

Personalizing persuasion strategies to individuals' personality traits in online advertising
Effective or elusive?

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Abstract

To persuade consumers into buying products or services, advertisers make smart use of persuasion strategies, of which Cialdini's Six principles of persuasion are most common. Although the general effects of these persuasion principles are widely investigated, limited research is done on individual differences in the effects of these tactics. With the increasing importance of online advertising and the possibilities big data offers, advertisers can enhance persuasion by further personalizing advertisements, using individual characteristics like personality traits.

Prior studies showed first evidence for differences in susceptibility towards these persuasion strategies based on individuals' personality traits. This study builds forward on these findings by assessing whether personality traits can potentially strengthen (or alter) the effect of persuasion strategies on online advertising effectiveness.

Therefore, this study examined the moderating effect of 3 of the *Big Five personality traits* (*Agreeableness*, *Openness*, and *Conscientiousness*) on 2 of *Cialdini's Six principles of persuasion* (*Authority* and *Liking*) and *Online advertising effectiveness* (*Ad appeal*, *Brand attitude* and *Purchase intention*). The study conducted an online survey-experiment with a 2 (Authority: high vs. low) by 2 (Liking: high vs. low) full factorial design, with a between-subject design. The sample consisted of 278 participants ($N = 278$).

After performing moderated multiple regression analyses, it can be concluded that in this study *Persuasion strategies* did not influence *Online advertising effectiveness* and *Personality traits* therefore did not moderate this effect. Nonetheless, some promising interaction effects between *Persuasion strategies* and *Personality traits* and *Personality traits and Online advertising effectiveness* were found. These findings suggest that advertisements can be more effective when they are personalized to an individual's personality traits.

Hence, future research should further examine this topic by improving the manipulations of *Authority* and *Liking*, and investigating interaction effects, rather than moderating effects. Until then, the use of persuasion principles and personality traits should be approached with some prudence. Moreover, marketers should test persuasion strategies extensively before incorporating them into advertising. Lastly, besides personality traits, it is recommended to assess other characteristics that could impact the effectiveness of persuasion principles, including age, culture and gender.

KEYWORDS: Persuasive communication, persuasion strategies, Cialdini's six principles of persuasion, personality traits, online advertising effectiveness, personalized advertising

Preface

This master's thesis is my final work before ending my six years of studying. Entering this thesis process, I wanted to challenge myself by conducting a quantitative study, instead of a qualitative study, which I have done in the past. Although it sometimes has been challenging, I enjoyed delving deep into the topic of persuasive communication. I am grateful I was able to research a topic I am interested in and hope you can see this back in my work.

I would like to take this opportunity to express my gratitude to all the individuals who have played a significant role in the completion of my Master's thesis.

First of all, I would like to thank my supervisor Dr. Niels Vink for the guidance and constructive feedback throughout this period. I appreciate his patience, time and help. Also, his advice from his own academic and work experience got me very inspired in behavioral science.

Moreover, I would like to thank everyone who participated in my research and shared my survey with their network. This made it possible for me to attain a great sample size, which has contributed positively to the quality of my thesis.

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1. Introduction

Marketers have mastered the art of persuading consumers into buying their products and services and creating constantly new desires and needs. With persuasion strategies, of which Cialdini's Six principles of persuasion (2001) are the most widely accepted, marketers can create advertisements that positively influence consumers' attitudes and purchase behavior (Cialdini, 2007; Oyibo et al., 2017).

One of the Six principles of persuasion is *Authority*, which states that individuals are more likely to be persuaded by people they perceive as legitimate authority or expert (Cialdini, 2001). An iconic example of *Authority* dates back to 1930 from the tobacco company Lucky Strikes. In one of their advertisements, they employed a physician wearing a white lab coat and glasses that recommended Lucky Strikes cigarettes, claiming they were less irritating and prevented coughing (Gardner & Brandt, 2006). Although explicit examples like these do not occur anymore in today's advertising, there are still many other types of authority-based advertisements such as dentists that promote a certain brand of toothpaste.

Along with *Authority*, the other five principles of persuasion have proved to positively influence advertising effectiveness (Cialdini, 2007; Jung & Kellaris, 2006; Patzer, 1983). Although much is known about the general effects of these persuasion strategies, limited research is done on the individual differences in these effects (Kaptein et al., 2009; Kaptein; Kaptein et al., 2012).

Especially now, with the accessibility to big data, marketers can increase the level of persuasion and satisfaction by personalizing online advertisements with consumers' individual characteristics (Oliveira et al., 2013). Although organizations use some individual characteristics like a person's age, occupation, or location to tailor advertisements, many other characteristics such as personality are often not considered. Previous research on personality (Butt & Philips, 2008; Paunonen & Ashton, 2001) has shown that people with similar characteristics can react differently to the same scenario because of differences in their personalities (Oliveira et al., 2013). This gives reasons to believe consumers with different personality traits might also respond differently to persuasion strategies incorporated in advertisements.

With an ever-increasing number of investments in online advertising, which is expected to reach globally 679.80 billion dollars in 2023 (Statista, 2023), it is surprising that there is limited research done on the individual effects of persuasion strategies. Until now, a minimum of studies investigated the relationship between personality traits and persuasion strategies (Halko & Kientz, 2010; Hirsh et al., 2012). Even less is known about the Six principles of persuasion (Cialdini, 2001) specifically. Only a few studies (Alkış & Temizel, 2015; Alslaity & Tran; 2020; Oyibo et al., 2017; Sofia et al., 2016) investigated the

relationship between (the Big Five) personality traits (Costa & McCrae, 1990) and the susceptibility to the Six persuasion strategies of Cialdini (2001). They provided initial evidence that some personalities are indeed more vulnerable to certain persuasion principles.

This study wants to build forward on these findings by investigating whether personality traits can potentially strengthen (or alter) the effect of persuasion strategies on online advertising effectiveness. Therefore, the following research question will be examined: *“To what extent do personality traits influence the effect of persuasion strategies on online advertising effectiveness?”*. This study aims to investigate the potential moderating effect of the *Big Five personality traits* on *Cialdini's Persuasion principles* and *Online advertising effectiveness*.

Regarding the research's scope and feasibility, 3 out of 5 Big Five personality traits were selected: *Agreeableness*, *Openness*, and *Conscientiousness*. Previous research (Alkış & Temizel, 2015; Oyibo et al., 2017) suggested these personality traits are most susceptible to Cialdini's persuasion principles. Similarly, 2 out of the 6 principles of persuasion (Cialdini, 2001) were selected: *Liking* and *Authority*, as previous studies showed these principles have the greatest influence on these personality traits (Alkış & Temizel, 2015; Alslaity & Tran, 2020; Oyibo et al., 2017). *Online advertising effectiveness* consists of *Attitude toward the ad (Aad)*, *Brand attitude*, *Click intention* and *Purchase intention*. The conceptual model of the research question is illustrated in Figure 1.

This research is academically relevant as it is the first to explore the moderating effect of the Big Five personality traits on Cialdini's persuasion principles and Online advertising effectiveness. Moreover, whereas previous studies focused on persuasive technologies for apps or recommendation systems (Alkış & Temizel, 2015; Alslaity & Tran, 2020; Oyibo et al., 2017; Sofia et al., 2016), this research focused specifically on online advertising. Also, it should be noted that *Liking* consists of multiple dimensions, including familiarity, compliments, cooperation, similarity and physical attractiveness (Cialdini, 2001). Whereas previous mentioned studies researched *Liking* in the form of familiarity, this study addressed *Liking* in the form of physical attractiveness. Finally, unlike most other studies that conducted a survey (Alkış & Temizel, 2015; Oyibo et al., 2017), this research employed a survey-experiment, which allowed to examine (a combination of) both main effects as well as interaction effects (Vargas et al., 2017).

Concerning societal relevance, new insights will enable marketers to further personalize online advertisements by incorporating the principles that fit with their personality traits. In this way, organizations can increase online advertising effectiveness, which in turn leads to higher sales and competitive advantages (Oyibo et al., 2017). Moreover, trait-based personalization, like matching persuasion strategies with an individual's personality traits,

provides a more subtle approach than the current prevailing cue-based personalization that uses demographics or behavioral data to tailor advertisements. The latter is increasingly perceived as intrusive and raises privacy concerns, consequently decreasing its effectiveness (Winter et al., 2021). Therefore, the potential to personalize advertisements with subtle techniques such as matching personality traits to persuasion strategies, can benefit marketers. Besides, enhanced personalization, insights from this research into how consumers with different personality traits respond to specific persuasion strategies can improve customer segmentation and predict future consumer behavior (Myers et al., 2010).

Multiple studies have shown that organizations can predict a person's personality based on their online behavior, including their search queries and social media usage (Azucar et al., 2018; Kosinski et al., 2013; Matz et al., 2017). As such, a person's 'Likes' on Facebook can already provide enough information to determine a person's personality (Kosinski et al., 2013). Furthermore, these predictions of personality are found to be more accurate than evaluations made by an individual's inner circle (Youyou et al., 2015).

Despite ethical debates about the use of personality traits for advertising purposes, it is expected that personality marketing will be the future (Graves & Matz, 2018). With that in mind, it is now more important than ever to examine the potential moderating effect of *Personality traits on Persuasion strategies and Online advertising effectiveness* and gain insights into whether personalizing persuasion strategies to an individual's personality traits is effective or rather elusive.

The thesis's structure is as follows. First, a theoretical framework for the study is introduced. The concepts of personality traits, persuasion strategies, and online advertising effectiveness are explained and discussed. Also, the interplay between these different variables is considered, from which 6 hypotheses derive. In the subsequent chapter, the study's methodology is explained, including the research method, stimulus material, procedure of data collection, sampling, and operationalization. Following, the study's results are presented. Finally, in the last chapter, the results will be discussed in line with previous studies, and conclusions will be drawn in order to answer the research question. Moreover, this chapter will provide practical and managerial implications, ethics, the study's limitations and recommendations for future research.

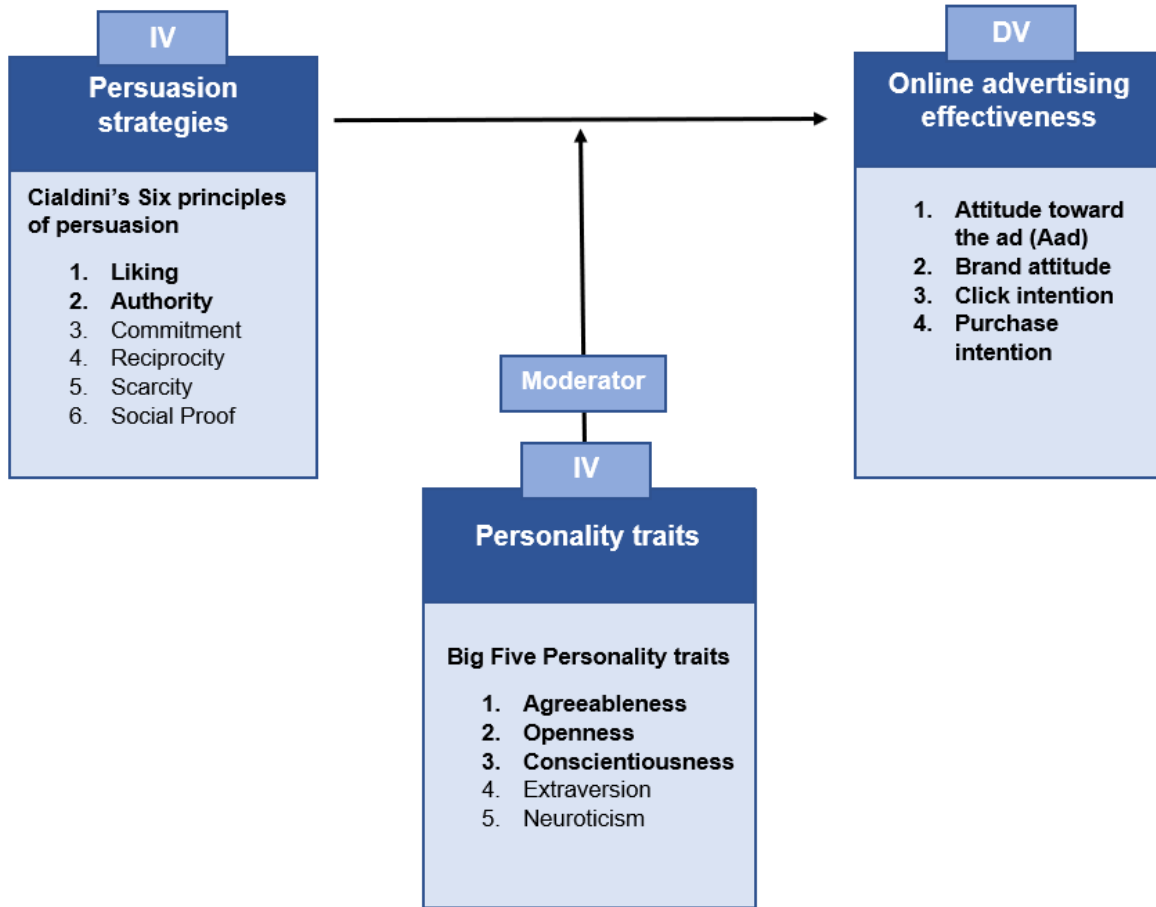


Figure 1. Conceptual model for the research question

2. Theoretical framework

This chapter is divided into four main sections that form a theoretical foundation for answering the research question. The first section discusses personality traits, with a primary focus on the Big Five personality traits. Following, the most commonly used persuasion strategies will be discussed, in which Cialdini's Six principles of persuasion will be reviewed. The third part analyzes online advertising effectiveness and the different components it consists of. Finally, in the last section, the previous literature on the relationships between personality traits, Cialdini's persuasion principles, and online advertising effectiveness will be reviewed, from which 6 hypotheses will derive.

2.1 Personality traits

To investigate whether personality traits could moderate the relationship between persuasion strategies and online advertising effectiveness, it is important to take the concept of personality under the loop. Over time, researchers have made significant efforts towards the understanding of personality and its various traits. As such, personality can be described as *“that pattern of characteristic thoughts, feelings, and behaviors that distinguishes one person from another and that persists over time and situation”* (Phares, 1991, p.4). Multiple frameworks have been developed to explain the individual differences in personalities, including the Enneagram, the Myers-Briggs Type Indicator (MBTI), and the Big Five personality traits, also known as the Five Factor model (Costa & McCrae, 1990). This study employed the latter due to its wide acceptance and application in psychology research (Alslaity & Tran, 2020).

The Big Five personality traits divide personality into five broad dimensions: 1.) *Agreeableness*, 2.) *Openness*, 3.) *Conscientiousness*, 4.) *Extraversion*, 5.) *Neuroticism*. Every individual possesses a unique combination of these different personality traits and the level of each trait can vary. 1.) *Agreeableness* can be described as the propensity to be friendly, accepting, and benevolent. People high in *Agreeableness* are very modest, like to help others and maintain positive relationships (Costa et al., 1991; Myers et al., 2010; Oyibo et al., 2017; Roccas et al., 2002). 2.) *Openness* refers to the extent to which a person is curious and adventurous, and open to new experiences and ideas. People with a high level of *Openness* are creative and easily accept change (Costa & McCrae, 1992; Myers et al., 2010; Oyibo et al., 2017). 3.) *Conscientiousness* is the degree to which a person is self-disciplined and goal-oriented. People with a high level of *Conscientiousness* are likely to obey norms and rules (Costa et al., 1991; Myers et al., 2010; Oyibo et al., 2017). 4.) *Extraversion* is the propensity to which a person searches for social contact with other people. People that have a high level of *Extraversion*, generally like to express their opinions,

take on a dominant or leadership role in groups and pursue positive feelings and thrills (Myers et al., 2010; Oyibo et al., 2017). 5.) *Neuroticism* is the extent to which a person experiences negative emotions such as somberness, anxiety, and nervousity. *Neuroticism* is associated with emotional instability (Costa & McCrae, 1992; Oyibo et al., 2017). An individual's Big Five personality traits are considered to be relatively consistent over time (Alslaity & Tran, 2020). However, they can alter during a person's development in life, but these changes tend to occur more at the level of specific components within one of the five personality traits, rather than at the broader level of the Big Five personality traits (Soto & John, 2012). Great alterations in personality traits only tend to occur due to rigorous changes in life, or consciously made attempts (Costa & McCrae, 1992; Heinström, 2003).

