

A Work Project, presented as part of the requirements for the Award of a Master's degree in
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COGNITIVE BIASES IN THE DECISION – MAKING PROCESS: EVIDENCE FROM THE
MASS MARKET INDUSTRY

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Abstract:

In today's fast-paced world of mass industry, consumers increasingly make irrational and impulsive decisions. The goal of this thesis is to analyze the interesting relationship between cognitive biases and the decision-making process. Through a survey investigated the degree of irrationality and the impact of cognitive biases in the purchasing process. The results show a gap between the way consumers think about buying and the way they actually buy, showing a strong propensity for bias and impulsive buying, but claiming to buy only on the basis of rational factors.

Keywords:

Cognitive Biases; Decision – Making Process; Consumer Behavior; Mass Market Industry; Impulsivity

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1 Introduction

The aim of this work project is to analyze the role of cognitive biases in the decision-making process and how they influence the consumer's purchasing choices, leading to irrational purchases, the result of impulsiveness.

The motivation that has led me to deepen this topic stems from the desire to understand the behavior of the individual and the role of psychology in the purchasing processes. It is a subject of great relevance in the contemporary context, since the consumer is still subject to a multiplicity of stimuli, both resulting from rapid technological change, social media, and the numerous promotions that companies make available.

We are still in a world where decisions are made quickly and are influenced by rational and irrational factors, and it is therefore important to understand how cognitive biases affect individuals and in relation to this how companies exploit them to their advantage, to direct consumers towards their business.

The paper develops starting with an analysis of the main theories that have accompanied the decision-making process, continuing with an overview of the main cognitive biases, going into each of them, trying to understand what the factors are and how they act on the consumer's mind, causing a distortion from reality.

The first part of the paper shows an overview of economic theories, in particular the process that led to the impossibility of thinking human as a rational being, and therefore perfect-decisionmaker who aims to maximize its usefulness, evolved into the concept of "*bounded rationality*" by Herbert Simon, according to which humans acts in an irrational way with the intention of reaching a decision that satisfies his needs (satisficing) (Barros G., 2010). This is because the individual does not have the cognitive ability to analyze all possible information to make optimal choices.

To give a first introduction of the decision-making process it can be define as "the process of making choices by identifying a decision, gathering information, and assessing alternative resolutions." (University of Massachusetts Dartmouth, n.d.).

This paper focuses mainly on the decision-making process in the mass market industry, analyzing the factors that influence their purchasing process, starting from the price influence, the brand perception, the habits of the same until reaching the fundamental point of the research thesis, that is, the cognitive biases.

Cognitive biases are systematic biases in human thinking and reasoning, which often do not follow principles of logic and probabilistic reasoning (Korteling & Toet 2020). They act as mental shortcuts that lead to making decisions without long reflection on the consequences of them but, saving time and resources, allow the individual to make decisions impulsively.

There are different types of cognitive bias, but we will focus mainly on: confirmation bias, framing effect, anchoring and availability heuristic, which we often find in the mass market industry. Consumers in this type of industry are exposed to a variety of products and services, influenced by advertising, social media, reviews, price etc. and that is why they tend to act most of the time instinctively, not rational by simplifying the purchasing process thanks to the advent of bias.

The methodology used was a consumer survey, which is analysed in the last part of the thesis, with the aim of discussing the most obvious cognitive biases and how they influence purchasing decisions. The survey provides evidence to better understand the dynamics of decision making, providing empirical evidence for theoretical discussion and drawing conclusions on the subject under analysis.

2 Literature review

The literature review begins by examining the interaction between economic and psychological theories. This approach provides a solid basis to analyze decision-making processes and the pervasive influence of cognitive biases. By covering all facets of decision making, the review enables a rational and detailed examination of the survey results. This approach ensures that well-founded conclusions can be drawn in response to the research question.

2.1 The Evolution of Economic Theories

To address a well-constructed analysis of the decision-making process and consequently of cognitive biases, it is necessary to delve into the evolution of economic and psychological theories regarding human thought.

In the first economic theories, human, considered a rational being, analyzes and evaluates all possible information in the decision-making process and chooses what is called the "*optimal choice*", which maximizes his economic utility.

This concept is studied in the Rational Choice Theory, developed by Adam Smith in the 18th century, which states that human beings make decisions based on a cost-benefit analysis. (MasterClass, n.d.). According to the Rational Choice Theory, choices are made by individuals to maximize the benefits and minimize the costs.

