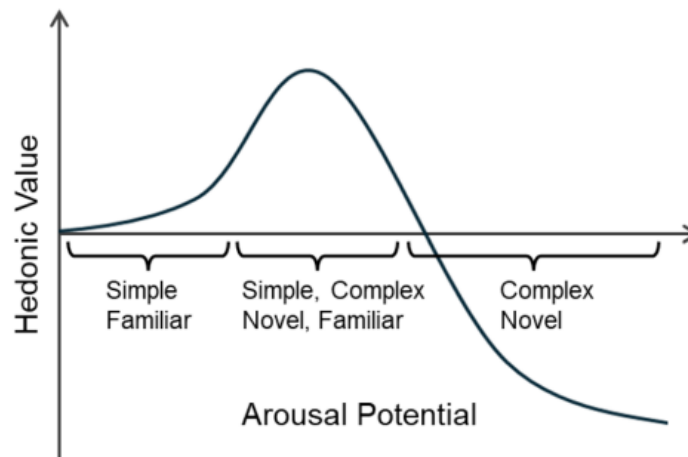
3.2.6 Novelty

By now, it must be known that viewing consumption behaviour as a rational process is an enormous mistake. Most of the time, people do not clearly know what they want, but they subconsciously want to be constantly aroused by receiving new stimuli. It is appropriate to highlight that the repeated exposure to the same stimuli makes it less powerful, and then the new stimuli become essential triggers, enhancing attractiveness and persuasion persuading audiences towards a final consumption decision.

However, according to Garcia-Torres (2004, 2009), the search for novelty must be governed by the need for a balance between originality and redundancy. This relationship is best illustrated by the Wundt-Curve. This curve is an inverted U-shaped model that suggests that positive perception peaks when a stimulus is neither too strange nor too common. As Scitovsky (1976) noted, complete originality can be baffling,

while perfect banality is simply boring. Therefore, for a new product to be pleasantly stimulating and trigger a purchase decision in consumers, it must offer a moderate amount of novelty, enough to be exciting, while remaining sufficiently familiar to be processed effectively.

Graph 3.3 Updated Wundt-curve



Source: Honda and Yanagisawa (2025)

Garcia-Torres (2004) and Garcia-Torres (2009) illustrated how although novelty is a crucial aspect when making a consumption decision, it fades over time, as people create habits of consuming regularly what in the past was new, removing this innovative appeal from the product. That is the reason why it is vital that the product also offers value to the consumer, by satisfying certain needs. If the consumption experience is successful it would lead to the creation of a habit, which means that the consumer transitions from a state of active, novelty-seeking exploration to a more stable pattern of behaviour. If not, the consumers would buy a company's goods out of curiosity and enjoy them until the exciting feeling that novelty provokes eventually fades, then, the product and maybe even the company, would face oblivion.

Ultimately, this process transforms a punctual transaction into a long-term relationship, where the product's value consistently reinforces consumer's satisfaction. However, to prevent this habit from fading into boredom, it remains a responsibility of the company to implement novelty into their already successful products and services to maintain an optimal level of arousal.

3.2.7 Purchase intention

The last variable considered in this dissertation is potential customers' purchase intention. It is important to separate purchase intention from actual purchases, as it is also important to differentiate it from other variables like motivation, as the concepts can sometimes get mixed. Purchase intention is the indicator of the individual's willingness to purchase a product. It is the previous step that leads to consumption (Wee and others, 2014).

When talking about purchase intention it is mandatory to mention the Theory of Planned Behaviour (TPB) (Bosnjak and others, 2020) (Wee and others, 2014). This theory was created by Ajzen in 1991. Although it is relatively old, it has widely been applied to the prediction of final consumption behaviour. At the heart of the theory lies the intention, which is why it is directly applicable to this study. Logically, if marketers want people to buy a product the single strongest indicator of the desired behaviour is their intention to do so.

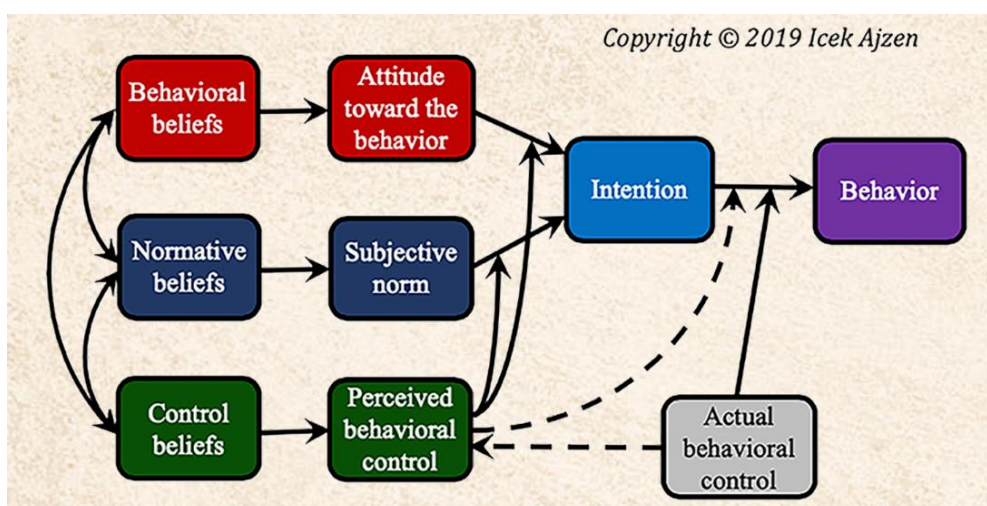
The theory states that purchase intention is composed of three aspects. First, the attitude towards the behaviour. This is the individual's positive or negative evaluation of the behaviour in question taking into consideration behavioural beliefs and possible outcomes.

Second, are the subjective norms or social factors. These represent the perceived social pressure to perform or not a particular behaviour. People are prompted by normative beliefs and their likeliness to comply.

At last, comes the perceived behavioural control. It refers to the individual's perception of how easy or difficult will it be to perform the behaviour. This factor is based on control beliefs aspects like money, time, skill and cooperation of others and in how each of these factors influences the final action.

The first two aspects affect directly on the purchase intention; however, the final aspect not only affects the previous two, but also has a decisive impact on the final behaviour. Even when having strong intention based on a positive attitude and the support for others the lack of control of the situation for example for a lack of money can put an end to all the intention.

Figure 3.6. Representation of the Theory of Planned Behaviour



Source: Ajzen (2019)

3.3 Case Studies

3.3.1 *Coca-Cola vs Pepsi*

One of the most famous experiments on the subconscious and non-logic aspects that affect consumer behaviour was a study conducted in 2004. This investigation tried to decipher the consumption preferences people had for Coca-Cola or Pepsi.

McClure and others (2004) doubted why people seemed to prefer one of these drinks rather than the other even though both have almost identical composition. This could only respond to subjective details. They discovered that cultural preferences united with the delivery of the product has an immense ability to shape people's perceptions.

During this study, Coke and Pepsi were given to humans in direct taste test and in passive experiments, collecting data of their mental and subconscious reactions through a functional magnetic resonance imaging (fMRI).

At first, it may have appeared logical to expect that people would choose the drink that they find that tastes the better. But this is too simple, it would have been a mistake not to consider that people are constantly receiving outside stimuli, which shape their behaviour. This tended out to be particularly true for this experiment, as Coca-Cola and Pepsi have a strong brand image and presence that appeals to people's subconscious to make them consume their drinks.

To prove this, the taste tests were anonymous; subjects were given a cup containing a sample of each of these drinks and they had to decide which one they preferred, and semi-anonymous; in which subjects knew the content of one of the cups and did not know the content of the other one, being possible that the content in the second cup was the same as the first one or the other brand's product. The anonymous taste tests showed people's preference was divided into the two brands.

On the contrary, it was the semi-anonymous taste tests that revealed the overwhelming preference for Coca-Cola. The Coke label made subjects select the cup with the label over the unlabelled cup, even when that second cup also contained Coca-Cola. Also, the view of a Coke can before the taste test provoked the activation of many more areas of the brain than in the case of a Pepsi can.

As a conclusion, this study was one of the first ones to show that consumer decisions are the result of a complex interaction between two distinct neural systems: one driven by immediate sensory reward, in the form of taste and image, and the other by stored cultural knowledge and brand perception. This study suggested that thought-out marketing is a powerful force capable of overriding sensory input.

3.3.2 Organic vs Popular brands in food perception

The research conducted by Fehse and others (2017) addresses a critical discrepancy in modern consumer behaviour in the food sector. While traditional marketing suggests a high valuation of organic food for its obvious health benefits, market data reveal that well-known brands with a lower nutritional profile, continue to dominate sales.

To identify the foundations of this intention-behaviour gap researchers utilized also a fMRI on 18 subjects to determine if the added value of a brand, whether it is a popular or organic brand, activates distinct areas of the brain.

Participants were exposed to food logos belonging to two categories: the well-known conventional producers and those specifically marketed as environmentally sustainable with several specific food products, constant in both cases to isolate the effects of each brand's characteristics.

The study discovered significant neurobiological differences in how the brain processes the stimuli for these two brand types, revealing a Medial vs Lateral split in the prefrontal cortex activity (mPFC and IPFC). When subjects viewed popular conventional brands, there was a higher activation of the medial prefrontal cortex; a region associated with self-referential processing, emotional valuation and reward. This indicated that popular brands trigger strong emotional responses on the audience as an almost automatic preference based on familiarity and social reinforcement shows. In contrast, organic brands triggered high activations in the dorsolateral prefrontal cortex (dlPFC), a region traditionally linked to cognitive control and cold logical processing.

This implies that brand information substantially affects food stimuli through two discrete and independent brain pathways; popular brands are frequently encoded as a reward in the mPFC, whereas organic attributes are processed in a logical way in the dlPFC.

Ultimately, that rational way of visualizing organic brands suggests that the organic attribute is treated as a normative and ethical issue that requires mental processing and self-control over immediate impulses. This finding is key, as it provides a biological explanation for why consumers often fail to choose the healthier and more responsible option and instead consume products from popular companies that are not as healthy or even healthy at all.

Moreover, this study emphasized on the fact that it is vital for every company to notice the importance of a well-rounded marketing strategy where the brand not only is perceived as the logical or ethical consumer choice, but also generates emotion in the audience, as this will trigger the automatic reward-responses.

