Influence of the need for affect and need for cognition on the relationship between the persuasion techniques scarcity and consensus and the purchase interest and intention

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Abstract

E-commerce companies have become a driving force in the economy. Every year, online stores generate tens of billions in sales, and the trend shows that this will not change soon. Companies are trying to target their customers as precisely as possible, but there is still much potential in personalizing e-commerce sites.

Persuasion techniques such as Cialdini's six principles of persuasion are widely used in marketing. However, until now, it has been unclear how individual differences are related to persuasion techniques. This paper examines the influence of the need for affect and the need for cognition on the relationship between the persuasion techniques scarcity and consensus and the purchase interest and purchase intention of potential customers.

To address this question, a survey is conducted (N = 215). In the style of an online hotel booking website, participants are shown high and low scarcity and consensus stimuli. Subsequently, their purchase interest and intention are measured, and their individual need for affect and need for cognition is determined.

The linear regression results show that the need for affect approach moderates the effect of the persuasion techniques scarcity and consensus on the purchase interest and intention. At the same time, the results also indicate that the need for cognition and the need for affect avoidance are not significant moderators. This leads to the following two conclusions:

1. When scarcity is high, the purchase decision is also high, but the effectiveness of this relationship is increased when the need for affect approach is high.
2. When consensus is high, the purchase decision is also high, but the effectiveness of this relationship is increased when the need for affect approach is low.

These two observations result in tangible recommendations for action for e-commerce companies. First, a short survey should determine the potential customers' need for affect. After that, people with a high need for affect approach are best shown

a scarcity stimulus, for example, by indicating that there are not many products left or a time limit. To increase purchase interest and intention, people with a low need for affect approach should be shown a consensus stimulus making it clear that previous customers agree on the good quality of a product.

This paper holds value both for companies that want to maximize the effectiveness of their personalized targeting and for academia, where not much research has been done on the influence of the need for affect and the need for cognition on the relationship between persuasion techniques and purchase interest and intention.

KEYWORDS: *need for affect, need for cognition, persuasion techniques, purchase interest, purchase intention*

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Introduction

Persuasion techniques have always aimed to influence people's attitudes and behaviors (Perloff, 2017). However, they differ greatly from manipulation or propaganda methods because persuasion techniques are ethically neutral, overt, and can be withdrawn (Romanova & Smirnova, 2019). Persuasion techniques are effectively used in marketing to persuade customers to buy a product or service (Kaptein & Eckles, 2012). One of the best-known concepts in the field of persuasion techniques are Cialdini's six principles of persuasion. It includes the following principles: reciprocation, scarcity, authority, commitment and consistency, consensus, and liking (Cialdini, 2007; Kaptein et al., 2009). However, up to now, research has primarily focused on the average customer and has yet to consider more extensively that people are individual beings and that each character is unique. Thus, not every persuasion technique may have the same effect on every person.

Social media and e-commerce platforms have become essential supports for retail businesses, so it is vital for the well-being of society to study these areas carefully (Saw & Inthiran, 2022). Furthermore, these new technologies also offer the advantage of addressing customers in a personalized way, i.e., using persuasion techniques tailored to the individual customer to ensure maximum effectiveness (Marwade et al., 2017). This paper aims to determine whether Cialdini's principle of scarcity and consensus have the same effect on all people or whether there are differences in their effectiveness.

To examine the individual differences, the relationship between the two information processing systems of humans and the persuasion techniques scarcity and consensus are examined. The two information processing systems are the affective and cognitive systems, which greatly influence how people behave and make decisions (Maio & Esses, 2001). Every person can have a high or low need for affect and a high or low need for cognition. The need for affect refers to feelings and emotions, whereas the need for cognition refers to reasons and properties (Teeny et al., 2021). Mainly in media usage and politics, the concepts of the need for affect and the need for cognition are often referred to. For example, people with a high need for affect are more likely to use rich media, and it is assumed that they are more easily influenced by political messages (Arceneaux & Vander Wielen, 2012; Johnson, 2020). On the other hand, people with a high need for cognition are considered to be more

intelligent, and it is more challenging to influence them in political debates (Arceneaux & Vander Wielen, 2012; Cacioppo & Petty, 1982).

The academic relevance arises from the fact that so far, various persuasion techniques, purchase interest and intention, as well as the need for affect and the need for cognition, have been studied extensively, but how these different concepts influence each other is still relatively unknown. Therefore, it is detrimental to determine whether the individual need for affect and cognition influence the effectiveness of the persuasion techniques scarcity and consensus on the purchase interest and intention. Researchers like Kim (2020) and Pradana et al. (2022) have already begun exploring the influence of the individual need for affect and need for cognition on purchase interest and purchase intention. However, persuasion techniques such as Cialdini's six principles did not play a role in these studies.

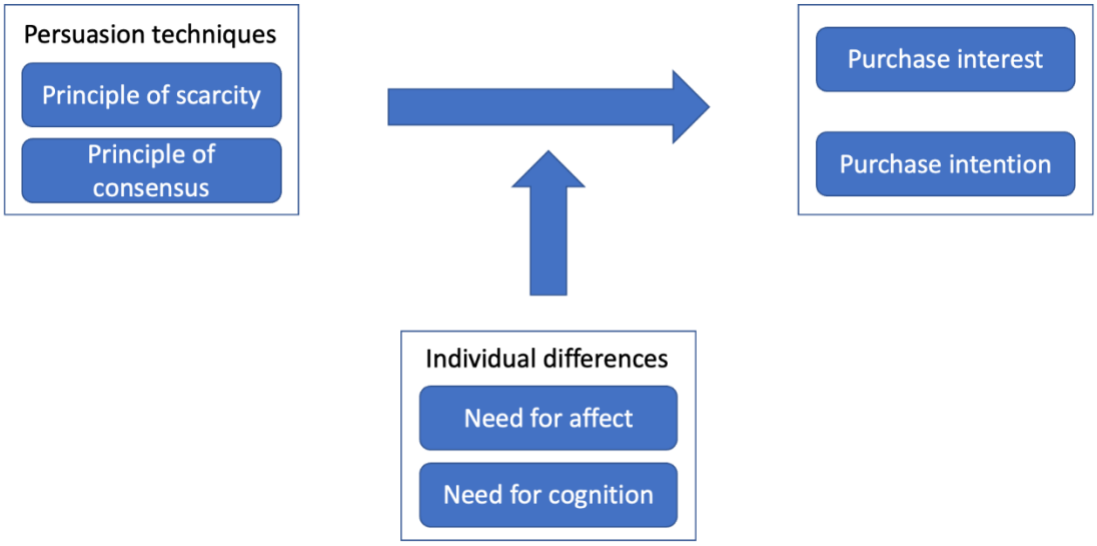
The societal relevance is justified by the fact that e-commerce companies have built up an enormous market power in the 21st century, and persuasion techniques are an integral part of their sales strategy. Therefore, it is essential to examine which role the need for affect and the need for cognition play in this psychological and economic construct. In addition, companies also recognize that personalizing messages along the customer journey can ultimately lead to higher profits, which makes the research in this paper interesting for businesses as well (Kaptein & Parvinen, 2015). With insights into the need for affect and the need for cognition of their customers, marketers can address them more personally and apply tailored persuasion techniques for each type of customer.

All these considerations result in the following research question: *To what extent do the need for affect and need for cognition influence the effectiveness of Cialdini's principles of scarcity and consensus regarding the purchase interest and the purchase intention?*

Conceptual Model

The persuasion techniques scarcity and consensus influence the purchase interest and purchase intention (see Figure 1). The individual differences in the need for affect and need for cognition serve as moderator variables and influence the form and strength of the relationship between the independent and the dependent variable.

Figure 1. Conceptual model



Structure of the Thesis

In the following chapters, first, the theoretical framework is explained, in which the persuasion techniques scarcity and consensus, as well as the need for affect and the need for cognition, and the purchase interest and intention, are discussed. Next, the individual variables are combined in the hypothesis chapter, and the relationships and influences between the elements are examined. In the methods section, reference is made primarily to the structure of the survey, but the ethical requirements are also discussed. Subsequently, the statistical analyses are presented, and the hypotheses are answered. In the last section, the main findings are summarized, scientific and societal implications are discussed, the study's limitations are analyzed, and suggestions for further research are given.

Theoretical Framework

Persuasion Techniques

Persuasion techniques are methods used to intentionally change people's attitudes or behavior (Kaptein et al., 2009). The academic literature describes numerous persuasion techniques, such as Fogg's persuasion strategies and Rhoads' principles (Alkış & Taşkaya Temizel, 2015). However, Cialdini's six principles of persuasion are one of the most well-known and recognized. The six principles are the following: reciprocation, authority, commitment and consistency, liking, scarcity, and consensus (Kaptein et al., 2009). Cialdini's principles have been applied successfully in various scenarios, such as online commerce, fund-raising, advertisements, and health information systems (Alkış & Taşkaya Temizel, 2015; Cialdini & Goldstein, 2002).

Furthermore, the principle of scarcity and the principle of consensus play a major role in the customer journey's interest and intention phase, which will be explained in detail later in the paper. For this reason, only these two principles are used as stimuli for this study (see Appendix A). The six principles are now presented in order, whereby the underlying mechanisms of the principle of scarcity and the principle of consensus are thoroughly described.

Principle of Reciprocation

People generally feel obligated to repay their debt to their fellow human beings (Cialdini & Goldstein, 2002). This sense of fairness and justice is deeply embedded in all societies and crucial to all interpersonal interactions. Those who are known only to take and not give are socially sanctioned and, for example, labeled as moochers and freeloaders (Clark & Kemp, 2008). This behavior of reciprocal altruism is the foundation of cooperation and coexistence (Apicella & Silk, 2019). Cialdini and Goldstein (2002) underpin this claim with the example that many charities give potential donors a small, inexpensive gift, thus significantly increasing their donation rate.

Principle of Authority

In order to make decisions or form opinions, humans often follow the advice or example of authority figures and experts, especially if a firm opinion has yet to be formed. Page et al. (1987) showed in their study that the broadcast of an expert statement on national television could change the overall sentiment of a society by up to four percent. Trust in experts is even stronger when it is assumed that they are neutral and do not gain any personal advantage from their opinion. Consequently, credibility is the key to success for the principle of authority to be an effective persuasion technique (Cialdini & Rhoads, 2001).

Principle of Commitment and Consistency

Humans are careful not to act contrary to their statements and beliefs. Cialdini and Goldstein (2002) illustrate this claim with the following example. Fundraising organizations distributed pins with the organization's logo to potential donors. As a result, the people who received and wore such a pin donated primarily to the organization that gave them the pin to avoid violating their convictions. Therefore, getting people to commit to something in public, even if it is not legally binding, significantly increases the likelihood of people standing by their word (Cialdini & Rhoads, 2001; Clark & Kemp, 2008).

Principle of Liking

According to Cialdini and Goldstein (2002), the principle of liking is based on four pillars: physical attractiveness, similarity, cooperation, and the extent to which we feel the other person likes us. Humans automatically attribute good qualities to attractive people, which is especially important for politicians and businesspeople. For example, researchers have studied the voting behavior of Canadians and found that good-looking Canadians do significantly better in elections than unattractive ones. However, when voters are asked if the candidate's attractiveness played a role, they vehemently deny it; therefore, the persuasion occurs subconsciously (Cialdini & Rhoads, 2001).

Principle of Scarcity

Scarce objects arouse a feeling of desire in people. According to Cialdini and Goldstein (2002), humans learn from an early age that rare or difficult-to-obtain objects are usually better and, therefore, more valuable. Furthermore, a product's limited availability is associated with a high general interest in it, which suggests it is of high value (Eisend, 2008; Lynn, 1989). This also applies to products that, objectively speaking, are not particularly good or of high quality, but are considered desirable because of their rarity.

This assumption was confirmed in a study by Cialdini and Rhoads (2001). One group of participants received ten cookies, while the other group received only two. The participants who received two cookies rated the cookies significantly better than those who received ten. The cookies were identical, and the taste, therefore, the same; only the availability was different. Quantity restrictions are, therefore, quite effective and increase interest in scarce products by signaling high quality and status (Lynn, 1992).

Moreover, also time limits can trigger the feeling of scarcity and influence consumers' buying behavior. Examples of time limits in commerce are discounted food, airline tickets, and vacation packages (Barton et al., 2022). Besides, Aggarwal and Vaidyanathan (2003) have shown that time-limited scarcity significantly influences whether promotions lead to increased purchase interest. In their study, the researchers analyzed the purchasing behavior of 102 students to determine whether the time during which a promotion is valid can influence purchasing behavior. A boombox was selected as the object of desire. The students were divided into two groups. One group received a promotion code that expired within ten hours (time-limited), and the other group received a promotion code that was valid indefinitely (time-independent). The promotion discount and the boombox's price were identical in both cases. The students were now asked whether they were interested in buying the boombox. The results showed that the group that received the time-limited promotion was significantly more willing to buy the boombox and rated the promotion considerably better than the time-independent group. In post-study interviews, the time-limited students indicated that limiting the promotion period to ten hours gave them the impression of the deal being so good that the company could only afford to offer the promotion for ten hours. Although the potential savings were the same in both groups, the feeling of scarcity alone increased the purchase interest significantly.

However, whether the stated scarcity of products and services really exists or whether companies create scarcity artificially or, in the worst case, brazenly lie to their customers varies from case to case. Nevertheless, using scarcity as a persuasion technique is quite lucrative for companies (Shi et al., 2020).

According to Shi et al. (2020), four theories explain why the principle of scarcity is so effective and why it is so often used in marketing. The first approach to why scarcity is widely used is based on the commodity theory. It states that scarcity increases the value of any product or service, provided it is helpful to the customer and transferable to others (Brock, 1968). This is related to the fact that people want to be unique and attribute high value to anything that can make them special, i.e., rare (Brock, 1968; Fromkin, 1970; Roy & Sharma, 2015; Wu et al., 2011).

The second theory, which contrasts somewhat with the first, is the conformity theory (Shi et al., 2020). The need for conformity describes the human need to be part of a group, which can only be achieved by conforming to the group's norms (Bernheim, 1994). Only minor deviations from the social norm are enough to endanger one's status and, thus, one's position in the group. Examples of products that indicate group membership are smartphones of a particular brand or the latest sneaker models. If these things are rare, there is pressure to own them as soon as possible in order to still conform to the group norm (Eisend, 2008).

The regret theory provides the third explanation for the importance of scarcity (Shi et al., 2020). People worry about future regrets and fear making the wrong decision (Simonson, 1992). Suppose it is known that a product will not be available for a long time or is only available in small quantities. In that case, there is pressure to purchase this product because otherwise, a good opportunity will have been missed, and in the future, one will regret not having been quick enough and having missed the chance to buy the product (Shi et al., 2020).

Fourth, the reactance theory comes into play. Behavioral freedom is essential for many people, and products not available in unlimited quantities interfere with this desire for freedom. Scarcity robs people of their freedom of choice, which they want to regain as soon as possible (Cialdini & Goldstein, 2002). The choice at risk now becomes more attractive. For this to happen, the person must assume that freedom of choice typically exists and that the object in danger must be of personal importance (Lessne & Venkatesan, 1989).

Another approach that explains why scarcity is such an effective persuasion technique is the bandwagon effect. This theory is based on the notion that people observe the behavior of other people very carefully in order to be sure that they belong to the majority of society (Schmitt-Beck, 2015). This, in turn, influences individual buying behavior. If a product is rare, it indicates that many people (the majority of society) are interested in this product and that it makes sense to buy it to be a part of the majority.

In summary, it can be said that quantity restrictions and time limits can trigger scarcity and thus strongly influence the purchasing behavior of customers (Barton et al., 2022; Lynn, 1992). Various theories provide explanations for this phenomenon (Schmitt-Beck, 2015; Shi et al., 2020). It is difficult to determine which approach is responsible for the increased purchase interest and intention in each individual case. Still, it can be said that businesses are well aware of the power of scarcity and use it cleverly to increase their sales. In the further course of this study, reference will not be made to a single theory. However, scarcity will be considered an overall construct from various explanatory approaches.

Principle of Consensus

Humans are social creatures and pay close attention to their environment to decide how to behave in each situation (Cialdini & Goldstein, 2002). The reason for this is the assumption by people that the decisions and behavior of their fellow human beings are correct and that they should therefore behave in the same way (Abdul Talib & Mat Saat, 2017). For example, it is more effective for a hotel owner to point out the social norm (most guests reuse their towels) than to point out the importance of environmental protection (Goldstein et al., 2008).

Although humans make independent decisions, they are subconsciously guided by others. This is especially true in ambiguous situations (Clark & Kemp, 2008). Orientation to other people gives the confidence to make the right decisions, which is the reason why many customers read reviews of other customers before buying a product (Yuan et al., 2012).

Online reviews are a classic example of an online popularity claim (Jeong & Kwon, 2012). The popularity of a product, conveyed, for example, by the number of product reviews, information about best-sold products, or the sentence "XX% of

consumers bought this product after viewing this site," serves as a signaling device along the lines of “if others think this is good, it should be good” (Ioanid et al., 2015; Sundar et al., 2008). This logic is based on the trait that humans are strongly influenced by what they think others think about a product. This process is called the bandwagon effect. The basis of the bandwagon effect is the human need to be part of the group they think represents the majority (Schmitt-Beck, 2015). Especially in the e-commerce sector, the purchase interest and intention toward a product are strongly influenced by the opinion of others (Jeong & Kwon, 2012; Sundar et al., 2008). Marketers use this behavioral characteristic to influence purchasing behavior (Yuan et al., 2012).