The theory is developed on two important factors; desire, which pushes the individual to make a certain choice, avoiding external circumstances (Sondej J.D, 2016) and beliefs, which arise and are the result of the available information that the individual has at his disposal, and which give awareness of the choice made (Sondej J.D, 2016).

However, over time, this theory has been challenged, due to the inability to evaluate all the available information, the impossibility of thinking every potential alternative and the limited cognitive capacity of humans prevent them from acting rationally.

This shift is due to the evolutions in economic theories, which have shown that in real situations, there are deviations that prevent the application of pure rationality but highlights that the behavior of individuals is influenced by uncontrolled factors (Nikolic J., 2018).

In this context, Behavioral Economics emerges, which adopts a psychological perspective and evaluates the way individuals take irrational decisions, explaining why their behavior does not follow the pre-established economic models.

Behavioral Economics also moves away from the idea of perfect rationality, introducing factors that influence rationality and willpower (Rabin, 1998; Mullainathan & Thaler, 2000). The individual is therefore influenced by a multitude factor, which render it impossible to make a fully rational choice, or in any case when believing they are making a rational choices, there will always be a part of the decision-making process influenced by irrational factors.

In the 50s, Herbert Simon introduced the concept of “*bounded rationality*” (1957), which aimed to provide a more realistic vision of economic behavior. In this theory, the individual tends to be satisfied with his choices (Reinhard Selten), in a concept known as “*satisficing*”, looking for alternatives that are sufficiently good, according to certain parameters (Barros G., 2010). The decision-maker then chooses an alternative that meets the acceptability criteria, making a decision that is not necessarily the best. (Barros G., 2010).

With the awareness of the limited rationality of individuals and their limited cognitive capacity, it has been realized that the ability of individuals to make decisions cannot be based exclusively on a cost-benefit analysis but must necessarily be influenced by a multiplicity of external factors.

Being aware of how economic theory has evolved over time is of fundamental importance to undertake our analysis of the decision-making process and the influence of cognitive biases.

2.2 Decision-Making Process

This context provides a foundation for introducing the decision-making process, first from a general perspective, and then with a focus on decision-making in purchasing behavior.

In the decision making process a preferred option is chosen from a set of alternatives, based on given criteria or strategies (Wang & Patel, 2004; Wilson & Keil, 2001). The objective of the decision-making process is to reach the best decision, satisfying the criteria of effectiveness and efficiency (Nikolic J., 2018).

The individual chooses under conditions of uncertainty, without knowing which is the right or the wrong choice. As discussed earlier regarding human irrationality, we understand that decisions are influenced by both rational considerations and emotional motivations. (Cabanac, 1992). The individual evaluates by considering the characteristics of the different options and assessing the likelihood of potential outcomes associated with each choice. The consumer acts based on two important elements: reducing uncertainty and gaining an advantage from the choice made (Bentham, 1948).

In the decision-making process, it is essential to understand that the focus lies on the act of decision, which is taken by evaluating and comparing the different options, with the aim of identifying the best solution.

Presented here is a representation of the decision-making process, which makes us understand how from an initial stage where the individual attempts to evaluate possible alternatives rationally and objectively, a range of irrational factors begins to influence the process. These factors lead to the so-called "*mental shortcuts*" or heuristics which result in a solution based on a distorted analysis of information (Jamieson & Hyland, 2006).