4. EMPIRICAL STUDY

4.1 Justification of the quasi-experiment

As the purpose of this undergraduate dissertation is to analyse the intersection of marketing and psychology and their impact on consumer behaviour, an empirical study was found suitable for conducting a comprehensive analysis of these dynamics in the explained variables. This study had a quantitative methodology, based on the replies of a designed survey involving items related to the previously explained variables. Participants would only be allowed to answer the survey once they had first taken part in a 5-minute immersion in a VR scenery chosen to stimulate the mentioned variables, so that later they could reflect on the impact of the scenery on their experience.

This empirical study had a dual purpose. First, its goal was to identify tendencies and associations that enable marketers to understand how consumers act. Second, the study tried to show if participants answer accurately based their immersion or if when being asked about subjective aspects and perceptions, like most of the explained variables, people downplay the stimuli's influence on them, do not remember their actions and consequently, are not able to maintain a coherent and objective account of their own decision-making processes. This last part was studied by comparing the results of the survey with an observational sheet of each participants' immersion.

4.2 Selection of the participants

The sampling process followed a convenience sampling method. The participants were young people of similar ages. As they were contacted through university connections all of them were currently pursuing a university degree. Previous experience with VR Headset was not required to participate. Before starting the quasi-experiment, they had to sign a consent form (see Annex II), where they confirmed their willingness to participate and their acceptance of the quasi-experiment's terms.

The sample chosen to carry out the study consisted of 45 people; 29 women and 16 men. All of them were in the age range from 18 to 29 years old. All participants' responses were considered, as they all met the criteria of the study.

The characteristics of the final sample are shown in the following table:

Table 4.1. Technical sheet of the investigation and description of the samples

Information collection	Google Forms survey after VR immersion
Place	Faculty of Economics in Universidad de Burgos, Burgos, Spain
Sample	45 participants
Date of field work	13 th – 16 th April 2026
Characteristics of the sample's participants	
Age	18-29 years old: 100%
Gender	Women: 64,4%; Men: 35,6%
Level of studies	University degree (already in possession or currently studying for it): 100%
Current working situation	Student: 100%; one student was also an employee
Previous experience with VR glasses	Yes: 51,1%; No: 48,9%

Source: own elaboration

4.3 How the quasi-experiment took place

For this paper's empirical study, it was found that the best option was to design a quantitative investigation, via a Google Forms survey (see Annex III). But before clarifying the survey's content, it is important to indicate that the empirical study consisted of two phases.

First, the participants used an Oculus Meta Quest VR Headset provided by the GIR's Research in Marketing and Innovation (R+M+I) group at the University of Burgos. This equipment allowed them to immerse themselves in a virtual supermarket scenery¹, where they had 5 minutes to wander through the supermarket and to notice everything there (products, offers, distribution of the store...) with complete freedom of movement. The scenery allowed the participants to move through all the surface of the store, however, it was not a fully interactive experience, as it did not allow other actions like grabbing products or paying for them. While the contributors were using the Virtual Reality Headset, the researchers² were

¹ Scenery found in Matterport Discover (2026), Albert Heijn Dutch Supermarket. Available at:

<https://discover.matterport.com/space/ded7xgeFMnA>

² I, Germán Blanco Loa, was the author and sole researcher of this dissertation. However, during the empirical study I received the help of Jorge Castañ Berniz, an associate researcher in the GIR Research in Marketing and Innovation R+M+I from the University of Burgos. He controlled the aspects of the VR Headset and contributed eventually to the completion of

able to see their actions through a computer screen. As the participants were immersed in the scenery, the most noticeable aspects of their immersion were noted in an observational sheet (see Annex IV), which later would be used to analyse the coherence of the participants' answers to the survey, compared with their VR experience noted in the observations by the researchers.

In the following table the conditions of the quasi-experiment are indicated:

Table 4.2. Conditions of the quasi-experiment

1	All the participants were standing during the quasi-experiment
2	Same virtual space for all participants
3	All participants started the quasi-experiment in the same position
4	Same duration of the immersion for all participants
5	Post-immersion answering of the survey
6	Silence in the room while the development of their experience

Source: own elaboration

Then, after the 5-minute immersion in the digital supermarket, the participants had to take a 33-question Google Forms survey, excluding the basic introductory indications that were: age, gender, studies, current working situation and previous use of similar digital tools. The questions were purposely designed to represent the manifestation of the variables explained in the conceptual framework in the context of the digital scenery where they immersed.

4.4 Measurement scales and design of the questionnaire

To establish the scale of measurement of each variable, it was found that the optimal decision was to employ the same criteria of other investigations on the same aspects that were employed for this paper.

The scale to measure the responses to almost all the questions of the survey is based on the Likert Scale. This is a structured rating system used in surveys to measure attitudes, opinions, behaviours by analysing the intensity of the participant's responses. This measuring system was first created in 1932, but it remains widely used for quantitative marketing purposes (Joshi and others, 2015). For this study, the scale was adapted to the specific requirements of each variable, utilizing only 5-point scales. However, 7-point formats are also common.

Next, there is a brief description for the measurement of each of the studied variables.

some observational sheets.

4.4.1 Attention

Although the Teixeira's (2014) attention-related paper explained how very different experimental trials were undergone, for the attention related questions of this paper's survey the method of directly measuring the variable used in the Banytè and others' (2025) paper was the more convenient.

That paper designed 8 different items to measure the consumers' visual attention in its survey. The responses to these items ranged from a 5-point Likert scale in where participants could choose from strongly disagree to strongly agree (strongly disagree-disagree-neutral-agree-strongly agree).

For this paper's study of the attention variable the same number of items and the same scale of measurement was used.

4.4.2 Emotional engagement

A 5-level Likert scale is the measuring method that Babu (2014) used in his study regarding the impact of marketing tools on consumers' psychology, where the options ranged from strongly disagree to strongly agree. Therefore, in this paper's research the emotional engagement questions were answered with the same options (strongly disagree to strongly agree).

In Babu's paper there were almost 30 items to measure five variables, however these variables are of different nature. One of the measured elements in his study was participants' entertainment or excitement levels. This aspect aligns perfectly with the emotional engagement variable as it is one of the main emotions that is tried to be awaken with marketing strategies. Moreover, it was thought as the most appropriate emotional reaction to measure in the context of the study's quasi-experiment. Therefore, for this paper's emotional engagement measuring 5 items were also designed.

4.4.3 Motivation

Regarding the motivation variable, Maldonado and others (2023) paper described deeply the results of the investigation but did not mention thoroughly the methods employed.

It was the study by Rayi and Aras (2021), that investigated how product innovation and motivation affect consumer behaviour for weight loss processes, the one that served as the basis for defining the measurement of this variable in this paper's study. In its research method Rayi and Aras used a survey where the answers were based on a 5-level Likert scale, ranging as in the emotional engagement aspect, from strongly disagree to strongly agree.

And for this variable Rayi and Aras' paper fixed 4 direct items, therefore for this variable's study, 4 items were also determined.

4.4.4 Brand awareness

The paper by Mokhtar and others (2018) about the effects of different aspects of a brand to consumer behaviour although useful to explain this variable, it was not completely suitable for the empirical study of the aspect, because of the lack of precise indications in the conduction of its empirical study.

Consequently, the paper by Hanzae and Yazd (2010) was found more appropriate as it stated that for measuring brand awareness the authors used 4 items. These questions were designed to be answered with a 5-option Likert scale, where the options also ranged from strongly disagree to strongly agree. The same number of items and options were used when designing this paper's measuring techniques for brand awareness.

4.4.5 Memory Retention

Based on Endo and Roque (2017) questionnaire, for this paper's memory retention study, 2 items were designed. One item with three sections, in which participants would answer on a 5-point Likert scale with the following options: I do not remember; I remember that, but could not describe it; I remember it and could describe it with few details; I remember that object and could describe it in almost every detail; and I remember it and could describe it with all features. And a second item, which was a question asking for the 3 most remembered elements. In Endo and Roque's (2017) paper more sub-questions were asked for what in this paper was the first item but this adaptation has been made for the sake of this study's context and extension. Moreover, although the reference paper's survey had more items, the questions focused on memory retention and therefore applicable for the study of this variable, were just the two that were implemented.

4.4.6 Novelty

The Garcia-Torres (2004, 2009) novelty papers before mentioned to explain the variable, drew a model for maximization of utility and habit formation when considering novelty. So, although useful to explain the novelty concept, the application of its practical aspects for this paper's research is not suitable.

For measuring this variable in this paper's study, Rayi and Aras' (2021) paper was also used as a reference. Consequently, 4 items³ to investigate the manifestation of novelty in this quasi-experiment were designed. These items were created as a 5-level Likert scale where answers ranged from strongly disagree to strongly agree, like in Rayi and Aras' paper.

³ In Rayi and Aras (2021) questionnaire the 4 items that measured novelty are the ones related to innovation.

4.4.7 Purchase intention

Wee and others (2014) paper was useful to find a suitable way of measuring purchase intention for this paper's empirical study. For a direct study of purchase intention, the referenced paper used 6 items which could be answered with a 5-point Likert scale in where 1 was low and 5 was high. This is exactly what was used in this paper's survey.

The different items of the survey were the following that appear on the tables.

Table 4.3. Summary of the survey's questions for each variable

Variable	Item	Answer	Source
Attention	A1 to A8	5-point Likert scale: from strongly disagree to strongly agree	Banytè and others (2025)
Emotional engagement	EE1 to EE5	5-point Likert scale: from strongly disagree to strongly agree	Babu (2014)
Motivation	M1 to M4	5-point Likert scale: from strongly disagree to strongly agree	Rayi and Aras (2021)
Brand Awareness	BA1 to BA4	5-point Likert scale: from strongly disagree to strongly agree	Hanzaee and Yazd (2010)
Memory retention	MR1.1 to MR1.3	Likert scale: from I do not remember to I remember it and could describe it with all features	Endo and Roque (2017)
	MR2	Open question	
Novelty	N1 to N4	5-point Likert scale: from strongly disagree to strongly agree	Rayi and Aras (2021)
Purchase Intention	PI1 to PI6	5-point Likert scale: from low to high	Wee and others (2014)

Source: own elaboration

5. RESULTS

Upon completion of the study, the data gathered from the surveys and observational sheets yielded the following results. As mentioned before, the survey was divided into eight sections (one for each studied variable and the last one for sociodemographic questions), so next, the results regarding each section

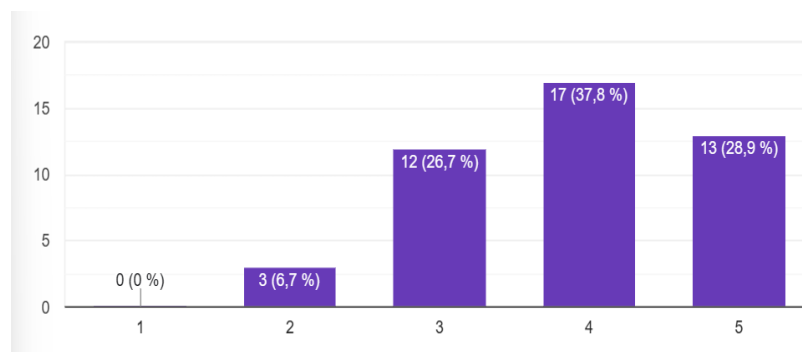
will be analysed. Due to this paper's length constraints, only the most important and surprising results were reported⁴.