However, this human characteristic is not only used in the e-commerce sector but also in completely different industries and situations. Cialdini and Goldstein (2002) describe how fundraisers present potential donors with a list of all the people in the neighborhood who have already donated, thereby significantly increasing the pressure to contribute money and be part of the right side of society. The same goes for street musicians who put money in their hats before performing to make passers-by feel obliged to give some money as well. Thus, conforming to the norm, getting social confirmation from fellow human beings, and striving to be e part of the majority is a very effective and frequently used persuasion technique.

In conclusion, the principle of consensus is an essential cornerstone of human coexistence and enables people to make decisions without having much prior knowledge (Abdul Talib & Mat Saat, 2017; Cialdini & Goldstein, 2002). Science, too, has studied the principle of consensus extensively as a persuasion technique and has provided important approaches that companies use widely to increase their sales (Jeong & Kwon, 2012; Sundar et al., 2008; Yuan et al., 2012). Examples of their application are omnipresent. Nearly every e-commerce website has product reviews by previous customers, ratings, and banners showing how often a product has been purchased (Ioanid et al., 2015; Sundar et al., 2008). All this information creates a sense of consensus and helps potential customers decide on a product.

Individual Differences

Some people tend to act impulsively and look for situations in which they can give free rein to their emotions, while others appear calm and act with deliberation. Maio and Esses (2001) provide an example of this difference based on two characters

from the Star Trek series. On the one hand, Dr. McCoy, who is passionate about his feelings and driven by them. On the other hand, Mr. Spock, who does not act out his emotions, seems distant and prefers to think analytically. According to Maio and Esses (2001), humans have two information processing systems: an affective and a cognitive one. The affective system functions holistically, while the cognitive system works analytically (Epstein, 1998). Dr. McCoy belongs to the affective system since he acts based on his emotions, while Mr. Spock can be assigned to the cognitive system since he acts calmly and deliberately (Maio & Esses, 2001). Consequently, the affective system refers to feelings and emotions like pleasure or fear, while the cognitive one refers to reasons and properties, such as individual utility (Teeny et al., 2021).

However, the two systems are not autonomous but can interact with each other. Thus, emotions can arise from cognitions, and cognitive actions are also linked to emotions (Maio & Esses, 2001). Nevertheless, as Huskinson and Haddock (2004) state, the affective and cognitive systems correlate only with r=0.15, according to Maio and Esses (2001), with r=0.21. Based on Schober et al. (2018), a Correlation Coefficient between 0.1 and 0.39 is weak, meaning there is no meaningful correlation between the affective and cognitive systems.

A small example from the advertising industry illustrates how the two systems are addressed differently in everyday life (Haddock et al., 2008). Former professional athletes advertised a beer brand in the United States but provided two different incentives for buying the beer. Some athletes praised the beer's excellent taste, while others pointed out that it was less filling, meaning it contained fewer calories. The first statement addresses the affective system, in which an emotion is emphasized. In contrast, the second statement addresses the cognitive system, in which the positive feature of the beer is highlighted. A similar example was provided by Edwards (1990), who had the participants of his experiment test an energy drink. The first group tasted the drink, while the second group had to read the information about the energy drink. Thus, the first group was exposed to an affective stimulus, and the second group was exposed to a cognitive stimulus.

Need for Affect

The affective system is commonly described as the need for affect and characterizes the motivation of people to enter or avoid situations that are emotional for themselves or others (Maio & Esses, 2001). The concept was first proposed and operationalized by Maio and Esses in 2001. The need for affect relates thus not to the emotion itself or the reaction to the emotional situation but to whether a person wants to get involved in an emotional situation in the first place (Appel et al., 2012).

According to Maio and Esses (2001), the following elements belong to the concept of affect: emotions, moods, preferences, and evaluations. It is important to note that people strive not only for positive emotions but for a whole range of feelings (Maio & Esses, 2001).

Because emotions are deeply rooted in human DNA, Maio and Esses (2001) suggest that the need for affect is a cross-cultural construct found throughout the world. Nevertheless, the need for affect is also likely to be culturally influenceable. In some cultures, for example, men are taught from an early age to disregard their emotions because they are considered a sign of weakness (King, 1998). On the other hand, women are taught to listen to their emotions to prepare them for the role of caregiver. Culture and individual upbringing can thus influence whether a person feels comfortable in emotional situations.

The habits of people with a high need for affect are evident in everyday life. Maio and Esses (2001) conclude in their study that individuals who exhibit a high need for affect have more extreme opinions, are more likely to watch emotional films, and were more affected by the death of Britain's Princess Diana. This was confirmed in a study by Bartsch et al. (2010) using dramas and horror movies. In addition, individuals with a high need for affect are more quickly immersed in emotional information and more inclined to endorse story-consistent beliefs when presented with an emotional story than individuals with a low need for affect (Appel & Richter, 2010; Appel et al., 2012).

In short, the need for affect describes the motivation to engage in or avoid situations that involve emotions. Therefore, people can have any value on a scale from a high to a low need for affect (Maio & Esses, 2001). Whether people have a high or a low need for affect, i.e., whether they seek out emotional situations or try to avoid them, has a variety of reasons that still need to be sufficiently researched.

However, the level of the need for affect is probably determined primarily by different personality traits and situational factors (Maio & Esses, 2001). In addition, education and culture also influence the need for affect, as do a person's past experiences. For example, Maio and Esses (2001) suggest that a person who has continuously experienced negative emotions will have developed an aversion toward emotions and will try to avoid emotional situations of all kinds.

Need for Cognition

The cognitive system is commonly described as the need for cognition and characterizes the extent to which people are willing to engage in cognitive activities. Like the need for affect, the need for cognition is an intrinsic motivation, not a natural need, and can reach any point on a scale from high to low (Petty et al., 2009). Therefore, the need for cognition is described as a motivation that develops over time and is not a need in the sense of an innate energy source that drives one's actions.

Individuals with a high need for cognition like to think, whereas individuals with a low need for cognition try to avoid cognitively demanding activities. The higher the need for cognition, the more people think, including about their own thoughts (Petty et al., 2009).

However, not only do people with a low need for cognition not feel comfortable in cognitively demanding situations, but they also do not pay much attention to facts and arguments and get easily distracted by trivialities. This was nicely demonstrated in an experiment by Chaiken et al. (1989). The participants in their study, which consisted of people with a high and a low need for cognition, were presented with six distinct persuasive arguments on a topic, which they were asked to agree and disagree with at the end of the study. However, one group of participants was told they would be presented with two arguments, while the other group was told they would now hear ten arguments. The result of the study was that the participants with a low need for cognition were significantly more likely to agree with the arguments if they were told at the beginning that there would be ten arguments in total. This implies that the participants with a low need for affect did not form their opinion primarily based on the quality of the arguments but were influenced by the sheer number of arguments.

Moreover, the need for cognition also affects the emotional state when a person must solve cognitive tasks and is a factor that determines how well a person

can solve cognitive tasks. Therefore, a high need for cognition leads to better performance in cognitive tasks, such as mathematical calculations, solving anagrams, and reaching logical conclusions. This has real implications for everyday life because people with a high need for cognition have more extensive knowledge than those with a low need for cognition and are also aware of it (Cacioppo et al., 1996).

In addition, a study by Verplanken et al. (1992) investigated whether there are differences between people with a high or low need for cognition regarding the amount of information they gathered before purchasing a product. The researchers told 53 University of Leiden students that they were participating in a market study for a new hand gel. For 15 minutes, the students could select on an information display board which information they want to know about the product. There were 30 different topics to choose from, each containing different information. To ensure that the participants did not simply select all the information, the condition was that the information on each topic was contained in a four-minute audio file. Thus, a price, in the form of time and attention, had to be paid for receiving the information. Afterward, the students had to fill out a need for cognition questionnaire. The experiment's results showed that the students with a high need for cognition selected significantly more information than those with a low need for cognition. Thus, Verplanken et al. (1992) showed that individuals with a high need for cognition search for more information and invest more cognitive resources than individuals with a low need for cognition. These findings are beneficial for advertisers because they indicate that people with a high need for cognition search for significantly more information before deciding to purchase a product.

Furthermore, product attributes are more decisive for individuals with a high need for cognition, while simple cues in advertisements influence individuals with a low need for cognition more strongly (Haugtvedt et al., 1992). Moreover, according to Cacioppo et al. (1996), people with a high need for cognition consume more news from newspapers and magazines. In contrast, individuals with a low need for cognition prefer to watch television (Cacioppo et al., 1996).

In summary, the need for cognition, like the need for affect, is an intrinsic motivation (Petty et al., 2009). It describes the extent to which people are willing to make a cognitive effort; therefore, the need for cognition can assume high and low values. These differences are also evident in everyday life, where people with a high

need for cognition attach importance to informing themselves extensively about a product before purchasing it (Verplanken et al., 1992). On the other hand, people with a low need for cognition are easily influenced by simple cues in advertisements (Haugtvedt et al., 1992).

The Customer Journey

The so-called AIDA model has been popular in advertising for over a century. It was developed in 1898 by E. St. Elmo Lewis, who derived his theory from a study of the life insurance industry (Hassan et al., 2015). Each letter of the AIDA model represents a cognitive phase. A stands for attention, I for interest, D for desire, and the last A for action. As Kojima et al. (2010) describe, the model can be used to track and understand the psychological journey of a customer from the first step to the last, the so-called customer journey (Tueanrat et al., 2021). Even in today's digital age, the AIDA model has retained its importance, as the principles leading to the purchase of a product or service have remained the same (Hassan et al., 2015).

The customer journey consists of four phases. In the first phase, the prospective customer must learn of the product's existence. This happens in the attention stage and usually through advertising (Song et al., 2021). In the next phase, an interest arises to learn more about the product. Although the customer journey is a cognitive process, emotions are triggered in the interest phase. These emotions form a foundation on which specific stimuli can reinforce a vague interest, and thus, the potential customer informs himself independently about the product (Song et al., 2021; Sukma Wijaya, 2012). Examples of such stimuli are product placements in movies that increase interest in a product (La Rey Van Der Waldt et al., 2007). In the third phase, also called the desire or consideration stage, the customer wants to buy the product but still determines which supplier he should choose (Sapian & Vyshnevska, 2019). At this point, the customer must be convinced why he should not buy the product from another provider. In the final phase, the desire becomes an action, i.e., a purchase (Song et al., 2021).

Persuasion Techniques in the Customer Journey

In the interest phase of the AIDA model, the potential customer's interest is aroused (Hassan et al., 2015). After learning about a product through advertising in the attention stage, the potential customer searches for more information and ends up on the website of an e-commerce company where the product is offered (Song et al., 2021). The principle of scarcity plays a major role in this phase. Indications of scarcity, such as a limited quantity or a time limit, stimulate the interest of potential customers because more value is attributed to scarce products (Adaji et al., 2020; Aggarwal et al., 2011; Lynn, 1992). The principle of consensus is also of great importance in the interest phase because, especially when potential customers do not yet know much about a product, they orient themselves toward the behavior of previous customers (Adaji et al., 2020; Clark & Kemp, 2008; Yuan et al., 2012). This human trait is related to the bandwagon effect discussed earlier, in which people are influenced by the behavior of those around them (Schmitt-Beck, 2015). For example, indicating the number of people who have bought a product creates trust and stimulates interest.

In the desire phase of the AIDA model, the purchase intention comes into play. This is when the decision is made as to whether one is willing to purchase. Intentions are the primary predictor of actual behavior and, therefore, fundamentally important (Montano & Kasprzyk, 2015). However, purchase intention should not be confused with the attitude toward a product or brand (Kim, 2020). The attitude only represents a predisposition to buy, while the purchase intention is a self-reported probability of making a purchase. Intention is defined as a combination of wants and desires and, at the same time, plans and needs, and is therefore always associated with the ability to act. Spears and Singh (2004) define purchase intention as "an individual's conscious plan to make an effort to purchase a brand". Nevertheless, the attitude is a preliminary stage to the intention and thus also belongs to the desire phase.

The concept of purchase intention has been used in economics for decades and is now regarded as a standard variable that can be measured in different ways but always has very high reliability, with Cronbach alpha typically >.90 (Kim, 2020). Furthermore, the purchase intention is integral to any marketing strategy and often measured, for example, before the launch of a new product, to predict its success.

The principle of scarcity also influences the behavior of potential customers at the desire stage. At this point, the various theories described earlier come into play,

which state that scarcity can trigger pressure in people (Cialdini & Goldstein, 2002; Lessne & Venkatesan, 1989; Shi et al., 2020). For example, some people feel they must buy a product to have no future regrets or feel they will regain their freedom through the purchase.

The principle of consensus also plays a role in the desire phase by creating the pressure to belong to the majority by buying a product (Jeong & Kwon, 2012; Schmitt-Beck, 2015; Sundar et al., 2008). This also happens in a different context, for example, when people feel compelled to donate money simply because many people around them have already done so (Cialdini & Goldstein, 2002).

The Effects of the Need for Affect and Need for Cognition on the Persuasion Techniques Scarcity and Consensus

As previously discussed, Cialdini's principle of scarcity describes how a product or service becomes more attractive when it is rare or at least appears rare (Cialdini & Goldstein, 2002). Thus, companies and their marketing departments have used the principle of scarcity for a long time (Shi et al., 2020). By applying time limits or quantity restrictions, interest in products is increased because their rarity makes them more desirable. This psychological phenomenon is remarkable because a shortage does not change a product's actual nature and objective value. For example, no matter if a sneaker model exists only once in the world or can be bought in every store, its materials and processing do not change, meaning its quality stays the same. The principle of scarcity thus causes an increase in subjective value but does not influence a product’s quality or condition.

Based on the commodity, conformity, regret, and reactance theory, as well as the bandwagon effect, it is evident that scarcity can trigger emotions and even pressure in people (Schmitt-Beck, 2015; Shi et al., 2020). This can result in a feeling of missing out, of not belonging to a group, or of having a low social status if one cannot acquire a particular product in time (Brock, 1968; Fromkin, 1970; Roy & Sharma, 2015; Shi et al., 2020; Wu et al., 2011). This anxiety is, for example, reflected in long lines in front of shoe stores when a very limited sneaker model is released or the hecticness that arises on discount days, such as Black Friday, when a certain number of electronic items are

sold at a lower price (Ioanid et al., 2015). In short, scarcity triggers emotions in many people and increases their purchase interest and intention (Guo et al., 2017).

People with a high need for affect feel more comfortable in such emotional situations than people with a low need for affect (Appel et al., 2012; Johnson, 2020; Maio & Esses, 2001). This is because people with a high need for affect like to experience highly emotional scenarios and are prone to feeling strong emotions. A classic example of this is shown in a study by Maio and Esses (2001), which indicates that people with a high need for affect enjoy watching emotion-provoking movies, such as horror films or dramas. Furthermore, people with a high need for affect are likelier to perform affective behaviors (Trafimow et al., 2004).

In addition, according to Appel et al. (2012), affective messages generally significantly influence individuals with a high need for affect. Conner et al. (2011) displayed the differences between affective and cognitive messages in an experiment. All participants were asked about their exercise behavior. However, one group additionally received an affective message emphasizing the benefits of exercising, such as reduced stress and anxiety, better self-esteem, and more satisfaction with one's body. The other group received cognitive messages that referred to the instrumental benefits of exercise, for example, reduced risk of cancer, healthier joints, and a lower risk of cardiovascular disease. Thus, affective messages target emotions, while cognitive messages focus on facts and apparent benefits. This logic can also be applied to the principle of scarcity. The cognitive message describes the quality of a product, while the affective message, like time limits or quantity restrictions, indicates that the product will soon be sold out and that one should hurry to get it.

These affective messages trigger emotions in people and intensify their purchase interest and desire, which is cleverly exploited in marketing (Brock, 1968; Fromkin, 1970; Roy & Sharma, 2015; Shi et al., 2020; Wu & Lee, 2016; Wu et al., 2011). Thus, scarcity has a greater impact on individuals with a high need for affect because they are not put off by these affective messages and the thereby created emotional situation. Therefore, scarcity leads to a higher purchase interest and intention for people with a high need for affect. The following hypotheses, H1a and H1b, result from this consideration:

H1a: High scarcity leads to higher purchase interest than low scarcity, but that effect is stronger if the need for affect is higher.

H1b: High scarcity leads to higher purchase intention than low scarcity, but that effect is stronger if the need for affect is higher.

The need for cognition refers to the individual tendency to either feel comfortable in a cognitively demanding situation, as is the case for individuals with a high need for cognition, or to avoid cognitively demanding situations, as is the case for individuals with a low need for cognition. Furthermore, as Chaiken et al. (1989) showed in their study, people with a low need for cognition do not pay much attention to facts and arguments and get easily distracted by trivialities. The results of this study can also be applied to purchasing behavior, where the objective quality of a product less influences people with a low need for cognition. Moreover, they are more likely to be persuaded to make a purchase by trivialities such as the emotions and pressure triggered by persuasion techniques. For this reason, scarcity can be expected to increase purchase interest and intention more strongly for individuals with a low need for cognition than for those with a high need for cognition.

In addition, Verplanken et al. (1992) showed in their experiment that people with a low need for cognition inform themselves significantly less before a purchase, do not search for much information about a product, and invest little cognitive energy in making a purchase decision. It is cognitively less demanding to make a purchase decision based on the subjective value triggered by scarcity than to inform oneself extensively about a product and its quality before making a purchase. For this reason, too, scarcity can be expected to increase purchase interest and intention more strongly for individuals with a low need for cognition than for individuals with a high need for cognition. These considerations lead to hypotheses H2a and H2b.