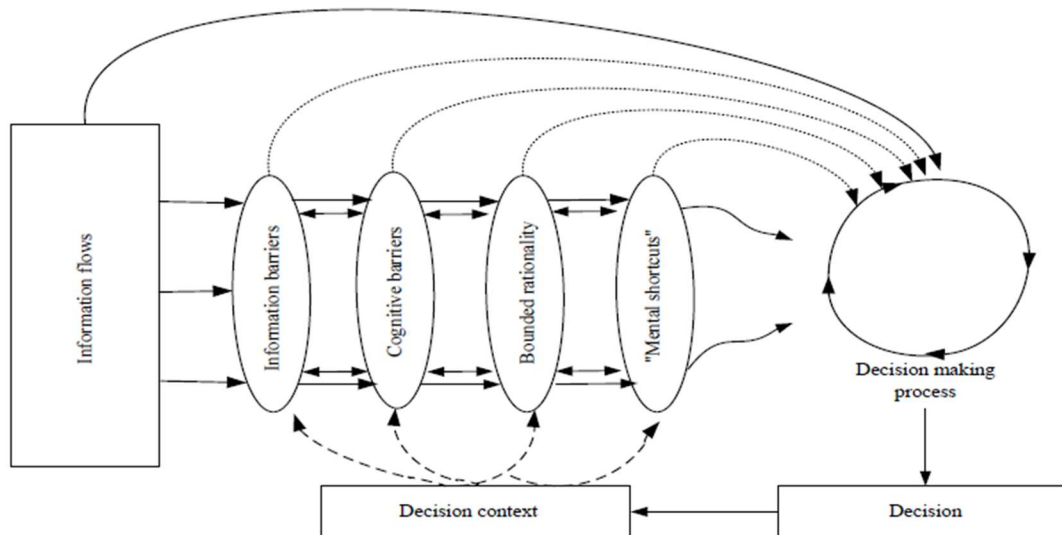


Figure 1: Bounded Rationality in the Decision-Making Process.

Source: Nikolic (2018), adapted from Jamieson and Hyland (2006).

In the context of the decision-making process, it is important to consider its fundamental role in purchasing processes. The decisions to be made in the purchasing processes are influenced by numerous personal, emotional and cultural variables that determine the choice, as well as the evaluation of rational factors and all the information necessary to make the optimal choice (Carmeci et al., 2007).

The decision-making process is developed in 5 steps (Engel et al., 1968):

1. **Problem Recognition**: this occurs when the consumer realizes that there is a gap between their current situation and the one, they desire, prompting them to act to find the product or service that will meet their needs (Dewey, 1910; Engel, et al., 1968). What drives the decision-making process is, fundamentally, the concept of need. A need can be defined as “a gap between actual and desired states. This gap is felt as discomfort and creates tension. Tension, in turn, motivates individuals to behave in ways that can reduce or eliminate the gap” (Monnier A., 2024).

2. Information Search: the consumer searches for all available information about that product/service. In the current market, the variety of products/services offered is so vast that it makes searching particularly difficult, the available options are many and sometimes very similar to each other, with small or imperceptible differences (Schwartz, 2004). Consumers can obtain information from various internal (information coming from the consumer himself, placing emphasis on their memory, experiences, opinions etc) and external sources (retailers, media, friends, magazines etc.) (Hoyer et al., 2018).
3. Alternatives evaluations: after becoming aware of the product/service they intend to purchase and selecting all the possible alternatives, the consumer compares these options based on both objective and subjective variables. There are several variables to consider, certainly the two main factors are price and quality that influence consumer evaluation in a significant way.
4. Purchase decision: the consumer then makes the final decision and identifies the product/service that wants to buy. The choice of purchase, as we have seen above, is not always made in a rational way, or at least in most cases the consumer believes to make a rational choice, but is influenced by several irrational factors that may prevent them from making the best choice.
5. Post-purchase evaluation: the evaluation of the product/service after use is crucial for the consumer to understand whether the choice made was optimal or not. After purchasing a product, many consumers tend to think that they have not made a rational choice, when the amount spent is significant (Pellicelli).

This is what happens in the case of a planned purchase, where the consumer is aware that he has a need to satisfy. In the case of an unplanned purchase, the process tends to be different, as the purchase is the result of an impulsive, rapid and sudden act (Carmeci et al., 2007).

Impulse buying is determined by an immediate need to buy something, which one does not really need and for which the consumer ignores the consequences (Rook, 1987). Purchases are driven by several factors such as: excitement, good or bad vibes, fun etc. (Dalli & Romani, 2000).

Individuals who buy impulsively tend to be more carried by emotions and their impulsiveness is even more evident when they are in high proximity with the product (Carmeci et al., 2007). This phenomenon is referred to as "*consumer spasm*" as defined by Levy (1987), highlighting the frenzy that affects the individual at that moment, which drives the consumer to want that product and buy it as soon as possible.

However, while the purchasing process should normally consist of these five steps, during the process several factors and motivations intervene that take the individual down a different path, diverting attention from what was the initial need and leading to a final decision resulting from the irrationality that, as we have seen, characterises human beings.

This analysis will delve into how cognitive biases influence the decision-making process and how an individual's bounded rationality relies on heuristics, often leading to solutions shaped by a distorted interpretation of information. This outcome reflects a subjective assessment of the available information. (Jamieson & Hyland, 2006).

2.3 Cognitive Biases

After understanding how the decision-makers are rational subjects constrained, with limited cognitive abilities, to simplify the decision-making process individuals choose and make decisions based on heuristics, mental shortcuts that lead to a rough and fast solution (De Neys, 2010).