2.2 Persuasion strategies

Now personality traits are discussed, a critical analysis of persuasion strategies will be provided. First, persuasion can be defined as "*human communication that is designed to influence others by modifying their beliefs, values, or attitudes*" (Simons, 1976, p. 21). Multiple persuasion strategies have been suggested in the literature such as Fogg's persuasion strategies (1999), Cialdini's Six principles of persuasion (2001), and Gragg's Seven Psychological Triggers (2003). This research focused on Cialdini's Six principles of persuasion (2001), since those are universally accepted, and still frequently applied in the marketing and advertising industry (Cialdini, 2001; Oyibo et al., 2017). Cialdini (2001) identified six persuasion strategies that can influence individuals' attitudes and behavior: 1.) *Liking*, 2.) *Authority*, 3.) *Scarcity*, 4.) *Commitment*, 5.) *Reciprocity* and 6.) *Social proof*.

The principle of 1.) *Liking* states that individuals are influenced more easily by people they like (Cialdini et al., 2003). 2.) *Authority* is the effect that individuals are more likely to accept a message by people they perceive as a legitimate authority or expert (Cialdini, 2001). 3.) *Scarcity* implies that when a product or service is scarce, it is more desired (Cialdini et al., 2003). 4.) *Commitment* means that individuals are more likely to comply when they commit to something (Oyibo et al., 2017). *Commitment* relates to *Consistency*, which describes people's need to be consistent with past statements, decisions, and actions (Cialdini et al., 2003). 5.) *Reciprocity* implies that people are more willing to act if they receive something in return (Cialdini et al., 2003). 6.) *Social proof* suggests that individuals are more probable to do something when they see that like-minded individuals have done the same (Cialdini et al., 2003).

This research focuses on 1.) *Liking* and 2.) *Authority*. Multiple studies have tested the pervasiveness of the six persuasion principles and demonstrated *Liking* and *Authority* are two of the most influential principles (Alslaity & Tran; 2020; Gkika & Lekakos, 2014; Smith et

al., 2016). *Liking* is used in different contexts, including negotiations, politics, and sales but especially in advertising (Cialdini, 2001). *Liking* consists of different dimensions including similarity, familiarity, compliments, cooperation and physical attractiveness. Similarity means that individuals tend to like people more that share commonalities with them, such as their background, hobbies, or opinions (Cialdini, 2007). Familiarity also plays a role in *Liking*, as people unconsciously are attracted to things or individuals they recognize or know (Cialdini, 2001). Another element is giving compliments: people are more prone to like those who give them compliments (Cialdini, 2001). Finally, people are inclined to like those who show willingness to cooperate or create the impression of being part of the same team, even if that is not the case. For example, a sales person helping a customer (Cialdini, 2001). Lastly, physical attractiveness indicates that individuals tend to like people more when they are good-looking. The latter is most commonly used in the advertising context (Cialdini, 2001).

According to Cialdini (2007), individuals automatically assign beneficial characteristics such as intelligence and friendliness to physically attractive people. This is due to the halo effect in which a person's overall evaluation is based on only one trait, in this case, physical appearance. Consequently, individuals unconsciously make positive judgments about physically attractive people, leading to increased likability and a higher probability of compliance. Moreover, they are inclined to respond automatically to limited information attractive people communicate instead of conducting a more comprehensive analysis (Cialdini, 2007). As such, multiple studies showed the positive influence of physical attractiveness on advertising effectiveness. Research (Baker & Churchill; 1977; Caballero & Pride, 1984; Patzer, 1983; Petroschius & Crocker, 1989) found that using highly physically attractive people in advertisements positively influences the consumer's attitude toward the ad and purchase intention. Additionally, Till and Bussler (1998) found that it also enhances a consumer's brand attitude.

Besides Liking, Authority is also widely applied in advertising. This principle provides consumers with mental shortcuts in decision-making, as consumers believe they can make fast but still informed decisions when an expert is used in advertising (Cialdini, 2001; Davidson, 2008). To create expertise, the use of symbols associated with experts including function titles or physical attributes like a lab coat is often already sufficient (Seethaler & Rose, 2006). In fact, people typically respond simply to these symbols of experts rather than the actual content the expert communicates (Davidson, 2008). Nonetheless, to strengthen the pervasiveness of the expert's message it is important he is viewed as legitimate and the source is credible (Eagly & Chaiken, 1975; Seethaler & Rose, 2006). Therefore, it is important the expert is perceived as unbiased and is part of an independent institution (Cialdini & Rhoads, 2001). Similarly to *Liking*, studies found that *Authority* also positively influences advertising effectiveness, including the attitude toward the ad, brand attitude, and

purchase intention (Jung & Kellaris, 2006).

2.3 Online advertising effectiveness

Now the concepts of *Personality traits* and *Persuasion strategies* are explained and reviewed, *Online advertising effectiveness* will be discussed. As mentioned previously, it is expected that persuasion strategies *Liking* and *Authority* influence *Online advertising effectiveness*. In contrast to prior research that addressed advertising in general, this research focuses specifically on online advertising due to its increasing importance, caused by people's expanded online (social media) activity (Pridmore & Hämäläinen, 2017). Many studies have debated the operationalization of (online) advertising effectiveness and distinguished different components, including attitude towards the ad (*Aad*), brand attitude, brand recognition, brand recall, brand attitude, click-through rates, click intentions, and purchase intentions (Aribarg & Schwartz, 2020; Kim et al., 2019; Muehling & McCann, 1993; Yaveroglu & Donthu, 2008). Concerning the scope of the research *Online advertisement effectiveness* will be divided into four components: *Attitude toward the ad*, *Brand attitude*, *Click intention* and *Purchase intention*. These four variables show different stages of the consumer's decision-making process when being exposed to an advertisement. This can be illustrated with the AIDA model, which is based on a hierarchy of effects and describes the different stages consumers experience when making a purchase decision: Awareness, Interest, Desire and Action (Van Dyck, 2014). The adapted AIDA model can be found in Figure 2.

2.3.1 Attitude toward the ad

The first component of *Online advertising effectiveness* is the *Attitude toward the ad (Aad)*. The concept can be found at the start of the consumer decision-making funnel, at the level of awareness. *Aad* can be described as the consumer's overall assessment of a specific advertisement, which can be negative as well as positive (MacKenzie et al., 1989; Muehling & McCann, 1993). This assessment can entail both emotional responses and rational reasonings such as the advertisement's credibility or the information quality (Muehling & McCann, 1993). A consumer's *Aad* has a significant positive effect on a consumer's *Brand attitude*, *Click intention*, and *Purchase intention* (Erdem et al., 2017; Mehta, 2000; Sallam & Algammash, 2016; Spears & Singh, 2004).

2.3.2 Brand attitude

The second component of *Online advertising effectiveness* is *Brand attitude*, which can be defined as an individual consumer's overall internal evaluation of the brand (Mitchell & Olson, 1981; Spears & Singh, 2004). This evaluation endures for a significant time but can

be changed with the employment of different marketing instruments such as commercials or email campaigns. Moreover, *Brand attitude* can predict consumer behavior and positively influence consumers' purchase intention (Mitchell & Olson, 1981; Spears & Singh, 2004)

2.3.3 Click intention

The third component of *Online advertising effectiveness* is *Click intention*, which is a consumer's probability to click on an advertisement. Since in many studies, real-time advertisements are hard to implement, researchers often measure the click intention instead of Click-Through Rates (CTR). CTR is the ratio of the number of clicks on an advertisement to the number of advertisement impressions (Kim et al., 2019; Yaveroglu & Donthu, 2008). These rates do not only show the relevance of the advertisement for the consumer but also reflect the consumer's interest and potential desire for the advertised product (Yang & Zhai, 2022).

2.3.4 Purchase intention

After *Click intention*, the following step in the consumer decision-making funnel is *Purchase intention*, which is a consumer's probability to buy a certain product or service (Ajzen & Fishbein, 1972; Grewal et al., 1998). Although click intentions are closely related to *Purchase intention* (Erdem et al., 2017), these concepts are located in different phases in the consumer's decision-making funnel. Whereas *Click intention* shows a consumer's interest and curiosity in a product, it does not demonstrate the consumer's actual intention to buy the product. When a consumer is at the stage of *Purchase intention*, he is beyond evaluating and is creating a conscious plan to actually buy the product (Spears & Singh, 2004). Therefore, *Click intention* and *Purchase intention* are two separate concepts in this study.

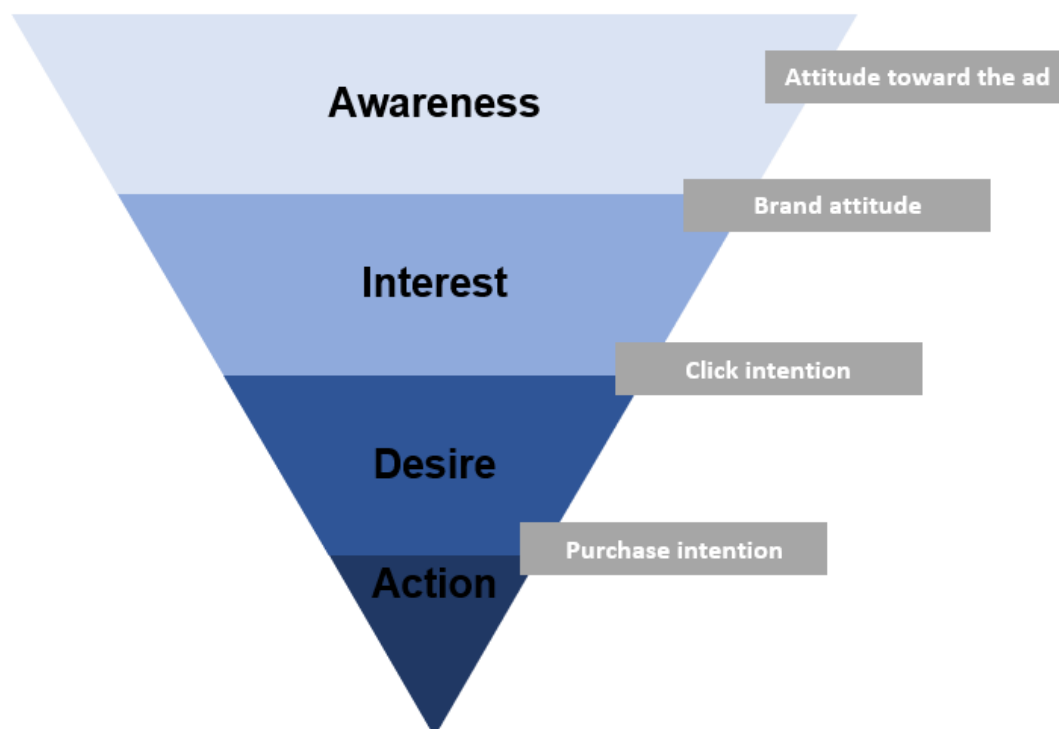


Figure 2. Elements of online advertising effectiveness incorporated in the AIDA model

2.4 Personality traits, persuasion strategies and online advertising effectiveness

2.4.1 The Big Five personality traits and its influence on the effectiveness of persuasion strategies

After reviewing the existing literature on *Personality traits*, *Persuasion strategies* and *Online advertising effectiveness* separately, now the relations between these three concepts will be discussed. Prior studies (Halko & Kientz, 2010; Hirsh et al., 2012) have researched the relationship between Persuasion strategies and the Big Five personality traits. Halko and Kientz (2010) researched in a survey experiment the influence of the Big Five personality traits and the effectiveness of different persuasion strategies in mobile health apps. The research showed significant relations between personality traits and persuasion strategies. For example, people high in *Agreeableness* tend to favor social strategies, in which they receive social feedback, interact and cooperate with peers in apps (Halko & Kientz, 2010). Since agreeable people are friendly, altruistic and like to maintain positive relationships (Costa et al., 1991; Karim et al., 2009), it makes sense they prefer a social strategy, in which

can help others in performing healthy behavior.

Similar to Halko and Kientz (2010), Hirsh et al. (2012) showed that persuasive messages are more effective when they are tailored to a person's personality traits. In their survey experiment, they created five advertisements that each targeted one of the Big Five personality traits, by matching the advertising message to the personality trait's motivational concern. For example, for people high in *Conscientiousness* a message was created that focused on efficiency and goal pursuit. They found a person-message congruent effect for all Big-Five personality traits, except for *Neuroticism* (Hirsh et al., 2012). Although both researchers (Halko & Kientz, 2010; Hirsh et al., 2012) made significant contributions to the literature investigating the relationship between Big Five personality traits and persuasion strategies, they did not specifically address Cialdini's persuasion principles (2001).

2.4.2 The individual differences in susceptibility to Cialdini's persuasion principles

Kaptein et al. (2009) were the first to investigate the individual differences in susceptibility to Cialdini's Six principles of persuasion (2001). With a survey, they measured individuals' susceptibility to the principles *Social proof* and *Reciprocity*. Subsequently, as part of a hidden experiment, they requested participants in the same survey to invite a friend to participate in the study, by incorporating one of the two principles in the request. The results confirmed using Cialdini's persuasion principles increased compliance with a persuasive message, but the effect was even greater when the message was personalized to the participants' susceptibility to the persuasion strategies (Kaptein et al., 2009). Kaptein et al. (2011) tested these findings in the e-commerce context and found that adapting the message to a consumer's individual susceptibility to the principles of *Scarcity* and *Social proof* increased the click-through rates and purchases.

Based on the findings of these studies, Kaptein et al. (2012) developed the Susceptibility to Persuasion Strategies (STPS) scale to measure an individual's susceptibility to all Six principles of persuasion. This scale includes multiple statements per principle, based on a 7-point Likert scale (1= *Completely disagree*; 7= *Completely agree*). The items for *Liking* are mainly focused on familiarity such as the importance of the opinion of friends and family. This research, however, focuses on *Liking* in the form of physical attractiveness as this is more suitable to employ in advertising (Cialdini, 2001). For *Authority* the items concerned statements, such as whether a person is more likely to listen to an authority figure than a friend, and how likely he is to obey rules. Kaptein et al. (2012) confirmed the scale's external validity by conducting an experiment in the form of a 2-week intervention in which they aimed to decrease participants' snacking behavior through text messages that were tailored to their STPS scores. As such, a person that scored high on susceptibility to *Authority*, received a message with a claim of an expert that recommended reducing

snacking. The results showed that individuals that received a message personalized to their STPS score reduced their snacking consumption significantly more than individuals who received a generic or a random message (Kaptein et al., 2012). Concluding, previous research (Kaptein et al., 2009; Kaptein et al., 2011; Kaptein et al., 2012) determined the existence of individual differences in the vulnerability towards the Six principles of persuasion.

2.4.3 The relationship between the Big Five personality traits and the susceptibility to Cialdini's persuasion principles

As shown in sub-paragraph 2.4.1 an individual's Big Five personality traits can influence the effectiveness of general persuasion strategies. Furthermore, in 2.4.2 it becomes evident that there are individual differences in vulnerability towards the Six principles of persuasion, specifically. Hence, from these findings, it follows logically that there may also be individual differences in susceptibility to the Six principles of persuasion based on an individual's Big five personality traits.

Alkış and Temizel (2015) first researched this topic, exploring the (causal) relationship between the Big Five personality traits and the susceptibility to Cialdini's principles of persuasion (2001). They aimed to gain insights in which personality traits were influenced by which persuasion principles. Their sample consisted of Turkish undergraduate students. They conducted a survey consisting of three parts: Big Five personality traits, measured with the Big Five Inventory (BFI) (John & Srivastava, 1999), the susceptibility to persuasion principles, measured with the STPS scale (Kaptein et al., 2012) and demographics.

Analyzing the survey responses with a Bayesian estimation, they found that *Agreeableness*, *Conscientiousness* and *Openness* are in general the most vulnerable personality traits to the Six principles of persuasion of Cialdini (2001). These personality traits had the most and on average the strongest direct effects on the susceptibility to the different persuasion strategies. *Agreeableness* is found to have a (positive) effect on all persuasion strategies except for *Scarcity*. *Conscientiousness* is vulnerable to *Authority*, *Liking* and *Commitment*, and *Reciprocation*. *Openness* is susceptible to the same first three strategies as *Conscientiousness* but is also prone to *Social proof*. In contrast, *Extraversion* was only susceptible to three strategies: *Liking*, *Reciprocation* and *Scarcity*, and *Neuroticism* only to *Reciprocation* and *Scarcity* (Alkış & Temizel, 2015).