H2a: High scarcity leads to higher purchase interest than low scarcity, but that effect is stronger if the need for cognition is lower.

H2b: High scarcity leads to higher purchase intention than low scarcity, but that effect is stronger if the need for cognition is lower.

The basic idea of consensus is that people rely on the opinions and experiences of other people since it is commonly assumed that other people's decisions are generally right (Abdul Talib & Mat Saat, 2017; Cialdini & Goldstein, 2002). For example, purchasing a product is always associated with a certain degree of uncertainty, as it is impossible to know all the unique features and, above all, the disadvantages of a product before the purchase. Therefore, people generally look at other people's recommendations to decide whether it is worth getting interested in a product or even buying it. Examples of this from everyday life are reading reviews before buying clothes, watching a movie in the cinema, or visiting a restaurant. The principle of consensus as a persuasion technique takes advantage of the fact that people often rely on the experiences of others (Abdul Talib & Mat Saat, 2017; Clark & Kemp, 2008).

In summary, it can be said that the orientation on other people's experiences makes it easier to decide since one does not have to learn by making mistakes but can benefit from the past decisions of other people (Yuan et al., 2012). Of course, this does not mean that every time many people like something, the product is good, but from a rational perspective, it makes sense to rely on other people's experience. For example, if customers in an e-commerce store see that a product has often been bought and many people have given it a high rating, they can interpret this as a sign of quality. Therefore, a high consensus or social proof leads to the majority opinion being perceived as the truth (Benedicktus et al., 2010).

The principle of consensus and the need for affect are also related. Individuals with a high need for affect are more likely to be attracted to extreme opinions and seek emotional situations (Maio & Esses, 2001). However, the majority opinion is precisely the opposite of an extreme opinion, so it is expected that a high consensus does not easily influence people with a high need for affect. In addition, considering something is good because the majority perceives it as good is not an emotional train of thought but somewhat rational reasoning. In contrast, individuals with a low need for affect rarely hold extreme opinions and tend to avoid emotional situations.

Therefore, individuals with a low need for affect will show an increased purchase interest and purchase intention in a high consensus situation. Hypotheses H3a and H3b were derived from these considerations.

H3a: High consensus leads to higher purchase interest than low consensus, but that effect is stronger if the need for affect is lower.

H3b: High consensus leads to higher purchase intention than low consensus, but that effect is stronger if the need for affect is lower.

Finally, the principle of consensus is also related to the need for cognition. First, people with a high need for cognition tend to think a lot before they act and do not shy away from cognitively demanding activities (Petty et al., 2009). Furthermore, according to Appel et al. (2012), cognitive-based messages, thus messages based on facts and not emotions, generally significantly influence people with a high need for cognition. According to Haugtvedt et al. (1992), also a product's quality is important for individuals with a high need for cognition. On the other hand, people with a low need for cognition are more likely to be persuaded by intrinsically irrelevant things that do not indicate anything about the quality of a product or service (Chaiken et al., 1989).

A high consensus clearly signals that many people have the same opinion. So, if a product has many good ratings, this is a strong indication that the quality of the product is indeed good (Ioanid et al., 2015; Sundar et al., 2008). A high consensus thus predicts the product to have a high quality to which people with a high need for cognition respond significantly more strongly than people with a low need for cognition.

Therefore, when consensus is high, purchase interest and intention increase because customers can now rely on the past experiences of others. However, this effect is more substantial for people with a high need for cognition. These considerations result in hypotheses H4a and H4b.

H4a: High consensus leads to higher purchase interest than low consensus, but that effect is stronger if the need for cognition is higher.

H4b: High consensus leads to higher purchase intention than low consensus, but that effect is stronger if the need for cognition is higher.

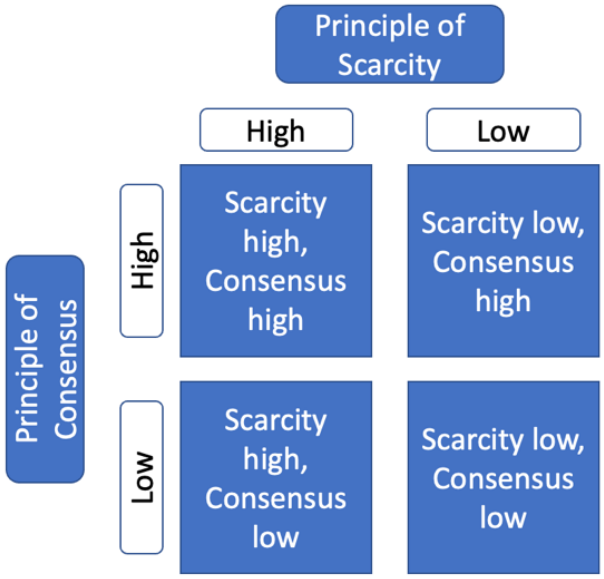
Methodology of Data Collection and Data Analysis

Research Design

A quantitative research design was chosen for this study. The reason for this decision is that quantitative research can determine the statistical relationships among variables and predict phenomena (Saunders et al., 2009). In addition, quantitative methods help investigate the influence of an independent variable on a dependent variable using a large sample, allowing generalized conclusions on broader groups beyond that sample (Queirós et al., 2017).

The persuasion techniques scarcity and consensus can be represented in a 2x2 factorial design (see Figure 2). The principle of scarcity with high and low values is depicted on the X-axis. The principle of consensus is depicted on the Y-axis in high and low values. The four conditions are visually shown as parts of an e-commerce store booking website and serve as stimuli for the participants.

Figure 2. 2x2 factorial design of the independent variables scarcity and consensus



Stimuli

The basic framework of the stimuli is the online booking website for a hotel room, inspired by commercially available e-commerce platforms such as booking.com or Airbnb. The scenario of a hotel booking website was chosen on purpose. In order

to minimize distortion of the results, it makes sense to place the participants in a familiar environment and situation in which they do not first have to find their way around. Most people have booked a hotel room online, so the scarcity and consensus stimuli are nothing new to them, even though they may not have consciously noticed them before. On the fictitious hotel booking page in the survey, no price for the hotel room is shown on purpose because the participants come from different countries and are of different ages and therefore have completely different financial resources. A price indication would, therefore, only distort the survey results and is, anyway, not essential for this work. The entire survey can be found in Appendix A.

Before the participants see the website with the stimuli, they are shown the following message: "Imagine you are planning your next vacation and are looking for a hotel room. On a booking site, you come across the following ad, which you take a good look at". This clarifies that the following part is essential for the survey and that participants must look at the picture carefully.

On the left side of the picture, images of the hotel room are shown, which is large and beautiful, and at the same time, relatively simple to meet the broad masses' taste. All images are royalty-free and have not been copied from real hotel booking sites. In the middle of the right side is a short text describing the hotel and the hotel room, making the accommodation appealing to potential customers. Both the images and the text are the same for all four variants.

The scarcity stimulus is placed above the text. The high scarcity stimulus is inspired by real e-commerce sites and consists of the statements, "5 people are looking right now!", "Only 1 room left!“, and "Limited time offer: only 30 minutes to book a room!”. All statements are colored to distinguish them and draw the viewer's attention. The low scarcity stimulus consists of the statements "Not booked today!", "Many rooms left!", and "No time limit to book your room!”. These statements are also colored the same way as the high scarcity statements and are essentially the opposite in content.

The consensus stimulus is located below the text and contains a rating graphic consisting of eight stars, indicating how many percent of the raters have chosen the respective star. In addition, the indication "1,425 ratings" is visible, but this is the same for all versions and intended to indicate that it is a well-visited hotel room, therefore creating trust. In the version with high consensus, 76% of all raters voted

for the 6-star rating, while the remaining 24% voted for the other seven stars. The high approval rate for a certain number of stars symbolizes that people are unanimous about how the hotel room should be rated, which means there is a high consensus among the voters. The votes are much more evenly spread out in the low consensus version. The seven stars rating has the highest percentage of votes, with 24%. It is important to note that the average rating for both the high and low consensus versions is precisely 5.91. A rating of 5.91 out of a possible eight stars is relatively high, but at the same time, not too high.

Measures

Purchase Interest and Purchase Intention

The purchase interest is determined using the five items from Spears and Singh's (2004) "attitude toward the brand" scale. The items are presented on a seven-point Likert scale (see Appendix B). The higher a person's average value on the scale, the greater their purchase interest.

The purchase intention is measured using the five items from Spears and Singh's (2004) purchase intention scale. The items are presented on a seven-point Likert scale (see Appendix B). The higher a person's average value on the scale, the greater their purchase intention.

To investigate whether the scales from the literature measure a common concept in this sample (N=215), the ten items were entered into a factor analysis using Principal Components extraction with Varimax rotation. Before the analysis, all items were reversed according to the instructions in the literature from which the corresponding scales were taken (Spears & Singh, 2004).

All items load on the same factor, $KMO = .96$, $\chi 2\ (N = 215,45) = 3042.93$, $p < .001$. The resultant model explains 81.1% of the variance. Only one factor has an eigenvalue of more than one, and, on the scree plot, a strong bend is visible after the first factor. All items positively correlate within their component, with factor loadings ranging from 0.884 to 0.922 (see Table 1). Factor loadings below .04 would be removed, but no item has such a low factor loading.

Table 1. Measurement of purchase interest and purchase intention: item loadings on a one-factor Principal Components solution

Items	Purchase decision
Do you intend to book the hotel room?	.922
Will you probably book the hotel room?	.91
Describe your overall feelings about the hotel room (bad to good).	.91
Describe your overall feelings about the hotel room (unpleasant to pleasant).	.903
Are you going to book the hotel room?	.899
How high is your purchase interest regarding the booking of the hotel room?	.897
Describe your overall feelings about the hotel room (unfavorable to favorable).	.895
Describe your overall feelings about the hotel room (unappealing to appealing).	.892
Will you book the hotel room?	.892
Describe your overall feelings about the hotel room (unlikable to likable).	.884
Cronbach's alpha	.97
Eigenvalue	8.11

The scale has very high reliability (α = .97), and the value would not increase if an item were removed from the scale. Cronbach's alpha can assume a value between zero and one. The greater the value, the more reliable the measured construct. Generally, values between 0.7 and 0.8 are satisfactory, and values between 0.9 and 0.95 are considered excellent (Bland & Altman, 1997). A Cronbach's alpha above 0.95 is usually considered suspicious and indicates that several items test the same

question, simply phrased differently (Tavakol & Dennick, 2011). As purchase interest and intention are closely related, this is probably also the case here. However, it is known that purchase intention scales generally have a high reliability of over 0.90 (Kim, 2020). Therefore, the high alpha of this scale is not a surprise. In addition, the ten items have proven valuable in previous scientific research. Thus, the scale will be retained for further calculations. Because purchase interest and intention load on the same factor, they are combined into a common dependent variable for further statistical analysis under the name purchase decision.

Need for Affect and Need for Cognition

To measure the need for affect, the ten-item NAQ-S questionnaire, developed by Appel et al. (2012), is used (see Appendix C). The items can be answered on a seven-point Likert scale ranging from minus three (strongly disagree) to three (strongly agree). However, to simplify the survey and align it with the purchase interest and intention scale, the need for affect items in this survey are presented to participants on a Likert scale ranging from one to seven.

The need for cognition is measured with the NFC-10 scale developed by Chiesi et al. (2018) (see Appendix D). The ten items are measured on a five-point Likert scale ranging from one (extremely uncharacteristic) to five (extremely characteristic). Nevertheless, to make the survey consistent, a Likert scale ranging from one to seven is used in this survey.

The twenty items were entered into a factor analysis using Principal Components extraction with Varimax rotation. Before the analysis, all items were reversed according to the instructions in the literature from which the corresponding scales were taken (Appel et al., 2012; Chiesi et al., 2018).

The resultant model explains 63.67% of the variance, $KMO = .9$, $\chi 2\ (N = 215{,}190) = 2528.72$, $p < .001$. The factor analysis showed three factors (see Table 2). The first factor is the need for cognition, the second is the need for affect avoidance, and the third is the need for affect approach. The three factors each have an eigenvalue of more than one, and, on the scree plot, a strong bend is visible after the third factor. All items positively correlate within their component, with factor loadings ranging from 0.621 to 0.835.

Table 2. Measurement of the need for cognition and need for affect: item loadings on a three-factor Principal Components solution

Items	Need for cognition	Need for affect avoidance	Need for affect approach
I like to have the responsibility of handling a situation that requires a lot of thinking.	.835		
The idea of relying on thought to make my way to the top appeals to me.	.816		
I prefer my life to be filled with puzzles that I must solve.	.803		
I really enjoy a task that involves coming up with new solutions to problems.	.759		
I would rather do something that requires little thought than something that is sure to challenge my thinking abilities. *	.751		
Thinking is not my idea of fun. *	.747		
I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.	.723		
I find satisfaction in deliberating hard and for long hours.	.701		
I try to anticipate and avoid situations where there is likely a chance I will have to think in depth about something. *	.696		
I would prefer complex to simple problems.	.621		
I do not know how to handle my emotions, so I avoid them. *		.802	
I find strong emotions overwhelming and therefore try to avoid them. *		.763	

Emotions are dangerous—they tend to get me into situations that I would rather avoid. *		.763	
If I reflect on my past, I see that I tend to be afraid of feeling emotions. *		.702	
I would prefer not to experience either the lows or highs of emotion. *		.671	
Emotions help people to get along in life.			.823
I think that it is important to explore my feelings.			.775
It is important for me to know how others are feeling.			.748
It is important for me to be in touch with my feelings.			.732
I feel that I need to experience strong emotions regularly.			.665
Cronbach's alpha	.92	.85	.86
Eigenvalue	7.49	3.42	1.83

Note: Items with * were reversed before conducting the Principal Component analysis

The Cronbach's alpha for the need for cognition is 0.92 and would not improve if an item was removed from the scale. The Cronbach's alpha for the need for affect avoidance is 0.85 and would not improve if an item was removed. The Cronbach's alpha for the need for affect approach is 0.86 and would improve to 0.87 if the item "I feel that I need to experience strong emotions regularly." was removed. However, since the improvement would only be marginal and Cronbach's alpha of the scale is already more than sufficient, the item's deletion is unnecessary (Cortina, 1993).

Appel et al. (2012) used in their study the two constructs need for affect approach and need for affect avoidance, but Maio and Esses (2001) applied the need for affect as a single construct. However, based on the Principal Component analysis results, the need for affect is now split into the need for affect approach and the need

for affect avoidance. The two variables are used for the rest of this study, especially for further statistical analysis. The hypotheses maintain their validity, but in the discussion of the results, it must be considered that the analysis was not conducted with a joint construct but with the two subcategories.

Procedure

The software Qualtrics is used to create the survey in this study. At the beginning of the survey, participants are informed about their rights; for example, they can cancel the survey at any time without consequences, and all data remains anonymous. The survey begins only after the participant consented to the study guidelines. After that, the fictitious hotel booking interface is displayed, along with the remark that participants should put themselves in the position of booking a hotel room for their vacations and look closely at the booking page. Randomly, one of four possible websites is presented: one with the stimuli high scarcity and high consensus, one with high scarcity and low consensus, one with low scarcity and high consensus, or one with low scarcity and low consensus.

Subsequently, the purchase interest and purchase intention are measured with five items each. After that, the two questionnaires on the need for affect and need for cognition follow: the NAQ-S and NFC-10. To determine the customer's personality, the explicit profiling approach is the most suitable (Kaptein et al., 2015). This approach has the advantage that standardized questionnaire scores can determine persuasion effectiveness. In a real scenario, the customer would be asked to answer a short questionnaire about his personality and would be rewarded with a discount code as an incentive to answer the questions (Mizes et al., 1984).

Afterward, the participants must answer four manipulation questions to check whether the manipulation was successful (see Appendix A). A manipulation check controls whether the respondents even realized they had been exposed to a specific condition (Hoewe, 2017). The last part of the survey consists of demographic questions about the participant’s age, gender, nationality, and education level. Finally, the experiment ends with a thank you for participation and the opportunity to ask questions.

Respondents

In order to reach as many participants as possible, the snowball sampling method was used. Snowball sampling is a non-probability sampling method, meaning it is not a random selection, but a selection based on accessibility (Etikan, 2016). Snowball sampling begins by asking a group of individuals to participate in the survey. In this case, these are relatives, friends, and colleagues. This first wave of individuals is invited to participate in the survey via online group chats and emails. These first respondents will, in turn, recruit the second wave of participants, and this cycle continues until enough people have participated in the survey to make statistically relevant conclusions. The disadvantage of snowball sampling is that the sample can be biased. The first wave of participants is expected to approach people from the same environment, meaning the second wave will have similar social structures to the first one (Erickson, 1979). To counteract this somewhat, it is essential to select the first wave as diverse as possible in terms of age, gender, nationality, and education (Etikan, 2016). In order to achieve this, people who are as diverse as possible were explicitly selected in the first wave. In addition to pupils and students, the first wave consists of people with several years of work experience or people that are already retired. Furthermore, the first participants asked to participate in the survey live in various European countries and the United States of America.