The use of heuristics greatly simplifies and speeds up decision-making. In this way, the individual avoids collecting and evaluating all available information, going beyond the use of

classical economic models. This takes an approach where much of the information is ignored, allowing a quick solution to be reached. (Maitland & Sammartino, 2015).

Heuristics that influence decision-makers' judgments and lead to systematic errors in the decision-making process (Nikolic J., 2018) stem from various social factors to which individuals are unconsciously subjected every day. These factors significantly impact their behavior without their realization.

Cognitive biases can be described as systematic and universal tendencies or dispositions which distort and alter information processes, making the result inaccurate (Lichtenstein & Slovic, 1971; Tversky & Kahneman, 1981). Irrational beliefs that influence the ability to make a specific decision based on facts and evidence are considered (Schwenk, 1986; Busenitz & Barney, 1997; Das Teng, 1999; Simon et al., 2000). They can also be defined as simplified procedures, which allow the problem to be solved quickly, and the decision to take is sometimes not optimal (Dalli & Romani, 2000).

Cognitive biases arise due to the tension between the automatic, fast and intuitive system 1 and the slow, analytical and rational system 2 that coexist in the human brain (Kahneman, D., 2017). It is at the point when system 1 dominates system 2 that cognitive biases manifest themselves, affecting the way individuals evaluate information and make quick decisions which may be subject to error.

Cognitive biases are divided into several types, each of which has a specific influence on decision making.

1. Availability Bias: is a bias where individuals judge the likelihood of an event or decision based on how easily relevant information can be recalled from memory. (Tversky & Kahneman, 1974). Individuals are influenced in their decision making by events, information, images that are most vivid in their minds relying on these to make the

decision. Memorable events or events linked to personal life such as an earthquake or accident play a major role, and are recalled more easily (Tversky & Kahneman, 1973). In discussing availability bias, it is crucial to highlight the *Google effect*. This phenomenon describes how people increasingly depend on the internet to retrieve information, opting not to store it personally. As a result, this reliance on digital sources can diminish the perceived importance of information (Sparrow et al., 2011). In this phenomenon, the options visible as prime tend to be perceived as better, solely because they appear more frequently and are more accessible (Häubl & Trifts, 2000). In the purchasing process, the consumer frequently falls into the availability bias, choosing a product/service based on information he already has or recent events. Repeated exposure to an advertisement or continuously hearing positive reviews of a product influences the consumer, who is likely to evaluate the product as superior to others, simply because they have easily accessible positive information about it in their mind (Nisbett & Ross, 1980). Other customer experiences, online reviews and word of mouth are factors determined by the consumer, who tends to give much weight to them, considering them as a decisional factor, although they may not represent everyone's opinion (Chen et al., 2011). Companies exploit this bias to make their product can be easily remembered by the consumer, at the expense of other brands and this happens when a brand is continuously visible through tv, social media, review etc (Keller, 1993).

2. Framing Effect: this is a bias that influences decision-making based on how options are presented (Azzopardi L., 2021). This type of bias, which highlights positive or negative aspects now information is presented, significantly influences an individual's choices (Tversky & Kahneman, 1981). In the purchasing process, the framing effect acts by influencing the way in which evaluate any benefits of a product. Emphasizing the positive effects of a product as "90% effective" compared to highlighting "failure in

10% of cases" leads the consumer to have a more positive perception of that product (Levin & Gaeth, 1988). In particular, the presentation of discounts and product offers is the optimal situation to invoke the framing effect, in a strategy known as "discount percentage", which emphasizes savings and convenience (Grewal et al., 1998). It is therefore evident that this bias manipulates the consumer's mind, playing on the presentation of information.

3. **Anchoring Effect:** anchoring bias demonstrates the tendency for people to overly focus on the first piece of information they learn or observe, often referred to as the "anchor" (White R., 2013). This type of bias is crucial in purchasing processes, particularly when assessing the price of a product, as buyers commonly use the first observed price as a benchmark for evaluating all other products. The department stores exploit the anchoring effect, showing first the initial price of a product and then the discounted price, in this way the consumer perceives a significant saving and tends to buy the product taken from the illusion of having made a good deal, even if it is often not the truth ((Nagle & Holden, 2002). A concrete example of anchoring effect, applied in the company's strategies was the presentation of Ipad by Steve Jobs in 2010, which starts the presentation showing all the features of the new product, emphasizing its innovation, captivating design, the simplicity of use, and functionalities, all of which led the audience to anticipate a very high purchase price. Later, Jobs introduced a price that industry professionals had speculated to be around \$999, using this figure as an "anchor". However, he soon revealed the actual price of the iPad to be \$499, surprising the entire audience. This is one of the greatest examples of anchoring that we can find in marketing strategies, Jobs had the opportunity to create a psychological anchor, a belief that Ipad, described as an innovative product, had extremely high value, when it was affordable and profitable.