Oyibo et al. (2017) adopted a similar research design as Alkış and Temizel (2015) but used a Canadian population, consisting of students as well as non-students. They conducted a survey with the same items of the STPS scale but used for Big Five personality traits a shorter iteration of the Big Five Inventory: The Big Five TIPI (Gosling et al., 2003). They validated a great part of Alkış and Temizel's (2015) outcomes and found *Agreeableness*,

Openness and *Conscientiousness* also as the most vulnerable personality traits to the persuasion strategies. Both studies found that 1.) people high in *Agreeableness* are more susceptible to *Authority*, *Commitment* and *Liking*. Agreeable people are compliant and tend to listen to authorities (*Authority*), keep their word (*Commitment*), and agree with individuals they like (*Liking*) (Oyibo et al., 2017). Moreover, they both demonstrated 2.) that people low in *Openness* are more susceptible to *Authority*, *Social proof* and *Liking* (Oyibo et al., 2017). People low in *Openness* are closed to new experiences and prefer conformity, which makes them susceptible to group pressure (*Social proof*) and authority figures (*Authority*) (Oyibo et al., 2017). Also, they tend to follow the opinions of people they like (*Liking*), especially in unknown scenarios (Alkış & Temizel, 2015). Finally, their findings showed that 3.) people high in *Conscientiousness* are more susceptible to *Commitment* and *Reciprocity*, and people low in *Conscientiousness* are more susceptible to *Liking*. Highly conscientious people have a greater sense of responsibility, which makes them likely to keep their promise (*Commitment*) and do something in return (*Reciprocity*) (Oyibo et al., 2017). Low conscientious people are not very critical and agree more easily based on a person's likability (*Liking*) (Alkış & Temizel, 2015). Concerning these three personality traits, additionally, Alkış and Temizel (2015) found that people high in *Conscientiousness* are more susceptible to *Authority*, people high in *Agreeableness* to *Social proof* and *Reciprocation* and people high in *Openness* to *Commitment*.

Overall, both studies showed that the effectiveness of the different persuasion strategies depends on an individual's personality traits and that *Agreeableness*, *Conscientiousness* and *Openness* in general are vulnerable personality traits to Cialdini's persuasion strategies. Analyzing the persuasion strategies, *Liking* and *Authority* are two of the most common principles for these three personality traits.

Although there are notable similarities in the findings of Alkış and Temizel (2015) and Oyibo et al. (2017) concerning the most susceptible personality traits and influential principles, other studies show also some discrepant findings. Sofia et al. (2016) studied the effect of personality traits on the influence of persuasion strategies in a movie recommendation context. They conducted an experiment in which participants were presented with a movie recommendation accompanied by a persuasive explanation that was created based on one of the six persuasion principles. For example: for *Authority* they communicated they movie won multiple Oscars, and for *Liking* that the movie was liked by Facebook friends. Subsequently, participants rated on a scale from 1 to 5 their intention to watch the movie based on the six persuasive explanations (Sofia et al., 2016). After the experiment, they had to complete the questionnaire that measured the Big Five personality traits with the Big Five Inventory (BFI). They confirmed that the use of persuasion principles increased the likelihood of individuals watching the movie. Moreover, consistent with previous researchers (Alkış &

Temizel, 2015; Oyibo et al., 2017) they found *Openness*, *Conscientiousness*, and *Agreeableness* to be the most susceptible personality traits to Cialdini's persuasion principles, as in general these traits scored the highest intention rates to watch the movie when persuasion strategies were added to the recommendation. As such, they found agreeable and conscientious people were more likely to watch a movie when it was recommended with *Authority*, and people low in *Openness* were prone to watch a movie when it was recommended with *Liking*. However, the researchers also found *Neuroticism* to be vulnerable to many persuasion principles. This strongly contrasts with previous studies that found *Neuroticism* as the least vulnerable personality trait, predicting only *Social proof* (Alkış & Temizel, 2015; Oyibo et al., 2017) and *Reciprocity* (Alkış & Temizel, 2015).

Alslaity and Tran (2020) conducted a similar experiment to Sofia et al. (2016) adopting their explanations for movie recommendations and additionally included an adapted version for an e-commerce context. Participants had to rate the explanations on a scale from 1 to 7, which demonstrated their acceptance of the recommendation. They found that in general *Liking* and *Reciprocity* as the most influential principles for *Agreeableness*, *Conscientiousness* and *Openness* since the recommendation that incorporated one of these principles was rated highest in acceptance. Previous studies (Alkış & Temizel, 2015; Oyibo et al., 2015) also found *Liking* as an influential strategy for all three personalities, however, *Reciprocity* was only found for *Conscientiousness*. Moreover, Alslaity and Tran (2020) found *Scarcity* to have the lowest level of pervasiveness for these three personality traits. This is in line with other researchers (Alkış & Temizel, 2015; Oyibo et al., 2015) that did not find any significant effect of these three traits on the susceptibility to *Scarcity*.

In summary, whereas some researchers conducted a survey (Alkış & Temizel, 2015; Oyibo et al., 2015) others used a survey-experiment (Alslaity & Tran, 2020; Sofia et al., 2016). Previous studies were conducted in various contexts, including mobile apps and recommendation systems, but the advertising context is until now unexplored.

All four studies (Alkış & Temizel, 2015; Alslaity & Tran, 2020; Oyibo et al., 2017; Sofia et al., 2016) showed there are differences in vulnerabilities towards the Six principles of persuasion, based on an individual's Big Five personality traits. Despite some discrepancies in the findings, it can be concluded that based on the limited existing literature on this topic *Agreeableness*, *Conscientiousness* and *Openness* seem to be the most promising personality traits to potentially moderate a relationship between persuasion strategies and online advertising effectiveness, since they were found to be the most susceptible personality traits to the Six principles of persuasion. Although there are multiple principles these three personalities are vulnerable to, *Authority* and *Liking* were found to be two of the most influential principles. Therefore, this study investigated *Agreeableness*, *Conscientiousness* and *Openness* for personality traits and *Authority* and *Liking* as persuasion strategies. The

following paragraph will further analyze these personality traits and persuasion strategies, from which 6 hypotheses will result.

2.4.4 The moderating effect of personality traits on persuasion strategies and online advertising effectiveness

2.4.4.1 Agreeableness and Authority and Liking

As discussed previously, research (Baker & Churchill, 1977; Caballero & Pride, 1984; Cialdini, 2001; Jung & Kellaris, 2006; Patzer, 1983; Petroschius & Crocker, 1989) showed that *Authority* and *Liking* have a significant effect on advertising effectiveness. Moreover, research (Alkış & Temizel, 2015; Alslaity & Tran, 2020; Oyibo et al., 2017; Sofia et al., 2016) suggests that people with different levels of the Big Five personality traits react differently to these persuasion principles.

Previous studies (Alkış & Temizel, 2015; Alslaity & Tran, 2020; Oyibo et al., 2017) suggest that people high in *Agreeableness* are more susceptible to *Authority* and *Liking*. This is because people high in *Agreeableness* are friendly, cooperative, and pleasing (Alkış & Temizel, 2015). They prefer to maintain social harmony and avoid conflict (Costa et al., 1991; Karim et al., 2009; Roccas et al., 2002). Accordingly, they often defer to others when making decisions, which makes them more plausible to comply with statements made by authorities and people they like (Costa et al., 1991). Also, they are afraid to get punished when not obeying rules and consequently take authority figures more seriously (Alkış & Temizel, 2015; Karim et al., 2009; Roccas et al., 2002). Moreover, highly agreeable people are good-natured and generally have more trust in people (Costa et al., 1991; John & Srivastava, 1999; Roccas et al., 2002). Therefore, people high in *Agreeableness* might trust the opinions of authorities as well as people they like faster. Consequently, it is expected that advertisements containing *Authority* or *Liking* are more effective on high agreeable people.

H1: Online advertisements high in Authority compared to online advertisements low in Authority have a positive influence on online advertising effectiveness, especially when people score higher on Agreeableness.

H2: Online advertisements high in Liking compared to online advertisements low in Liking have a positive influence on online advertising effectiveness, especially when people score higher on Agreeableness.

2.4.4.2 Openness and Authority and Liking

Next to *Agreeableness*, other personality traits may also influence the effectiveness of the persuasion techniques *Authority* and *Liking*. Research (Alkış & Temizel, 2015; Oyibo et

al., 2017) suggests people low in *Openness* are more susceptible to *Authority* and *Liking*. This could be explained by the fact that people low in *Openness* are more conventional, traditional, and narrow-minded, and prefer security and stability (Roccas et al., 2002; Williamson, 2018). They are less open to new ideas, or opinions, and prefer to hold on to their existing beliefs. Consequently, they do not actively search for new information as it may challenge these beliefs (Heinström, 2010). This might make them less critical when analyzing advertisements that contain *Liking* or *Authority*. Moreover, they tend to base their decisions on shared opinions and common beliefs, instead of their own critical reasoning, like people high in *Openness* do. This makes people low in *Openness* less likely to question authority figures. Moreover, authorities offer the conformity and reassurance they seek when making a decision (Heinström, 2010). Hence, advertisements with *Authority* might be more effective on people that score lower on *Openness*. Additionally, in contrast to people that score higher on *Openness* who first search for alternative reasoning before accepting a message, people that score lower on *Openness* are more prone to accept a message solely based on a person's likability or appearance (Oyibo et al., 2017). Therefore, advertisements that incorporate *Authority* or *Liking* are expected to be especially effective on people that score lower on *Openness*.

H3: Online advertisements high in Authority compared to online advertisements low in Authority have a positive influence on online advertising effectiveness, especially when people score lower on Openness.

H4: Online advertisements high in Liking compared to online advertisements low in Liking have a positive influence on online advertising effectiveness, especially when people score lower on Openness.

2.4.4.3 Conscientiousness and Authority and Liking

Besides *Agreeableness* and *Openness*, *Conscientiousness* may also influence the relationship between persuasion principles and *Online advertising effectiveness*. Previous research showed that people high in *Conscientiousness* are more susceptible to *Authority* (Alkış & Temizel, 2015; Oyibo et al., 2017; Sofia et al., 2016). This could be explained by the fact that people high in *Conscientiousness* are organized, responsible, and disciplined (Roccas et al., 2002). Moreover, they are obedient to rules and authorities, which makes them more likely to trust and follow claims made by authorities in advertising. Also, highly conscientious people rely more on the opinions of authorities than those of friends. Lastly, since people high in *Conscientiousness* are more cautious and try to avoid risks, claims of authorities in advertisements could provide them reassurance and mitigate perceived risks of buying the advertised product or services (Alkış & Temizel, 2015; Oyibo et al., 2017). Thus,

advertisements that incorporate *Authority* are expected to be especially effective on highly conscientious people.

H5: Online advertisements high in Authority compared to online advertisements low in Authority have a positive influence on online advertising effectiveness, especially when people score higher on Conscientiousness.

Finally, while people high in *Conscientiousness* are more susceptible to *Authority*, research suggests that people low in *Conscientiousness* are more vulnerable to *Liking* (Oyibo et al., 2017). This can be explained by the fact that in contrast to highly conscientious people, low conscientious people are disorganized, impulsive, and easily distracted (Clark & Çallı, 2014; Roccas et al., 2002). They are more driven by emotions than rationality (Myers et al., 2010). Since *Liking* appeals more to a person's emotions, it is therefore expected that advertisements that contain *Liking* are especially effective on people that score low in *Conscientiousness*. Moreover, low conscientious people tend to agree more easily with others, based on more simplistic reasoning such as appearance or likeability, while highly conscientious people often search for more extensive argumentation (Oyibo et al., 2017). Hence, it is expected that advertisements that contain *Liking* are more effective on people that score lower on *Conscientiousness*.

H6: Online advertisements high in Liking compared to online advertisements low in Liking have a positive influence on online advertising effectiveness, especially when people score lower on Conscientiousness.

3. Method

In this chapter, the methodological design of the study is presented. First, the choice of research method: an online survey experiment is explained, followed by the stimulus material. Subsequently, the procedure of data collection, sampling, and operationalization will be discussed.

3.1 Choice of research method

To answer the research question an online experiment was conducted since it enabled testing the moderating effect of personality traits on persuasion principles and online advertising effectiveness. An experiment allowed for the examination of causal relationships between persuasion principles and online advertising effectiveness (Neuman, 2014). A survey was added to the study to measure personality traits and assess the moderating effect of persuasion principles on ad effectiveness. An online form was chosen due to its accessibility to a large and diverse audience.

The experiment employed a 2 (*Authority*: high vs. low) by 2 (*Liking*: high vs. low) full factorial design (Figure 3.1). This design allowed for the simultaneous investigation of two independent variables: *Authority* and *Liking*. Moreover, it facilitated the examination of (a combination of) main effects and interaction effects (Vargas et al., 2017). A between-subject design was chosen over an in-between-subject design since it prevents any learning effects or knowledge transmission (Vargas et al., 2017). The three moderating variables in this study were *Agreeableness*, *Openness*, and *Conscientiousness*

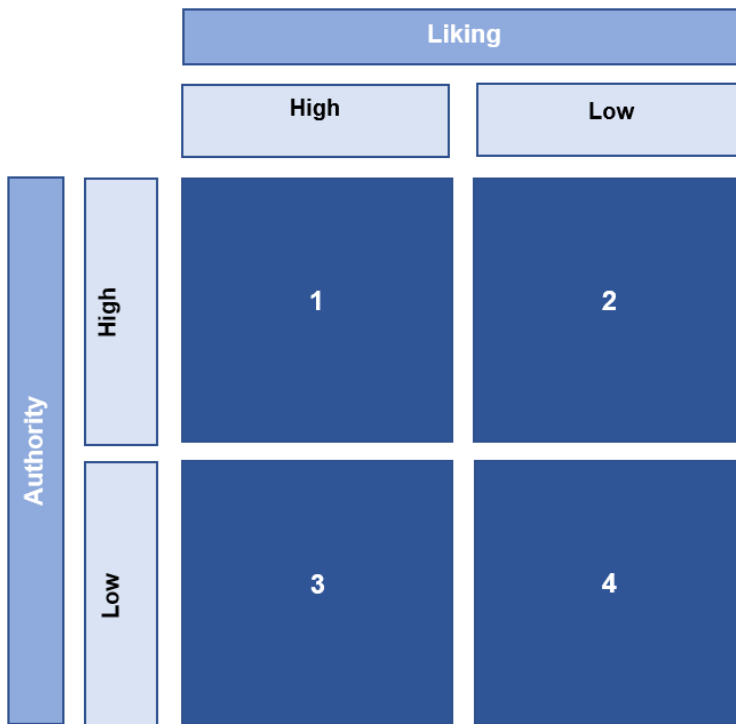


Figure 3.1. 2x2 full factorial design

3.2 Stimulus material

As illustrated in Figure 3.1, the research design consisted of four experimental conditions. These conditions were operationalized by showing each group an advertisement of a fictional headphone brand “Hertz”, demonstrated in Figure 3.2. Headphones were chosen as product due to their unisex nature, making them suitable for a research sample of both men and women. Moreover, a technical product like headphones requires a certain level of knowledge and expertise, which makes it very suitable for testing *Authority*. The principle of *Liking*, on the other hand, is applicable to any product. Finally, the use of a fictional brand ensured findings were not influenced by participants’ prior knowledge, attitudes, or experiences with the brand (Vargas et al., 2017).

To manipulate *Liking* a model was used in the advertisement, in which only the model’s attractiveness differed. For conditions high in *Liking* the person was highly physically attractive and for conditions low in *Liking* the same person was made less attractive by editing the picture on Adobe Photoshop. The physical attractiveness was decreased by making the face more asymmetric (Rhodes et al., 1998), diminishing accents of the bone structure, creating unevenness in the skin, adding facial hair (Fink & Penton-Voak, 2002), reducing the thickness of the lips, decreasing the eye width (Baudouin & Tiberghien, 2004),

making the shape of her teeth asymmetric and darkening the color of her teeth (Van der Geld et al., 2007).

To manipulate *Authority*, a quote was created that praises the headphones and promotes their technical features. The quote was accompanied by the fictional name “Emily Pieterse”. For conditions high in *Authority* a title function of “Dr.” and “Audio engineer, TU Delft” was added to the name. For conditions low in *Authority*, the title of “Customer” was added. Besides differentiations in physical attractiveness and expertise for both principles, all other aspects of the advertisement, such as background color, text, font and logo, were identical for all four conditions.