Of the 233 participants who completed the survey within the two weeks, 18 (7.73%) were excluded for not answering all the survey questions. Thus, the sample for this thesis consists of 215 people. 119 respondents (55.3%) reported being male, and 96 reported being female (44.7%). No person identified themselves as a third gender. 86 persons live in Switzerland (40%), 57 persons in the Netherlands (26.5%), and 25 in Germany (11.6%). These three nations were indicated most frequently, accounting for 78.1% of respondents. When asked about the highest level of school completed or the highest degree obtained, 14.4% of respondents indicated having a high school diploma, 10.2% some college but no degree, 46% a bachelor's degree, and 22.8% a master's degree. Less than high school, doctoral, and professional degrees were only indicated in small single-digit percentages. The youngest participant was 18, and the oldest was 72. The average age was 25 years.

Ethics

Online experiments and surveys should not violate the following principles: autonomy, fairness, non-maleficence, and beneficence (Polonioli et al., 2022). Autonomy means that every human being has the choice to make decisions independently. In this survey, therefore, informed consent must prevail; the participants are told that they are taking part in a study and have the right to withdraw at any time.

Fairness means that all participants are treated fairly in the sense that no one is favored or disadvantaged. This is ensured because the survey is controlled by software, not humans. Therefore, all participants are treated equally, and the survey creators cannot influence how the questions are answered.

The principle of non-maleficence states that no participant will suffer any physical or psychological harm during or as a result of the survey. It is impossible to be physically harmed by an online survey, and psychological harm cannot occur in this case either, as none of the questions deal with topics related to a previously experienced trauma or anything similar. In addition, participants always have the right to cancel the survey without fear of consequences.

Finally, beneficence means that the survey is done for the benefit of the people and the environment, for example, that the well-being of users is advanced. The survey and this study provide essential information about further personalization of the customer decision journey. This allows companies to promote their products more efficiently and also benefits customers, who are no longer confronted with persuasion techniques that do not reflect their character. However, it is essential to maintain fairness and not deceive customers. Scarcity and consensus should arise naturally and should not be artificially induced by companies; then, the principles of persuasion can be used with a clear conscience. The ethics of persuasion techniques in general are discussed in more detail in the subsection on further research.

Results

Manipulation Checks

The participants were asked four manipulation check questions towards the end of the survey to prove whether the participants recognized the stimuli scarcity high and low and consensus high and low. The answers to these manipulation checks were evaluated using a Chi-square test of independence. The Chi-square statistic is used to analyze group differences and does not require equality of variances or homoscedasticity in the data (McHugh, 2013). To define the strength of the correlation between the variables, Cramer's V is used. Its value is always between zero and one; the bigger the value, the stronger the correlation.

Therefore, a Chi-square test of independence was performed to test whether the scarcity stimulus significantly affected how the two scarcity manipulation checks were answered (see Table 3). Participants who saw a high scarcity stimulus significantly recognized that not many hotel rooms were available anymore, X^2 (2, N = 215) = 127.05, p < .001. The Cramer's V is 0.77 (p < .001), which indicates a very strong correlation (Akoglu, 2018). Furthermore, participants who saw a high scarcity stimulus significantly recognized that there was a time limit, X^2 (2, N = 215) = 156.51, p < .001. The Cramer's V is 0.85 (p < .001), which indicates a very strong correlation.

Table 3: Chi-square test of independence, evaluating the scarcity manipulation checks

		Scarcity low	Scarcity high
Were there still many hotel rooms available?	Yes	73.1%	2.8%
	Maybe	13.9%	12.1%
	No	13%	85%
Was there a time limit to book the hotel room?	Yes	8.3%	88.8%
	Maybe	7.4%	9.3%

	No	84.3%	1.9%

A Chi-square test of independence was performed to examine whether the consensus stimulus significantly affected how the two consensus manipulation checks were answered (see Table 4). Both high and low consensus participants have indicated that the hotel room had many reviews, X^2 (2, N = 215) = 3.03, p = 0.22. The Chi-square test is, therefore, not significant, which is good because the number of reviews was the same for all stimuli. Participants who saw a high consensus stimulus significantly recognized that the reviews were not evenly distributed, X^2 (2, N = 215) = 67.98, p < .001. The Cramer's V is 0.56 (p < .001), which indicates a very strong correlation. All stimuli were thus correctly recognized by the participants.

Table 4: Chi-square test of independence, evaluating the consensus manipulation checks

		Consensus low	Consensus high
Did the hotel room have many reviews?	Yes	84.7%	81.7%
	Maybe	14.4%	13.5%
	No	0.9%	4.8%
Did one of the total eight stars have a very high percentage of ratings (over 50 percent), while the others had rather low percentage ratings?	Yes	26.1%	80.8%
	Maybe	19.8%	10.6%
	No	54.1%	8.7%

Testing for Normal Distribution

Before a linear regression can be performed, it must be checked whether certain assumptions are fulfilled. These include normal distribution, homoscedasticity, and low multicollinearity (Ernst & Albers, 2017; Flatt & Jacobs,

2019). If these assumptions are not fulfilled, the results can be distorted and lose their validity.

A Kolmogorov-Smirnov and Shapiro-Wilk test was performed to examine whether the variables purchase decision, need for affect approach, need for affect avoidance, and need for cognition are normally distributed. Both tests have a significance of less than 0.005, meaning the variables are not normally distributed. Interestingly, the P-P plot shows that the data is not as far from a normal distribution as the previous results would suggest (see Appendix E). The results for the Kolmogorov-Smirnov and Shapiro-Wilk tests remain the same even after the data has been z-transformed. Furthermore, 14 Outliers have an extreme value of one or seven for at least one of the four variables. Even after removing these outliers, the significance of the Kolmogorov-Smirnov and the Shapiro-Wilk test does not change. Therefore, the outliers are kept in the data set. It can be concluded that outliers are not responsible for the non-normal distribution. However, most participants have values towards the upper end of the scale, which is also evident from the respective mean values (see Appendix F). The mean for the purchase decision is 4.65 (SD = 1.54), for the need for affect approach 5.23 (SD = 1.16), for the need for affect avoidance 4.7 (SD = 1.34), and for the need for cognition 4.58 (SD = 1.21).

Nevertheless, the picture looks completely different if skewness and kurtosis are considered. Skewness is a statistical measure that describes the symmetry of a distribution (Đorić et al., 2007). If there is perfect symmetry, the skewness is zero. A positive skew indicates that the tail is on the right side of the distribution, which extends towards more positive values. In contrast, negative skew indicates that the tail is on the left side of the distribution, which extends towards more negative values. Kurtosis measures whether a distribution is heavy-tailed or light-tailed relative to a normal distribution (Cannon et al., 2008). In a normal distribution, the value is zero. If it is negative, it is a so-called platykurtic distribution, meaning there are fewer outliers than in a normal distribution. If the value is positive, it is a leptokurtic distribution, which indicates that more outliers are to be expected than in a normal distribution. According to George and Mallery (2010), values between minus and plus two are acceptable for both skewness and kurtosis. According to Hair et al. (2010) and Byrne (2016), values between minus two and plus two for skewness and between minus seven and plus seven for kurtosis are normal. The purchase decision

has a skewness of -0.31 and a kurtosis of -0.89, the need for affect approach a skewness of -0.99 and a kurtosis of 0.47, the need for affect avoidance a skewness of -0.41 and a kurtosis of -0.86, and the need for cognition a skewness of -0.5 and a kurtosis of -0.48. The graphical depiction of these four variables is shown in Appendix F. Based on the guidelines of the previously mentioned researchers, this study's data is normally distributed. However, all variables have a negative skewness, which means that the tail is on the left side of the distribution.

In conclusion, according to the Kolmogorov-Smirnov and the Shapiro-Wilk test, there is no normal distribution. However, considering the skewness and kurtosis, the values are in the normally distributed range. One possible explanation is that the Shapiro-Wilk test is primarily suitable for sample sizes below 50, which is not the case for this study (Mishra et al., 2019). In addition, some researchers generally advise against relying too much on statistical tests to determine the normal distribution but promote trusting graphical representations (Läärä, 2009; Montgomery & Peck, 1992; Quinn & Keough, 2002). The P-P plot, as well as the skewness and kurtosis values, suggest that the four variables are normally distributed. For this reason, the data of this study is considered to be normally distributed, and the regression can be performed. Furthermore, statistical conclusions can be made regardless of the distribution of the individual variables in the study sample (Canals & Canals, 2019). This is based on the central limit theorem, which states that the distribution becomes normal when the sample size is infinite (Pek et al., 2018; Sainani, 2012).

Multicollinearity and Homoscedasticity

Another step that must be performed before evaluating the regression is the test for multicollinearity and homoscedasticity. Multicollinearity describes the state when at least two model predictors are strongly correlated (Vatcheva et al., 2016). This can lead to biased results of the p-values but does not influence the overall predictive power of a model. The variance inflation factor (VIF) is used to determine multicollinearity. A VIF of more than ten indicates high multicollinearity (Curto & Pinto, 2011). In the second regression model of this study, in which the interaction effects are included, VIF values for all variables are above ten, with a maximum value of 65.85 for scarcity. This is usually a cause for concern, but McClelland et al. (2017)

state that high multicollinearity is irrelevant for calculations with moderator variables and should therefore be ignored. Hence, the regression can be performed since high multicollinearity does not affect the model's predictive power and is common in models with moderator variables.

Homoscedasticity means that the variance of errors is the same at all levels of the independent variables (Dowers, 2023). If there are differences, it is an indication of heteroscedasticity and can lead to inaccurate results (Osbourne & Waters, 2002). Whether heteroscedasticity is present is usually checked visually. The scatterplot shows that heteroscedasticity is present for the data of this study since the points are not randomly distributed but form a cone shape (see Appendix G).

Heteroscedasticity often occurs when extreme values are present in the dataset (Tranmer et al., 2020). Therefore, one solution is to delete the outliers from the dataset. However, even after removing the 14 outliers mentioned earlier, the shape of the scatterplot does not change noticeably. For this reason, the homoscedasticity assumption is violated, which can somewhat distort the results. Nonetheless, the regression is performed anyway since the other assumptions are neither violated nor play a role in moderator analyses. In the chapter on the limitations of this study, however, it is again pointed out that the results should be treated with caution and that further studies in which all assumptions are respected are needed in order to be able to make genuinely valid statements.

The Effect of the Persuasion Techniques on the Purchase Decision

Linear regression is applied to check whether the independent variables can be used to predict the value of the dependent variables. Especially for samples that tend to be small, linear regression still provides a good approximation of the regression function (Su et al., 2012). The effect of the moderator variables need for affect approach, need for affect avoidance and need for cognition is also tested using linear regression. According to Baron and Kenny (1986), the main goal of a moderation analysis should be testing the differential effect of the independent variable (persuasion techniques) on the dependent variable (purchase decision) as a function of the moderator (individual differences). The effect size must therefore be calculated, mainly how much it contributes to R^2 as a function of the moderator (Memon et al., 2019). For this reason, the interaction effect is examined, consisting of

the independent and moderator variables (Murphy & Aguinis, 2022). More precisely, it is investigated whether the individual differences moderate the effect of the persuasion techniques on the purchase decision.

Thus, for the first model, a linear regression was performed with scarcity and consensus as independent variables and the purchase decision as the dependent variable. For the second model, as a linear regression with the dependent variable purchase decision and the independent variables scarcity and consensus, as well as the interaction effects between the independent variables and the moderator variables, need for affect approach, need for affect avoidance, and need for cognition was performed.

The first regression model is significant $F(2, 212) = 5.4$, $p = 0.005$. However, the principles of scarcity and consensus only explain 4 percent of the differences (adjusted $R2 = 0.04$). The second regression model is also significant, $F(8, 206) = 6.88$, $p < .001$. The underlying concepts are thus helpful in predicting the purchase interest and intention. The independent variables and the interaction effects can predict 18 percent of the differences in the purchase decision (adjusted $R2 = 0.18$). Thus, the adjusted R2 change between the two models is 14 percent; therefore, the moderator variables add 14 percent to the total predictive power.

Evaluation of the Hypotheses

Based on the first regression model, in which the interaction effects have not yet been introduced, the first part of all hypotheses can be considered confirmed. In the first model, both coefficients are significant: scarcity, $b^* = 0.52$, $t = 2.51$, $p = 0.013$, 95% CI [0.11, 0.92] and consensus, $b^* = 0.42$, $t = 2.06$, $p = 0.041$, 95% CI [0.02, 0.83]. This means the purchase decision is 0.518 higher when scarcity is high instead of low, and the purchase decision is 0.424 higher when consensus is high instead of low (see Table 5). The purchase decision is measured on a scale from one to seven, so an increase of about half a point is reasonably large. Therefore, when scarcity and consensus are high, the purchase decision is also high.

However, the picture looks different in the second regression model, in which the interaction effects were also tested in addition to scarcity and consensus. In the second model, scarcity and consensus were no longer significant, which means that

the persuasion techniques do not automatically lead to a high purchase decision when the interaction effects are included.

Table 5. Regression model to predict the purchase decision (N = 215)

	Purchase decision	
	Model 1	Model 2
Constant	4.19***	4.1***
Scarcity	0.52*	-2.25
Consensus	0.42*	2.4
Interaction effect scarcity and need for affect approach		0.65**
Interaction effect scarcity and need for affect avoidance		0.12
Interaction effect scarcity and need for cognition		-0.28
Interaction effect consensus and need for affect approach		-0.47*
Interaction effect consensus and need for affect avoidance		-0.12
Interaction effect consensus and need for cognition		0.24
R2	0.05	0.21
Adjusted R2	0.04	0.18
F	5.4**	6.88***
Δ R2		0.16
Δ Adjusted R2		0.14
Δ F		7.06***

Significance levels: * p < .05 ** p < .01 *** p < .001

Hypotheses H1a and H1b

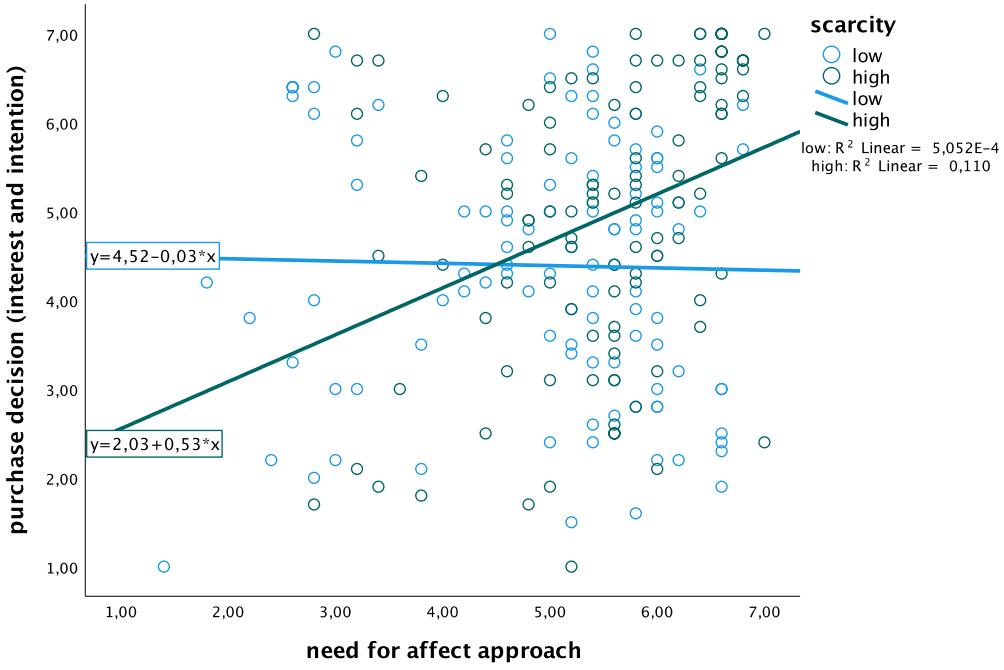
In summary, hypotheses H1a and H1b are as follows: *In a high scarcity scenario, purchase interest and purchase intention are higher than in a low scarcity scenario. However, this effect is stronger when the need for affect is high, compared to low.*

In the second model, the interaction effect of scarcity and the need for affect approach was significant, b* = 0.65, t = 3.28, p = .001, 95% CI [0.26, 1.04]. Thus, hypotheses H1a and H1b can be confirmed conditionally. When scarcity is high, the

purchase interest and intention are higher, and this effect is more substantial when the need for affect approach is high. Therefore, scarcity is moderated by the need for affect approach.

Figure 3 depicts the interaction effect between scarcity and the need for affect approach. The X-axis shows the need for affect approach, and the Y-axis the purchase decision. Two lines are drawn through the resulting set of points, one for the points created under the stimulus scarcity low and one for the points created under the stimulus scarcity high. The equation for the regression line scarcity low is y = 4.52 - 0.03x, which means that in a low scarcity scenario, the greater the need for affect approach, the smaller the purchase decision. The opposite is true in a high scarcity scenario. The equation is y = 2.03 + 0.53x, meaning that the greater the need for affect approach, the greater the purchase decision.

Figure 3. Scatterplot for the interaction effect between scarcity and the need for affect approach



However, both hypotheses can only be accepted conditionally since this only applies to the need for affect approach and not to the need for affect avoidance. The interaction effect between the dependent variable scarcity and the need for affect avoidance was insignificant in the regression.

Hypotheses H2a and H2b

Combining hypotheses H2a and H2b into one hypothesis, it reads as follows: *In a high scarcity scenario, purchase interest and purchase intention are higher than in a low scarcity scenario. However, this effect is stronger when the need for cognition is low, compared to high.*

In the second regression model, only the interaction effects with the need for affect approach were significant. This means that hypotheses H2a and H2b must be rejected because the interaction effect between scarcity and the need for cognition was insignificant.