5.1. Attention

In the virtual scenery, attention could be triggered by numerous aspects like promotional areas, highlighted prices, "hotspots", etc. The answers to this variable's questions lead me to support my initial hypothesis based on the idea that people do not give coherent answers regarding their attention set off, as frequently people's actions are automatic and do not require of a thorough thought process. This could mainly be because the scenery of this study is well-known to society as a whole and therefore it initiates subconscious actions and patterns.

This idea can be appreciated in the fact that 66,7% of the participants stated that the colourful signs and promotional exhibitors immediately caught their attention (positions 4 and 5 of the Likert scale), it is important to stress that the remaining 33,3% (positions 1, 2 and 3) do not believe that their attention was really sparked, whether consciously disagreeing or declaring themselves as indifferent to that stimuli (see Graph 5.1). That does not go well with the notes of the observational sheets as almost all participants did somehow pay special attention to the highlighted staff of the scenery. In fact, these elements were certainly, one of the most observed items of the store.

Graph 5.1. Visual impact of promotional displays and posters

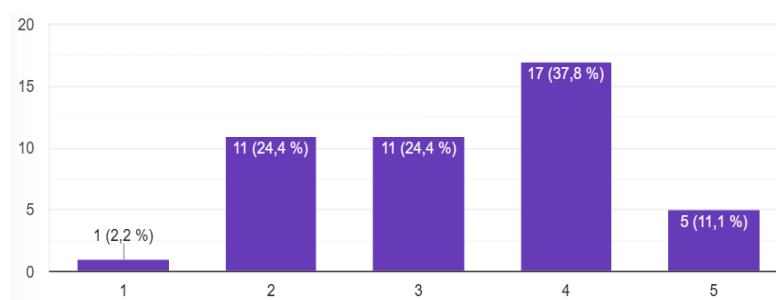


Source: own elaboration

Moreover, exactly 51% of the participants (answer options 1,2 and 3) stated a disagreement or indifferent position to the fact that they, as participants easily could maintain the attention in the products (see Graph 5.2).

⁴ For the reviews of the results, groupings of the possible answers have frequently been done. That is, on the one side, combining the number of responses between agree and strongly agree. On the other side, combining the number of responses between strongly disagree and disagree. The neutral or indifferent position joined either of the sides, depending on the interpretation of the results that wanted to be given, or it remained as an independent position.

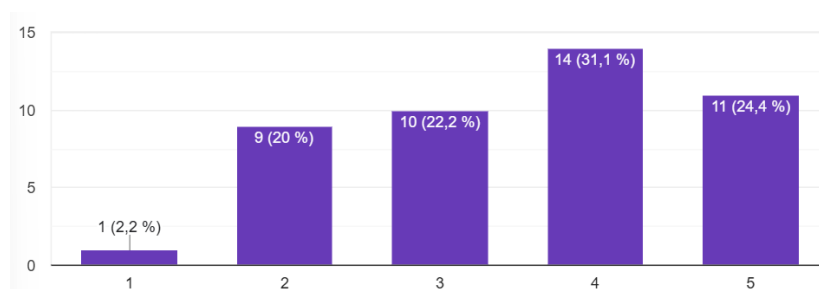
Graph 5.2. Assessment of attentional focus vs. distractions



Source: own elaboration

What is more, 44,4% of the participants (positions 1,2 and 3) also had the same opinion regarding their ability to identify price tags and discounts (see Graph 5.3).

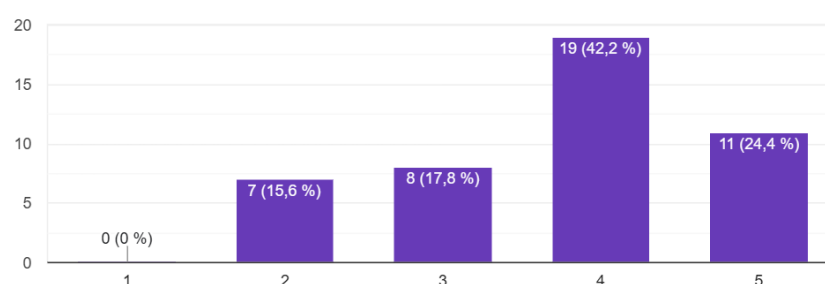
Graph 5.3. Efficiency of attention in identifying price and discount information



Source: own elaboration

However, 66,6% of the participants (positions 4 and 5) agreed with the fact that the “hotspots” and specific product highlighted areas caught their attention (see Graph 5.4).

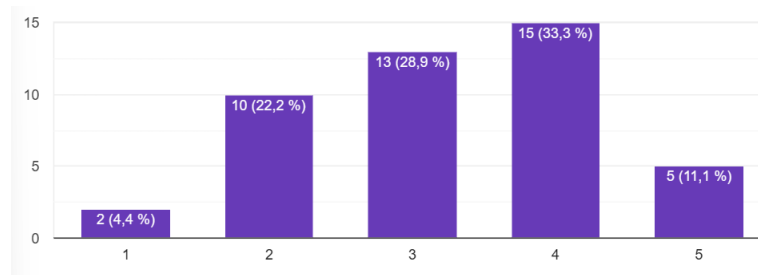
Graph 5.4. Effectiveness of highlighted areas “hotspots” in capturing user attention



Source: own elaboration

Moreover, 44,4% of the participants (positions 4 and 5) stated that they were not distracted by irrelevant elements of the virtual scenery, while the remaining 55,6% had a disagreement or neutral position towards that statement (see Graph 5.5).

Graph 5.5. Resilience of visual attention against irrelevant environmental stimuli



Source: own elaboration

All in all, the observations about the attention of the participants during their immersions, showed that the most noticed elements of the scenery were those related to colourful signs, discount signs and promotional products. In fact, it was mentioned in almost every participation observational sheet. This clearly revealed the discrepancy between the participants' experiences and the answers they gave to the survey questions, as a third of the participants stated that those elements did not capture their attention (see Graph 5.1).

However, the immersions' observations also demonstrated that participants were distracted by different elements of the virtual scenery and even by the mere use of the VR Headset. Even though, almost all the participants were distracted at some point of the immersion, almost 50% could not recognize their instants of inattention (see Graphs 5.2 and 5.5). This goes to show people's inability to answer objectively and consciously questions regarding this variable.

Marketers should embrace these findings, as they need to act considering that people surely pay attention to their surroundings, but often, in routine purchase experiences, like the one in the quasi-experiment, they do it subconsciously. Therefore, they must adapt their marketing strategies and contents to the expected customer experience for the products or services that are being offered.

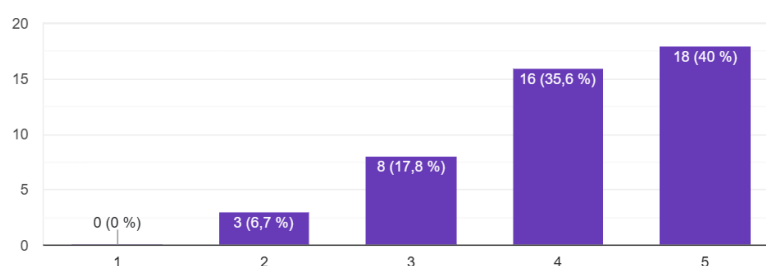
5.2. Emotional Engagement

The engagement questions of the survey were focused on the feeling of excitement aroused by the marketing efforts of the scenery in the participants.

First, it is important to state that the observational sheet of most participants collects a general feeling of entertainment as they often smiled, made comments out loud or had some curiosity signs as constant head movement during the immersion

That excitement feeling can be appreciated with the fact that 75,6% of respondents (positions 4 and 5) answered that the visual design and colours of the store made them feel excited to start the navigation (see Graph 5.6).

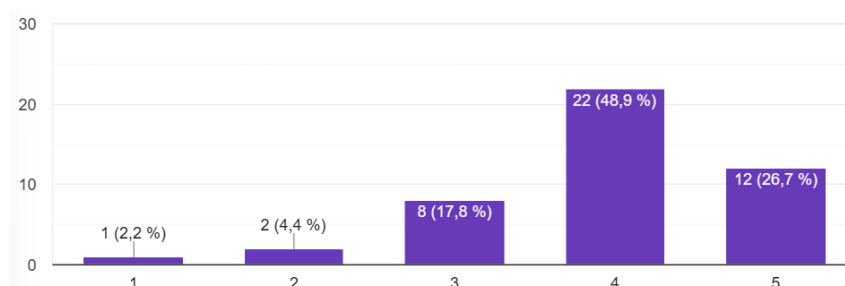
Graph 5.6. Impact of visual design on user emotional arousal and excitement



Source: own elaboration

75,6% of the participants (positions 4 and 5) also revealed that they actively felt excitement and curiosity while discovering the products and sections of the scenery (see Graph 5.7).