The stimuli were pre-tested on eight individuals. For *Liking*, the researcher asked participants to provide their opinions on the two versions of the model. The researcher asked follow-up questions on how much they found the person attractive and liked her. They expressed a clear difference in attractiveness and liking between the two versions. Participants also rated overall liking, with the model low in *Liking* receiving scores of approximately 4-5 out of 10 and the model high in *Liking* receiving scores around 8-9 out of 10. Consequently, no further changes were made for *Liking*.

Regarding the manipulation of *Authority*, the titles "customer" and "user" were tested for the condition low in *Authority*. Customer was perceived as having the lowest level of authority and expertise. For the condition high in *Authority*, multiple functions, including an audiologist, audicien, and audio engineer were tested to determine which was perceived to have the highest authority. Although the audio engineer function was most frequently chosen, participants still expressed doubts about the level of expertise an audio engineer has in headphones. Therefore, the stimuli were adjusted and retested, adding the title of Doctor (Dr.) to enhance credibility. Multiple (independent) institutions, such as Erasmus MC, TU Delft, and Sony, were tested, with participants considering TU Delft as the most credible. After these adjustments, participants perceived a clear difference in expertise and authority between the two versions, with the condition low in *Authority* receiving scores of approximately 4-5 out of 10 and the condition high in *Authority* receiving scores around 7-8 out of 10.

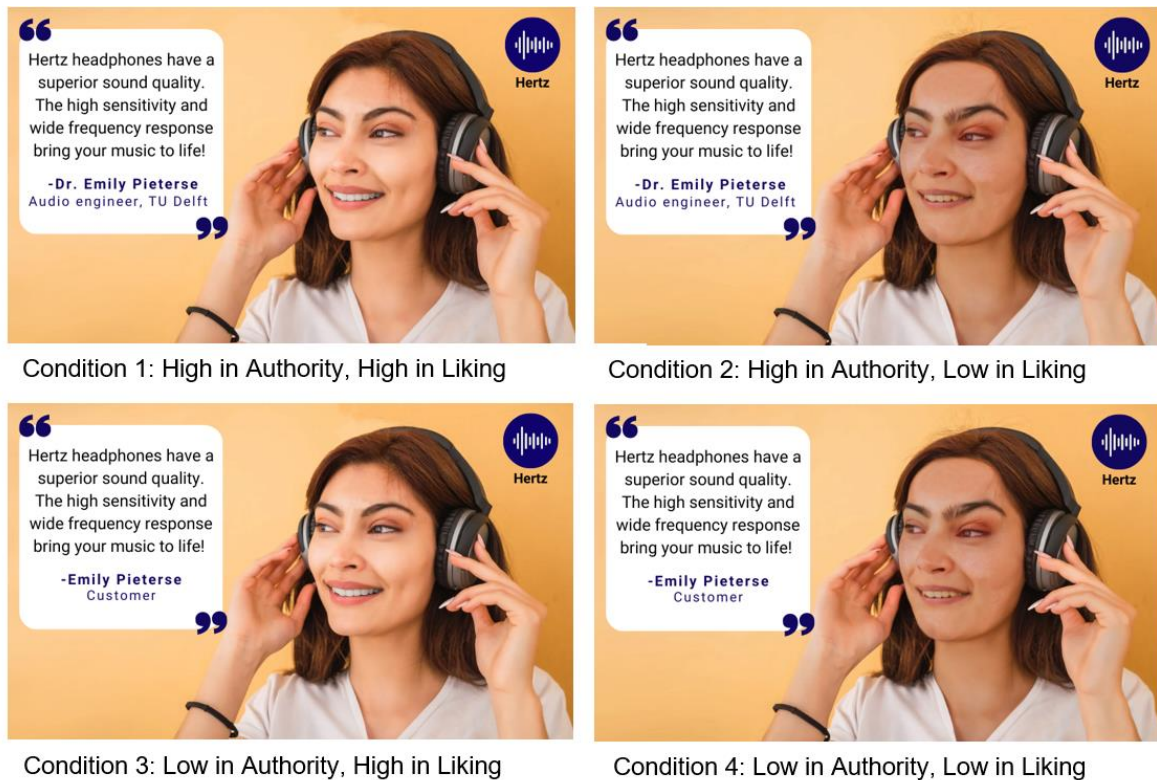


Figure 3.2. Stimuli

3.3 Procedure

Before sending the survey experiment to the sample, a pretest was conducted. Five persons were asked to fill in the survey to see where unclarities aroused. After revising the survey based on the feedback from the pretest, it was sent to the sample. The duration of the survey was approximately seven minutes.

The survey started with a general introduction that stressed the voluntary, confidentiality and anonymity of the survey. Following, participants had to sign the consent form. The survey consisted of 5 parts. The first part concerned the experiment. Participants were presented with a cover story in which the participant's opinion on a headphone advertisement was requested. Every participant was then randomly assigned to one of the four advertisements. After viewing the advertisement, questions about *Online advertising effectiveness* followed in the order of the AIDA model (Figure 2): *Aad*, *Brand attitude*, *Click intention*, and *Purchase intention*. In the third part, questions concerning the Big Five personality traits were asked. Subsequently, a manipulation check was executed. In the last part, demographics were asked, including age, gender, nationality, and attained level of education. Finally, participants were thanked and could leave comments and questions. The survey can be found in Appendix A.

3.4 Sampling

3.4.1 Sampling strategy

The sample criterion was an age of 18 years or older due to ethical considerations of advertising (Austin & Reed, 1999). The research employed non-probability sampling, using both convenience and snowball sampling. Convenience sampling was employed to access a large number of potential respondents (Babbie, 2014). Besides sharing the survey in the researcher's direct network, it was shared on her own social networking sites: Instagram, Facebook, LinkedIn, WhatsApp and Nextdoor. Snowball sampling was used by asking participants to share the survey with their network. While both methods are efficient and effective to attain a great sample size, they can create selection bias, which can negatively impact the study's internal validity (Babbie, 2014).

3.4.2 Sample description

After the data cleaning, the conditions contained an unequal number of participants, depicted in Table 3.1. These differences are taken into account by SPSS. The sample consisted of 278 participants ($N = 278$). The sample consisted of 36.3% male and 62.2% female. The remaining 1.4% responded with "*Prefer not to say*". The average age of the sample was 36.41 ($SD = 16.23$). The sample consisted of 22 nationalities, of which Dutch (87.1%) was the most dominant, followed by German (1.8%), Greek (1.1%) and Swedish (1.1%). The sample's highest completed level of education was a Bachelor's degree (46.0%), Master's degree (33.1%), High School graduate (15.8%), less than high school (2.5%), Doctorate (Dr.) (1.4%) and Doctor of Philosophy (PhD.) (1.1%).

On average the sample scored a 4.30 ($SD = 0.60$) on a 5-point Likert-scale on *Agreeableness*, indicating they are highly agreeable. For *Openness* their average was 3.79 ($SD = 0.76$), suggesting the sample is quite open. Finally, for *Conscientiousness* the mean was 3.51 ($SD = 0.83$), indicating they are moderately conscientious. Although not all data is normally distributed for personality traits, no problems are expected due to the large sample size (Pallant, 2016).

Table 3.1. Distribution of the conditions

Condition	<i>n</i>
Condition 1: High in Authority, High in Liking	63
Condition 2: High in Authority, Low in Liking	69
Condition 3: Low in Authority, High in Liking	72
Condition 4: Low in Authority, High in Liking	74

3.5. Operationalization and measurements

3.5.1 Personality traits

Personality traits is an independent variable and potential moderator. Personality traits were measured with the 20-item Big Five Mini IPIP (Donnellan et al., 2006). This scale is the shorter version of the 50-item International Personality Item Pool-Five-Factor Model (IPIP-FFM) measure (Goldberg, 1999). Multiple studies (Baldasaro et al., 2013; Cooper et al., 2010) have confirmed the scale's validity. Statements include: "*Am the life of the party*" (*Extraversion*), "*Sympathize with others' feelings*" (*Agreeableness*), "*Get chores done right away*" (*Conscientiousness*), "*Have frequent mood swings*" (*Neuroticism*) and "*Have a vivid imagination*" (*Openness*) (Donnellan et al., 2006). Answers were formulated on a 5-point Likert scale (1= *Strongly disagree*; 5= *Strongly agree*). A high score on a personality trait means a high presence of that trait. *Neuroticism* and *Extraversion* were also measured to ensure a comprehensive dataset of the Big Five personality traits for future research purposes.

A confirmatory factor analysis was conducted to confirm the factor structure of the Big Five Mini IPIP (Donnellan et al., 2006). Before running the factor analysis, the suitability of data for the factor analysis was evaluated. The data met the a priori as the scale contained more than 3 items, was measured at a continuous level and the sample size ($N = 278$) met the criteria of $N \geq 150$. Concerning a posteriori, the Kaiser-Meyer-Olkin (KMO) was .71, which met the requirement of $KMO > .60$ and the Bartlett's Test of Sphericity was significant ($p < .001$) (Pallant, 2016).

The Big Five model suggests that the traits are relatively independent and uncorrelated. Therefore, an orthogonal Varimax rotation was conducted since it assumes factors are uncorrelated and maximizes the independence of the factors (Pallant, 2016).

The 20 items, which were Likert-scale-based, were entered into factor analysis using Principal Components extraction with a Varimax rotation based on 5 fixed factors, $KMO = .71$, $\chi^2 (N = 278, 190) = 1345.82$, $p < .001$. The resultant model explained 55.1% of the variance in personality traits. All five factors had an eigenvalue above 1. Moreover, the scree plot showed a clear bend after 5 factors. The variables of the Big Five personality traits were confirmed in the factor analysis as the factors found were *Neuroticism*, *Extraversion*, *Conscientiousness*, *Agreeableness*, and *Openness*. All items positively correlated within their component, with factor loadings ranging from .38 up to .81. Factor loadings of individual items onto the five (fixed) factors are presented in Table 3.2.

One item "*Have a vivid imagination*" of the factor *Openness* was deleted due to its low factor loading (.38), which did not meet the criteria of $\geq .45$. Deleting the item did not change the value of Cronbach's Alpha for *Openness* ($\alpha = .57$). The low factor loading might

be explained by the fact that this item was the only normal-scored item of *Openness*, as the other three items were reverse-scored. Conrad et al. (2004) state that reverse-coded items link poorly with normal-scored items, which can diminish the validity and reliability. Since in this case the majority of the items were reversed, the normal-scored item of *Openness* might have led to confusion by respondents, resulting in a lower factor loading.

Despite the lower reliability of *Openness* ($\alpha = .57$), it was still selected for the research because it is an important concept for the Big Five personality traits and crucial in answering the research question. Moreover, the variable was used before and proved to be reliable. Omitting other items of *Openness* did not significantly improve its reliability. The other factors: *Neuroticism* ($\alpha = .70$), *Extraversion* ($\alpha = .75$), *Conscientiousness* ($\alpha = .69$), and *Agreeableness* ($\alpha = .68$) were all moderately reliable.

Table 3.2. Big-Five personality traits: Item loadings on a five-factor principal components solution

Items	Neuroticism	Extraversion	Conscientiousness	Agreeableness	Openness
To what extent do you agree with the following statements about yourself? I					
Have frequent mood swings	.77				
Am relaxed most of the time	.69				
Get upset easily	.70				
Seldom feel blue	.58				
Keep in the background		.81			
Don't talk a lot		.73			
Talk to a lot of different people at parties		.71			
Am the life of the party		.63			

Often forget to put things back in their proper place					.80
Make a mess of things					.76
Get chores done right away					.66
Like order					.55
Sympathize with others feelings					.75
Feel others emotions					.70
Am not really interested in others					.68
Am not interested in other people's problems					.63
Have difficulty understanding abstract ideas					.78
Am not interested in abstract ideas					.76
Do not have a good imagination					.54
Deleted: Have a vivid imagination					.38
R^2	.16	.14	.11	.09	.06
Cronbach's α	.70	.75	.69	.68	.57
Eigenvalue	3.11	2.70	2.20	1.73	1.28

3.5.2 Online advertising effectiveness

Online advertising effectiveness consists of *Attitude toward the ad (Aad)*, *Brand attitude*, *Click intention* and *Purchase intention*.

:Attitude toward the ad (Aad)

The attitude toward the ad (Aad) is a dependent variable and was measured with the five-item seven-point semantic differential scale. The items are “*Favorable/ Unfavorable*”, “*Boring/ Interesting*”, “*Dislike very much/ Like very much*”, “*Not irritating/ Irritating*”, and “*Holds attention/ Does not hold attention*” (Phelps & Thorson, 1991).

:Brand attitude

Brand attitude is a dependent variable and was measured with the seven-point semantic differential scale of Spears and Singh (2004), consisting of five items concerning people's attitudes toward a brand. The scale was developed for advertising studies. The five items are: “*Unappealing/ Appealing*”, “*Bad/ Good*”, “*Unpleasant/ Pleasant*”, “*Unfavorable/ Favorable*” and “*Unlikeable/ Likeable*”.

:Click intention

Click intention is a dependent variable and was measured through a three-item scale (Kim et al., 2019). The scale measures the probability the respondent will click on the advertisement. The items are: “*Highly improbable/ Highly probable*”, “*Very unlikely/ Very likely*” and “*Highly impossible/ Highly possible*”. Answers were originally formulated on a seven-point Likert scale but were transformed into a seven-point semantic differential scale, consistent with the other variables of *Online advertising effectiveness*, to enhance participants' response ease.

:Purchase intention

Purchase intention is a dependent variable and was measured with the seven-point semantic differential scale of Spears and Singh (2004). The scale consists of five items: “*Never/ Definitely*”, “*Definitely do not intend to buy/ Definitely intend to buy*”, “*Low purchase interest/ High purchase interest*”, “*Definitely not buy it/ Definitely buy it*”, and “*Probably not buy it/ Probably buy it*”. The last item had a ten-point format but was changed into a seven-point format, to avoid participant confusion and enhance response ease.

For *Online advertising effectiveness*, a confirmatory factor analysis was conducted to check whether the different variables could be confirmed. Before running the factor analysis, the suitability of data for the factor analysis was evaluated. The data met the a priori as the

scale contained more than 3 items, was measured at a continuous level and the sample size ($N = 278$) met the requirement of $N \geq 150$. Concerning a posteriori, analyzing the correlation table, showed that correlations were different from 0 and more than $\frac{1}{3}$ of the items were $> .30$. Secondly, the *KMO* was .93, which met the requirement of $KMO > .60$ and the Bartlett's Test of Sphericity was significant ($p = .000$), confirming the factorability of the correlation matrix (Pallant, 2016).

For the factor analysis for *Online advertising effectiveness*, a Direct Oblimin rotation was chosen, since it was expected that the different elements of *Online advertising effectiveness* could be correlated. In contrast to a Varimax rotation, which assumes factors are orthogonal, a Direct Oblimin rotation allows for factors to correlate and can reveal underlying relationships between variables (Pallant, 2016).

Initially, the factor analysis was conducted with 4 fixed factors. However, analyzing the scree plot showed a clear bend after 3 factors. Therefore, the factor analysis was conducted again, using 3 fixed factors. The 18 items, which were semantic differential scale based were entered into factor analysis using Principal Components extraction with a Direct Oblimin rotation, (based on 3 fixed factors), $KMO = .93$, $\chi^2 (N = 278, 153) = 3979.53$, $p = .000$. The resultant model explained 70.3% of the variance in *Online advertising effectiveness*. All 3 factors had an eigenvalue above 1. The factor analysis confirmed *Brand attitude* and *Purchase intention* as factors. However, *Click intention* and *Attitude toward the ad* were fused into one factor, named: *Ad appeal*. This factor describes the attraction toward the advertisement. A positive *Ad appeal* means consumers have a positive attitude toward the ad and intent to click on it. The items "*Unlikely/ Likely to click*" and "*Improbable/ Probable to click*" had a factor loading on both *Ad appeal* and *Purchase intention*. Since the difference between the loadings was smaller than .1, the assignment to a factor was made based on the content of the items. As both items concern the intention to click on the ad, it made more sense to categorize the two items in *Ad appeal*, than in *Purchase intention*. Clicking on an advertisement indicates a certain level of attraction to the ad, but does not necessarily mean the person intends to buy the product.

All items had sufficient factor loadings, of which the lowest was an absolute value of .50 and the highest was .90. The items of *Ad appeal* had positive loadings while the items for *Purchase intention* and *Brand attitude* had negative loadings, which means they are negatively correlated with the construct. Factor loadings of individual items onto the three (fixed) factors are presented in Table 3.3. The reliability of *Ad appeal* ($\alpha = .88$), *Purchase intention* ($\alpha = .94$) and *Brand attitude* ($\alpha = .92$) were all highly sufficient.