4. Confirmation bias: occurs when individuals tend to consider information that affirms their beliefs about a particular situation and avoid information that contradicts these beliefs (Nickerson R.S., 1998). In the purchase process, confirmation bias is manifested when a consumer has a positive perception of a given product and tends to find, recall information that confirms his positive thinking about the product, ignoring all negative information and going against his belief (Nickerson, 1998). There are two types of confirmation bias (Segal, 2023):
- Biased search: occurs in the field of research, where the individual tends to seek only information that supports his thesis. Nowadays, this type of bias is exploited by search engines such as Google, offering us certain results as a priority, the result of optimized algorithms.
 - Biased Interpretation: explains why individuals tend to confirm their ideas, beliefs, regardless of what is shown by the data.
 - Biased Memories: this type of confirmation bias explains that we tend to remember more easily events that support our beliefs.

2.4 Mass Market Industry and Cognitive Biases

Mass Market Industry refers to that part of the market which offers a large quantity of products and services to many consumers, directly meeting the wishes of consumers at a reasonable price (Investopedia, n.d.). This type of industry is distinguished by the high standardization of products, being composed of companies that offer solutions to meet specific consumer needs. This results in products that are substantially identical in function but may differ in small features. These subtle differences make consumer choice complicated and uncertain. In this context, cognitive biases play a significant role, influencing rapid decisions between similar products.

The mass market industry is the quintessential field where companies capitalize on cognitive biases to benefit themselves, by leveraging these biases and guiding consumers towards their products and services through strategic marketing. This is also apparent when consumers are faced with choosing from a vast array of products, or when there is a desire to enhance the perception of a particular brand, or to ensure a product dominates the market through aggressive and pervasive advertising.

The powerful influence of cognitive biases in the mass market industry is particularly evident in large stores, where the quantity of products offered, the way they are positioned inside the store and the atmosphere created in the store is designed to make the most of cognitive biases in the consumer's mind, driving them to purchase.

There are many different biases that brands use to maximize their performance in stores, in particular scarcity effect and halo effect.

The Scarcity Effect is a cognitive bias whereby people attach a greater value to an object that is in small quantity, compared to an object available in abundance. Scarcity is something that pours positively into the consumer's mind, as it tends to be associated with luxury or exclusivity, qualities that everyone perceives as high quality. The object in scarcity arouses more interest in the consumer, classifying it as desirable. One example of the use of the scarcity effect is limited edition products, where limited availability increases consumer interest (Convertize, n.d.). A typical case of the bias in question is the Apple effect on consumers, where with each new version of the phone long lines are created miles outside the stores to have the new model. This is because Apple products are famous for running out of stock at the time of release, as it tends to produce a limited number to maintain its exclusivity (Queue-fair, n.d.) This type of bias is also found in e-commerce, where the number of products remaining in stock of that article is

often indicated, to create desire and fear of missing out on the opportunity to have it. This is a situation that can be found both in online shops and on sites such as booking or Expedia.

The halo effect is a bias that occurs when the positive perception of a product spills over to other related products. The halo effect leads consumers to form a positive opinion of a product based on a feature that convinces them, even if it is irrelevant to their choice (Economia Comportamentale, 2024). This happens in a department store when a product is chosen because it has attractive packaging, which conveys a sense of the product's quality. If we perceive the product as aesthetically pleasing, we are inclined to believe that it is of high quality (Bortolotti A. & Bellante F., 2024).

Another cognitive bias that is exploited by companies operating in the mass market industry is the Priming Effect, a process for which a first exposure to a stimulus affects the response to a subsequent stimulus, without the individual being aware of it (Pilat & Krastey, 2024).

The priming effect influences the way a consumer behaves along their purchasing journey, shaping their perceptions, actions, and thoughts by predisposition. It subtly guides them to respond in a certain way, leading to a specific purchasing decision, often without them being fully aware of how they arrived at that conclusion.