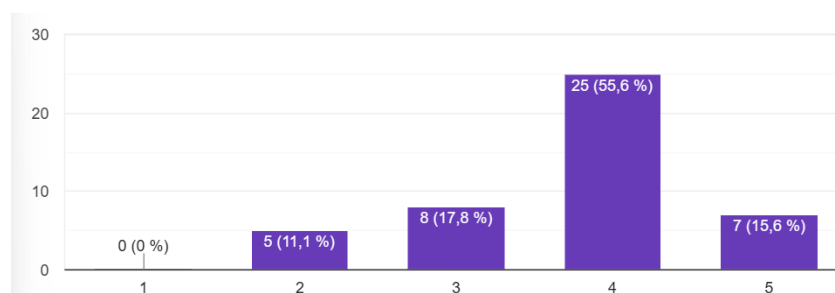
Graph 5.7. Emotional stimulation and curiosity during product discovery



Source: own elaboration

But still, there are two questions that pointed out consumers' misjudgement and tendency to forget and overlook when reflecting on their feelings. 71,2% of the participants (options 4 and 5) signalled that the way the products and offers were presented made them feel excited about the shopping experience products (see Graph 5.8).

Graph 5.8. Affective response elicited by product and offer presentation

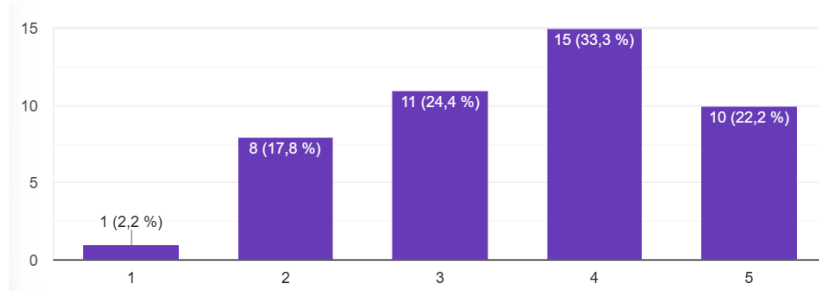


Source: own elaboration

Yet only 55,5% of the participants (positions 4 and 5) indicated they felt a boost of excitement when looking at highlighted prices and discounts signs. That is a 15,7% difference between two closely related questions. And it is even more remarkable when considering that the observational sheet revealed that

the marketing efforts that most attention and reactions got were the highlighted prices, and promotional and discounts signs (see Graph 5.9). This is a great example of people's inability to sustain a coherent line of recognition of the effects of marketing on their behaviour, as almost 50% of the participants seem unaware of the attention and possible emotional effects that highlighted prices and discounts have on them, even though in the observational sheets the prices were always mentioned as one of the most noticed elements of the scenery.

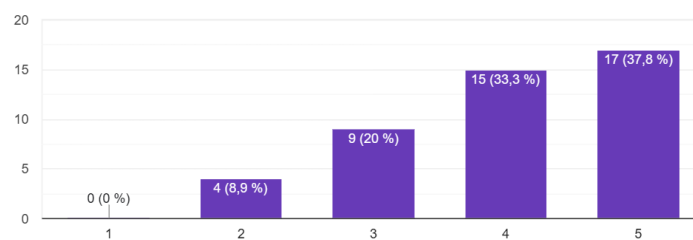
Graph 5.9. Impact of price highlights and discount signage on user affective engagement



Source: own elaboration

It is also interesting to mention that 71,1% of the participants (positions 4 and 5), considered that the virtual reality atmosphere made the immersion feel entertaining and different to a regular shopping experience (see Graph 5.10). This is an important fact to consider, because it revealed the impact of the virtual scenery in the arousal of the participants' excitement. Although, it would be wrong not to consider it, the observational sheet results also demonstrated the participants' excitement considering aspects like gestures or laughs.

Graph 5.10. Assessment of emotional arousal during the immersion compared to the routine task of grocery shopping



Source: own elaboration

5.3. Motivation

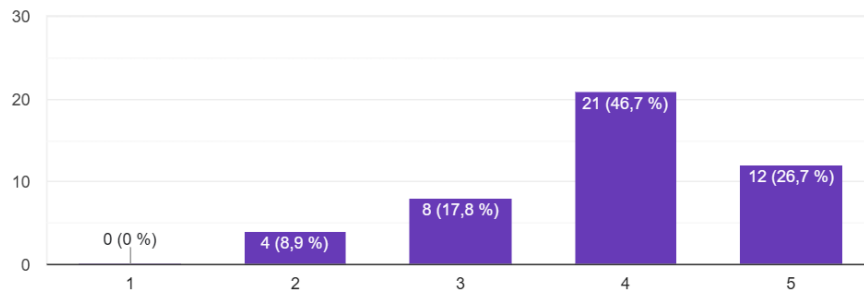
Thanks to the observation of the participants' immersions, it was concluded that they were particularly motivated, as it was recorded that all of them moved constantly and curiously through the virtual scenery and even some did some small movements through the office where the quasi-experiment was taking

place. Curiosity was frequently considered when describing the participants' immersions

It must be noted that the settings of the study directed the participants to focus exclusively and purposely on the scenery, and in some of this variable's questions this effect could clearly be appreciated.

73,4% of the participants (positions 4 and 5) believed that the presentation of the products made them feel a personal interest in exploring the supermarket (see Graph 5.11).

Graph 5.11. Influence of product display on user exploratory drive

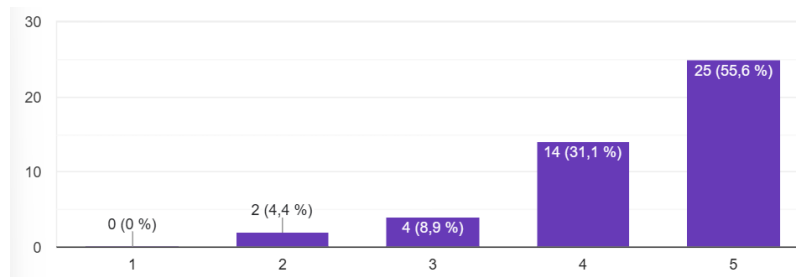


Source: own elaboration

Moreover, 86,7% of the participants (positions 4 and 5) felt they were discovering the products of the scenery through personal initiative thanks to the autonomy they had for the duration of the immersion.

This was a clear sign of the participants' high motivation (see Graph 5.12).

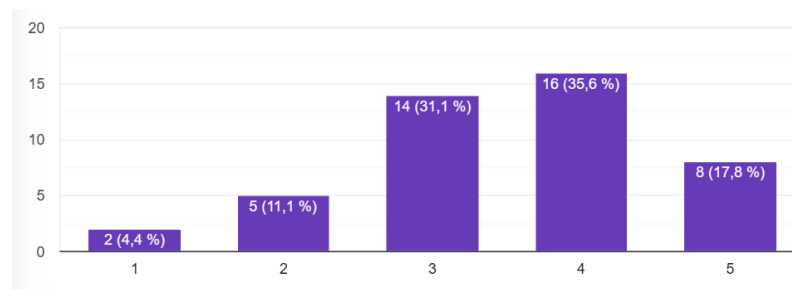
Graph 5.12. Assessment of perceived autonomy and intrinsic motivation during immersion



Source: own elaboration

And again, there is some discrepancy when considering some of the answers to this variable's questions. While having shown a strong motivation in the previous items, only 53,4% of respondents (positions 4 and 5) felt motivated to consider the purchase of products after viewing discount signs, offers, or other promotional elements. In the remaining 46,6%, most of them showed indifference (see Graph 5.13).

Graph 5.13. Motivational impact of promotional framing on purchase consideration



Source: own elaboration

The answers to this question clearly clashed with the observations of the participations, as big discount signs, offers and promotional elements were the most viewed and appreciated elements of the scenery, and the participants with this last question stated that their motivation was not that influenced by the most noticed elements of the scenery. This seems somehow difficult to understand.

5.4. Brand Awareness

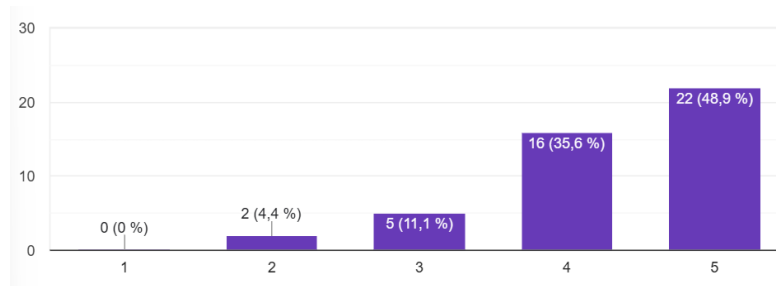
As mentioned earlier, brands' perception is essential in consumption decisions. It is a crucial aspect on its own, but it is even more important when considering that brand recognition impacts other important issues in the decision-making processes, like emotional engagement or the memory retrieval process.

Brand awareness is quite relevant in recurrent consumption habits like grocery shopping. People often have strict preferences when consuming certain goods, acquiring only the products of a certain brand. Therefore, it is necessary for businesses like supermarkets to offer a wide range of well-known products, so that customers can feel familiar and in peace while making their purchase decisions.

The virtual scenery presented numerous globally known and easily distinguishable products. Some of these goods could be found in the snacks section (like Lay's or Doritos...), the breakfast section (cookies like Principe, Oreo...), the drinks section (Coca-Cola, Fanta...), etc.

In fact, 84,5% of the participants (positions 4 and 5) agreed or strongly agreed with the statement that indicated that visual attributes of the products like packaging, colours, logos made them easy to recognize. These elements align perfectly with the previously mentioned definition of brand created by the American Marketing Association (see Graph 5.14). The conclusions of the observation of the immersions matched the given answers, as almost every participant recognized some brands and dedicated a few seconds to fully notice them. Most of the remaining 15,5% has a neutral towards that statement. It may have been because of a lack of memory or the result of a slightly chaotic immersion. The difference between perspectives was so big that those votes are not particularly relevant to this analysis.

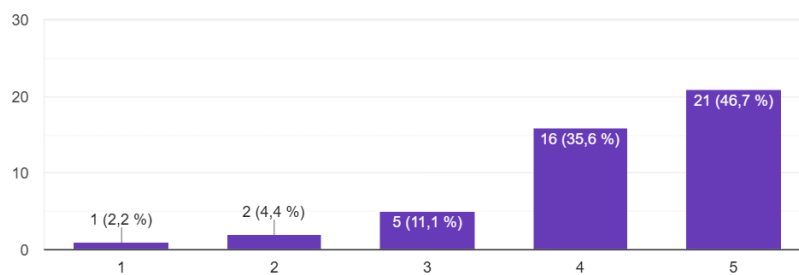
Graph 5.14. Role of product attributes in brand awareness efficiency



Source: own elaboration

Moreover, 82,3% of the participants (positions 4 and 5) agreed that the presence of popular brands made the shopping environment familiar. The remaining 17,7% (positions 1, 2 and 3) as in the previous question was not found relevant enough, because of the immense difference between both postures (see Graph 5.15).