Table 3.3. Online advertising effectiveness: Item loadings on a three-factor principal components solution

Items	Ad appeal	Purchase intention	Brand attitude
Please describe your....			
Overall feelings toward the ad: Does not hold attention/ Does hold attention	.66		
Overall feelings toward the ad: Boring/ Interesting	.50		
Overall feelings toward the ad: Unfavorable/ Favorable	.52		
Overall feelings toward the ad: Irritating/ Not irritating	.63		
Overall feelings toward the ad: Dislike it very much/ Like it very much	.58		
Intentions to click on the ad: Impossible to click/ Possible to click	.56		
Intentions to click on the ad: Unlikely to click/ Likely to click	.54	(-.53)	
Intentions to click on the ad: Improbable/ probable	.53	(-.58)	
Intentions to buy the headphones in the ad: Definitely do not intend to buy/ Definitely intend to buy			-.90
Intentions to buy the headphones in the ad: Never/ Definitely			-.86
Intentions to buy the headphones in the ad: Definitely not buy it/ Definitely buy it			-.87
Intentions to buy the headphones in the ad: Probably not buy it/ Probably buy it			-.85
Intentions to buy the headphones in the ad: Low purchase interest/ High purchase interest			-.76
Overall feelings about the brand in the ad: Unlikeable/ Likeable			-.87

4. Results

In this chapter, the results of the study are presented. First, the outcomes of the manipulation checks of *Authority* and *Liking* will be discussed. Following the hypotheses will be tested, by discussing the results of the moderated multiple regression analyses.

4.1 Assumptions independent sample *t*-test

Independent sample *t*-tests were conducted to test whether the manipulation checks of both *Authority* and *Liking* worked. This test can compare the mean scores of two groups (conditions high and conditions low in *Authority/Liking*) on the four manipulation questions, which identifies whether there was a significant difference between the groups, suggesting the manipulation was successful.

Before conducting *t*-tests, the following assumptions were checked: the level of measurement, random sampling, independence of observations, normal distribution and homogeneity of variance (Pallant, 2016). The level of measurement entails that the dependent variable is measured on a continuous scale rather than on a categorical scale (Pallant, 2016). The manipulation questions are the dependent variables in this *t*-test and were measured on a 5-point Likert scale, which is a continuous scale. Therefore, the first assumption was met.

The second assumption that assumes data is achieved by using random sampling, was not met. However, in practice, studies rarely meet this assumption and the absence of a random sampling method in this study does not render the *t*-test invalid (Pallant, 2016).

The assumption of independence of observations was met since each measurement was not influenced by any other measurement (Pallant, 2016). The histograms of the four manipulation questions showed that the data were not normally distributed, so the assumption of normal distribution was violated. However, since the sample size was quite large ($N > 30$) no major issues were expected (Pallant, 2016).

Lastly, the homogeneity of variance assumption was only met for 2 of the 4 manipulation questions. For the questions “*To what extent did you perceive the person in the advertisement as an expert in headphones?*” and “*To what extent did you find the person in the advertisement attractive?*”, $p < .05$, indicating that the variances of the groups within these questions were not equal and the assumption was not met. However, this study did not anticipate severe issues since *t*-tests typically demonstrate robustness against violations of this assumption, particularly when the group sizes are relatively similar (Pallant, 2016).

4.2. Manipulation checks

4.2.1 Authority

For the first question: “*To what extent did you think the person in the advertisement has knowledge about the headphones?*”, the groups with conditions high in *Authority* ($M = 2.80$, $SD = 1.00$) did not score significantly higher than conditions low in *Authority* ($M = 2.58$, $SD = .87$), $t(276) = -1.96$, $p = .051$. For the second question: “*To what extent did you perceive the person in the advertisement as an expert in headphones?*”, the groups with conditions high in *Authority* ($M = 2.56$, $SD = .983$) scored significantly higher than conditions low in *Authority* ($M = 2.03$, $SD = .756$), $t(245.22) = -4.97$, $p < .001$. Despite this significant difference, the ratings for the conditions high in *Authority* were skewed towards the lower end of the 5-point Likert scale, with a mean of 2.80. This indicates that while participants perceived conditions high in *Authority* to have more expertise than conditions low in *Authority*, they still did not perceive the former as an expert or authority in headphones. Therefore, it can be concluded the manipulation of *Authority* did not work as well as expected.

Table 4.1. Description of the manipulation check of Authority

Manipulation question	Level of Authority	<i>M</i>	<i>SD</i>	<i>n</i>	Test statistics		
					<i>t</i> -value	<i>df</i>	<i>p</i> (2-tailed)
To what extent did you think the person in the advertisement has knowledge about the headphones?	Low	2.58	.87	146	-1.96	276	.051
	High	2.80	1.00	132			
To what extent did you perceive the person in the advertisement as an expert in headphones?	Low	2.03	.76	146	-4.97	245.22	< .001
	High	2.56	.98	132			

4.2.2 Liking

For the first question: “*To what extent did you like the person in the advertisement?*”, the groups with conditions high in *Liking* ($M = 3.32$, $SD = .72$) scored significantly higher than the groups with conditions low in *Liking* ($M = 2.89$, $SD = .73$), $t(276) = -4.94$, $p < .001$. For the second question: “*To what extent did you find the person in the advertisement attractive?*”, the groups with conditions high in *Liking* ($M = 3.40$, $SD = .74$) scored significantly higher than conditions low in *Liking* ($M = 2.69$, $SD = .88$), $t(276) = -7.25$, $p < .001$. However, the means for both questions showed both groups were rather close to average. It was expected that the groups high in *Liking* would have shown a significantly higher mean score on the 5-point Likert scale, while groups low in *Liking* would have demonstrated a correspondingly lower mean score. Therefore, it can be concluded that

although the means for the two conditions were significantly different, the manipulation did not work as well as expected.

Table 4.2. Description of the manipulation check of Liking

Manipulation question	Level of Liking	<i>M</i>	<i>SD</i>	<i>n</i>	Test statistics		
					<i>t</i> -value	<i>df</i>	<i>p</i> (2-tailed)
To what extent did you like the person in the advertisement?	Low	2.89	.73	143	-4.94	276	< .001
	High	3.32	.72	135			
To what extent did you find the person in the advertisement attractive?	Low	2.69	.88	143	-7.25	276	< .001
	High	3.40	.74	135			

4.3. Assumptions moderated multiple regression analyses

To test the six hypotheses moderated multiple regression analyses were conducted. Prior to the data analyses, the following assumptions were checked: sample size, multicollinearity, outliers, normality, linearity, homoscedasticity and independence of residuals. The study's sample size ($N = 278$) met the assumption of having an adequately large sample size. Also, the assumption of an absence of multicollinearity was met. The Pearson's r met the criteria of below .7, indicating a low level of correlation. Furthermore, the collinearity diagnostics demonstrated for all variables scores above the criteria of .10. Finally, the Variance Inflation Factor (VIF) for all variables was below the criteria of 10, indicating an absence of multicollinearity.

For the assumption of no outliers, the scatterplot was used, in which outliers were confirmed when the values of the standardized residuals were more than 3.3. or less than -3.3 (Tabachnick & Fidell, 2013). In all analyses, only a few outliers were found. According to Pallant (2016), it is not uncommon to have outliers in a great sample. Therefore, no further action was required.

To test the normality of the residuals, Normal P-P Plots were analyzed. The plots indicated in general no violation of this assumption; only a few cases were questionable. However, the effect of these residuals was negligible. To test the assumption of independence of residuals, a Durbin-Watson statistic was calculated. All values were between 1.5 and 2, indicating that the values of the residuals were independent and the assumption was not violated (Pallant, 2016).

For testing homoscedasticity, scatterplots were assessed on a constant variance of the residuals. In some cases, the assumption was violated. Similarly, for linearity, a random

pattern of residuals needs to be observed. Also, this assumption was in some cases violated. Despite the violation of the assumptions of linearity and homoscedasticity the moderated multiple regression analyses were still conducted since the assumptions were only violated in some cases and not for all. Consequently, the overall influence of these violations on the analysis was expected to be limited. Also, with the study's large sample size ($N = 278$) the impact of the violations was reduced. Moreover, by conducting a moderated regression analysis for all cases, including the ones with violated assumptions, the study was able to maintain consistency and unity in the outcomes.

4.4 Hypotheses testing

To test the hypotheses, moderated multiple regression analyses were conducted. A moderation analysis can determine whether the relationship between the *Persuasion principles* and *Online advertising effectiveness* differentiates under the influence of *Personality traits*. A multiple regression analysis was chosen over an ANOVA, as it was deemed more suitable because of continuous independent variables.

The dependent variable is *Online advertising effectiveness*; for each of the underlying factors, a separate analysis was performed. The independent variables are the *Persuasion principles* (*Authority* or *Liking*) and the *Personality traits* (*Agreeableness*, *Openness* and *Conscientiousness*), of which the latter is the hypothesized moderating variable. The variables were standardized by converting them into z-scores to make a comparison between variables possible.

Every moderated multiple regression analysis consisted of three models. Model 1 tested the effect of *Persuasion strategies* (*Authority* or *Liking*) on *Online advertising effectiveness* (*Ad appeal*, *Purchase intention*, or *Brand attitude*). Model 2 determined the effect of *Personality traits* (*Agreeableness*, *Openness* or *Conscientiousness*) on *Online advertising effectiveness* (*Ad appeal*, *Purchase intention*, or *Brand attitude*). Model 3 tested the interaction effect between the *Persuasion strategies* (*Authority* or *Liking*) and *Personality traits* (*Agreeableness*, *Openness* or *Conscientiousness*).

4.4.1 Testing the moderating effect of Agreeableness on Authority and Online advertising effectiveness (H1)

The first hypothesis tested whether online advertisements high in *Authority* compared to online advertisements low in *Authority* have a positive influence on *Online advertising effectiveness*, especially when people score high on *Agreeableness*. For each of the underlying factors of *Online advertising effectiveness*, a separate analysis was performed.

H1a: Ad appeal

The results of Model 1 revealed a non-significant effect of *Authority* on *Ad appeal*, $F(1, 276) = 0.05$, $p = .829$, indicating that there is no main effect. Model 2 showed a non-significant effect of *Agreeableness* on *Ad appeal*, $F(1, 275) = 0.32$, $p = .727$. Model 3 showed a non-significant interaction effect between *Authority* and *Agreeableness*, $F(1, 274) = 0.84$, $p = .475$. Since all three models are non-significant, it can be concluded that *Authority* does not influence *Ad appeal*, nor does *Agreeableness* influence *Ad appeal*. Moreover, *Agreeableness* is not a moderator between *Authority* and *Ad appeal*. Therefore, H1a is rejected (\neq H1a).

H1b: Purchase intention

The results of Model 1 revealed a non-significant effect of *Authority* on *Purchase intention*, $F(1, 276) = 0.04$, $p = .523$, indicating that there is no main effect. Model 2 showed a non-significant effect of *Agreeableness* on *Purchase intention* $F(1, 275) = 1.11$, $p = .179$. Model 3 showed a non-significant interaction effect between *Authority* and *Agreeableness*, $F(1, 274) = 0.85$, $p = .568$. Since all three models are non-significant, it can be concluded that *Authority* does not influence *Purchase intention*, nor does *Agreeableness* influence *Purchase intention*. Moreover, *Agreeableness* is not a moderator between *Authority* and *Purchase intention*. Therefore, H1b is rejected (\neq H1b).

H1c: Brand attitude

The results of Model 1 revealed a non-significant effect of *Authority* on *Brand attitude*, $F(1, 276) = 0.01$, $p = .935$, indicating that there is no main effect. Model 2 showed a non-significant effect of *Agreeableness* on *Brand attitude*, $F(1, 275) = 0.01$, $p = .988$. Model 3, showed a non-significant interaction effect between *Authority* and *Agreeableness*, $F(1, 274) = 0.07$, $p = .976$. Since all three models are non-significant, it can be concluded that *Authority* does not influence *Brand attitude* nor does *Agreeableness* influence *Brand attitude*. Moreover, *Agreeableness* is not a moderator between *Authority* and *Brand attitude*. Therefore, H1c is rejected (\neq H1c).

Conclusion H1

Since there is no significant effect found in the different factors of *Online advertising effectiveness* it can be concluded that *Authority* does not influence *Online advertising effectiveness*, nor does *Agreeableness* influence *Online advertising effectiveness*. Moreover, *Agreeableness* is not a moderator between *Authority* and *Online advertising effectiveness*. Therefore, H1 is completely rejected (\neq H1a,b,c).

Table 4.3. Moderation regression model for hypothesis 1

	Online advertising effectiveness								
	Ad appeal			Purchase intention			Brand attitude		
	Model 1 <i>b</i> *	Model 2 <i>b</i> *	Model 3 <i>b</i> *	Model 1 <i>b</i> *	Model 2 <i>b</i> *	Model 3 <i>b</i> *	Model 1 <i>b</i> *	Model 2 <i>b</i> *	Model 3 <i>b</i> *
Authority	-0.01	-0.01	-0.01	-0.04	-0.04	-0.04	-0.01	-0.01	-0.01
Agreeableness		-0.05	-0.04		-0.08	-0.08		0.01	0.01
Authority * Agreeableness			-0.08			-0.03			-0.03
<i>R</i> ²	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00
<i>F</i>	0.05	0.32	0.84	0.41	1.11	0.85	0.01	0.01	0.07
ΔR^2	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
ΔF	0.05	0.59	1.8	0.41	1.82	0.33	0.01	0.02	0.19

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

4.2.2 Testing the moderating effect of Agreeableness on Liking and Online advertising effectiveness (H2)

The second hypothesis tested whether online advertisements high in *Liking* compared to online advertisements low in *Liking* have a positive influence on *Online advertising effectiveness*, especially when people score higher on *Agreeableness*.

H2a: Ad appeal

The results of Model 1 revealed a non-significant effect of *Liking* on *Ad appeal*, $F(1, 276) = 1.34$, $p = .249$. Similarly, Model 2 showed a non-significant effect of *Agreeableness* on *Ad appeal*, $F(1, 275) = 1.01$, $p = .366$. However, Model 3 revealed a significant interaction effect between *Liking* and *Agreeableness* on *Ad appeal*, $F(1, 274) = 3.62$, $p = .014$, indicating that *Agreeableness* moderates the relationship between *Liking* and *Ad appeal*. Model 3 explained 4.0% ($R^2 = .04$), and accounted for an additional 3.1% of the variance ($\Delta R^2 = .03$) in *Ad appeal*, which was statistically significant, $F(1, 274) = 8.79$, $p = .003$. Specifically, the interaction effect between *Liking* and *Agreeableness* was significant ($b^* = 0.20$, $t = 2.96$, $p = .003$). This means that *Agreeableness* moderates the relationship between *Liking* and *Ad appeal*. However, since there is no main effect between *Liking* and *Ad appeal* or effect between *Agreeableness* and *Ad appeal*, *Agreeableness* is no significant moderator. Therefore, H2a is rejected (\neq H2a).

H2b: Purchase intention

The results of Model 1 revealed a non-significant effect of *Liking* on *Purchase intention*, $F(1, 276) = 1.34, p = .815$, indicating that there is no main effect. Model 2 showed a non-significant effect of *Agreeableness* on *Purchase intention*, $F(1, 275) = .92, p = .400$. Model 3 showed a non-significant interaction effect between *Liking* and *Agreeableness* on *Purchase intention*, $F(1, 274) = 1.50, p = .214$. Since all three models are non-significant, it can be concluded that *Liking* does not influence *Purchase intention*, nor does *Agreeableness* influence *Purchase intention*. Moreover, *Agreeableness* is not a moderator between *Liking* and *Purchase intention*. Therefore, H2b is rejected (\neq H2b).