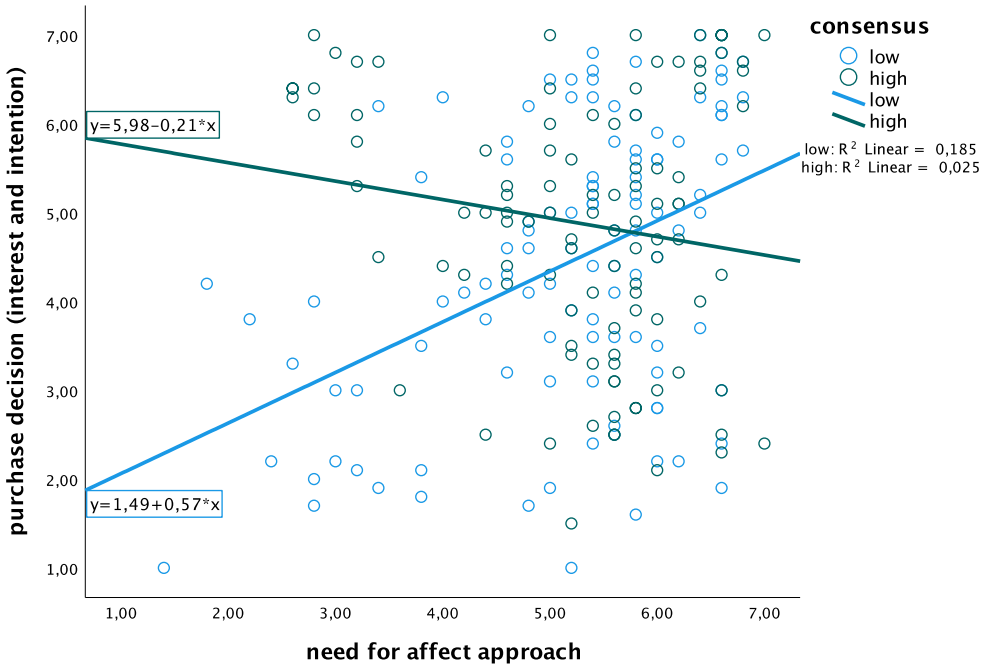
Hypotheses H3a and H3b

The third pair of hypotheses is as follows: *In a high consensus scenario, purchase interest and purchase intention are higher than in a low consensus scenario. However, this effect is stronger when the need for affect is low, compared to high.*

In the second model, the interaction effect of consensus and the need for affect approach, b* = -4.7, t = -2.49, p = 0.014, 95% CI [-0.84, -0.1], is significant, meaning consensus is moderated by the need for affect approach. Therefore, hypotheses H3a and H3b can be accepted conditionally since the purchase interest and intention are higher in a high consensus environment, and this effect is more substantial when the need for affect approach is low. However, again, it should be noted that this is only true for the need for affect approach and not for the need for affect avoidance.

The interaction effect between consensus and the need for affect approach is shown in Figure 4. The need for affect approach is depicted on the X axis, and the purchase decision on the Y axis. The regression line is drawn through the set of points for low and high consensus. The equation for consensus low is y = 1.49 + 0.57x, which means that in a low consensus scenario, the greater the need for affect approach, the greater the purchase decision. On the other hand, the equation for consensus high is y = 5.98 - 0.21x, which means that the greater the need for affect approach, the smaller the purchase decision.

Figure 4. Scatterplot for the interaction effect between consensus and the need for affect approach



Hypotheses H4a and H4b

The combination of the last two hypotheses is as follows: *In a high consensus scenario, purchase interest and purchase intention are higher than in a low consensus scenario. However, this effect is stronger when the need for cognition is high, compared to low.*

H4a and H4b must be rejected since, in the second model, only the interaction effects with the need for affect approach were significant and not the ones with the need for cognition.

Discussion

Summary of Main Research Findings

In summary, the results show that scarcity and consensus, when the moderator variables are omitted, increase the purchase interest and intention. However, high scarcity or high consensus do not lead to increased purchase interest and purchase intention by default; it depends on whether the participant or, in a real scenario, the potential customer can be assigned to the category of need for affect approach high or need for affect approach low. Therefore, what can be considered the final result of this paper are the following two observations:

1. When scarcity is high, the purchase interest and intention are also high, but the effectiveness of this relationship is increased when the need for affect approach is high.
2. When consensus is high, the purchase interest and intention are also high, but the effectiveness of this relationship is increased when the need for affect approach is low.

Therefore, to increase the purchase interest and intention, scarcity has the greatest influence on people with a high need for affect approach, and consensus has the greatest influence on people with a low need for affect approach. Alternatively, in other words: the persuasion techniques scarcity and consensus are moderated by the need for affect approach.

The research question posed at the beginning of this paper is as follows: To what extent do the need for affect and need for cognition influence the effectiveness of Cialdini's principles of scarcity and consensus regarding the purchase interest and the purchase intention? After evaluating the regression, the research question can be answered with two sentences: A high need for affect approach increases the effectiveness of Cialdini's principle of scarcity on the purchase interest and purchase intention. A low need for affect approach increases the effectiveness of Cialdini's principle of consensus on the purchase interest and purchase intention.

Furthermore, it can be stated that the need for cognition in the sample of this study had no significant influence on the effectiveness of scarcity and consensus on the

purchase decision. Nor can the need for affect as a single construct be said to influence the effectiveness of persuasion techniques on the purchase decision, since in this study, it was divided into the need for affect approach and the need for affect avoidance, and only the need for affect approach was significant.

Why the need for cognition and the need for affect avoidance were not significant is unclear. However, a possible explanation would be that the scenario in which the stimuli were presented, i.e., the hotel booking website, was too familiar for the participants. According to Bettman and Park (1980), the degree of familiarity influences how much one processes currently available information instead of relying on prior knowledge. It is likely that just about every participant in this study has visited a hotel booking website, and most have probably used one quite often. Therefore, the scenario was very familiar to the participants, so they may not had the motivation and need to look closely at the website (the currently available information). Instead, they relied primarily on their prior knowledge and experiences, as they assumed to be in a situation they knew well. Thus, the familiarity allowed the participants to reduce their attention because they assumed that everything they saw was already known to them. Although the participants did notice the scarcity and consensus stimuli, which the manipulation checks confirmed, they were maybe not influenced strongly enough by the stimuli because the hotel booking website looked so familiar. In conclusion, this possible lack of attention may have led to not all variables being significant.

Implications for Existing Theory and Practice

Scientific Implications

The primary scientific finding of this paper is that the persuasion techniques scarcity and consensus are moderated by the need for affect approach. The finding that the strength of the relationship between persuasion techniques and purchase interest and intention is influenced by the need for affect approach is new and has not been demonstrated scientifically before. Furthermore, the fact that scarcity and consensus generally influence purchase interest and intention is already known but has been proven again in this study.

It is also interesting to note that the need for affect avoidance and the need for cognition do not seem to have the same effect as the need for affect approach. This

finding confirms the results of a study by Pradana et al. (2022), which states that the need for cognition does not serve as a moderator variable for the purchase intention.

However, it should be made clear that certain limitations of this paper's study reduce the results' validity. The implications of these limitations result in interesting research approaches for future studies and are discussed in more detail in the following subsections.

Societal Implications

The results also have societal implications for how e-commerce businesses attract potential customers. In general, applying Cialdini's principles of scarcity and consensus is undoubtedly helpful in increasing purchase interest and intention. However, the customer's characteristics must be considered when choosing which principles to use. If customers have a high need for affect approach, showing them a scarcity stimulus makes sense. On the other hand, if customers have a low need for affect approach, showing them a consensus stimulus is more effective.

Companies can find out which group their customers belong to by having them answer the NAQ-S questionnaire. Since it consists of only ten items, the application takes little time and is suitable for the scenario on an e-commerce website. As an incentive for answering the questions, a voucher or a discount on the next purchase can be promised. In the long run, however, picking the right stimulus for each customer should be financially worthwhile since the targeted use of persuasion techniques can significantly influence the expected purchasing behavior, as the study in this paper has shown. By applying the results of this study, the customer journey can be tailored even more individually to each customer. This increases purchase interest and intention, resulting in higher company sales.

Finally, it is imperative to emphasize that the principle of scarcity and the principle of consensus are persuasion techniques, not methods of manipulation. When persuasion techniques are used in good faith, they are not reprehensible and benefit both the customer and the company, but honesty and openness must be at the forefront. Cialdini and Rhoads (2001) claim that it is okay to use persuasion techniques, for example, to promote a new effective drug that will help people. However, if a drug is ineffective and marketers still use scarcity, consensus, or some other technique to persuade customers to make a purchase, it is disgraceful misconduct.

Limitations and Further Research

Limitations

The major limitation of this study is that the need for affect avoidance and the need for cognition, respectively, the corresponding interaction effects were not significant. Therefore, no general conclusions can be drawn about the influence of the need for affect or the need for cognition on the relationship between the persuasion techniques and the purchase interest and intention. Possible solutions for future studies are discussed in the next chapter.

Another significant limitation is the lack of homoscedasticity and, thus, the violation of one of the assumptions necessary for the regression. Therefore, the results may be somewhat biased, so testing the hypotheses in future studies where none of the assumptions are violated is essential. The fact that the Kolmogorov-Smirnov and the Shapiro-Wilk tests were significant is also a limitation. Even though, because of the PP plot and the skewness and kurtosis, it was assumed that normal distribution prevailed, the results would have been more valid if the two tests had not been significant.

In retrospect, the four different hotel booking websites that participants were shown at the beginning of the survey proved to be another limitation (see Appendix A). The relevant aspects of the website for this study were the scarcity and consensus stimuli, which, however, only made up a relatively small part of the website in terms of surface area. In consultation with some participants, after they finished the survey, it became clear that they paid significantly more attention to the other, for this study, unimportant parts of the website than the stimuli. The participants spent much time studying the hotel room pictures, the layout, and the description of the hotel room but needed to pay more attention to the stimuli. This was especially true with older people and participants without an academic background.

In addition, there is the possibility that the images of the hotel room influenced people with a high need for affect approach. The images of the beautiful hotel room may have triggered affective emotions in this group of participants, which in turn influenced their responses to the other questions and led to a higher purchase interest and purchase intention. It may be that in a variant without pictures or with pictures of only a mediocre hotel room, the results of the people with a high need for affect approach would have looked different. Still, since the study was strongly oriented toward real e-commerce websites, a version without pictures is not the

point. However, a good solution would have been to introduce two further manipulation checks, which would ask whether the pictures of the hotel room were perceived as appealing and whether the participants' answers would have been different if they had not been shown pictures of the hotel room.

A sampling bias also occurred in this study. Due to snowball sampling, certain groups of people are overrepresented, such as people with an academic degree, who comprise 72 percent of all participants (Goodman, 1961). Even though the manipulation checks were significant, after consultation with various participants, it became clear that academics recognized the stimuli much better than people without a university background. One reason may be that people who have completed a course of study have taken part in scientific studies before and know that certain stimuli will be presented to them, so they pay much more attention to details. People without academic experience may have never seen a scientific study in their life and therefore do not know that they must pay attention to all the details, such as, for example, the time limit indicated on the hotel booking website. However, due to this work's limited time and financial resources, snowball sampling was the only way to accumulate a sufficiently high number of participants quickly.

Another minor limitation is that Cronbach's alpha, with a value of 0.97, was extraordinarily high for the purchase decision scale. This did not affect the further analysis but must be nevertheless mentioned again at this point.

Further Research

An essential point of interest for future studies is to investigate why the need for affect avoidance and the need for cognition were not significant moderators. For example, it must be clarified whether the considerations that led to the hypotheses were incorrect or whether special features of the sample in this study led to the insignificant results. Furthermore, it is crucial to examine whether the need for cognition, in general, is unsuitable as a moderator for purchase intention. The results of this study, as well as those of Pradana et al. (2022), point in this direction.

On the other hand, as discussed before, the insignificance of the need for affect avoidance and the need for cognition could also be related to the familiarity of the hotel booking website. The familiarity may have reduced the stimuli's effectiveness, which led to the insignificance of these two variables. However, due to the

omnipresence of e-commerce websites, it is not easy to find a middle ground between presenting the study in a realistic e-commerce design and, at the same time, presenting a situation that is not so familiar to the participants. One solution would be that instead of a hotel booking site, a booking platform for more unusual activities should be used, which demands more participants' attention due to it being less familiar. An example would be the booking of a boat trip. This is an activity that most people like to do but have most likely never booked in their lives.

Furthermore, the significant results need to be confirmed in studies with a larger sample size and a more diverse composition of participants. In particular, the assumption that scarcity has a more substantial effect on individuals with a high need for affect approach because these individuals welcome the emotions that scarcity triggers in them needs to be confirmed in further studies. The same applies to the assumption that consensus has a more substantial effect on people with a low need for affect approach because consensus, and thus the majority opinion, is not an extreme opinion.

The violation of the homoscedasticity assumption also provides a reason for further studies. The results of a regression in which none of the assumptions were violated are simply more meaningful. Heteroscedasticity can usually be achieved by removing outliers, which did not work in this study (Tranmer et al., 2020). If more than the 14 extreme outliers had been removed, the sample size would have been relatively small, reducing the results' explanatory power. The smaller the sample size, the more difficult it is to extrapolate the results to the general population. For this reason, a possible solution for future studies would be to work with large sample sizes, allowing enough outliers to be removed to establish homoscedasticity.

Another promising point for future scientific work is to investigate the influence of other persuasion techniques on purchase interest and purchase intention. Cialdini's other principles, namely the principle of reciprocation, authority, commitment and consistency, and liking, are effective methods for influencing people, as Cialdini and Goldstein (2002) illustrated in their hospitality industry study. However, whether and how these principles can also increase purchase interest and purchase intention in an e-commerce business has yet to be sufficiently researched. Moreover, it needs to be made clear how these principles are related to the need for affect and the need for cognition and whether they lose or gain persuasive power through these individual differences.

In all further studies, it is essential to prevent a sampling bias, as it occurred in this study. A possible solution to avoid a similar sampling bias would be to distribute the survey in several languages. The majority of the participants in this study live in German-speaking countries, and the older generation in these countries, in particular, often has only a minimal knowledge of English (Davydova, 2020). Therefore, it is quite possible that the first wave of participants only sent the survey to people with good English knowledge, mainly people with an academic background. Thus, a German-language survey would probably have led to a more diverse distribution of participants regarding their educational background.

Furthermore, care should be taken to ensure that the stimuli are very explicit. Using the websites of this study as an example, one possible option would be to omit the informative text about the hotel room, which, in consultation with some participants, attracted too much attention and distracted them from the actual stimuli, like the table with the star ratings. Thus, even older people and participants without an academic background would have no difficulty recognizing the stimuli, which would improve the study's validity. Changing the stimuli themselves would have altered the purpose of the study since the goal was to recreate a real e-commerce scenario. The stimuli presented, at least those for high scarcity, high consensus, and low consensus, can be found on many real websites. Therefore, in order to make the stimuli more explicit, distracting side information, such as the text, should be removed.

In addition to the more explicit stimuli, the best recommendation for future studies would be to abandon the snowball sampling approach completely. Instead, for example, the simple random sampling approach should be used, in which, theoretically, every person from the population has an equal chance of being selected (Singh, 2013). Thus, ideally, no population stratum would be overrepresented.