Graph 5.15. Impact of brand familiarity on establishing a pleasant experience

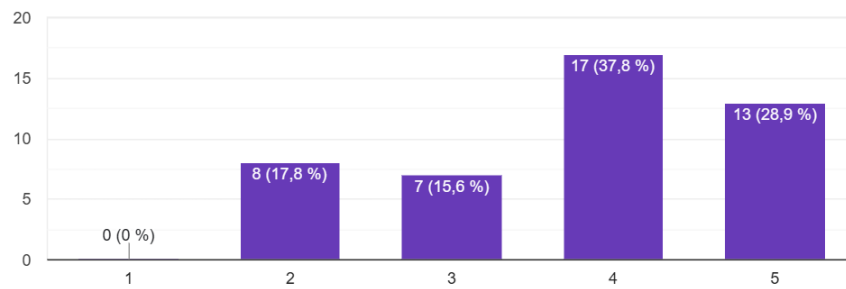


Source: own elaboration

It is worthy to mention the coherence of the participants in these first two questions regarding brand awareness. Brand awareness is not that much of a subjective aspect as the variables analysed before, therefore, the line of response is more coherent. Brands are engraved in people's subconscious, so once people notice them, as they are somehow tangible, they do not hesitate in their identification, confirming that brand presence operates on a combined level of subconscious and conscious recall.

When answering the questions regarding if the participants were able to attribute a personality to the supermarket (modern, premium, accessible) thanks to the aesthetic and signage of the store 66,7% of the participants (positions 4 and 5) agreed that they could (see Graph 5.16). It is important to mention that the scenery was full of posters, discount signs, promotional shelves, etc. All these items had a design that could not be traced to numerous stores but rather seemed to be the design of this store's signs.

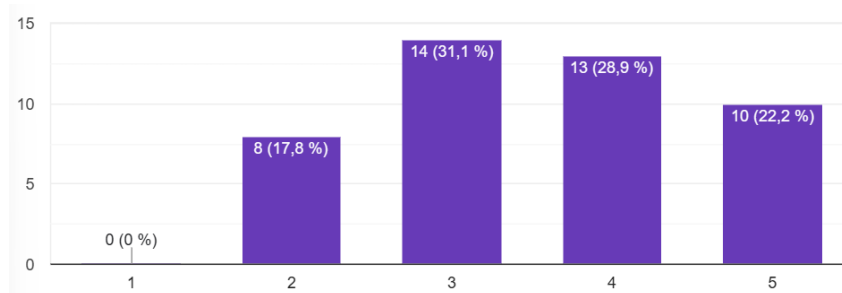
Graph 5.16. Impact of aesthetics on the perception of a particular brand personality for the store



Source: own elaboration

However, when being asked if they were able to recognize the supermarket as a brand of its own like other supermarkets (like Mercadona, Lidl, Aldi...) only 51,1% agreed that they could (positions 4 and 5). 31,1% remained indifferent (position 3) and 17,8% disagreed (positions 1 and 2) (see Graph 5.17).

Graph 5.17. Perceived brand uniqueness and identification relative to market competitors



Source: own elaboration

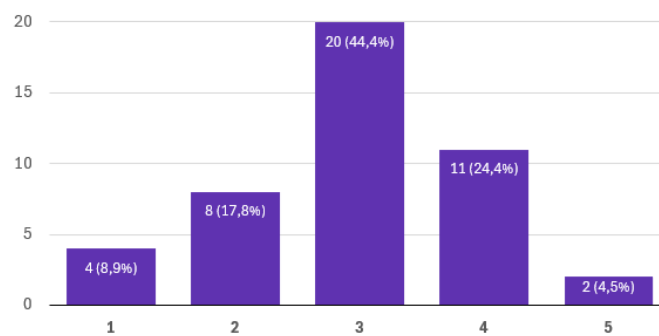
Having the participants shown a relative consensus about the personality of the supermarket, there is a noticeable decline when identifying the supermarket as a brand of its own. These may very well have been because these questions are mostly answered by participants' sensations. When having asked about well-known brands present in the scenery the participants did not hesitate, but in these two last questions, when involving people's subjective perceptions, the answers noticeably differed. This goes to show the instability of consumers' views. It is crucial for marketers to actively manage these confusing aspects so that a business' brand and personality become unmistakable.

5.5. Memory retention

The Ries and Trout (2002) paper makes of marketing a battle of perception where the mind is the main factor to consider addresses the importance of creating appealing stimuli worthy of being remembered. Thus, marketing strategies should not only focus on products, but also on creating memorable experiences that resonate with consumers.

44,4% of the participants stated that they remember the location of the main posters and signs during the immersion and could describe it with few details (position 3). The remaining 55,6% was almost equally divided into those who remembered them and could describe them with more details and those who did not remember them or that remembered them but could not describe them (see Graph 5.18). These responses matched the notes of the observational sheets as they collect that most participants focused heavily on the promotional posters and signs. These answers aligned with the observed attention and focus that people had on promotional elements of the scenery. However, the degree to which they can recall those elements is somehow a complex aspect to measure and consider.

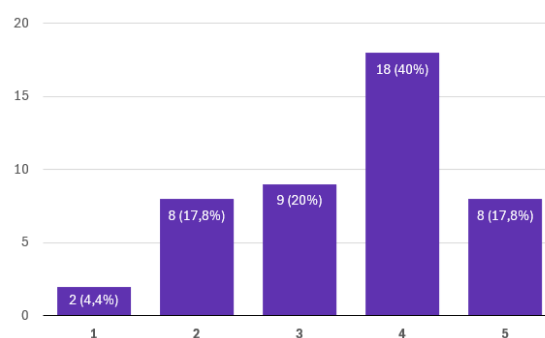
Graph 5.18. Spatial recall accuracy of promotional stimuli and signage locations



Source: own elaboration

57,8% of the participants (positions 4 and 5) agreed that they remembered the colours of the signage and that they could describe them with almost every detail or perfectly. Moreover, 20% (position 3) stated that they could remember them with few details. These answers also fitted with what was expected by the information of the observational sheets as posters and signs were highly noticed by most participants (see Graph 5.19).

Graph 5.19. Accuracy of chromatic recall regarding promotional signage

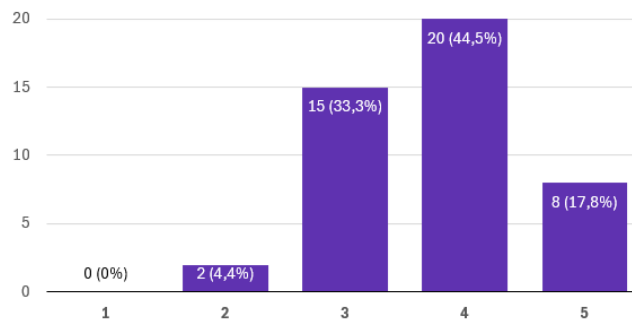


Source: own elaboration

Lastly, 62,2% of the participants (positions 4 and 5) answered that they remembered and could describe

the aisles' distribution with lots or all details. Plus, 33,3% of respondents believed that they could describe them with few details (position 3). This again matched the prospects deduced from the observational sheets (see Graph 5.20).

Graph 5.20. Accuracy in the recall of the store's layout and category organization



Source: own elaboration

People showed an explorative behaviour and high attention during the immersion, so these results were not particularly shocking. The fact that many people chose the option that stated that they remembered the asked aspects but could describe them with few details, could be related to novelty reasons, due to the use of VR Headset or it could be related to the finite and reduced time for the immersion, and the relatively big extension of the scenery.

The memory retention questions included an open question where people were asked to name the 3 elements that the participants remembered the most and to describe them. All 45 participants were able to complete this question. Some did it by naming 3 products and describing them, others did it by talking about certain aisles and sectors of the supermarket. The most mentioned elements were the snack aisles, where people frequently recognized Lay's potato chips, the fizzy drink aisles, with people often mentioning Coca-Cola and the bakery sector of the supermarket and the discounts and bonus signs. Nevertheless, there were many other elements that were noticed by participants, like the breakfast aisle, the magazines aisle, the sausage and cheese refrigerators, etc. All the mentioned items were present in the scenery and most of them stood out in different ways, like the discount and bonus signs, the bakery section or the snacks and fizzy-drinks aisles, where the space for Coca-Cola and Lay's chips made them easier to be remembered.

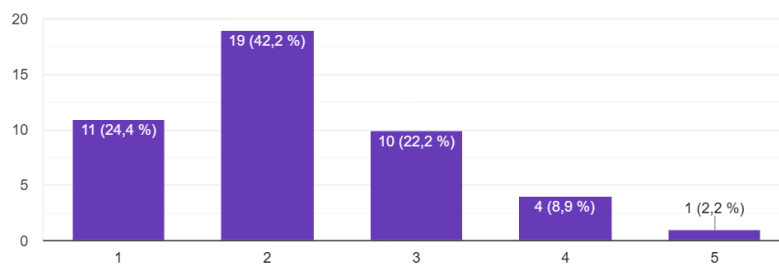
These answers showed the same as the first two mentioned items of the brand awareness variable. That is, when being asked about physical, tangible and clear elements, people tend to answer more coherently than when being asked about perceptions. And even though, memory is part of people's perception, the process of recall is simple, either people remember what they are being asked or they do not.

5.6. Novelty

Since consumer behaviour is driven by a subconscious craving for arousal rather than pure logic, marketers must strategically navigate the Wundt-Curve by introducing moderate novelty that is exciting enough to disrupt habituation without becoming so unfamiliar that it alienates the audience (Garcia-Torres, 2004, 2009).

This empirical study measured novelty with 4 questions. In the first one, 66,6% of the participants (positions 1 and 2) disagreed with the statement that mentioned that the layout and visual organization of the virtual store felt unconventional to the typical supermarkets the respondents visit regularly. But for this question, the important issue was among the remaining 33,4%. These 15 participants were indifferent to the statement or agreed with it (positions 3,4 and 5). While the virtual scenery had the supermarket's own settings and decoration style, it is undeniable that its disposition and design had clear similarities to other European supermarket brands like Aldi or Lidl. So, it was quite noticeable that one of every three respondents did not answer accordingly to the scenery objective circumstances (see Graph 5.21). This emphasizes more the idea of the incoherent answers people give when being asked about their perceptions of somehow subjective aspects that influence their consumption behaviour.