H2c: Brand attitude

The results of Model 1 revealed a non-significant effect of *Liking* on *Brand attitude*, $F(1, 276) = 2.62, p = .106$. Similarly, Model 2 showed a non-significant effect of *Agreeableness* on *Brand attitude*, $F(1, 275) = 1.31, p = .272$. However, Model 3 revealed a significant interaction effect between *Liking* and *Agreeableness* on *Brand attitude*, $F(1, 274) = 2.73, p = .044$, indicating that *Agreeableness* moderates the relationship between *Liking* and *Brand attitude*. Model 3 explains 3.0% ($R^2 = 0.03$) and accounted for an additional 2.0% of the variance ($\Delta R^2 = 0.02$) in *Brand attitude*, which was statistically significant, $F(1, 274) = 5.54, p = .019$. Specifically, the interaction effect between *Liking* and *Agreeableness* was significant ($b^* = 0.14, t = 2.35, p = .019$). The interaction effect is positive, so the non-significant (positive) main effect of *Liking* on *Brand attitude* is (weakly) strengthened by *Agreeableness*. This indicates that for people that score higher on *Agreeableness*, the principle *Liking* has a greater influence on their *Brand attitude* than people that score lower on *Agreeableness*. However, since there is no main effect between *Liking* and *Brand attitude* or an effect between *Agreeableness* and *Brand attitude*, *Agreeableness* is no significant moderator. Therefore, H2c is rejected (\neq H2c).

Conclusion H2

Based on these results it can be concluded that *Liking* does not influence *Online advertising effectiveness*, nor does *Agreeableness* influence *Online advertising effectiveness*. However, there are interaction effects between *Liking* and *Agreeableness* on *Ad appeal* and *Brand attitude*, but due to the absence of a main effect it is not a significant moderator between *Liking* and *Online advertising effectiveness*. Therefore, H2 is completely rejected (\neq H2a,b,c)

Table 4.4. Moderation regression model for hypothesis 2

	Online advertising effectiveness								
	Ad appeal			Purchase intention			Brand attitude		
	Model 1 <i>b</i> *	Model 2 <i>b</i> *	Model 3 <i>b</i> *	Model 1 <i>b</i> *	Model 2 <i>b</i> *	Model 3 <i>b</i> *	Model 1 <i>b</i> *	Model 2 <i>b</i> *	Model 3 <i>b</i> *
Liking	0.07	0.07	0.07	-0.01	-0.010	-0.01	0.10	0.10	0.20
Agreeableness		-0.05	-0.05		-0.080	-0.08		0.00	0.00
Liking * Agreeableness			0.18			0.10			0.14*
<i>R</i> ²	0.01	0.01	0.04*	0.00	0.01	0.02	0.01	0.01	0.03*
<i>F</i>	1.34	1.01	3.62*	0.06	0.92	1.50	2.62	1.31	2.73*
ΔR^2	0.01	0.00	0.03*	0.00	0.01	0.01	0.01	0.00	0.02*
ΔF	1.34	0.69	8.79*	0.06	1.78	2.67	2.62	0.00	5.54*

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

4.2.3 Testing the moderating effect of Openness on Authority and Online advertising effectiveness (H3)

The third hypothesis tested whether online advertisements high in *Authority* compared to online advertisements low in *Authority* have a positive influence on *Online advertising effectiveness*, especially when people score lower in *Openness*.

H3a: Ad appeal

The results of Model 1 revealed a non-significant effect of *Authority* on *Ad appeal*, $F(1, 276) = 0.05$, $p = .829$, indicating that there is no main effect. Model 2 showed a non-significant effect of *Openness* on *Ad appeal*, $F(1, 275) = 1.66$, $p = .192$. Model 3 showed a non-significant interaction effect between *Authority* and *Openness*, $F(1, 274) = 2.27$, $p = .081$. Since all three models are non-significant, it can be concluded that *Authority* does not influence *Ad appeal*, nor does *Openness* influence *Ad appeal*. Moreover, *Openness* is not a moderator between *Authority* and *Ad appeal*. Therefore, H3a is rejected (\neq H3a).

H3b: Purchase intention

The results of Model 1 revealed a non-significant effect of *Authority* on *Purchase intention* $F(1, 276) = 0.41$, $p = .523$. Model 2 showed a significant effect of *Openness* on *Purchase intention* $F(1, 275) = 5.80$, $p = .003$. Model 2 accounted for an additional 4.0% of

the variance ($\Delta R^2 = .04$) in *Purchase intention*, which was statistically significant, $\Delta F(1, 275) = 11.17, p = .001$. Specifically, the effect between *Openness* and *Purchase intention* was significant ($b^* = -0.20, t = -3.34, p = .001$), indicating that a lower score on *Openness* can lead to a higher *Purchase intention*, and vice versa. Also, Model 3 revealed a significant interaction effect between *Authority* and *Openness*, $F(1, 274) = 3.93, p = .009$, indicating that *Openness* moderates the relationship between *Authority* and *Purchase intention*. However, Model 3 only accounted for an additional 0.1% of the variance ($\Delta R^2 = .00$) in *Purchase intention*, which was statistically non-significant, $\Delta F(1, 274) = 0.23, p = .634$. This means that Model 3 does not significantly improve the prediction of *Purchase intention* beyond Model 2. Since no significant main effect and interaction effect is found, and the direction of the significant effect of *Openness* on *Purchase intention* is negative, H3b is completely rejected ($\neq H3b$).

H3c: Brand attitude

The results of Model 1 revealed a non-significant effect of *Authority* on *Brand attitude*, $F(1, 276) = 0.01, p = .935$, indicating an absence of a main effect. Model 2 showed a non-significant effect of *Openness* on *Brand attitude*, $F(1, 275) = 0.13, p = .877$. Model 3, showed a non-significant interaction effect between *Authority* and *Openness*, $F(1, 274) = 0.47, p = .702$. Since all three models are non-significant, it can be concluded that *Authority* does not influence *Brand attitude* nor does *Openness* influence *Brand attitude*. Moreover, *Openness* is not a moderator between *Authority* and *Brand attitude*. Therefore, H3c is rejected ($\neq H3c$).

Conclusion H3

Based on these results it can be concluded that *Authority* does not influence *Online advertising effectiveness*. *Openness* did only influence one of the *Online advertising effectiveness* components: *Purchase intention*. Also, no interaction effect was found between *Authority* and *Openness*. Therefore, H3 is completely rejected ($\neq H3a,b,c$).

Table 4.5. Moderation regression model for hypothesis 3

	Online advertising effectiveness								
	Ad appeal			Purchase intention			Brand attitude		
	Model 1 b^*	Model 2 b^*	Model 3 b^*	Model 1 b^*	Model 2 b^*	Model 3 b^*	Model 1 b^*	Model 2 b^*	Model 3 b^*
Authority	-0.01	-0.01	0,00	-0.04	-0,03	-0,03	-0.01	-0.00	0,00
Openness		-0.11	-0,13		-0.20**	-0,20**		-0.03	-0,04
Authority * Openness			-0,11			-0,03			-0,07
R^2	0.00	0.01	0.02	0.00	0.04**	0.04**	0.00	0.00	0.01

<i>F</i>	0.05	1.66	2.27	0.41	5.80**	3.93**	0.01	0.13	0.47
ΔR^2	0.00	0.01	0.01	0.00	0.04**	0.01**	0.00	0.00	0.01
ΔF	0.05	3.27	3.46	0.41	11.17***	0.23	0.01	0.26	1.77

4.2.4 Testing the moderating effect of Openness on Liking and Online advertising effectiveness (H4)

The fourth hypothesis tested whether online advertisements high in *Liking* compared to online advertisements low in *Liking* have a positive influence on *Online advertising effectiveness*, especially when people score lower on *Openness*.

H4a: Ad appeal

The results of Model 1 revealed a non-significant effect of *Liking* on *Ad appeal*, $F(1, 276) = 1.34$, $p = .249$, indicating that there is no main effect. Model 2 showed a non-significant effect of *Openness* on *Ad appeal*, $F(1, 275) = 2.39$, $p = .093$. Model 3 showed a non-significant interaction effect between *Liking* and *Openness*, $F(1, 274) = 2.16$, $p = .093$. Since all three models are non-significant it can be concluded that *Liking* does not influence *Ad appeal*, nor does *Openness* influence *Ad appeal*. Moreover, *Openness* is not a moderator between *Liking* and *Ad appeal*. Therefore, H4a is rejected (\neq H4a).

H4b: Purchase intention

The results of Model 1 revealed a non-significant effect of *Liking* on *Purchase intention* $F(1, 276) = 0.06$, $p = .815$. Model 2 showed a significant effect of *Openness* on *Purchase intention* $F(1, 275) = 5.71$, $p = .004$. Model 2 accounted for an additional 4.0% of the variance ($\Delta R^2 = .04$) in *Purchase intention*, which was statistically significant, $\Delta F(1, 275) = 11.36$, $p = .001$. This indicates that 4% can be explained by the effect of *Openness* on *Purchase intention*. The effect between *Openness* and *Purchase intention* was significant ($b^* = -0.20$, $t = -3.37$, $p = .001$), suggesting that a higher score on *Openness* can lead to a lower *Purchase intention*, and vice versa. Also, Model 3 revealed a significant interaction effect between *Liking* and *Openness* $F(1, 274) = 4.26$, $p = .006$, indicating that *Openness* moderates the relationship between *Liking* and *Purchase intention*. However, Model 3 only accounted for an additional 0.5% ($\Delta R^2 = .00$) of the variance in *Purchase intention*, which was statistically non-significant, $\Delta F(1, 274) = 1.35$, $p = .247$. This means that Model 3 does not significantly improve the prediction of *Purchase intention* beyond Model 2. The interaction effect between *Liking* and *Openness* is also non-significant ($b^* = 0.07$, $t = 1.16$, $p = .247$).

This indicates that *Openness* does not moderate the relationship between *Liking* and *Purchase intention*. Therefore, H4b is rejected (\neq H4b).

H4c: Brand attitude

The results of Model 1 showed a non-significant effect of *Liking* on *Brand attitude*, $F(1, 276) = 2.62, p = .106$. Model 2 revealed a non-significant effect of *Openness* on *Brand attitude*, $F(1, 275) = 1.46, p = .234$. Finally, Model 3 also showed a non-significant interaction effect between *Liking* and *Openness*, $F(1, 274) = 1.58, p = .195$. Since all three models are non-significant, it can be concluded that *Liking* does not influence *Brand attitude*, nor does *Openness* influence *Brand attitude*. Moreover, *Openness* is not a moderator between *Liking* and *Brand attitude*. Therefore, H4c is rejected (\neq H4c).

Conclusion H4

Based on these results it can be concluded that *Liking* does not influence *Online advertising effectiveness*, nor does *Openness* influence *Online advertising effectiveness*. *Openness* did only influence one of the *Online advertising effectiveness* components: *Purchase intention*. Also, no interaction effect was found between *Liking* and *Openness*. Therefore, H4 is completely rejected (\neq H4a,b,c).

Table 4.6. Moderation regression model for hypothesis 4

	Online advertising effectiveness								
	Ad appeal			Purchase intention			Brand attitude		
	Model 1 <i>b</i> *	Model 2 <i>b</i> *	Model 3 <i>b</i> *	Model 1 <i>b</i> *	Model 2 <i>b</i> *	Model 3 <i>b</i> *	Model 1 <i>b</i> *	Model 2 <i>b</i> *	Model 3 <i>b</i> *
Liking	0.07	0.07	0.07	-0.01	-0.01	-0.01	0.10	0.10	0.10
Openness		-0.11	-0.12		-0.20	-0.19**		-0.03	-0.04
Liking * Openness			-0.08			0.07			-0.08
<i>R</i> ²	0.01	0.02	0.02	0.00	0.04 **	0.05 **	0.01	0.01	0.02
<i>F</i>	1.34	2.39	2.16	0.06	5.71 **	4.26**	2.62	1.46	1.58
ΔR^2	0.01	0.01	0.01	0.00	0.04 **	0.01 **	0.01	0.00	0.01
ΔF	1.34	3.44	1.69	0.06	11.36***	1.35	2.62	0.31	1.80

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

4.2.5 Testing the moderating effect of Conscientiousness on Authority and Online advertising effectiveness (H5)

The fifth hypothesis tested whether online advertisements high in *Authority* compared to online advertisements low in *Authority* have a positive influence on *Online advertising effectiveness*, especially when people score higher on *Conscientiousness*.

H5a: Ad appeal

The results of Model 1 revealed a non-significant effect of *Authority* on *Ad appeal* $F(1, 276) = 0.05, p = .829$, indicating that there is no main effect. Model 2 showed a non-significant effect of *Conscientiousness* on *Ad appeal*, $F(1, 275) = 0.04, p = .652$. Model 3 showed a non-significant interaction effect between *Authority* and *Conscientiousness*, $F(1, 274) = 0.51, p = .677$. Since all three models are non-significant, it can be concluded that *Authority* does not influence *Ad appeal*, nor does *Conscientiousness* influence *Ad appeal*. Moreover, *Conscientiousness* is not a moderator between *Authority* and *Ad appeal*. Therefore, H5a is rejected (\neq H5a).

H5b: Purchase intention

The results of Model 1 revealed a non-significant effect of *Authority* on *Purchase intention*, $F(1, 276) = 0.41, p = .523$, indicating that there is no main effect. Model 2 showed a non-significant effect of *Conscientiousness* on *Purchase intention*, $F(1, 275) = 0.41, p = .668$. Model 3 showed a non-significant interaction effect between *Authority* and *Conscientiousness*, $F(1, 274) = 0.27, p = .848$. Since all three models are non-significant, it can be concluded that *Authority* does not influence *Purchase intention*, nor does *Conscientiousness* influence *Purchase intention*. Moreover, *Conscientiousness* is not a moderator between *Authority* and *Purchase intention*. Therefore, H5b is rejected (\neq H5b).

H5c: Brand attitude

The results of Model 1 revealed a non-significant effect of *Authority* on *Brand attitude*, $F(1, 276) = 0.07, p = .935$, indicating that there is no main effect. Model 2 showed a non-significant effect of *Conscientiousness* on *Brand attitude*, $F(1, 275) = 0.12, p = .887$. Model 3 showed a non-significant interaction effect between *Authority* and *Conscientiousness*, $F(1, 274) = 0.09, p = .966$. Since all three models are non-significant, it can be concluded that *Authority* does not influence *Brand attitude*, nor does *Conscientiousness* influence *Brand attitude*. Moreover, *Conscientiousness* is not a moderator between *Authority* and *Brand attitude*. Therefore, H5c is rejected (\neq H5c).

Conclusion H5

Since there is no significant effect found for any of the factors of *Online advertising effectiveness* it can be concluded that *Authority* does not influence *Online advertising effectiveness*, nor does *Conscientiousness* influence *Online advertising effectiveness*. Moreover, *Conscientiousness* is not a moderator between *Authority* and *Online advertising effectiveness*. Therefore, H5 is completely rejected (\neq H5a,b,c).

Table 4.7. Moderation regression model for hypothesis 5

	Online advertising effectiveness								
	Ad appeal			Purchase intention			Brand attitude		
	Model 1 <i>b</i> *	Model 2 <i>b</i> *	Model 3 <i>b</i> *	Model 1 <i>b</i> *	Model 2 <i>b</i> *	Model 3 <i>b</i> *	Model 1 <i>b</i> *	Model 2 <i>b</i> *	Model 3 <i>b</i> *
Authority	-0.01	-0.01	-0.01	-0.04	-0.04	-0.04	-0.01	-0.01	-0.01
Conscientiousness		0.06	0.06		-0.04	-0.04		-0.03	-0.03
Authority * Conscientiousness			-0.05			0.000			0.01
R ²	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
F	0.05	0.43	0.51	0.41	0.41	0.27	0.01	0.12	0.09
Δ R ²	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Δ F	0.05	0.81	0.67	0.41	0.40	0.00	0.01	0.23	0.03

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

4.2.6 Testing the moderating effect of Conscientiousness on Liking and Online advertising effectiveness (H6)

The last hypothesis tested whether online advertisements high in Liking compared to online advertisements low in Liking have a positive influence on Online advertising effectiveness, especially when people score lower on Conscientiousness.

H6a: Ad appeal

The results of Model 1 revealed a non-significant effect of *Liking* on *Ad appeal* $F(1, 276) = 1.34, p = .249$, indicating that there is no main effect. Model 2 showed a non-significant effect of *Conscientiousness* on *Ad appeal*, $F(1, 275) = 1.03, p = .358$. Model 3 showed a non-significant interaction effect between *Liking* and *Conscientiousness*, $F(1, 274) = 0.77, p = .514$. Since all three models are non-significant, it can be concluded that *Authority* does not influence *Ad appeal*, nor does *Conscientiousness* influence *Ad appeal*. Moreover,

Conscientiousness is not a moderator between *Authority* and *Ad appeal*. Therefore, H6a is rejected (\neq H6a).