Companies use the priming effect in their marketing campaigns, through a process called "Behavioral Pump" (Pilat & Krastey, 2024), which means that consumers' purchasing decisions are influenced without their knowledge. A study by Chartrand (2008) and colleagues shows how the priming effect can push consumers to prefer a specific brand. In the study, consumers are exposed to a series of words that recalled either high-end brands or low-end brands. This exposure triggered in them an association mechanism such that consumers exposed only to words that recalled luxury brands, the choice fell on high-end brands such as Gucci, without them being aware. It was studied how the priming effect acts unconsciously and that the

influence of certain words and images push the consumer to make decisions in an unconscious way.

Another important factor in the mass market industry that leverages cognitive biases is the strategic design of store layouts. By carefully positioning products and creating an atmosphere tailored to encourage specific behaviors, companies use store layouts to subtly influence consumer choices, guiding them towards purchases without them realizing it.

In the mass market industry, companies strategically design their retail spaces to guide consumers along a specific path that encourages product purchases based on their placement. Everything about the design of the store, the music chosen, the type of lights, the layout of the products and the style of furniture chosen are all strategically selected to create a specific atmosphere that stimulates consumers to buy.

So-called "mind maps", defined as internal representations of external geographical realities and their spatial dimensions (Hackett et al., 1993). They are acquired either through movement in space or by verbal communication of space. In store layout, mind maps are created based on knowledge of the location of products within a store, the location of shelves, escalators etc. (Golledge 1999; Ittelson et al. 1974; Russell and Ward 1982). In particular, environmental psychology, relating to the way consumers perceive environments (Mehrabian, 1976), can be distinguished in emotional and cognitive approaches.

In the emotional approach, the focus is on the type of emotions that the consumer experiences when entering a store. According to the behavioral model proposed by Mehrabian (1976), the amount of information subjectively perceived by a consumer in a store is related to their image of that store. The amount of information depends on how complex and new the point of sale is because. The more different, new, surprising, the more it causes emotional reactions such as pleasure and excitement (Groeppe-Klein & Bartmann, 2009). These reactions are then

transformed into situations of "approach" to the store, in which the consumer enjoys visiting the point of sale, recommending it and recommending it to other consumers (Groeppel-Klein & Bartmann, 2009).

In the cognitive approach, the rational aspect of the consumer is more involved, determining how they remember and perceive the environment. In the cognitive approach, mind maps, as mentioned above, play an important role, since they are formed based on the information the consumer perceives about a given environment. When a consumer is very familiar with a store tends to spend a lot of time inside it, the likelihood of them moving to another store is low (Rhee & Bell, 2002). This is because consumers do not want to miss the opportunity to take advantage of the store's knowledge, its assortments, product layout, and prices (Rhee & Bell, 2002).

3 Methodology

In order to effectively and concretely answer the research question and understand whether and how cognitive biases influence the decision-making process in consumers, a quantitative analysis was undertaken by means of a survey method.

This instrument was chosen for its ability to collect information from a large number of people in a systemic and standardised manner. This made it possible to obtain a number of quantitative data that could be easily analysed and compared.

The survey was designed with the objective of understanding the degree of consumer irrationality in the purchasing process, i.e. how aware consumers really are of their purchases, how much they purchase in a reasonable and rational manner, and how much cognitive bias actually influences the consumer purchasing process. This is because, as previously mentioned, cognitive biases act as mental shortcuts in a completely unconscious manner in the mind of the

consumer, who, not being aware of the phenomenon, becomes the victim of these mechanisms, put into play by companies to maximise their profits.

The central dependent variable in the survey analysis is the degree of irrationality in the decision-making process. This will be examined by looking at how frequently consumers make impulsive purchases and whether they tend to base their purchasing decisions on rational or irrational factors.

The independent variables consist of questions relating to both demographic factors and the different cognitive biases whose effect we want to study. In particular, the independent variables influence the dependent variables, which is why these types of questions were used to understand the extent to which cognitive biases influence the degree to which consumers are irrational in their purchasing processes.

The sample identified consists of approximately 50 participants, mostly women between the ages of 25 and 35, a suitable age to be able to draw a fair figure on how young people perceive and are subject to cognitive bias. In particular, the majority are students and workers.

4 Results

It is important to start the survey analysis by specifying whether consumers prefer to buy online or in shop. 62.5% of respondents prefer buying in shop over buying online, which is interesting in the context of an increasingly digitised society. Consumers value the in-store experience and contact with products, in particular, as discussed in the previous sections, companies in the mass market industry take full advantage of the cognitive bias in their shops, both in the way stores are decorated, the way products are positioned, and the presence of promotions and offers.