References

Abdul Talib, Y. Y., & Mat Saat, R. (2017). Social proof in social media shopping: An experimental design research. *SHS Web of Conferences*, *34*, 1–6. https://doi.org/10.1051/shsconf/20173402005

Adaji, I., Oyibo, K., & Vassileva, J. (2020). E-Commerce Shopping Motivation and the Influence of Persuasive Strategies. *Frontiers in Artificial Intelligence*, *3*, 1–14. https://doi.org/10.3389/frai.2020.00067

Aggarwal, P., & Vaidyanathan, R. (2003). Use it or lose it: purchase acceleration effects of time-limited promotions. *Journal of Consumer Behaviour*, *2*(4), 393–403. https://doi.org/10.1002/cb.116

Aggarwal, P., Jun, S. Y., & Huh, J. H. (2011). Scarcity Messages. *Journal of Advertising, 40*(3), 19–30. https://doi.org/10.2753/joa0091-3367400302

Akoglu, H. (2018). User's guide to correlation coefficients. *Turkish Journal of Emergency Medicine*, *18*(3), 91–93. https://doi.org/10.1016/j.tjem.2018.08.001

Alkış, N., & Taşkaya Temizel, T. (2015). The impact of individual differences on influence strategies. *Personality and Individual Differences*, *87*, 147–152. https://doi.org/10.1016/j.paid.2015.07.037

Apicella, C. L., & Silk, J. B. (2019). The evolution of human cooperation. *Current Biology*, *29*(11), 447–450. https://doi.org/10.1016/j.cub.2019.03.036

Appel, M., & Richter, T. (2010). Transportation and Need for Affect in Narrative Persuasion: A Mediated Moderation Model. *Media Psychology*, *13*(2), 101–135. Https://doi.org/10.1080/15213261003799847

Appel, M., Gnambs, T., & Maio, G. R. (2012). A Short Measure of the Need for Affect. *Journal of Personality Assessment*, *94*(4), 418–426. https://doi.org/10.1080/00223891.2012.666921

Arceneaux, K., & Vander Wielen, R. J. (2012). The Effects of Need for Cognition and Need for Affect on Partisan Evaluations. *Political Psychology*, *34*(1), 23–42. Https://doi.org/10.1111/j.1467-9221.2012.00925.x

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

Barton, B., Zlatevska, N., & Oppewal, H. (2022). Scarcity tactics in marketing: A meta-analysis of product scarcity effects on consumer purchase intentions. *Journal of Retailing*, *98*(4), 741–758. https://doi.org/10.1016/j.jretai.2022.06.003

Bartsch, A., Appel, M., & Storch, D. (2010). Predicting Emotions and Meta-Emotions at the Movies: The Role of the Need for Affect in Audiences' Experience of Horror and Drama. *Communication Research*, *37*(2), 167–190. https://doi.org/10.1177/0093650209356441

Benedicktus, R. L., Brady, M. E., Darke, P. R., & Voorhees, C. M. (2010). Conveying Trustworthiness to Online Consumers: Reactions to Consensus, Physical Store Presence, Brand Familiarity, and Generalized Suspicion. *Journal of Retailing*, *86*(4), 322–335. https://doi.org/10.1016/j.jretai.2010.04.002

Bernheim, B. D. (1994). A Theory of Conformity. *Journal of Political Economy*, *102*(5), 841–877. https://doi.org/10.1086/261957

Bettman, J. R., & Park, C. S. (1980). Effects of Prior Knowledge and Experience and Phase of the Choice Process on Consumer Decision Processes: A Protocol Analysis. *Journal of Consumer Research*, *7*(3), 234–248. https://doi.org/10.1086/208812

Bland, M., & Altman, D. G. (1997). Statistics notes: Cronbach's alpha. *BMJ*, *314*(7080), 572. https://doi.org/10.1136/bmj.314.7080.572

Brock, T. C. (1968). Implications of Commodity Theory for Value Change. In A.G Greenwald, T.C Brock & T.M Ostrom (Eds.), *Psychological Foundations of Attitudes* (pp. 243–275). Elsevier. https://doi.org/10.1016/b978-1-4832-3071-9.50016-7

Byrne, B.M. (2016). *Structural Equation Modeling With AMOS: Basic Concepts, Applications, and Programming* (3rd ed.). Routledge. https://doi.org/10.4324/9781315757421

Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology*, *42*(1), 116–131. https://doi.org/10.1037/0022-3514.42.1.116

Cacioppo, J. T., Petty, R. E., Feinstein, J. A., & Jarvis, W. B. G. (1996). Dispositional differences in cognitive motivation: The life and times of individuals varying in need for cognition. *Psychological Bulletin*, *119*(2), 197–253. https://doi.org/10.1037/0033-2909.119.2.197

Canals, C., & Canals, A. (2019). When is *n* large enough? Looking for the right sample size to estimate proportions. *Journal of Statistical Computation and Simulation*, *89*(10), 1887–1898. https://doi.org/10.1080/00949655.2019.1602125

Cannon, E. O., Nigsch, F., & Mitchell, J. C. (2008). A novel hybrid ultrafast shape descriptor method for use in virtual screening. *Chemistry Central Journal*, *2*(1), 1–9. https://doi.org/10.1186/1752-153x-2-3

Chaiken, S., Liberman, A., & Eagly, A. H. (1989). Heuristic and systematic information processing within and beyond the persuasion context. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 212–252). The Guilford Press.

Chiesi, F., Morsanyi, K., Donati, M. A., & Primi, C. (2018). Applying Item Response Theory to Develop a Shortened Version of the Need for Cognition Scale. *Advances in Cognitive Psychology*, *14*(3), 75–86. https://doi.org/10.5709/acp-0240-z

Cialdini, R. B. (2007). *Influence: the psychology of persuasion*. Harper Collins.

Cialdini, R. B., & Goldstein, N. J. (2002). The Science and Practice of Persuasion. *Cornell Hotel and Restaurant Administration Quarterly*, *43*(2), 40–50. https://doi.org/10.1177/001088040204300204

Cialdini, R. B., & Rhoads, K. V. L. (2001). Human behavior and the marketplace. *Marketing Research, 13*(3), 8-13. https://www.proquest.com/scholarly-journals/human-behavior-marketplace/docview/202675039/se-2

Clark, W.R., & Kemp, J.K. (2008). Using the six principles of influence to increase student involvement in professional organizations: A relationship marketing approach. *Journal for Advancement of Marketing Education, 12*, 43–52. https://www.semanticscholar.org/paper/USING-THE-SIX-PRINCIPLES-OF-INFLUENCE-TO-INCREASE-A-Clark-Kemp/2bad876fc048d502da0b9d6fad0a75cf1949f7b9#citing-papers

Conner, M., Rhodes, R. E., Morris, B., McEachan, R. R. C., & Lawton, R. (2011). Changing exercise through targeting affective or cognitive attitudes. *Psychology & Health*, *26*(2), 133–149. https://doi.org/10.1080/08870446.2011.531570

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology*, *78*(1), 98–104. https://doi.org/10.1037/0021-9010.78.1.98

Curto, J. D., & Pinto, J. C. (2011). The corrected VIF (CVIF). *Journal of Applied Statistics*, *38*(7), 1499–1507. https://doi.org/10.1080/02664763.2010.505956

Davydova, J. (2020). English in Germany: Evidence from domains of use and attitudes. *Russian Journal of Linguistics*, *24*(3), 687–702. https://doi.org/10.22363/2687-0088-2020-24-3-687-702

Đorić, D., Nikolić-Đorić, E., Jevremovic, V., & Mališić, J. (2007). On measuring skewness and kurtosis. *Quality and Quantity*, *43*(3), 481–493. https://doi.org/10.1007/s11135-007-9128-9

Dowers, W. (2023). *Usage Intention of Open Banking in Canada: A Unified Theory of Acceptance and Use of Technology (UTAUT)* (Publication No. 30313166) [Doctoral dissertation, Wilmington University]. ProQuest Dissertations & Theses Global. https://www.proquest.com/dissertations-theses/usage-intention-open-banking-canada-unified/docview/2788858966/se-2

Edwards, K. (1990). The interplay of affect and cognition in attitude formation and change. *Journal of Personality and Social Psychology*, *59*(2), 202–216. https://doi.org/10.1037/0022-3514.59.2.202

Eisend, M. (2008). Explaining The Impact of Scarcity Appeals In Advertising: The Mediating Role of Perceptions of Susceptibility. *Journal of Advertising*, *37*(3), 33–40. https://doi.org/10.2753/joa0091-3367370303

Epstein, S. (1998). Cognitive-Experiential Self-Theory. In D.F Barone, M. Hersen, V.B. Van Hasselt (Eds.), *Advanced Personality. The Plenum Series in Social/Clinical Psychology* (pp. 211–238). Springer. https://doi.org/10.1007/978-1-4419-8580-4_9

Erickson, B. H. (1979). Some Problems of Inference from Chain Data. *Sociological Methodology*, *10*, 276. https://doi.org/10.2307/270774

Ernst, A., & Albers, C. J. (2017). Regression assumptions in clinical psychology research practice—a systematic review of common misconceptions. *PeerJ*, *5*. https://doi.org/10.7717/peerj.3323

Etikan, I. (2016). Comparison of Snowball Sampling and Sequential Sampling Technique. *Biometrics &Amp; Biostatistics International Journal*, *3*(1), 6-7. https://doi.org/10.15406/bbij.2016.03.00055

Flatt, C., & Jacobs, R. L. (2019). Principle Assumptions of Regression Analysis: Testing, Techniques, and Statistical Reporting of Imperfect Data Sets. *Advances in Developing Human Resources*, *21*(4), 484–502. https://doi.org/10.1177/1523422319869915

Fromkin, H. L. (1970). Effects of experimentally aroused feelings of indistinctiveness upon valuation of scarce and novel experiences. *Journal of Personality and Social Psychology*, *16*(3), 521–529. https://doi.org/10.1037/h0030059

George, D. and Mallery, P. (2010). *SPSS for Windows Step by Step: A Simple Guide and Reference 17.0 Update* (10th ed.). Pearson.

Goldstein, N. J., Cialdini, R. B., & Griskevicius, V. (2008). A Room with a Viewpoint: Using Social Norms to Motivate Environmental Conservation in Hotels. *Journal of Consumer Research*, *35*(3), 472–482. https://doi.org/10.1086/586910

Goodman, L. A. (1961). Snowball Sampling. *Annals of Mathematical Statistics*, *32*(1), 148–170. https://doi.org/10.1214/aoms/1177705148

Guo, J., Xin, L., Wu, Y. (2017). Arousal or Not? The Effects of Scarcity Messages on Online Impulsive Purchase. In F.H Nah & C.H Tan (Eds.), *HCI in Business, Government and Organizations. Supporting Business. HCIBGO 2017. Lecture Notes in Computer Science* (pp. 29–40). Springer. https://doi.org/10.1007/978-3-319-58484-3_3

Haddock, G., Maio, G. R., Arnold, K., & Huskinson, T. (2008). Should Persuasion Be Affective or Cognitive? The Moderating Effects of Need for Affect and Need for Cognition. *Personality and Social Psychology Bulletin*, *34*(6), 769–778. https://doi.org/10.1177/0146167208314871

Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2010). *Multivariate Data Analysis* (7th ed.). Pearson.

Hassan, S., Nadzim, S. Z. A., & Shiratuddin, N. (2015). Strategic Use of Social Media for Small Business Based on the AIDA Model. *Procedia - Social and Behavioral Sciences*, *172*, 262–269. https://doi.org/10.1016/j.sbspro.2015.01.363

Haugtvedt, C. P., Petty, R. E., & Cacioppo, J. T. (1992). Need for Cognition and Advertising: Understanding the Role of Personality Variables in Consumer Behavior. *Journal of Consumer Psychology*, *1*(3), 239–260. https://doi.org/10.1016/s1057-7408(08)80038-1

Hoewe, J. (2017). Manipulation Check. In J. Matthes, C.S Davis & R.F Potter (Eds.), *The International Encyclopedia of Communication Research Methods* (pp. 1–5). Wiley-Blackwell. https://doi.org/10.1002/9781118901731.iecrm0135

Huskinson, T. L., & Haddock, G. (2004). Individual differences in attitude structure: Variance in the chronic reliance on affective and cognitive information. *Journal of Experimental Social Psychology*, *40*(1), 82–90. https://doi.org/10.1016/s0022-1031(03)00060-x

Ioanid, A., Militaru, G., & Mihai, P. (2015). Social media strategies for organizations using influencers' power. *European Scientific Journal, 11*(10), 139-143. http://eujournal.org/index.php/esj/article/viewFile/6144/5928

Jeong, H. J., & Kwon, K. N. (2012). The Effectiveness of Two Online Persuasion Claims: Limited Product Availability and Product Popularity. *Journal of Promotion Management*, *18*(1), 83–99. https://doi.org/10.1080/10496491.2012.646221

Johnson, B.K. (2020). Need for Affect. In J. Van den Bulck (Ed.), *The International Encyclopedia of Media Psychology* (pp. 1–5). Wiley-Blackwell. https://doi.org/10.1002/9781119011071.iemp0250

Kaptein, M., & Eckles, D. (2012). Heterogeneity in the Effects of Online Persuasion. *Journal of Interactive Marketing*, *26*(3), 176–188. https://doi.org/10.1016/j.intmar.2012.02.00

Kaptein, M., & Parvinen, P. (2015). Advancing E-Commerce Personalization: Process Framework and Case Study. *International Journal of Electronic Commerce*, *19*(3), 7–33. https://doi.org/10.1080/10864415.2015.1000216

Kaptein, M., Markopoulos, P., de Ruyter, B., & Aarts, E. (2015). Personalizing persuasive technologies: Explicit and implicit personalization using persuasion profiles. *International Journal of Human-Computer Studies*, *77*, 38–51. https://doi.org/10.1016/j.ijhcs.2015.01.004

Kaptein, M., Markopoulos, P., De Ruyter, B., & Aarts, E. H. L. (2009). Can You Be Persuaded? Individual Differences in Susceptibility to Persuasion. In A.A Ozok & P. Zaphiris (Eds.), *Lecture Notes in Computer Science* (pp. 115–118). Springer Science+Business Media. https://doi.org/10.1007/978-3-642-03655-2_13

Kim, S. (2020). Predictors of Behavioral Intention to Purchase a Potentially Risky Consumer Product, Sunscreen containing Nanoparticles. *International Journal of Trend in Research and Development*, *7*(6), 162–177. http://www.ijtrd.com/papers/IJTRD22410.pdf

King, L. A. (1998). Ambivalence over emotional expression and reading emotions in situations and faces. *Journal of Personality and Social Psychology*, *74*(3), 753–762. https://doi.org/10.1037/0022-3514.74.3.753

Kojima, T., Kimura, T., Yamaji, M., & Amasaka, K. (2010). Proposal And Development Of The Direct Mail Method PMCI-DM For Effectively Attracting Customers.

International Journal of Management &Amp; Information Systems (IJMIS), *14*(5), 15–22. https://doi.org/10.19030/ijmis.v14i5.9

Läärä, E. (2009). Statistics: Reasoning on Uncertainty, and the Insignificance of Testing Null. *Annales Zoologici Fennici*, *46*(2), 138–157. https://doi.org/10.5735/086.046.0206

La Rey Van Der Waldt, D., Du Toit, L., & Redelinghuys, R. (2007). Does branded product placement in film enhance realism and product recognition by consumers. *African Journal of Business Management*, *1*(2), 19–25. https://doi.org/10.5897/ajbm.9000217

Lessne, G., & Venkatesan, M. (1989). Reactance Theory in Consumer Research: the Past, Present and Future. *Advances in Consumer Research, 16*, 76-78. https://www.acrwebsite.org/search/view-conference-proceedings.aspx?Id=6884

Lynn, M. (1989). Scarcity effects on desirability: Mediated by assumed expensiveness? *Journal of Economic Psychology*, *10*(2), 257–274. https://doi.org/10.1016/0167-4870(89)90023-8

Lynn, M. J. (1992). Scarcity's Enhancement of Desirability: The Role of Naive Economic Theories. *Basic and Applied Social Psychology*, *13*(1), 67–78. https://doi.org/10.1207/s15324834basp1301_6

Maio, G. R., & Esses, V. M. (2001). The Need for Affect: Individual Differences in the Motivation to Approach or Avoid Emotions. *Journal of Personality*, *69*(4), 583–614. https://doi.org/10.1111/1467-6494.694156

Marwade, A., Kumar, N., Mundada, S., & Aghav, J. (2017). Augmenting e-commerce product recommendations by analyzing customer personality. *2017 9th International Conference on Computational Intelligence and Communication Networks (CICN)*, 174–180. https://doi.org/10.1109/cicn.2017.8319380

McClelland, G. H., Irwin, J. R., Disatnik, D., & Sivan, L. (2017). Multicollinearity is a red herring in the search for moderator variables: A guide to interpreting moderated multiple regression models and a critique of Iacobucci, Schneider, Popovich, and Bakamitsos (2016). *Behavior Research Methods*, *49*(1), 394–402. https://doi.org/10.3758/s13428-016-0785-2

McHugh, M. M. (2013). The Chi-square test of independence. *Biochemia Medica*, *23*(2), 143–149. https://doi.org/10.11613/bm.2013.018

Memon, M. A., Cheah, J. H., Ramayah, T., Ting, H., Chuah, F., & Cham, T. H. (2019). MODERATION ANALYSIS: ISSUES AND GUIDELINES. *Journal of Applied Structural Equation Modeling*, *3*(1), 1–11. https://doi.org/10.47263/jasem.3(1)01

Mishra, P., Pandey, C. K., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of Cardiac Anaesthesia*, *22*(1), 67–72. https://doi.org/10.4103/aca.aca_157_18

Mizes, J. S., Fleece, E. L., & Roos, C. (1984). Incentives for Increasing Return Rates: Magnitude Levels, Response Bias, and Format. *Public Opinion Quarterly*, *48*(4), 794–800. https://doi.org/10.1086/268885

Montano, D. E., & Kasprzyk, D. (2015). Theory of reasoned action, theory of planned behavior, and the integrated behavioral model. In K. Glanz, B.K. Rimer & K. Kasisomayajula (Eds.), *Health behavior: Theory, research and practice* (pp. 67-96). John Wiley & Sons. https://psycnet.apa.org/record/2015-35837-006

Montgomery, D. C., & Peck, E. A. (1992). *Introduction to Linear Regression Analysis*. Wiley-Interscience.