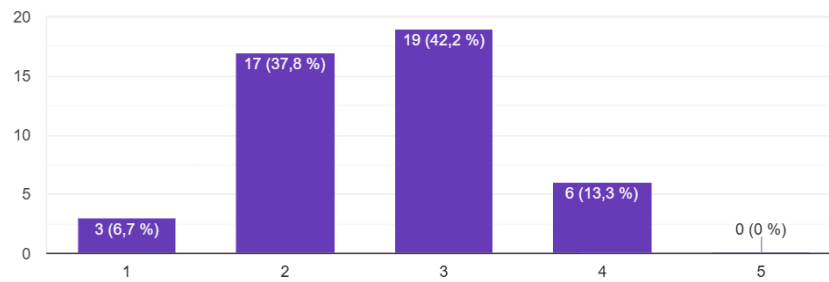
Graph 5.21. Disruption of habitual shopping routines through unconventional organization of the store



Source: own elaboration

Moreover, 44,5% of participants (positions 1 and 2) disagreed with the affirmation that stated that the way products and offers were integrated in the store's layout created a distinct and new shopping experience. 44,2% of the respondents (position 3) remained indifferent and the other 13,3% (positions 4 and 5) agreed with that statement (see Graph 5.22).

Graph 5.22. Perceived distinctiveness of the shopping experience based on spatial product and offer placement

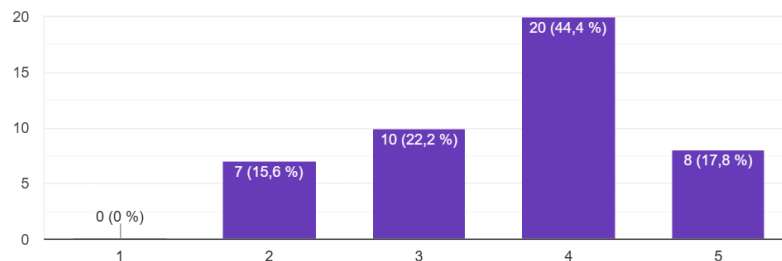


Source: own elaboration

The answers to these first items clearly displayed what was already explained in other variables. That is people's inability to base their answers on the objective elements of the shopping environment when being asked about personal perceptions. For these two questions almost, every answer should have been oriented to disagreement or strong disagreement. However, it was not like that.

Lastly, regarding novelty it is worthy to mention that 62,2% of respondents (positions 4 and 5) found the overall shopping experience in that scenery to be unexpected and original. 22,2% (position 3) remained indifferent and 15,6% (position 1 and 2) disagreed with that idea (see Graph 5.23).

Graph 5.23. Assessment of experiential novelty and mitigation of routine shopping feelings



Source: own elaboration

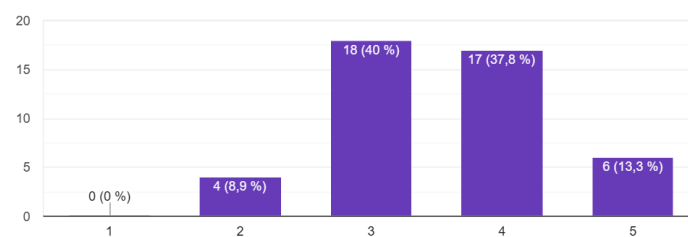
The answers to this last question showed a different line of answering compared to the responses of the previous novelty items. It might be because this last item is about the overall experience during the immersion. Therefore, considering the previous responses, it can be suggested that while the store's physical layout felt relatively familiar and grounded, the VR Headset, may have provided the necessary novelty to successfully trigger a sense of originality without overwhelming the participant. As it was earlier established, it is key to aim for a controlled level of novelty and through this survey, it can be concluded that supermarket chains, or at least this one, could benefit from the implementation of designed marketing strategies that attempt to improve this. Striking a balance between familiarity and innovation would be crucial for maintaining customer loyalty while fostering long-term growth.

5.7. Purchase Intention

It is important to remember that purchase intention is comprised of three elements; the individual's attitude towards the behaviour, the social pressure to perform the behaviour and lastly, the level of control and effort that will take the individual to perform the behaviour (Bosnjak and others, 2020), (Wee and others, 2014). Moreover, this quasi-experiment's scenery did not present a threat for this intention to be awakened, as grocery shopping is a normal, necessary and relatively easy task that most human beings do. This variable was measured in the survey through 6 different items.

Only 52,1% of the respondents (positions 4 and 5) agreed with the statement that the quality and appearance of the products displayed in this store made the respondents want to purchase them for their daily consumption. 40% (position 3) remained indifferent and 8,9% (positions 1 and 2) disagreed (see Graph 5.24).

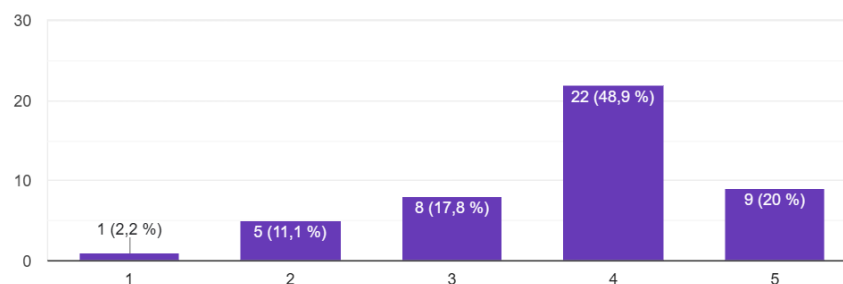
Graph 5.24. Assessment of visual sensory appeal and its impact on purchase intent



Source: own elaboration

Nevertheless, 68,9% of the participants (positions 4 and 5) considered the offers and discounts attractive enough to arouse in them the intention to purchase those products. Most of the remaining participants remained indifferent (see Graph 5.25).

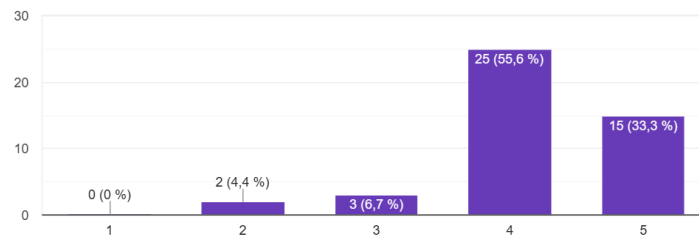
Graph 5.25. Influence of promotional incentives on behavioural purchase intention



Source: own elaboration

Moreover, 88,9% of the respondents (positions 4 and 5) would buy products from this supermarket as the selection of items available covers their immediate needs (see Graph 5.26).

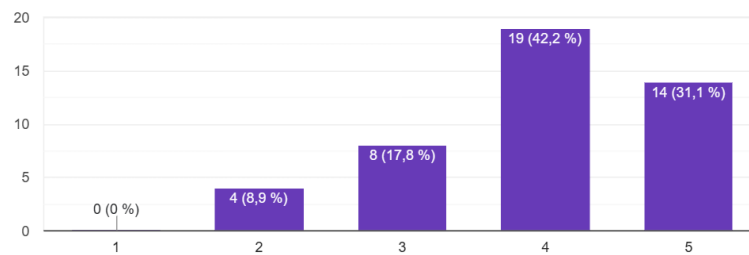
Graph 5.26. Influence of product selection and availability on consumer purchase commitment



Source: own elaboration

73,3% of the participants (positions 4 and 5) agreed that the wide variety of product categories would make them choose this supermarket for a satisfactory shopping experience, while 17,8% (position 3) remained indifferent and 8,9% (positions 1 and 2) of them disagreed (see Graph 5.27).

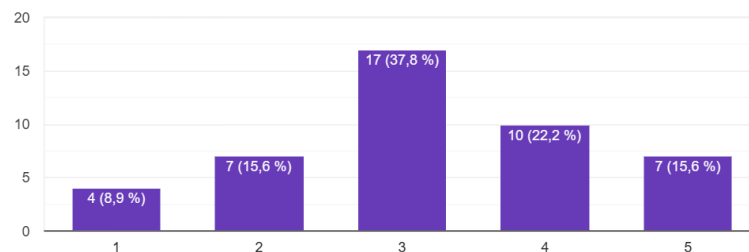
Graph 5.27. Impact of perceived variety on store preference and experiential satisfaction



Source: own elaboration

Lastly, it is worthy to mention the disparity of answers in the last question, that asked if as the immersion ended the participants sensed a strong impulse to go to that supermarket to buy some specific products they saw. 37,8% (position 3) remained indifferent, and the remaining 62,2% was shared between the agreement (positions 4 and 5, 37,8%) and disagreement positions (positions 1 and 2, 24,4%), having the first option more supporters (see Graph 5.28).

Graph 5.28. Post-immersion behavioural intent; evaluation of the digital-to-physical purchase transfer.



Source: own elaboration

This variable's answers once again show noticeable changes in the respondents' opinions when being asked for similar or related issues. Specifically, even though most respondents directly answered they would buy products from this supermarket (see Graph 5.26), in the first mentioned item there was almost

a 50-50 split between if they would buy products from the supermarket for their daily consumption or if they would not. This difference is too big not to be appreciated, as both questions are closely related.

Furthermore, while the general trend of the responses remained consistent across most items, the specific percentages fluctuated significantly.

6. CONCLUSIONS, BUSINESS RECOMMENDATIONS AND LIMITATIONS

6.1 Conclusions and Business Recommendations

This dissertation has let me understand the importance of the combination of efforts between marketing and psychology when seeking to persuade consumers and shape their behaviour. Along the dissertation, the literature used for the conceptual framework showed the huge relevance and close relation between the seven explained variables (attention, emotional engagement, motivation, brand awareness, memory retention, novelty and purchase intention) and consumers' final behaviours (Mansor and Isa, 2020). The main purpose of this paper was precisely to emphasize and support these believes. Although overall, the study has clearly shown the importance of these factors in consumers' final decisions, the results were more complex than expected.

With their answers, participants demonstrated the implication of each of these variables in their consumption decision-making process. For example, 73,4% of the participants appreciated the presentation of the products in the store (layout, promotional signs, etc.) as a factor that contributed to motivate them to explore the virtual store and be interested during the potential consuming experience. This aligns with the view maintained by Maldonado and others (2023), as in this paper it is highlighted the relevance to employ psychological findings about motivation to later apply them to marketing strategies.