But what is the main factor that consumers consider when deciding to buy? The most popular factor is price, with about 48%, followed by quality with 25%, brand reputation with 19% and

reviews with 8%. It can be seen that price is predominant as a criteria of choice for consumers, this influencing a large part of consumer choices, considered as the first thing consumers look at when evaluating which product to buy. It is precisely on price that cognitive biases play an important role, companies play a lot on price to attract consumers to buy their products, thus deviating the consumer from economic rationality.

Of course, brand reputation is also important, so that consumers rely on the reputation they have of a brand as an indicator of trust and quality. In this case, confirmation bias is crucial as it is precisely these consumers who give more weight to information that confirms the positive perceptions they have of the brand, neglecting what may be negative factors. The importance of brand loyalty is also found in a follow-up question where respondents on a scale of 1 to 5 indicated how important brand loyalty was to them in the decision-making process. The majority of the respondents placed themselves at an intermediate value at a score of 3 with a percentage of 52%, this shows that for more than half of the participants, the brand is an important factor but not the only one that consumers notice at the time of purchase, as previously verified, it is therefore not a decisive element.

After giving a brief analysis of consumer choice factors and understanding the target group of participants, the focus shift to the analysis of cognitive biases.

In the area of confirmation bias, the analysis shows that around 46% of participants avoid reading negative reviews about a brand whose thoughts are positive. This confirms that confirmation bias significantly influences consumers, who tend to confirm and protect the thoughts they have about a particular brand or product, thus not going against their own beliefs.

In the second question asked again in the context of confirmation bias, the topic of negative reviews is taken up, showing participants a clear example of a situation they may find themselves in, where if an external consumer shows that they have had a negative experience

with a brand of which participants are particularly fond, how much they tend to avoid the opinion of others and remain focused on their positive thoughts for the brand. The majority of responses indicate that many tend to ignore this criticism by continuing to support the brand, with 40% stating they are neutral, while 44% state they would probably ignore the advice of others by continuing to buy the products of the brand they love. This type of response makes us realise how much the emotional factor can play an important role in the decision making process and highlights how a consumer's past experiences with a brand can be crucial in building positive thinking towards the brand, even against objective evidence showing negative results.

In the following, the focus is on the framing effect, where both questions show examples of situations in which the consumer may find himself during his purchase path within a store. In both cases, the focus is on how an identical piece of information but presented in a different way can influence the way the consumer chooses and which of the two products the consumer focuses on. In the first question, the situation is presented in which the consumer is confronted with two identical healthy products in which the first is labelled 'contains 80% less fat' and the second 'contains 20% fat'. Approximately 40% of the respondents answered that they would most likely choose the product with the statement '80% less fat', which shows how a simple positive statement and the way in which the benefits are indicated affects the consumer's perception of the product as better than the competitor.

In the second question, the context shifts to promotions and how an opportunity on the product is presented to the consumer. Consumers were asked how willing they are to buy a product if it is advertised with the slogan '*Buy before it's gone*' compared to a classic discount. About 50% of the participants answered in the affirmative, i.e. that they would tend to buy the product if it was no longer available in the future. The perception that the product is running out evokes in

the consumer an increase in perceived value, putting the consumer in the position where they must necessarily buy the product in order not to miss this opportunity.

For the anchoring effect, two questions were asked that could accurately capture the objective of this bias. Participants were asked how much the first price they saw for a product influences subsequent price comparisons for the same product, and 50% of them indicated that they thought the first price they saw had some influence on future comparisons. This is because, in our minds, the so-called 'anchor', discussed in the previous chapters, is created, which acts as a reference for subsequent evaluations, thus considering the first price as a reference point on which to base subsequent comparisons. Only a minority of 10% consider that the first displayed price is not so relevant, showing more rationality and analysis in evaluating prices independently.

The second question puts the participants in a situation of buying a dress, where we place the anchor bias together with a discount. The comparison is made between two dresses, where in the first the price is 60€ discounted from 120€, resulting in a 50% discount, the second has a price of 45€ with no discount indicated. 50% of the participants indicate that the initial price influences their evaluation of the product enough, and seeing the discounted price with the original one increases the perception of value and quality they have on that product, considering it a good opportunity. This is because, even if the price of the first dress discounted at 60€ is higher than the second dress not discounted at 45€, the initial price of the first dress at 120€ makes people perceive it as a quality product, for which they cannot pass up the opportunity of the discount, thus moving the decision towards it even if it has a higher price.