H6b: Purchase intention

The results of Model 1 revealed a non-significant effect of *Liking* on *Purchase intention*, $F(1, 276) = 0.06, p = .815$, indicating that there is no main effect. Model 2 showed a non-significant effect of *Conscientiousness* on *Purchase intention*, $F(1, 275) = 0.164, p = .849$. Model 3 showed a non-significant interaction effect between *Liking* and *Conscientiousness*, $F(1, 274) = 0.12, p = .951$. Since all three models are non-significant, it can be concluded that *Liking* does not influence *Purchase intention*, nor does *Conscientiousness* influence *Purchase intention*. Moreover, *Conscientiousness* is not a moderator between *Liking* and *Purchase intention*. Therefore, H6b is rejected (\neq H6b).

H6c: Brand attitude

The results of Model 1 revealed a non-significant effect of *Liking* on *Brand attitude*, $F(1, 276) = 2.62, p = .106$, indicating that there is no main effect. Model 2 showed a non-significant effect of *Conscientiousness* on *Brand attitude*, $F(1, 275) = 1.47, p = .231$. Model 3 showed a non-significant interaction effect between *Liking* and *Conscientiousness*, $F(1, 274) = 1.44, p = .232$. Since all three models are non-significant, it can be concluded that *Liking* does not influence *Brand attitude*, nor does *Conscientiousness* influence *Brand attitude*. Moreover, *Conscientiousness* is not a moderator between *Liking* and *Brand attitude*. Therefore, H6c is rejected (\neq H6c).

Conclusion H6

Since there is no significant effect found for any of the factors of *Online advertising effectiveness* it can be concluded that *Liking* does not influence *Online advertising effectiveness*, nor does *Conscientiousness* influence *Online advertising effectiveness*. Moreover, *Conscientiousness* is not a moderator between *Liking* and *Online advertising effectiveness*. Therefore, H6 is completely rejected (\neq H6a,b,c).

Table 4.8. Moderation regression model for hypothesis 6

	Online advertising effectiveness								
	Ad appeal			Purchase intention			Brand attitude		
	Model 1 <i>b</i> *	Model 2 <i>b</i> *	Model 3 <i>b</i> *	Model 1 <i>b</i> *	Model 2 <i>b</i> *	Model 3 <i>b</i> *	Model 1 <i>b</i> *	Model 2 <i>b</i> *	Model 3 <i>b</i> *
Liking	0.07	0.07	0.07	-0.01	-0.01	-0.01	0.09	0.10	0.10

Conscientiousness	0.05	0.05		-0.03	-0.03		-0.03	-0.03	
Liking * Conscientiousness		-0.03			-0.01			0.07	
R2	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.02
F	1.34	1.03	0.77	0.06	0.16	0.12	2.62	1.47	1.44
ΔR^2	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
ΔF	1.34	0.73	0.24	0.06	0.27	0.02	2.62	0.33	1.37

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

4.2.7 Summary of the hypotheses

The results of the data analyses are presented in Table 4.9.

Table 4.9. Summary of the hypotheses

Hypotheses	Status
<i>H1 Online advertisements high in Authority compared to online advertisements low in Authority have a positive influence on online advertising effectiveness (a. Ad appeal, b. Purchase intention, c. Brand attitude), especially when people score higher on Agreeableness.</i>	Rejected
<i>H2 Online advertisements high in Liking compared to online advertisements low in Liking have a positive influence on online advertising effectiveness (a. Ad appeal, b. Purchase intention, c. Brand attitude), especially when people score higher on Agreeableness.</i>	Rejected
<i>H3 Online advertisements high in Authority compared to online advertisements low in Authority have a positive influence on online advertising effectiveness (a. Ad appeal, b. Purchase intention, c. Brand attitude), especially when people score lower on Openness.</i>	Rejected
<i>H4 Online advertisements high in Liking compared to online advertisements low in Liking have a positive influence on online advertising effectiveness (a. Ad appeal, b. Purchase intention, c. Brand attitude), especially when people score lower on Openness.</i>	Rejected

- | | |
|--|----------|
| <i>H5 Online advertisements high in Authority compared to online advertisements low in Authority have a positive influence on online advertising effectiveness (a. Ad appeal, b. Purchase intention, c. Brand attitude), especially when people score higher on Conscientiousness.</i> | Rejected |
| <i>H6 Online advertisements high in Liking compared to online advertisements low in Liking have a positive influence on online advertising effectiveness (a. Ad appeal, b. Purchase intention, c. Brand attitude), especially when people score lower on Conscientiousness.</i> | Rejected |
-

5. Discussion and conclusion

This chapter will discuss to what extent personality traits influence the effect of persuasion strategies on online advertising effectiveness. First, the main findings will be interpreted and linked to prior academic research. Following, the practical and managerial implications of the research's findings and the ethics will be discussed. Subsequently, the study's limitations and recommendations for future research will be proposed. Finally, a conclusion will be provided.

5.1 Discussion of the main findings

First, the main findings will be discussed to answer the research question. Based on the results, it can be concluded that in this study, personality traits did not influence the effect of persuasion strategies on online advertising effectiveness since no main effects of *Persuasion strategies* on *Online advertising effectiveness* were found. However, a few effects of *Personality traits* on *Online advertising effectiveness* and interaction effects between *Persuasion strategies* and *Personality traits* were found, which will be discussed below.

In this research, the persuasion strategies *Authority* and *Liking* (Cialdini, 2001) did not affect the different components of *Online advertising effectiveness*: *Ad appeal*, *Purchase intention* and *Brand attitude*. Despite the evidence of the pervasiveness of *Authority* in general (Cialdini, 2001; Davidson, 2008) and in the advertising context (Jung & Kellaris, 2006), the present study did not find any significant main effect of *Authority* on *Online advertising effectiveness*.

This might be explained by the fact that the manipulation of *Authority* only worked partially, which might have negatively affected the study's outcomes. Of the two manipulation questions, only one demonstrated statistical significance, and even in that case, it was rated low in terms of perceived expertise. This indicates that the model featured in the advertisement was not regarded as an expert by the participants. To establish credible expertise, a function title (Dr./ Audio engineer) and the name of an independent organization (TU Delft) were incorporated in the advertisement, which is in accordance with previous literature (Cialdini & Rhoads, 2001; Seethaler & Rose, 2006). However, physical attributes commonly associated with expertise, such as glasses or work tools, were not possible to incorporate in the advertisement as the study's experimental form allowed to change only one element: the function title. The absence of these physical attributes might have contributed to participants' skepticism towards the expert.

Another reason that could explain why the person featured in the advertisement was

not perceived as an expert, is because a female expert was used, which contradicts the stereotype that associates technical products with male experts (Matthes et al., 2016). In advertisements for technical products, women are in general featured to show the simplicity of the product, whereas men are employed to show their competence and knowledge about the product (Dilevko & Harris, 1998). Although gender representation in the technological field has significantly changed, these stereotypes are nowadays still deeply rooted and might have negatively impacted the sample's perception of the female expert in the advertisement (Tsichla, 2020). Besides gender, the model's age might have also contributed to the moderate outcomes of the manipulation of *Authority*. Previous research (Hovland et al., 1953; Weibel et al., 2008) shows that older people are perceived as more credible authorities and experts than young people, as older people often have more experience and knowledge.

Besides the failure of the manipulation of *Authority*, an absence of a main effect of *Authority* on *Online advertising effectiveness* might be because the effectiveness of *Authority* depends on multiple factors, including a person's age and culture. Jung and Kellaris (2006) suggest that young adult consumers may experience a phenomenon known as the reversed authority effect, in which they hold negative feelings or animosity towards authority figures. Since the majority of the sample were young adults, they might have had a similar resistance or skepticism towards the expert in the advertisement. Therefore, they might be less susceptible to *Authority* than older participants, leading to different responses, which could have masked any potential effect of *Authority* on *Online advertising effectiveness*. Moreover, the researchers showed that culture also plays a role in the effectiveness of *Authority* principles in advertising, as they found that American young adults are more positive towards authority than French young adults (Jung & Kellaris, 2006). As such, it could be that similar to the French, the sample, consisting primarily of Dutch people, does not have a positive attitude toward *Authority*. Future research should therefore further examine the role of age and culture in the effect of *Authority* and *Online advertising effectiveness*

Also, for *Liking*, no main effect was found. This might be explained by the fact that the manipulation of *Liking*, despite its statistical significance, did not work as well as expected since the means were rather close to the average. Theory (Cialdini, 2007) suggests that individuals subconsciously assign good qualities to physically attractive individuals (halo effect), which can result in increased likeability. However, evaluating an individual's likeability might be more nuanced than what can be measured on a 5-point Likert scale. Also, individuals might struggle to rate someone's likeability solely based on appearance without additional information.

Another reason for the lower likeability of the featured model might be caused due to her ethnic background. One of the dimensions of *Liking* explained that individuals like people that share similarities, such as their appearance and background (Cialdini, 2001). Since the

sample is mostly Dutch, it could be that the likeability is diminished as the model does not have a Dutch-looking appearance like most of the participants. Besides the manipulation question regarding likeability, the moderate outcome for the manipulation question concerning physical attractiveness might be caused by a social desirability bias (Grimm, 2010). Participants might have felt uncomfortable rating the person on her appearance and were concerned to be perceived as shallow when rating the person as highly attractive or unattractive. Consequently, individuals might have chosen a more neutral option rather than giving their honest opinion.

In addition to the diminished effects of the manipulation of *Liking*, an absence of a main effect of *Liking* on *Online advertising effectiveness* might be due to the high level of the physical attractiveness of the model. Although, multiples studies (Baker & Churchill; 1977; Caballero & Pride, 1984; Patzer, 1983; Petroschius & Crocker, 1989; Till & Bussler, 2003) state that physical attractiveness can positively influence advertising effectiveness, other studies (Buunk & Dijkstra, 2011; Tsai & Chang, 2007) suggest that the use of highly attractive models can also diminish the advertising effectiveness. This is because people tend to compare themselves with the model featured in the advertisement, leading to a lower self-image, which can consequently result in a less favorable attitude toward the advertisement. Women are especially sensitive to this behavior, comparing themselves with female models. As such, researchers found that employing normally physically attractive models in advertising is more effective than highly physically attractive models (Buunk & Dijkstra, 2011; Tsai & Chang, 2007). These inconsistent findings concerning the impact of physical attractiveness on advertising effectiveness may indicate the presence of both positive and negative effects, which may be canceling each other out, resulting in an overall lack of effect. Moreover, the use of a female model in this experiment and a sample consisting of a majority of women might have strengthened an absence of a main effect. Consequently, future research could further assess the moderating role of gender in the relationship between physical attractiveness and advertising effectiveness.

Another explanation for the absence of main effects for both *Liking* and *Authority* could be due to the type of product chosen for the experiment. First, headphones are a familiar product among the sample. According to Bettman and Park (1980), consumers who are already familiar with a product often disregard processing the communicated information and rely on existing knowledge and prior experiences. This might make them less dependent on an expert or a person's likeability.

Secondly, headphones can be categorized as high-involvement products, which are associated with higher costs and greater risks. According to the Elaboration Likelihood Model (ELM), proposed by Petty et al. (1983), individuals can follow two distinct paths when processing persuasive content: the central and the peripheral route. In the case of high-

involvement products, like headphones, consumers follow the central route, in which they engage in more extensive research and compare other products before making a purchase. In contrast, low-involvement products are relatively inexpensive and carry fewer risks. Consequently, consumers follow the peripheral route, in which they rely more on heuristics and mental shortcuts such as expert claims or an individual's attractiveness (Petty et al., 1983). Hence, a low-involvement product might have been more suitable to test the effect of persuasion strategies on online advertising effectiveness.

Although no main effects were found, surprisingly the results revealed a significant negative effect of *Openness* on *Purchase intention*, indicating that people that score lower in *Openness* have a higher *Purchase intention* and people that score higher in *Openness* have a lower *Purchase intention*. These findings suggest that certain types of advertisements are more effective on people lower in *Openness*, than people higher in *Openness*. In advertising, two main types can be distinguished: informational and transformational advertisements. An informational advertisement simply provides rational information and facts about the product whereas a transformational advertisement adds an experience to the advertised product and creates associations with this experience that a customer would otherwise not have thought of (Myers et al., 2010). As such, Coca-Cola transforms drinking their soda into an experience of reuniting people and creating moments of happiness (Roose et al., 2018). Since the experimental advertisement, primarily consisted of factual information, it can be categorized as an informational rather than a transformational advertisement (Myers et al., 2010). Myers et al. (2010) suggest that people low in *Openness* prefer informational advertisements while people high in *Openness* prefer transformational advertisements. This is in accordance with the findings of this study as the *Purchase intention* of people that score lower on *Openness* is higher than for people that score higher on *Openness*. This can be explained by the fact that people lower in *Openness* are more narrow-minded and like practicality and straightforward information while people higher in *Openness* enjoy creativity and new and emotional experiences in advertisements (Heinström, 2010; Myers et al., 2010; Roccas et al., 2002). Overall the current study's finding aligns with other studies (Halko & Kientz, 2010; Hirsh et al., 2012; Myers et al., 2010) that advertisements are more effective when they are tailored to an individual's personality traits. However, unexpectedly, no similar effect was found for *Conscientiousness* and *Agreeableness*. Therefore, future research should further explore the effects of *Personality traits* on *Online advertising effectiveness*.

Also, a significant positive interaction effect was found between *Liking* and *Agreeableness* for *Ad appeal* and *Brand attitude*. This suggests that the non-significant (positive) main effect of *Liking* on *Ad appeal* and *Brand attitude* is strengthened by *Agreeableness*. This indicates that for people that score higher on *Agreeableness*, the principle *Liking* has a greater influence on *Ad appeal* and *Brand attitude* than people that

score lower on *Agreeableness*. This is in line with the expectations found in the literature (Alkıř & Temizel, 2015; Oyibo et al., 2017) that suggests that people high in *Agreeableness* are more susceptible to *Liking*. This can be explained by the fact that agreeable people are friendly and trust people (featured in advertising) more easily. Moreover, highly agreeable people deter others when making decisions, which makes them more prone to be influenced by a friendly and pretty face that recommends a product in an advertisement, than low agreeable people (Alkıř & Temizel, 2015; Costa et al., 1991; John & Srivastava, 1999; Roccas et al., 2002). Although there is no significant main effect between *Liking* and *Ad appeal* or *Brand attitude*, the presence of an interaction effect indicates that the effect of *Liking* on *Ad appeal* or *Brand attitude* depends on the individual's level of *Agreeableness*.

As demonstrated above, there are some significant effects of *Personality traits* on *Online advertising effectiveness* and interaction effects between the *Persuasion strategies* and *Personality traits*. These findings hold promise for identifying potential moderators in the future. It is noteworthy that if the perceived difference within *Authority* and *Liking* had been larger, it might have resulted in significant main effects and a substantial chance for these variables to moderate this relationship. Accordingly, future research could build upon this research, and improve the manipulations for the persuasion principles to attain a wider range of perceived differences within the persuasion principles. Suggestions are discussed in 5.2 and 5.4.

5.2 Practical and managerial implications

The main findings that are just discussed have practical and managerial implications. First, advertisers and marketers should test *Authority* and *Liking* extensively before incorporating these principles in advertising, as in this study no significant effects were found between these *Persuasion strategies* and *Online advertising effectiveness*.

When deciding to use persuasion strategies, it is recommended to apply it to unfamiliar products rather than familiar products. This is because with unfamiliar products consumers are not relying on previous knowledge and experience and therefore are more prone to accept the message of an expert and a likable person in an advertisement (Bettman & Park, 1980). Besides the use of an unfamiliar product, a low-involvement product is advised over a high-involvement product. With low-involvement products, consumers are more likely to rely on heuristics like *Authority* and *Liking* due to the lower perceived costs and risks of the product (Petty et al., 1983).

Concerning *Authority*, it is advised to improve an expert's credibility, by using besides a function title, physical attributes such as glasses or a lab coat. Moreover, it is recommended to use an older person as an expert, since they are perceived as more

trustworthy (Hovland et al., 1953; Weibel et al., 2008). Additionally, for technical products, it is advised to use a male model to diminish the potential risk of lower advertising effectiveness due to biases about female experts in the technical field (Matthes et al., 2016).

Besides the implementation of *Authority*, there are also implications associated with its use. It is advised to apply *Authority* in advertisements for older target audiences, as they are more likely to accept messages of experts than younger generations (Jung & Kellaris, 2006). Also, marketers should consider a consumer's cultural background. For example, for Americans, the use of authority is recommended but for French, it is not, due to the reversed authority effect (Jung & Kellaris, 2016). Hence, marketers should assess a culture's attitude toward authorities, before using this principle to target them.