In the brand awareness study, 84,5% of the participants stated that the visual attributes of the products were essential to quickly recognize them. Moreover, 82,3% of the participants stated that the presence of popular brands contributed to make the scenery more familiar. Obviously, these answers have a reason. It is thanks to that sense of familiarity that people feel comfortable in an environment, which consequently makes them more open to stimuli and consequently, more open to purchase. As it was established in Hanzatee and Yazd (2010) brand awareness increases people's purchase intention, it makes people stop searching for similar products and lastly it influences positively the perception of its brand thanks to the familiarity feeling they arouse.

As a last example, regarding this first objective, the empirical clearly showed the importance of emotional engagement as 75,6% of the participants felt a sense of excitement thanks to the colours of the store. Therefore, by enhancing the aspects that arouse positive feelings from potential consumers it is more likely to final trigger a consumption decision. This harmonizes with Babu's (2014) findings, where it was

concluded that companies and marketers should not just focus on highlighting a product's characteristics, but they should also understand consumers' psychology to have an insight on what their desires are and how to present the product to evoke the specific emotional responses that bring potential consumers to finally make a purchase.

It is relevant to highlight the participants' inconsistency when reflecting about their experience and the shifting patterns in their responses when answering some closely related subjective questions. This shows people's own limitations to realize and acknowledge the impact that marketing and psychology aspects have on them. Here lies an interesting finding of the conducted empirical study.

An example of this disconnection between participants' actual experiences and their retrospective view of the experiences, occurred when only 66,7% of participants stated that promotional elements, and colourful signs captured their attention. This is too low of a percentage according to the information captured in the observational sheet. As mentioned earlier, it was specifically these highlighted and visual elements the only ones that captured the attention of almost all participants, not just two thirds of them. This is also applicable to the fact that again only 66,6% of participants stated that the "hotspots" of the scenery captured their attention, when the information of the observational sheet revealed again that those specific areas and the products or signs in them, were the ones that captured almost every participant's attention.

The inconsistency in response patterns was shown in certain areas of the study. A great example appeared when studying emotional engagement, as 71,2% of the participants stated that the way products and offers were presented made them feel excited about the shopping experience, but later, only 55,5% stated that they felt a boost of excitement when viewing these promotional and visual elements of the scenery. This is a significant difference for two closely related questions, and it is even odder considering that offers and promotional elements were the most viewed factors of the scenery.

Although it is known that consumers are driven by the subconscious and often misjudge their own behaviour, the study suggests a sort of disconnection between what consumers consciously report and how they behave, especially when being asked about personal perceptions rather than objective aspects. Precisely the results showed that those variables related to more conscious aspects, like brand awareness or memory retention, tend to leave less margin for these disconnections to appear. On the other hand, totally subjective aspects, like the other variables in the study, leave a huge and uncertain margin for personal interpretation, which frequently leads to people's misjudgements of their experiences. Consequently, as consumption decisions are predominantly automatic and based on subconscious associations, traditional study methods like surveys often show incomplete results, as they rely entirely

on the consumer's conscious mind to reveal its private and more restricted area. Therefore, these studies should be accompanied with other tools that could help to complete the given answers and to detect where the participants fail to respond coherently. Some of these tools could be observational sheets, brain activity tracking instruments, etc.

Human consumption is not just a rational exchange; but it is highly conditioned by emotions and the limbic system. Excitement and curiosity during the VR immersion showed how important strong emotional resonance is for marketing efforts to be encoded into potential consumers' long-term memory to affect their latter consumption decisions. The battle for companies is not only to offer the best possible product. The real goal for companies should be to offer the best possible product along the best possible way of communicating their offer so that people develop an inner attraction to their offers, that becomes unshakable.

Since the findings of this study highlight the potential for companies to impact people's consumption decisions by reaching their subconscious through the combined work of marketing and psychology techniques, the main recommendation for companies and marketers is to focus on maximizing the effectiveness of the marketing campaigns. This goal requires a deep understanding of the variables measured in this study and the application of these insights to optimize the design of marketing strategies.

This can be achieved by designing campaigns that leverage the science of capturing and retaining consumers' attention; eliciting specific emotions, to ensure the audience actively connects with the message; motivating customers by aligning products with their subconscious needs; and utilizing novelty to stand out in a saturated market. Furthermore, by creating lasting impressions that strengthen memory retention and brand awareness, companies can establish themselves in the market and become top-of-mind brands. Finally, by strategically addressing purchase intention as a distinct psychological trigger, marketers can convert cognitive engagement into a definitive commitment to buy. When marketing strategies are built upon these psychological foundations, marketing initiatives should expect consistent and measurable success.

Ultimately, to achieve this, marketers should maintain a collaborative relationship with psychologists to identify the factors that condition consumer behaviour and develop more effective methods for accessing the consumer's subconscious.

6.2 Limitations

The study presented a series of limitations that should be mentioned. First, the VR Headset did not have eye tracking, so, when observing each participant's immersion for writing the observational sheet, we could only see what the individuals were seeing, but we could not precisely observe what they were

focusing on. Moreover, the virtual scenery was not interactive, meaning that participants could not take a shopping cart and grab or leave the products of their choice. If it had been interactive, maybe the answers could have been a little different. Furthermore, the sample size was small, so it was difficult to make more advanced conclusive statistical analysis or to compare the answers of different groups. This was related with the fact that each participation took a considerable amount of time and effort. Each participant had to read and sign the consent form; they received an explanation of the study; then came the five-minute immersion using the VR Headset, during which their experiences were closely monitored to facilitate the completion of an individual observational sheet; finally, the process concluded with the completion of the survey.

Lastly, in this quasi-experiment there was no access to tools like the mentioned fMRI to measure the brain's activity to the different stimuli. Observing brain activity during the immersion and the survey could have been interesting for a more precise and detailed analysis. However, this would have required of the participation of neurologists or psychologists.

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ANNEX I – CURRICULUM SUSTAINABILITY

At the heart of today's academic research and commercial practices lies sustainability, a three-dimensional pillar that integrates social, ecological and financial considerations into a unified standard. Although this dissertation is focused on the intersection of marketing and psychology to decode consumer behaviour, this approach is deeply connected with the United Nations' 2030 Agenda for Sustainable Development Goals (SDGs). The purpose of this annex is to reflect on how understanding the underlying, often irrational mechanisms that dictate our purchase decisions must be used to foster a more sustainable societal model.

First and foremost, this paper's goal is directly linked to SDG 12: Responsible Consumption and Production. Throughout the conceptual framework and the empirical study, it has been demonstrated that human consumption is rarely a purely logical exchange process. On the contrary, it is heavily driven by the subconscious. Therefore, a detailed understanding of subjective variables like motivation or novelty can and should be used to design marketing campaigns that make ethical and sustainable products more attractive, facilitating a transition toward habits that minimize society's environmental footprint. Moreover, solving the mysteries of consumer decision-making grants corporations an immense power of influence, which consequently requires strong morality. Understanding human behaviour provides a unique opportunity to guide consumers (from a place of honesty, respect and fairness) towards decisions that guarantee the future viability of the global economic and social fabric.

Second, the study aligns closely with SDG 3: Good Health and Well-being. The analysis carried out in the immersive VR environment highlights how vibrant colours, aisle layout and visual aesthetics automatically capture consumers' attention, and affect their memory retention and purchase intention. Even though, historically similar persuasion tactics have been employed across different industries to encourage the impulsive purchase of negatively impact products, this information advocates for an undeniable ethical responsibility. Marketers, companies and policymakers can utilise consumer psychology to strategically place healthier products or frame them in ways that trigger positive associations. In doing so, marketing becomes a powerful tool to improve the physical well-being of the population, without compromising corporate profitability.

Additionally, this paper contributes directly to SDG 4: Quality Education, from the perspective of societal literacy and empowerment. By exposing the old idea of the consumer's mind as an unapproachable "black box" and openly demonstrating the impact of the chosen variables on people's consumption decisions, power is returned to the citizens. A society that is educated about its own cognitive processes and aware of how primal instincts can be guided by external stimuli is a more critical and free society. Educating consumers on these psychological mechanisms protects them against commercial manipulation and

fosters more deliberate decision-making.

Finally, the methodology adopted in the empirical research resonates strongly with SDG 9: Industry, Innovation and Infrastructure. The implementation of Virtual Reality technology for the collection behavioural data represents an innovative approach in the social sciences. Promoting the use of digital stimulations reduces the need to build large infrastructures for market testing and enables marketing research to provide participants with a more realistic baseline environment while maintaining a feasible budget. It promotes an academic and commercial research model that is more complete, technologically adapted and environmentally clean, paving the way for future studies to integrate immersive technology into everyday research.

To conclude, this dissertation contributes indirectly, but noticeably to the use, prosperity and the fixation of diverse SDGs in society, especially those related to Responsible Consumption and Production, Good Health and Well-being, Quality Education and Industry, Innovation and Infrastructure. The analysis conducted in this paper proves the joint impact of marketing and psychology on people's consumption decisions. By integrating these insights into long-term ethical strategies, sustainability and social transformation can be effectively pursued, employing marketing and psychology as instruments that can be used for aligning business practices with global sustainability values.

ANNEX II – CONSENT FORM



Consentimiento informado para participar en el proyecto de investigación del Trabajo de Fin de Grado "Marketing y Psicología para entender mejor el Comportamiento del Consumidor" de Germán Blanco Loa

Me gustaría invitarle a participar en este estudio de investigación sobre **"Marketing y Psicología para entender mejor el Comportamiento del Consumidor"**. Antes de decidirse, por favor tómese el tiempo necesario para leer la siguiente información.

1. Información sobre el proyecto

Usted es quien decide participar en este estudio, es libre de retirarse en cualquier momento.

Si finalmente participa, acepta la inmersión en un escenario virtual con el uso de las gafas de realidad virtual puestas a disposición por la Universidad de Burgos, para posteriormente contestar unas preguntas sobre lo que ha visionado.

Participará como voluntario/a y no recibirá dinero por ello.

No existe ningún riesgo por participar. Todas sus respuestas serán anónimas, lo único que se considerará por interés del estudio será el momento temporal en el que llevó a cabo su participación.

Su participación es importante porque ayudará a desarrollar algunas ideas sobre el tema del Trabajo de Fin de Grado.