Murphy, K., & Aguinis, H. (2022). Reporting Interaction Effects: Visualization, Effect Size, and Interpretation. *Journal of Management*, *48*(8), 2159–2166. https://doi.org/10.1177/01492063221088516

Osbourne, J. W., & Waters, E. M. (2002). Four Assumptions of Multiple Regression That Researchers Should Always Test. *Practical Assessment, Research and Evaluation*, *8*(2), 1–5. https://doi.org/10.7275/r222-hv23

Page, B. I., Shapiro, R. Y., & Dempsey, G. R. (1987). What Moves Public Opinion? *American Political Science Review, 81*(1), 23–43. https://doi.org/10.2307/1960777

Pek, J., Wong, O., & Wong, A. C. M. (2018). How to Address Non-normality: A Taxonomy of Approaches, Reviewed, and Illustrated. *Frontiers in Psychology*, *9(2104)*, 1–17. https://doi.org/10.3389/fpsyg.2018.02104

Perloff, R.M. (2017). *The Dynamics of Persuasion: Communication and Attitudes in the Twenty-First Century (6th ed.)*. Routledge. https://doi.org/10.4324/9781315657714

Petty, R. E., Brinol, P., Loersch, C., & McCaslin, M. J. (2009). The need for cognition. In M. R. Leary & R. H. Hoyle (Eds.), *Handbook of individual differences in social behavior*

(pp. 318–329). The Guilford Press https://www.guilford.com/books/Handbook-of-Individual-Differences-in-Social-Behavior/Leary-Hoyle/9781593856472

Polonioli, A., Ghioni, R., Greco, C., Juneja, P., Tagliabue, J., Watson, D., & Floridi, L. (2022). The Ethics of Online Controlled Experiments (A/B testing). *SSRN Electronic Journal*, 1–30. https://doi.org/10.2139/ssrn.4282827

Pradana, M., Wardhana, A., Rubiyanti, N., Syahputra, S., & Utami, D. S. (2022). Halal food purchase intention of Muslim students in Spain: testing the moderating effect of need-for-cognition. *Journal of Islamic Marketing*, *13*(2), 434–445. https://doi.org/10.1108/jima-05-2020-0122

Queirós, A., Faria, D., & Almeida, F. (2017). Strengths and limitations of qualitative and quantitative research methods. *European Journal of Education Studies, 3*(9), 369–387. https://doi.org/10.46827/ejes.v0i0.1017

Quinn, G., & Keough, M. (2002). *Experimental Design and Data Analysis for Biologists*. Cambridge University Press. doi:10.1017/CBO9780511806384

Romanova, I. D., & Smirnova, I. V. (2019). Persuasive techniques in advertising. *Training Language and Culture*, *3*(2), 55–70. https://doi.org/10.29366/2019tlc.3.2.4

Roy, R., & Sharma, P. (2015). Scarcity Appeal in Advertising: Exploring the Moderating Roles of Need for Uniqueness and Message Framing. *Journal of Advertising*, *44*(4), 349–359. https://doi.org/10.1080/00913367.2015.1018459

Sainani, K. L. (2012). Dealing With Non-normal Data. *Pm&R*, *4*(12), 1001–1005. https://doi.org/10.1016/j.pmrj.2012.10.013

Sapian, A., & Vyshnevska, M. (2019). The marketing funnel as an effective way of business strategy. *ΛΌΓΟΣ. МИСТЕЦТВО НАУКОВОЇ ДУМКИ*, (4), 16-18. https://ojs.ukrlogos.in.ua/index.php/2617-7064/article/view/191

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research Methods for Business Students*. Pearson Education.

Saw, C. C., & Inthiran, A. (2022). Designing for Trust on E-Commerce Websites Using Two of the Big Five Personality Traits. *Journal of Theoretical and Applied Electronic Commerce Research*, *17*(2), 375–393. https://doi.org/10.3390/jtaer17020020

Schmitt-Beck, R. (2015). Bandwagon Effect. In G. Mazzoleni (Ed.), *The International Encyclopedia of Political Communication* (pp. 1–5). https://doi.org/10.1002/9781118541555.wbiepc015

Schober, P., Boer, C., & Schwarte, L. A. (2018). Correlation Coefficients. *Anesthesia & Analgesia*, *126*(5), 1763–1768. https://doi.org/10.1213/ane.0000000000002864

Shi, X., Li, F., & Chumnumpan, P. (2020). The use of product scarcity in marketing. *European Journal of Marketing*, *54*(2), 380–418. https://doi.org/10.1108/ejm-04-2018-0285

Simonson, I. (1992). The Influence of Anticipating Regret and Responsibility on Purchase Decisions. *Journal of Consumer Research*, *19*(1), 105–118. https://doi.org/10.1086/209290

Singh, S. (2013). *Advanced Sampling Theory with Applications: How Michael' selected' Amy Volume I*. Springer Science & Business Media.

Song, H., Ruan, W. J., & Jeon, Y. J. J. (2021). An integrated approach to the purchase decision-making process of food-delivery apps: Focusing on the TAM and AIDA models. *International Journal of Hospitality Management*, *95*(102943), 1–8. https://doi.org/10.1016/j.ijhm.2021.102943

Spears, N., & Singh, S. N. (2004). Measuring Attitude toward the Brand and Purchase Intentions. *Journal of Current Issues &Amp; Research in Advertising*, *26*(2), 53–66. https://doi.org/10.1080/10641734.2004.10505164

Su, X., Yan, X., & Tsai, C. (2012). Linear regression. *Wiley Interdisciplinary Reviews: Computational Statistics*, *4*(3), 275–294. https://doi.org/10.1002/wics.1198

Sukma Wijaya, B. (2012). The Development of Hierarchy of Effects Model in Advertising. *International Research Journal of Business Studies*, *5*(1), 73–85. https://doi.org/10.21632/irjbs.5.1.73-85

Sundar, S. S., Oeldorf-Hirsch, A., & Xu, Q. (2008). The bandwagon effect of collaborative filtering technology. In M. Czerwinski & A. Lund (Eds.), *CHI '08 Extended Abstracts on Human Factors in Computing Systems* (pp. 3453–3458). https://doi.org/10.1145/1358628.1358873

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, *2*, 53–55. https://doi.org/10.5116/ijme.4dfb.8dfd

Teeny, J. D., Siev, J. J., Briñol Pablo, & Petty, R. E. (2021). A review and conceptual framework for understanding personalized matching effects in persuasion. Journal of Consumer Psychology, *31*(2), 382–414. https://doi.org/10.1002/jcpy.1198

Trafimow, D., Sheeran, P., Lombardo, B., Finlay, K. A., Brown, J., & Armitage, C. J. (2004). Affective and cognitive control of persons and behaviours. *British Journal of Social Psychology*, *43*(2), 207–224. https://doi.org/10.1348/0144666041501642

Tranmer, M., Murphy, J., Elliot, M., & Pampaka, M. (2020). *Multiple linear regression* (2nd ed.). The Cathie Marsh Centre for Census and Survey Research (CCSR). https://hummedia.manchester.ac.uk/institutes/cmist/a rchive-publications/working-papers/2020/2020-1- multiple-linear-regression.pdf.

Tueanrat, Y., Papagiannidis, S., & Alamanos, E. (2021). Going on a journey: A review of the customer journey literature. *Journal of Business Research*, *125*, 336–353. https://doi.org/10.1016/j.jbusres.2020.12.028

Vatcheva, K. P., Lee, M., McCormick, J. B., & Rahbar, M. H. (2016). Multicollinearity in Regression Analyses Conducted in Epidemiologic Studies. *Epidemiology*, *6*(2), 1–9. https://doi.org/10.4172/2161-1165.1000227

Verplanken, B., Hazenberg, P. T., & Palenéwen, G. R. (1992). Need for cognition and external information search effort. *Journal of Research in Personality*, *26*(2), 128–136. https://doi.org/10.1016/0092-6566(92)90049-a

Wu, L., & Lee, C. S. (2016). Limited Edition for Me and Best Seller for You: The Impact of Scarcity versus Popularity Cues on Self versus Other-Purchase Behavior. *Journal of Retailing*, *92*(4), 486–499. https://doi.org/10.1016/j.jretai.2016.08.001

Wu, W. Y., Lu, H. Y., Wu, Y. Y., & Fu, C. S. (2011). The effects of product scarcity and consumers' need for uniqueness on purchase intention. *International Journal of Consumer Studies*, *36*(3), 263–274. https://doi.org/10.1111/j.1470-6431.2011.01000.x

Yuan, W., Hong, Y., & Pavlou, P. A. (2012). Do Consumers Trust Online Product Reviews? An Experimental Study of Biases in Online Product Reviews. In K.D Joshi & Y. Yoo (Eds.), *Americas Conference on Information Systems*. https://aisel.aisnet.org/amcis2012/proceedings/HCIStudies/27/

Appendix A: Survey

Start of Block: Consent

Consent Dear respondent, thank you for helping me with my master's thesis research on advertising in the hotel industry and personal choices in the booking process of a hotel room.

The questionnaire will take approximately 10 minutes to fill in. Please answer each question carefully and honestly. There are no right or wrong answers.

CONFIDENTIALITY OF DATA
All research data remain entirely confidential and are collected in anonymous form. I will not be able to identify you. Therefore, no foreseeable risks or discomforts are associated with participating in this research.

VOLUNTARY
If you now decide not to participate in this research, this will not affect you. Likewise, if you choose to cease your cooperation while filling in the questionnaire, this will in no way affect you either. You can end your cooperation without giving reasons.

ETHICS
This study has been approved by the Ethics Committee of Erasmus University Rotterdam. If you want to invoke your rights or have a question concerning privacy about this study, you can contact Erasmus University's DPO (Data Protection Officer) at fg@eur.nl.

I would be very grateful if you could fill in the questionnaire. If you have any questions or want to give me feedback, you can contact me at the following email address: 650236dm@student.eur.nl

Thanks a lot for your help and best regards.

Dominik Mate

Do you agree to take part in this survey?

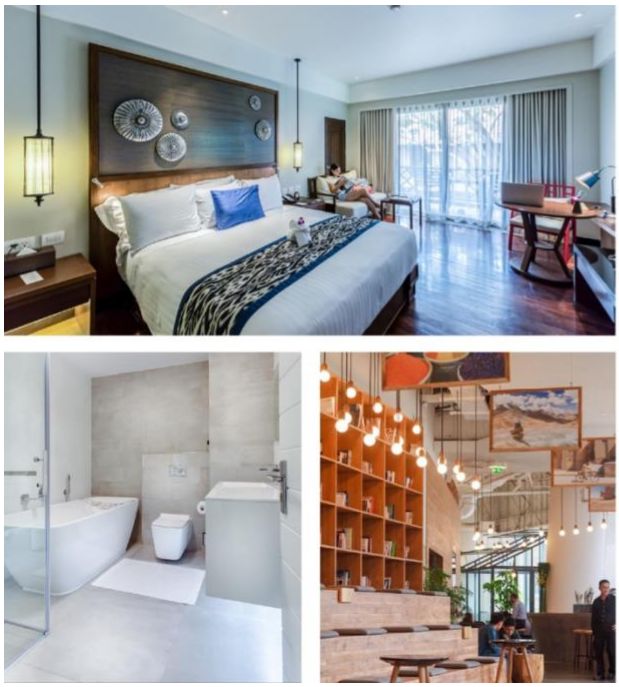
- ○ Yes (1)
- ○ No (2)

Skip To: End of Survey If Dear respondent, thank you for helping me with my master's thesis research on advertising in the... = No

End of Block: Consent

Start of Block: Stimuli

Q02 Imagine you are planning your next vacation and are looking for a hotel room. On a booking site, you come across the following ad, which you take a good look at.



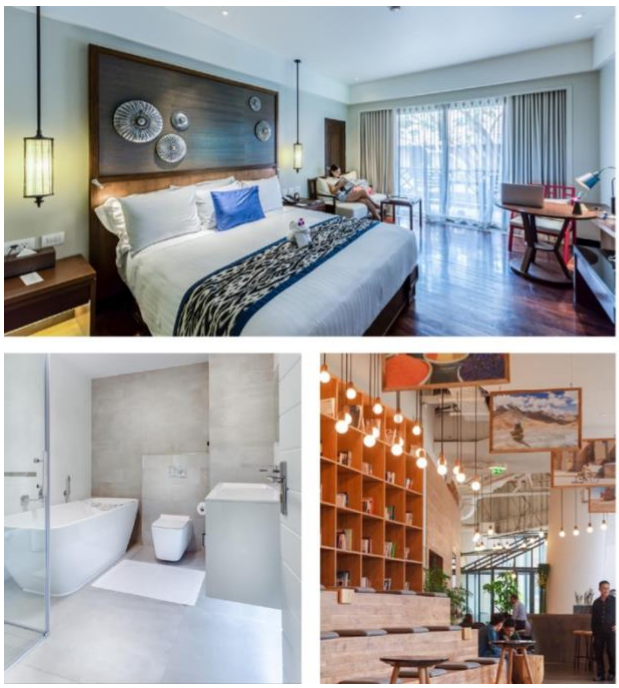
5 people are looking right now!
Only 1 room left!

Limited time offer: only 30 minutes left to book a room!

Welcome to your luxurious escape at our hotel! Your room is a spacious haven of relaxation and comfort, meticulously designed to cater to all your needs.

Indulge in the ultimate luxury experience at our hotel, where every detail has been thoughtfully considered, making your stay unforgettable.

Q03 Imagine you are planning your next vacation and are looking for a hotel room. On a booking site, you come across the following ad, which you take a good look at.

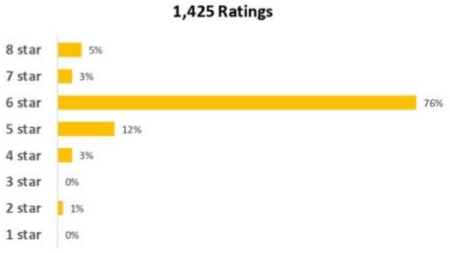


Not booked today!
Many rooms left!

No time limit to book your room!

Welcome to your luxurious escape at our hotel! Your room is a spacious haven of relaxation and comfort, meticulously designed to cater to all your needs.

Indulge in the ultimate luxury experience at our hotel, where every detail has been thoughtfully considered, making your stay unforgettable.



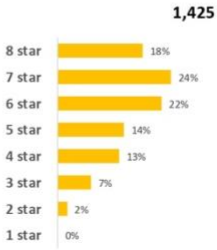
Q04 Imagine you are planning your next vacation and are looking for a hotel room. On a booking site, you come across the following ad, which you take a good look at.

Not booked today!
Many rooms left!

No time limit to book your room!

Welcome to your luxurious escape at our hotel! Your room is a spacious haven of relaxation and comfort, meticulously designed to cater to all your needs.

Indulge in the ultimate luxury experience at our hotel, where every detail has been thoughtfully considered, making your stay unforgettable.



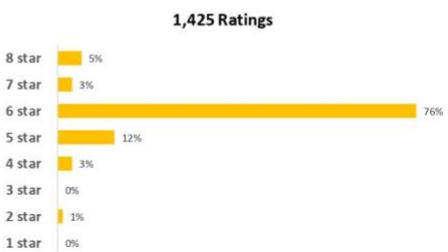
Q05 Imagine you are planning your next vacation and are looking for a hotel room. On a booking site, you come across the following ad, which you take a good look at.

5 people are looking right now!
Only 1 room left!

Limited time offer: only 30 minutes left to book a room!

Welcome to your luxurious escape at our hotel! Your room is a spacious haven of relaxation and comfort, meticulously designed to cater to all your needs.

Indulge in the ultimate luxury experience at our hotel, where every detail has been thoughtfully considered, making your stay unforgettable.



End of Block: Stimuli

Start of Block: Purchase interest

Q06 Imagine you are looking for a hotel room for your next vacation. Now, please describe your overall feelings about the hotel room in the ad you just saw.

Q07 Please select on the 7-point scale what applies most to you.

- ○ Unappealing (1)
- ○ (2)
- ○ (3)
- ○ (4)
- ○ (5)
- ○ (6)
- ○ Appealing (7)

Q08 Please select on the 7-point scale what applies most to you.

- ○ Bad (1)
- ○ (2)
- ○ (3)
- ○ (4)
- ○ (5)
- ○ (6)
- ○ Good (7)

Q09 Please select on the 7-point scale what applies most to you.

- ○ Unpleasant (1)
- ○ (2)
- ○ (3)
- ○ (4)
- ○ (5)
- ○ (6)
- ○ Pleasant (7)

Q10 Please select on the 7-point scale what applies most to you.

- ○ Unfavorable (1)
- ○ (2)
- ○ (3)
- ○ (4)
- ○ (5)
- ○ (6)
- ○ Favorable (7)

Q11 Please select on the 7-point scale what applies most to you.

- Unlikable (1)
- (2)
- (3)
- (4)
- (5)
- (6)
- Likable (7)

End of Block: Interest

Start of Block: Purchase intention

Q12 Now follow some questions where you have to answer, if you would book the hotel room you just saw. How much money you usually spend on vacations is not important in this case. Please select on the 7-point scale what applies most to you.

Q13 Are you going to book the hotel room?

- Never (1)
- (2)
- (3)
- (4)
- (5)
- (6)
- Definitely (7)

Q14 Do you intend to book the hotel room?

- ○ Definitely not (1)
- ○ (2)
- ○ (3)
- ○ (4)
- ○ (5)
- ○ (6)
- ○ Definitely (7)

Q15 How high is your purchase interest regarding the booking of the hotel room?

- ○ Very low (1)
- ○ (2)
- ○ (3)
- ○ (4)
- ○ (5)
- ○ (6)
- ○ Very high (7)

Q16 Will you book the hotel room?

- Definitely not (1)
- (2)
- (3)
- (4)
- (5)
- (6)
- Definitely (7)

Q17 Will you probably book the hotel room?

- Probably not (1)
- (2)
- (3)
- (4)
- (5)
- (6)
- Probably yes (7)

End of Block: Purchase intention

Start of Block: Need for affect

Q18 The following questions are not related to the hotel room. Please select on the scale how much you agree with the following statements.