Similarly, for *Liking* in the form of physical attractiveness, it is recommended to employ average-attractive models over highly attractive models, especially when targeting women. In this way, one can prevent potential negative feelings caused by social comparison that in turn can negatively influence advertising effectiveness (Buunk & Dijkstra, 2011). Moreover, it is advised to select a model that has a similar ethnic background to increase the chance of similarities with the audience, which can enhance a person's likeability (Cialdini, 2007).

In addition to these persuasion principles, the use of personality traits for advertising purposes should be treated still with caution, due to the minimal effect found of *Personality traits* on *Online advertising effectiveness* in this study. However, the promising effect of *Openness* on *Purchase intention* indicates that it could be valuable for marketers to match the type of advertisement with the consumers' level of *Openness*. Hence, it is suggested to use informational advertisements for people that score lower on *Openness*: providing objective information about the advertised product, and to use transformational advertisements for people that score higher on *Openness*: creating experiences and associations with the advertised product.

Another promising finding was that people high in *Agreeableness* are more susceptible to the principle *Liking*, in relation to *Ad appeal* and *Brand attitude*. Marketers could use these insights by targeting highly agreeable people with advertisements that incorporate the *Liking* principle. In addition to tailoring advertisements to consumers' personality traits and enhancing customer segmentation, marketers can use insights into the different personality traits to predict consumer behavior. Nonetheless, since these effects were only found for a few personality traits, marketers should not overly rely on personality traits when targeting consumers and still consider other characteristics in their advertising strategies, such as gender, occupation, and interests.

Besides the use of consumers' personality traits in advertising, the appropriate manner of measuring personality traits is also disputable. In contrast to previous studies

(Costa & McCrae, 1990; Phares, 1991) suggesting personality traits are long-term and rigid, new studies (Beckmann et al., 2020; Koffer & Ram, 2015) claim an individual's personality traits can fluctuate in context and across time, known as the Intra-Individual Variability (IIV) of personality. This not only has implications for the understanding and approach of personality in the academic context but also in the corporate context. Marketers need to have the most up-to-date data on the target audience's personality to deal with these fluctuations in personality. With real-time data, this is possible, but reality shows that many corporations still encounter problems organizing vast volumes of data originating from different channels. Consequently, they cannot keep up with the latest insights about consumers' personalities (Pridmore & Hämäläinen, 2017; Russo-Spena & Bifulco, 2021). Hence, this presents a challenge for corporations and asks for recruiting highly qualified data analysts.

Thus, the practical implications are to use unfamiliar and/or low-involvement products when employing *Authority* and *Liking* for advertising. For *Authority* it is advised to use an older person, and for technical products specifically, male models are recommended. The use of *Authority* might be most suitable when targeting older target audiences, but its effectiveness is also culture-dependent. For *Liking*, it is recommended to use an average-looking model with a similar ethnic background as the target group. Also, *Liking* should be employed especially for targeting high agreeable people. Additionally, it is recommended to target people lower in *Openness* with informational advertisements, while targeting people higher in *Openness* with transformational advertisements. Finally, marketers should hire advanced data analysts that can provide consumers' most up-to-date personality data.

5.3 Ethics

On a societal level, the use of an individual's personality for advertising purposes raises ethical concerns. First, personality trait-based personalization is more subtle and hidden, resulting in consumers not being aware that advertisements are tailored to their personalities. This can be perceived as manipulative and can undermine an individual's autonomy (Winter et al., 2021). Furthermore, personality data can be used in discriminatory manners, wherein certain personalities are specifically targeted and others are excluded. This can result in biases, inequalities and unfair treatment, such as price differentiations (Clarke, 2019). Finally, personality data for advertising purposes creates new privacy concerns and risks of data inaccuracies due to limited data control, potentially leading to incorrect judgments of an individual's personality (Clarke, 2019).

As personalization in advertising intensifies, it is crucial for governments to continually sharpen regulations and establish clear guidelines for organizations to ensure transparent and responsible use of personality data (Winter et al., 2021). However, consumers

themselves also have a responsibility to educate themselves about personalization and asserting their rights. Finally for companies, actively addressing these ethical issues is not only morally right but also beneficial, as it can increase consumers' trust and loyalty (Sharma & Lijuan, 2014).

5.4 Research limitations and future research

Now the practical implications and ethics are discussed, the research limitations will be presented to put the findings in perspective and discuss recommendations for future research. Due to the time limitation of seven months for this research, only 2 of the 6 persuasion principles of Cialdini (2001) and 3 of the 5 Big Five personality traits (Costa & McCrae, 1990) were examined. It is valuable to research the remaining 4 principles of persuasion (*Commitment, Reciprocity, Scarcity and Social proof*) and the 2 Big Five personality traits (*Extraversion and Neuroticism*) for a more comprehensive and complete understanding of the subject. Moreover, future studies could investigate the other dimensions of *Liking*, consisting of similarity, familiarity, compliments and cooperation (Cialdini, 2001). Especially the latter two might be interesting since they have not been researched yet.

Moreover, in the present study personality traits were researched separately. However, people often hold a combination of different personality traits. Future research could therefore investigate the combination of these traits in a similar study. Sofia et al. (2016) made the first efforts in which they proposed pathways of combined personality traits that increase the effectiveness of each persuasion principle. Nonetheless, they only studied a few combinations, so more research in this field is recommended.

Similarly, it might be interesting for future research to study whether the combination of certain persuasion principles can strengthen the persuasive effect and online advertising effectiveness. Although in one condition of the experiment, the principles *Authority* and *Liking* were combined, this research only tested the effect of the principles on Online advertising effectiveness separately.

Another limitation is the use of a shorter iteration of the Big Five inventory to measure the Big Five personality traits: the Big Five Mini IPIP (Donnellan et al., 2006). Although prior studies (Baldasaro et al., 2013; Cooper et al., 2010) have confirmed the validity of this scale, this study showed a weak to moderate reliability of the variables, with even one deleted item due to its low correlation with the other items within the same factor *Openness*. Furthermore, the factor analysis for *Online advertising effectiveness* did not confirm the initial four components of the variable, but proposed the fusion of *Attitude toward the ad* and *Click intention* into a single factor. This deviation from the expected component structure confirms

again the complexity of measuring *Online advertising effectiveness*. Therefore, future research should further examine approaches to assess *Online advertising effectiveness*.

Besides the measurements, the experiment itself also had some constraints. Although the majority of the participants perceived the advertisement design in the intended manner, a few participants expressed uncertainty about whether the quote belonged to the model featured in the advertisement. Furthermore, some participants failed to imagine the possibility of coming across this advertisement and being open to the idea of buying headphones. As such, they responded they do not wear headphones or just bought new ones. Although this were just a few cases, it might have affected the validity of the results.

As already discussed, the manipulations of *Authority* and *Liking* did not work as well as expected. Future research could improve the current manipulations by employing an average attractive male expert, that is relatively old, and has a similar ethnic background as the sample. Also, an unfamiliar and low-involvement product is advisable such as a smart plug or a wireless adapter, which are still relatively unknown but are also inexpensive and do not carry many risks. Finally, in the layout of the advertisement, a text cloud is recommended instead of a separate white text box to prevent confusion about whether the quote belongs to the featured model.

Additionally, the reader should bear in mind that the study used a purposive sampling method, which might have caused sampling bias that can reduce the generalizability of the findings to the larger population (Babbie, 2014). There is an overrepresentation of Dutch young adults and women. Moreover, the sample has on average a high level of *Agreeableness*, *Openness*, and *Conscientiousness*, which does not reflect the diversity of personality traits in the population and could have impacted the results.

Since the assumptions of linearity and homoscedasticity were not met for all analyses, it might have negatively impacted the accuracy and reliability of the obtained results. Nonetheless, a deliberate decision was made to conduct moderated multiple regression analysis to maintain unity and coherence within the study.

Concerning recommendations for future research, one could consider focusing on investigating interaction effects rather than moderation effects. While moderation analyses examine how a third variable can alter a predetermined relationship between two variables, interaction analyses can provide a deeper understanding of how different variables interact with each other (Hayes, 2017; Rosnow & Rosenthal, 1989). Given the research on this topic is still limited and in an early stage, investigating interaction effects might be a suitable starting point as it allows exploring the complex relationships between the *Persuasion principles*, *Personality traits* and *Online advertising effectiveness* and their conditional effects. The present study already showed some promising interaction effects between the different variables.

As discussed previously, other individual characteristics than personality traits can play a role in the effectiveness of *Persuasion strategies* on *Online advertising effectiveness*, such as gender, age and culture. Therefore, it would be valuable to further research how these characteristics might influence the effectiveness of these persuasion strategies.

Another recommendation for future research is to investigate different types of product categories for advertisements. Alslaity and Tran (2020) have shown that the effect of persuasion strategies on personality traits can be context dependent in recommendation systems. As such, *Liking* was more effective in the movie context than in the e-commerce context. Similarly, future studies could research different types of domains for advertising, such as beauty, travel, technology, and food.

Finally, as discussed previously, new studies (Beckmann et al., 2020; Koffer & Ram, 2015) show evidence for Intra-Individual Variability of personality. Future research should therefore reconsider using a survey but perhaps employ a different method that measures these fluctuations in personality. Possible options are assessing a person's personality at short intervals, attaining different opinions from different individuals about a person that interacts with this person in different contexts, or using specialized apps for tracking an individual's emotions and experiences (Beckmann, 2020; Koffer & Ram, 2015; Newman et al., 2020).

5.5 Conclusion

This study investigated the potential moderating effect of 3 of the Big Five personality traits (*Agreeableness*, *Openness*, and *Conscientiousness*) on the persuasion strategies *Authority* and *Liking* and *Online advertising effectiveness*, consisting of *Ad appeal*, *Brand attitude* and *Purchase intention*. It can be concluded that in this study persuasion strategies did not influence online advertising effectiveness and personality traits therefore did not moderate this effect. However, some promising interaction effects between *Persuasion principles* and *Personality traits* and the effects of *Personality traits* on *Online advertising effectiveness* were found. These findings indicate that advertisements can be more effective when they are tailored to an individual's personality traits.

Therefore, future research should further investigate this topic by improving the manipulations and potentially investigating interaction effects first, rather than moderating effects. Until then, the use of persuasion principles and personality should be treated with some caution. Also, persuasion strategies should be tested extensively before incorporating them into advertising. Moreover, personalizing persuasion strategies to personality traits raises multiple ethical concerns, including diminished autonomy, discriminatory practices, privacy concerns, and misunderstanding of an individual personality due to data

inaccuracies. It is important that these ethical issues are addressed collectively by corporations, governments and consumers.

Furthermore, with the new findings of Intra-Individual Variability of personality, the academic as well as the corporate environment should reconsider and further examine how an individual's personality should be approached. Finally, besides the use of personality traits, it is valuable to explore other characteristics that could potentially impact the effectiveness of persuasion principles, including age, culture and gender. Overall, personalizing persuasion strategies to individuals' personality traits in online advertising has great potential to be effective rather than elusive.

6. Reference list

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7. Appendices

Appendix A: Survey

Start of Block: Intro

Dear respondent,

Thank you for your interest in this research. The purpose of this study is to investigate advertising for headphones. The questionnaire will take approximately 7 minutes to complete.

Please answer each question carefully and honestly as I am sincerely interested in your personal opinion. Keep in mind that there are no right or wrong answers.

Confidentiality of data

All data that will be collected during this survey will be treated confidentially and anonymously. This means the research is not able to identify you. There are no foreseeable risks or discomforts associated with participating in this research.

Voluntary

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

Further information

If you have questions about this research, please feel free to contact me, Jill Neuenheim, via 615358jn@eur.nl. This study has been approved by the Ethics Committee of Erasmus University Rotterdam. If you want to invoke your rights or if you have a question concerning privacy about this study, you can contact Erasmus University's DPO (Data Protection Officer) at fg@eur.nl.

Thank you in advance,

Jill Neuenheim

If you understand the previously mentioned information and freely consent to participate in this study, click on the "I agree" button below to start the questionnaire.

I agree (1)

I disagree (2)

Skip To: End of Survey If If you understand the previously mentioned information and freely consent to participate in this st... = I disagree

End of Block: Intro

Start of Block: Stimuli

Condition 1

Imagine that you are on your laptop or phone and come across this online advertisement for headphones.

Please take a minute to view and read it carefully. Questions will follow concerning this online advertisement. The advertisement will not be viewed again during the survey. You can use the back button to go back if you like, without losing any data.



Condition 2

Imagine that you are on your laptop or phone and come across this online advertisement for headphones.

Please take a minute to view and read it carefully. Questions will follow concerning this online advertisement. The advertisement will not be viewed again during the survey. You can use the back button to go back if you like, without losing any data.



Condition 3

Imagine that you are on your laptop or phone and come across this online advertisement for headphones.

Please take a minute to view and read it carefully. Questions will follow concerning this

online advertisement. The advertisement will not be viewed again during the survey. You can use the back button to go back if you like, without losing any data.



Condition 4

Imagine that you are on your laptop or phone and come across this online advertisement for headphones.

Please take a minute to view and read it carefully. Questions will follow concerning this online advertisement. The advertisement will not be viewed again during the survey. You can

use the back button to go back if you like, without losing any data.



End of Block: Stimuli

Start of Block: Online advertising effectiveness

Please indicate your overall feelings toward the advertisement you just have seen.

	1	2	3	4	5	6	7	
Boring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Interesting
Unfavorable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Favorable
Dislike it very much	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Like it very much
Irritating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not irritating
Does not hold attention	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Holds attention

Page Break

Please describe your overall feelings about the brand in the advertisement you just have seen.

	1	2	3	4	5	6	7	
Unappealing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Appealing
Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Good
Unpleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Pleasant
Unfavorable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Favorable
Unlikeable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Likeable

Page Break

Please indicate your intentions to click on the advertisement you just have seen.

	1	2	3	4	5	6	7	
Improbable to click	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Probable to click
Unlikely to click	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Likely to click
Impossible to click	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Possible to click

Page Break

Please indicate your intentions to buy the headphones in the advertisement you just have seen.

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

Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Definitely
Definitely do not intend to buy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Definitely intend to buy
Low purchase interest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High purchase interest
Definitely not buy it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Definitely buy it
Probably not buy it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Probably buy it

End of Block: Online advertising effectiveness

Start of Block: Personality traits

To what extent do you agree with the following statements about yourself? I...

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
Am the life of the party. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sympathize with others' feelings. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Get chores done right away. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have frequent mood swings. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have a vivid imagination. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Don't talk a lot. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Am not interested in other people's problems. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Often forget to put things back in their proper place. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Am relaxed most of the time. (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Am not interested in abstract ideas. (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talk to a lot of different people at parties. (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Feel others' emotions. (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Like order. (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Get upset easily. (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have difficulty understanding abstract ideas. (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Keep in the background. (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Am not really interested in others. (17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Make a mess of things. (18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seldom feel blue. (19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do not have a good imagination. (20)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Personality traits

Start of Block: Manipulation check

To what extent did you like the person in the advertisement?

- I didn't like the person at all (1)
- I didn't like the person (2)
- I didn't like or dislike the person (3)
- I liked the person (4)
- I liked the person very much (5)

Page Break

To what extent did you find the person in the advertisement attractive?

- Not attractive at all (1)
- Not attractive (2)
- Neither attractive nor unattractive (3)
- Attractive (4)
- Very attractive (5)

Page Break

To what extent did you think the person in the advertisement has knowledge about the headphones?

- The person is not knowledgeable at all (1)
- The person is not knowledgeable (2)
- The person is neither knowledgeable nor unknowledgeable (3)
- The person is knowledgeable (4)
- The person is very knowledgeable (5)

Page Break

To what extent did you perceive the person in the advertisement as an expert in headphones?

- The person is no expert at all (1)
- The person is no expert (2)
- The person is neither an expert nor an inexperienced (3)
- The person is an expert (4)
- The person is very much of an expert (5)

End of Block: Manipulation check

Start of Block: Demographics

Age What is your age?

Page Break

What is your gender?

- Male (1)
- Female (2)
- Non-binary / third gender (3)
- Prefer not to say (4)

Page Break

What is your nationality?

▼ Afghanistan (1) ... Other (197)

Page Break

What is your highest completed level of education?

- Less than high school (1)
- High school graduate (2)
- Bachelor's degree (3)
- Master's degree (4)
- Doctor of Philosophy (Ph.D.) (5)
- Doctorate (Dr.) (6)

Page Break



Do you have any comments, concerning this survey?

End of Block: Demographics