Si le surge alguna duda, puede preguntar al equipo de investigación, que hará lo posible por responder a sus preguntas.

2. Compromiso de confidencialidad

El proyecto está altamente comprometido con la garantía de los derechos fundamentales a la protección de datos. Para ello, hemos tomado todas las medidas oportunas para cumplir con el Reglamento (UE) 2016/679 del Parlamento Europeo y del Consejo, de 27 de abril de 2016, relativo a la protección de las personas físicas en lo que respecta al tratamiento de datos personales y a la libre circulación de estos datos (GDPR) y con la ley española aplicable, la Ley Orgánica 3/2018, de 5 de diciembre, de Protección de Datos Personales y garantía de los derechos digitales (LOPDGDD).

El proyecto está liderado por Germán Blanco Loa, alumno de la Universidad de Burgos, que es el responsable del tratamiento de los datos. La entidad de investigación asociada al proyecto podrá utilizar y tratar los datos.

La recogida y el tratamiento de los datos recogidos tiene la siguiente finalidad:

- Realización de estudios en el contexto de este proyecto de investigación.
- Elaborar estadísticas generales, agregadas y anónimas, sobre las distintas variables medidas en la encuesta.

Tiene derecho a solicitar el acceso, la rectificación o la supresión de los datos personales o la limitación de los mismos o a oponerse a su tratamiento. Estos derechos solo pueden ser invocados por la persona interesada. Además, tiene derecho a presentar una reclamación ante la Agencia Española de Protección de Datos.



Título del estudio: Marketing y Psicología para entender mejor el Comportamiento del Consumidor

Yo (nombre y apellidos):

con D.N.I. nº:

He hablado con el responsable del estudio empírico de dicho Trabajo de Fin de Grado

☐ He revisado la información ofrecida.

☐ He podido hacer preguntas sobre el estudio.

☐ He recibido suficiente información sobre el estudio.

☐ Comprendo que mi participación es voluntaria y que no se utiliza ninguna herramienta de seguimiento ocular, ni de inteligencia artificial para recabar información personal.

☐ Doy libertad de grabar lo que veo por las gafas durante mi participación.

☐ Comprendo que existe la posibilidad de sensación de mareo, inestabilidad o malestar o fatiga.

☐ Comprendo que puedo retirarme del estudio en cualquier momento, sin tener que dar explicaciones.

☐ Presto libremente mi conformidad para participar en el estudio.

Los análisis realizados en este estudio solo serán utilizados para los fines de este.

Fecha:

Firma del participante:

ANNEX III – SURVEY

Empirical study on Marketing and Psychology to better understand Consumer Behaviour

Hello!

This questionnaire is the second part of the empirical study of a **Final Degree Project** about how marketing and psychology affect consumer behaviour.

Your participation is anonymous. There are no wrong answers and it only takes about **5 minutes**.

Attention questions

A1. The coloured posters and promotional displays immediately captured my focus as soon as I entered the virtual aisles

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

A2. I found it easy to maintain my focus on the products on the shelves without being distracted by other elements of the scenery

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

A7. Even with many visual stimuli present, I did not feel distracted by irrelevant elements of the virtual scenery

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

A8. The 3D depth and realistic lighting of the scenery made it easier for me to stay engaged with the visual details of the store.

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

Emotional engagement questions

EE1. The visual design and colours of the virtual store immediately made me feel excited to start the navigation

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

EE2. The way the products and offers are presented made me feel excited about the shopping experience

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

A3. My eyes were naturally drawn to the "hotspots" or specific product highlighted areas within the virtual space

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

A4. The 'hotspots' were positioned in a way that effectively guided my visual journey through the store

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

A5. I was able to quickly identify the price tags and discount information despite the large number of products on display

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

A6. The arrangement of the products was intuitive, allowing me to pay attention to the items I was actually interested in

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

EE3. I felt a sense of excitement and curiosity while discovering the products and sections in the aisles

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

EE4. When looking at the highlighted prices and discount signs, I felt a boost of excitement that made the experience more engaging

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

EE5. The overall atmosphere of this virtual environment made the immersion feel stimulating and energetic rather than just a routine task of grocery shopping

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

Motivation questions

M1. The presentation of the products in this virtual store made me feel a personal interest in exploring the scenery

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

M2. The virtual environment gave me enough autonomy to feel that I was discovering the products for my own purposes, rather than just being shown them

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

M3. The way the offers and discounts were framed created a sense of opportunity that motivated me to consider a purchase

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

M4. The way the special offers were placed in the store layout motivated me to consider buying products I do not usually consume

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☒ ☐ Strongly agree

Brand Awareness questions

BA1. The visual attributes of the products (packaging, colours, and logos) were essential in helping me quickly distinguish between different brands on the shelves.

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

BA2. The repetitive presence of popular and recognizable brands throughout the scenery made the shopping environment familiar

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

BA3. The overall aesthetic and signage of the store helped me perceive a specific "brand personality" (e.g., modern, premium, or accessible) of the supermarket beyond just the products.

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

BA4. After the immersion I can now appreciate this supermarket as a brand of with "its own personality" like other supermarkets (e.g., Mercadona, Lidl)

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

Memory Retention questions

Answer to the following questions with the following scale: **1. I do not remember, 2. I remember that, but could not describe it, 3. I remember it and could describe it with few details, 4. I remember it and could describe it in almost every detail and 5. I remember it and could describe it with all features.**

MR1.1: How well do you remember the specific location of the main offers (posters/signs) you saw during the immersion?

MR1.2: How well do you remember the colors of the signage (posters/signs) you saw during the immersion?

MR1.3: Thinking about the visual arrangement of product categories (how aisles were organized), how accurately can you recall its layout?

	1	2	3	4	5
Section 1	☐	☐	☐	☐	☐
Section 2	☐	☐	☐	☐	☐
Section 3	☐	☐	☐	☐	☐

MR2. Without looking back at the scenery, name the 3 elements that you remember the most of the virtual supermarket (a product, a brand, a promotional sign, the layout...) and describe what you can about them

Tu respuesta

Novelty questions

N1. The layout and visual organization of this store felt unconventional compared to the typical physical supermarkets I visit, breaking my usual shopping routine

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

N2. The way the products and offers are integrated into the store's layout (e.g., specific shelf placement) provided a shopping experience that felt distinct and fresh compared to standard physical supermarket I shop at.

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

N3. I found the visual environment (colours and signage) to be unexpected enough to keep me curious throughout the 5-minute immersion.

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

N4. I found the overall shopping experience in this environment to be unexpected and original, preventing it from feeling like a repetitive or routine task.

1 2 3 4 5
Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

Purchase Intention questions

For the following items, please indicate the level of intensity that applies to you using a scale from **1 (Low)** to **5 (High)**. Select **Low** if the statement does not apply to you at all, and **High** if it describes your intention or feeling completely.

PI1. The quality and appearance of the food products displayed in this store make me want to purchase them for my daily consumption

Low 1 2 3 4 5 High
☐ ☐ ☐ ☐ ☐ ☐

PI2. The specific deals and discounts presented in the aisles are attractive enough to make me intend to buy those products

Low 1 2 3 4 5 High
☐ ☐ ☐ ☐ ☐ ☐

PI3. I would buy products from this supermarket because the specific selection of items available in these aisles covers my immediate grocery needs

Low 1 2 3 4 5 High
☐ ☐ ☐ ☐ ☐ ☐

Age

- ☐ 18-29 years old
- ☐ 30-39 years old
- ☐ 40-49 years old
- ☐ 50-59 years old
- ☐ 60 years old or older

Gender

- ☐ Male
- ☐ Female
- ☐ Other
- ☐ Prefer not to say

Studies

- ☐ Primary school
- ☐ Secondary school
- ☐ University degree
- ☐ Master graduate
- ☐ Doctor

PI4. The wide variety of product categories I saw in the shelves motivates me to choose this store for a satisfactory shopping trip

Low 1 2 3 4 5 High
☐ ☐ ☐ ☐ ☐ ☐

PI5. The way the products are organized and presented makes the purchasing process seem so easy that I would choose to buy here to save effort

Low 1 2 3 4 5 High
☐ ☐ ☐ ☐ ☐ ☐

PI6. If I were to finish this navigation right now, I would feel a high urge to go to this exact supermarket and buy some of the specific products I just saw

Low 1 2 3 4 5 High
☐ ☐ ☐ ☐ ☐ ☐

Sociodemographic questions

Current work situation

- ☐ Self-employed
- ☐ Employee
- ☐ Student
- ☐ Unemployed
- ☐ Retired
- ☐ Housewife or househusband

Prior to this experiment, have you already used virtual reality glasses?

- ☐ Yes
- ☐ No

ANNEX IV – OBSERVATIONAL SHEET

OBSERVATIONAL SHEET	
Researchers observing the subjects' immersion during the experiment will provide brief notes on each aspect measured in the survey to verify the consistency between the participants' actual experience and their survey responses.	Motivation <u>Possible factors to consider:</u> constant movement, curiosity about the setting, active search for products or offers, personal autonomy... Tu respuesta _____
Immersion start time Hora _____	Brand Awareness <u>Possible factors to consider:</u> pausing at logos, identification and interest in specific branded products, reading well-known brand names, dwell time on leading brands versus private labels... Tu respuesta _____
Immersion end time Hora _____	Memory Retention <u>Possible factors to consider:</u> exposure time to signage, returning to previously visited areas, prolonged gaze at specific zones or products, revisiting points of interest already viewed... Tu respuesta _____
Attention <u>Possible points to consider:</u> focus on colorful signs, promotions, distractions and time lost on environmental elements, 'hotspots', price tags, shelf scanning... Tu respuesta _____	Novelty <u>Possible factors to consider:</u> amazement at the virtual format, movements with no apparent patterns, exploratory behavior, sustained activity throughout the 5-minute session... Tu respuesta _____
Emotional Engagement (focused on excitement or arousal) <u>Possible factors to consider:</u> smiling, gestures of enthusiasm, thinking-aloud/verbal comments, response to vibrant colors, special offers... Tu respuesta _____	
Purchase Intention <u>Possible factors to consider:</u> visual product selection, physical approach, simulated grasping of objects, focus on actual needs, and attention to promotions as if it were a real-life purchase... Tu respuesta _____	

ANNEX V – VISUAL DOCUMENTATION OF THE IMMERSIVE PHASE