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)

If I reflect on my past, I see that I tend to be afraid of feeling emotions. (1)	○	○	○	○	○	○	○
I feel that I need to experience strong emotions regularly. (2)	○	○	○	○	○	○	○
Emotions help people to get along in life. (3)	○	○	○	○	○	○	○
I find strong emotions overwhelming and therefore try to avoid them. (4)	○	○	○	○	○	○	○
I think that it is important to explore my feelings. (5)	○	○	○	○	○	○	○
I would prefer not to experience either the lows or highs of emotion. (6)	○	○	○	○	○	○	○
I do not know how to handle my emotions, so I avoid them. (7)	○	○	○	○	○	○	○
It is important for me to be	○	○	○	○	○	○	○

in touch with my feelings. (8)							
It is important for me to know how others are feeling. (9)	○	○	○	○	○	○	○
Emotions are dangerous—they tend to get me into situations that I would rather avoid. (10)	○	○	○	○	○	○	○

End of Block: Need for affect

Start of Block: Need for cognition

Q19 The following questions are not related to the hotel room. Please select on the scale how much you agree with the following statements.

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I would prefer complex to simple problems. (1)	○	○	○	○	○	○	○
I like to have the responsibility of handling a situation that requires a	○	○	○	○	○	○	○

lot of thinking. (2)							
Thinking is not my idea of fun. (3)	○	○	○	○	○	○	○
I would rather do something that requires little thought than something that is sure to challenge my thinking abilities. (4)	○	○	○	○	○	○	○
I try to anticipate and avoid situations where there is likely a chance I will have to think in depth about something. (5)	○	○	○	○	○	○	○
I find satisfaction in deliberating hard and for long hours. (6)	○	○	○	○	○	○	○
The idea of relying on thought to make my way to the top appeals to me. (7)	○	○	○	○	○	○	○
I really enjoy a task	○	○	○	○	○	○	○

that involves coming up with new solutions to problems. (8)							
I prefer my life to be filled with puzzles that I must solve. (9)	○	○	○	○	○	○	○
I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought. (10)	○	○	○	○	○	○	○

End of Block: Need for cognition

Start of Block: Manipulation checks

Q20 Think back to the hotel booking page. Were there still many hotel rooms available?

- ○ Yes (1)
- ○ Maybe (2)
- ○ No (3)

Q21 Think back to the hotel booking page. Was there a time limit to book the hotel room?

- ○ Yes (1)
- ○ Maybe (2)
- ○ No (3)

Q22 Think back to the hotel booking page. Did the hotel room have many reviews?

- ○ Yes (1)
- ○ Maybe (2)
- ○ No (3)

Q23 Think back to the hotel booking page. Did one of the total eight stars have a very high percentage of ratings (over 50 percent), while the others had rather low percentage ratings?

- ○ Yes (1)
- ○ Maybe (2)
- ○ No (3)

End of Block: Manipulation checks

Start of Block: Demographics

Q24 What is the highest level of school you have completed or the highest degree you have received?

- ○ Less than high school degree (1)
- ○ High school graduate (high school diploma or equivalent) (2)
- ○ Some college but no degree (3)
- ○ Bachelor's degree (4)
- ○ Master's degree (5)
- ○ Doctoral degree (6)
- ○ Professional degree (JD, MD) (7)

Q25 How old are you? Please insert your age in numbers.

_____

X→

Q26 In which country do you currently reside?

▼ Afghanistan (1) ... Zimbabwe (1357)

Q27 What gender do you identify with?

- ○ Male (1)
- ○ Female (2)
- ○ Other (3)

End of Block: Demographics

Appendix B: Purchase Interest and Purchase Intention

Scales by Spears & Singh, 2004.

Purchase interest: Please describe your overall feelings about the brand described in the ad you just read.

1. Unappealing (1) / Appealing (7)
2. Bad (1) / Good (7)
3. Unpleasant (1) / Pleasant (7)
4. Unfavorable (1) / Favorable (7)
5. Unlikable (1) / Likable (7)

Purchase intention: Please describe your overall feelings about the brand described in the ad you just read.

1. Never (1) / Definitely (7)
2. Definitely do not intend to buy (1) / Definitely intend to buy (7)
3. Very low purchase interest (1) / Very high purchase interest (7)
4. Definitely not buy it (1) / Definitely buy it (7)
5. Probably no buy it (1) / Probably buy it (7)

Appendix C: Need for Affect

The items marked with an asterisk were reversed before the evaluation of the survey (Appel et al., 2012).

1. I feel that I need to experience strong emotions regularly.
2. Emotions help people to get along in life.
3. I think that it is important to explore my feelings.
4. It is important for me to be in touch with my feelings.
5. It is important for me to know how others are feeling.
6. If I reflect on my past, I see that I tend to be afraid of feeling emotions.*
7. I find strong emotions overwhelming and therefore try to avoid them.*
8. I would prefer not to experience either the lows or highs of emotion.*
9. I do not know how to handle my emotions, so I avoid them.*
10. Emotions are dangerous — they tend to get me into situations that I would rather avoid.*

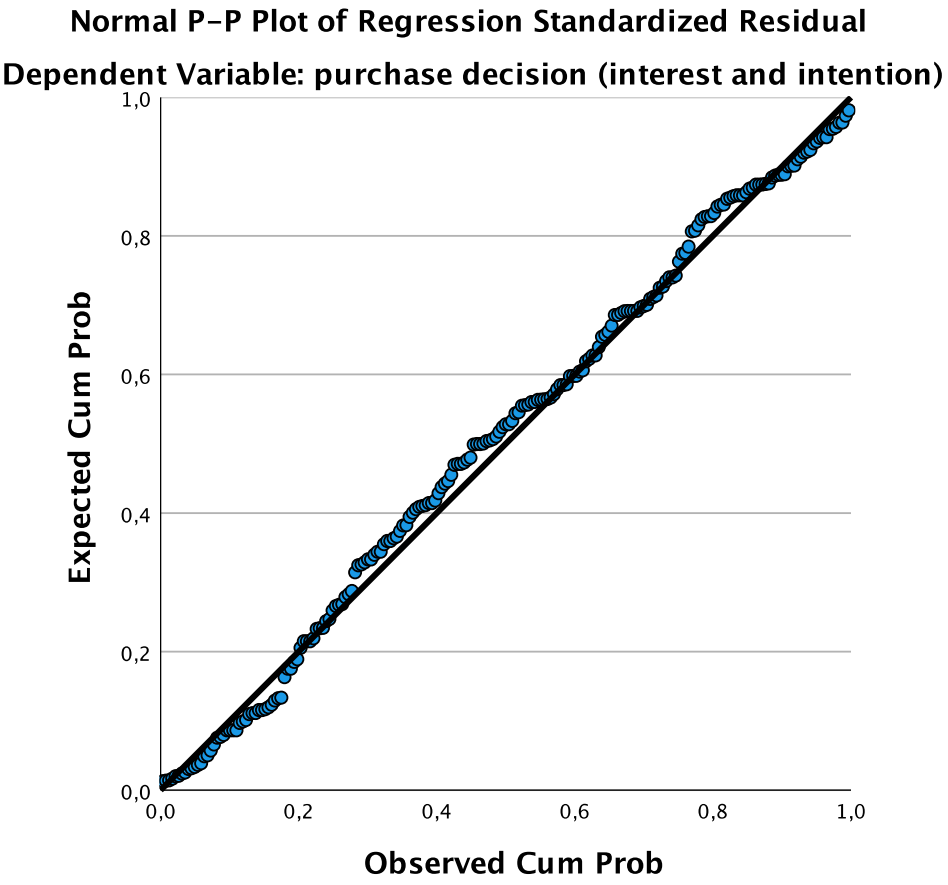
Appendix D: Need for Cognition

The items marked with an asterisk were reversed before the evaluation of the survey (Chiesi et al., 2018).

1. I would prefer complex to simple problems.
2. I like to have the responsibility of handling a situation that requires a lot of thinking.
3. Thinking is not my idea of fun.*
4. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.*
5. I try to anticipate and avoid situations where there is likely a chance I will have to think in depth about something.*
6. I find satisfaction in deliberating hard and for long hours.
7. The idea of relying on thought to make my way to the top appeals to me.
8. I really enjoy a task that involves coming up with new solutions to problems.
9. I prefer my life to be filled with puzzles that I must solve.
10. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.

Appendix E: Normal Distribution

Figure E1. P-P plot testing for normal distribution



Appendix F: Skewness and Kurtosis

Figure F1. Distribution of the variable purchase decision

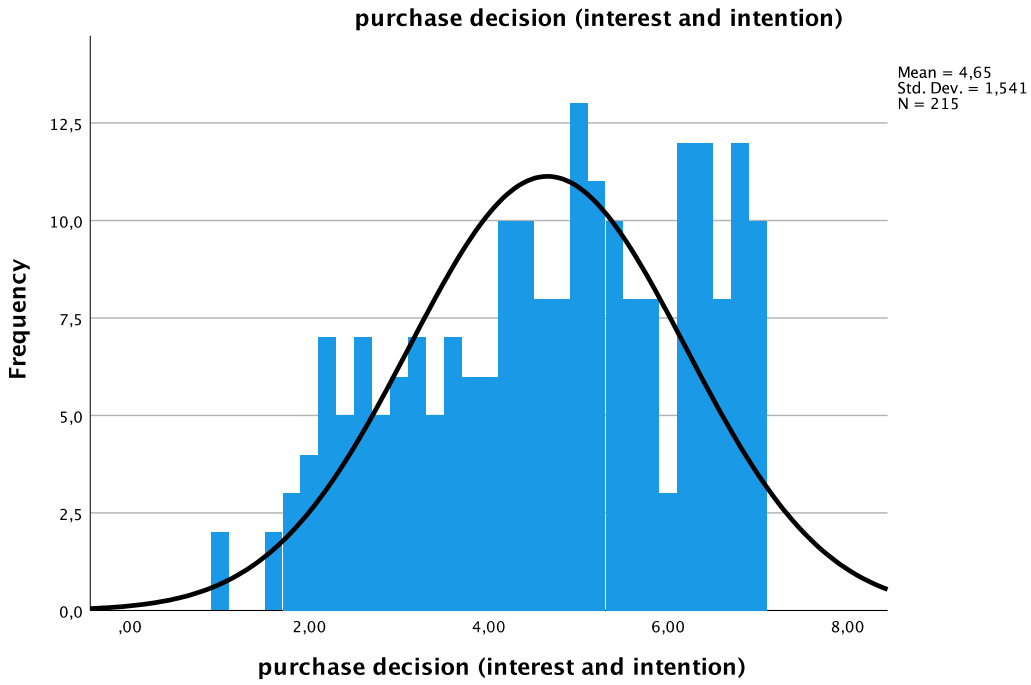


Figure F2. Distribution of the variable need for affect approach

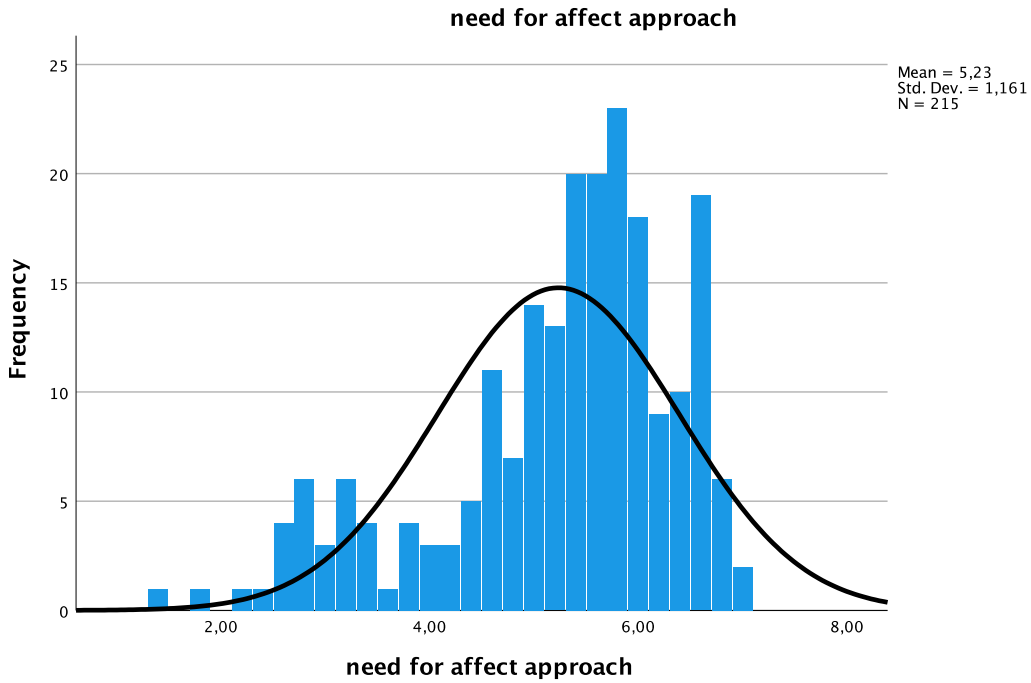


Figure F3. Distribution of the variable need for affect avoidance

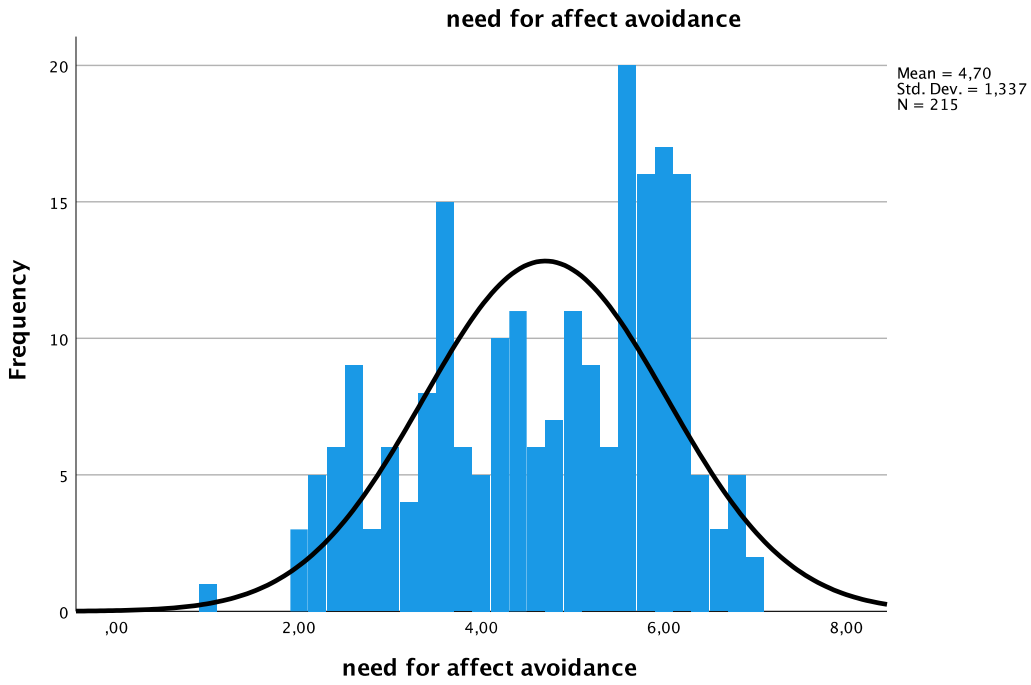
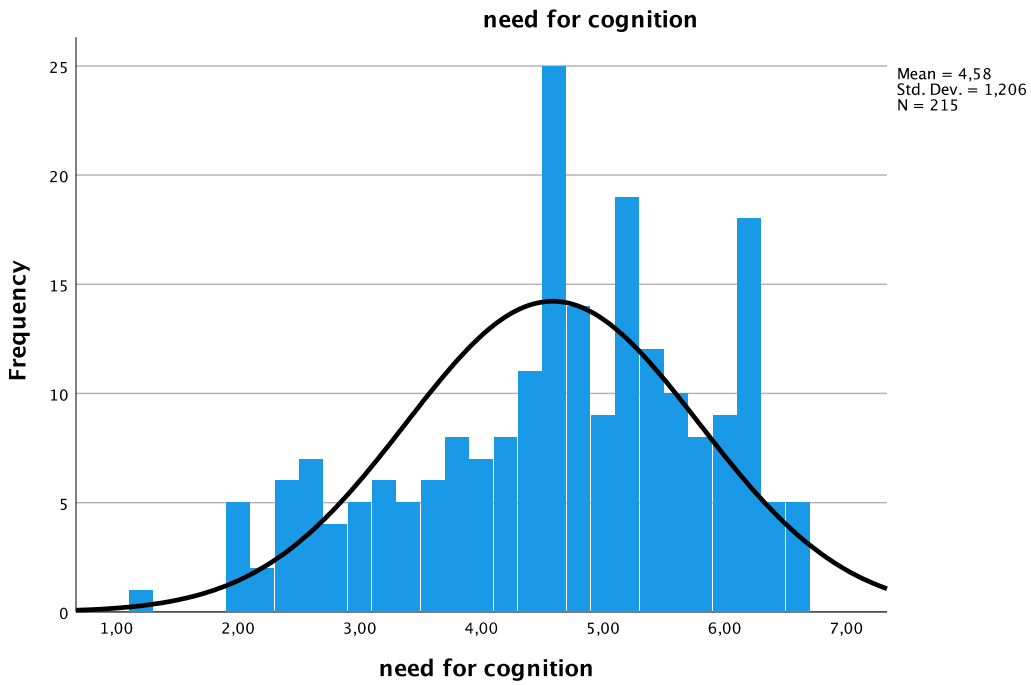


Figure F4. Distribution of the variable need for cognition



Appendix G: Homoscedasticity

Figure G1. Scatterplot testing for homoscedasticity