The last bias analysed in the survey is the availability heuristic, in which it was asked how the frequency with which a product is visible to participants through advertising, reviews and word of mouth influences their purchasing decisions. The results show that for 52% of the

participants, the likelihood that they will be influenced by what they repeatedly see through social media, TV, advertising etc. influences their evaluation of the product, thus increasing the likelihood that it will be taken into consideration during the decision-making process.

After analysing the independent variables and understanding the influence of cognitive biases on the purchasing process, the survey concludes with the last two questions, focusing on the dependent variables. Using a quantitative variable, participants were asked how likely on a scale of 1 to 5 they were to make impulsive purchases. Most participants placed themselves in the 4s with a percentage of 47%, thus showing a fairly high tendency to make impulsive purchases. They were then asked whether they based their purchasing choices on rational or irrational factors, and in this case 85% indicated rational factors, a result consistent with the consumer's unawareness of cognitive bias, convinced that they buy according to objective factors.

There is a strong link between the questions as it is in these that the conclusion of the survey can be drawn. Consumers buy impulsively, and we have seen this before, they buy out of emotion, out of necessity, out of attraction, out of stimuli from social media, advertising etc. Purchases are not always made rationally, although, as the previous question showed, the majority states the opposite, i.e. that they buy according to rational factors.

This statement is clearly contradictory to what has been said about impulsivity, but it is precisely what the study aims to demonstrate, namely that consumers think they are rational in their purchasing processes, but in reality, they are strongly influenced by cognitive biases that act at a completely unconscious level.

5 Conclusion

This thesis allowed for the exploration of the importance of cognitive biases in the decision-making process and in particular how consumers are influenced unconsciously by them.

The study began with an overview of the main economic theories, starting with the Rational Choice Theory and ending with the concept of bounded rationality, which provided the basis for embarking on the discussion of the decision-making process and cognitive biases.

It became evident that human decision-making is often irrational, shaped by a purchasing journey influenced by multiple factors that drive consumers toward impulsive choices under the sway of cognitive biases.

The study delved into the concept of cognitive bias, analyzing the most important and common types such as the availability heuristic, the framing effect, the anchoring effect and the confirmation bias.

The survey revealed an important point that decisively fulfils the purpose of this research, i.e., consumers consider themselves to be rational decision-makers, believing that they act completely objectively, basing their purchasing decisions on rational choices, but this belief contradicts the real behaviour of consumers, who are influenced by cognitive biases. Emotional factors, limited promotions, brand loyalty are all factors that influence consumers and allow cognitive biases to divert the consumer's purchase, causing a sense of lack and leading the consumer to make impulsive and irrational purchases.

In conclusion, human beings make irrational and impulsive purchases unconsciously, the result of the interaction of emotional factors, external stimuli and corporate strategies. Companies, aware of these dynamics, exploit cognitive biases to guide their choices and increase profits.

5.1 Limitations and considerations

The study conducted was certainly of great importance in understanding the influence of cognitive bias and consumer irrationality in purchasing processes. However, there are limitations to be highlighted, which did not allow for a comprehensive view.

Certainly, one of the most relevant limitations is the not so large number of participants that took part in the survey. A larger sample of participants would have been able to provide a more accurate and complete analysis, with the possibility of obtaining a broader and more diversified point of view. A further limitation is represented by the cognitive biases analysed, as only some of the cognitive biases were addressed, when in fact there are many others that in turn have an important influence on the consumer purchasing process.

Finally, it is important to point out that the study focused exclusively on the consumer, analysing the purchasing process from his point of view, leaving little room for the side of the strategies implemented by companies to leverage cognitive biases.

5.2 Proposal for future research

Future research in this area could focus on analysing how companies exploit cognitive biases in order to better understand where it all originates. It would be interesting to study how advertising campaigns, product placement in stores and promotions are designed to activate cognitive biases and to understand what companies see as consumers' weak points to leverage. Thus, the dynamics between consumers and companies would be clearer and more complete and it would be possible to implement strategies that are useful for companies but at the same time protect the consumer's decision-making autonomy and awareness.

Finally, it would certainly be useful to provide the study with the analysis of additional cognitive biases, such as the halo effect and the priming effect, which were discussed but not specifically analysed within the survey.

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