

## DISSERTATION

# AN OVERSTIMULATED CONSUMER IN A HIGHLY VISUAL WORLD

The moderating effect of the Highly Sensitive Person (HSP)  
trait on the attitude towards the ad

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# **AN OVERSTIMULATED CONSUMER IN A HIGHLY VISUAL WORLD**

The moderating effect of the Highly Sensitive Person (HSP)  
trait on the attitude towards the ad

A Thesis presented as part of the requirements for the award of a master's degree in marketing management from IPAM, with the guidance and supervision of Professor Luisa M. Martinez and Professor Filipe R. Ramos.

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“Tudo é ousado para quem nada se atreve”

-Fernando Pessoa

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## **ABSTRACT**

In the digital world, consumers are constantly being exposed to an overwhelming number of visual stimuli. Online advertisements are the big new showroom for brands – all are striving for attention and attracting the right customer. Generally, advertisements combine colored imagery and strong movements to encourage and capture the consumer’s attention, but is this always the right strategy? Literature shows that people could react differently to similar stimuli, depending on their personality traits – specifically, the visual stimuli embedded in online ads are not an exception. Thus, brands could eventually repel (rather than entice) potential customers by using various colors, high dynamism, and information overload. This research aims to assess how people with a higher sensitivity to external stimuli, commonly defined as Highly Sensitive Persons (HSPs, Aron & Aron, 1997) react when exposed to ads with excessive visual stimuli (i.e., colors, dynamic imagery, complex layouts). Additionally, the HSP trait will be tested as a moderator in the relationship between visual stimuli and attitude towards the ad. A quantitative methodology will be used, involving an experimental design. Theoretical and managerial implications are discussed. We seek to shed some light on the literature through the study of this innovative topic that merges the HSP trait and consumer behavior.

**Keywords.** Online advertising; Highly Sensitive Person (HSP); Visual stimuli; Attitude towards the ad.



## RESUMO

Numa era digital, os consumidores estão constantemente expostos a um exorbitante número de estímulos visuais. Os anúncios online são a grande aposta para expansão das marcas – existe um esforço cada vez maior por captar a atenção e atrair o cliente certo. Geralmente, os anúncios agregam cores e movimentos fortes para despertar a atenção do consumidor, mas será essa sempre a estratégia certa a seguir? A literatura demonstra que as pessoas podem reagir de forma diferente a estímulos semelhantes, dependendo de seus traços de personalidade – e, os estímulos visuais incorporados em anúncios online, não são uma exceção. Assim, as marcas podem estar a afastar (em vez de seduzir) potenciais clientes usando uma grande combinação de cores, alto dinamismo e sobrecarga de informações. Esta pesquisa tem como objetivo avaliar como as pessoas com maior sensibilidade a estímulos externos, comumente definidas como Pessoas Altamente Sensíveis (PAS, Aron & Aron, 1997) reagem quando expostas a anúncios com estímulos visuais excessivos (ou seja, cores, imagens dinâmicas, layouts complexos). Adicionalmente, o traço PAS será testado como moderador na relação entre estímulos visuais dos anúncios e a atitude perante o anúncio. Será utilizada uma metodologia quantitativa, envolvendo um design experimental. As implicações teóricas e práticas serão discutidas. Pretende-se agregar novos conhecimentos à literatura através do estudo deste tema inovador que cruza o traço HSP e o comportamento do consumidor.

**Palavras-Chave.** Anúncios Online; Pessoa Altamente Sensível (PAS); Estímulos Visuais; Atitude perante o anúncio.

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## **ABBREVIATIONS**

HS- Highly Sensitive

HSP- Highly Sensitive Person

HSPS- Highly Sensitive Person Scale

NHS- Not Highly Sensitive

SOR- Stimulus Organism Response

SPS- Sensory Processing Sensitivity

## 1. INTRODUCTION

Aron and Aron (1997) believe that a highly sensitive person (HSP) has an increased sensitivity of the central nervous system to physical, emotional, and environmental stimuli. This trait is characterized by sensory processing sensitivity (SPS), which translates into heightened emotional sensitivity, deeper reactivity to external and internal stimuli, and a complex inner self (Aron et al., 2012). It is believed that HSPs are more prone to being overwhelmed and can easily become uncomfortable with different lights, colors, sounds, or certain bodily sensations. These terms were first explored by psychologists Elaine Aron and Arthur Aron in the 1990s. Since then, research has grown, and more people are perceiving themselves as HSP.

Although research on people with high sensitivity has increased significantly, to the best of our knowledge, their behavior as consumers responding to various types of advertising remains unknown. Image-based social platforms have gained recognition in recent years, collecting information based on visual stimuli (Choi & Sung, 2018). The assumption that at least 20% of the population is highly sensitive (Aron & Aron, 1997) implies great relevance for this research. Therefore, this study aims to understand if the degree of sensitivity of the respondents has a moderating effect on the attitude towards advertisements. The HSP scale (Aron & Aron, 1997) will be applied to assess the participants' profiles, and three categories of visual stimuli will be settled, as independent variables: color (chromatic vs. achromatic), dynamism (dynamic vs. static), and layout (complex vs. minimalist). The visual stimuli will be digitally manipulated through fictitious advertisements. The attitude towards the ad will be evaluated through the scale developed by Cho (1999).

## **2. LITERATURE REVIEW**

### **2.1. Consumer behavior and sensory marketing**

Consumers are more sophisticated, more complicated, and more demanding than ever. Therefore, marketing has gained more responsibility in identifying what the consumer needs and wants (Štefko & Steffek, 2018). Online channels bring novelty, accessibility, and, more importantly, easiness to consumers when it comes to assessing products and prices in the comfort of their homes without crowds or check-out lines. Consumer behavior is influenced by psychological, social, economic, and technological attributes, and it may determine what drives consumers when making their purchasing decisions (Ungerma et al., 2018).

Sensory marketing can be described as a multidimensional conversation between brands and customers. It is based on sensations and perceptions that influence consumer buying behavior and their attitude towards brands, advertisements, and products (Krishna, 2012). Sensory marketing directly influences the consumer's senses by using experiential techniques that evoke new emotions and sensations in the consumer. It can include sensory, emotional, rational, and relational experiences that influence consumer behavior. Consequently, sensory experiences involve all five senses: sight, hearing, smell, touch, and taste. Despite the advantages that the digital world brings, it poses certain barriers regarding sensory stimulation, since the main stimuli provided online are visual (Biswas et al., 2019; Krishna et al., 2016). Consequently, social media platforms with rich audio and visual experiences are expanding exponentially. The combination of auditory and visual stimuli is particularly effective in influencing a product's focus and visual processing (Lowe & Haws, 2017). Sensory marketing seeks to strengthen the relationship between brands and consumers using sensory strategies (Krishna, 2012) that influence the buying process. Using sensory cues increases consumer interest, the impetus for purchasing behavior, and may even suppress rational thinking in consumers with dominant emotional responses (Lindstrom, 2005). Ads that effectively appeal to

consumers' senses hold promise, as all five human senses (sight, hearing, touch, smell, and taste) are potentially important in product evaluation (Schifferstein, 2006). Rajaobelina et al. (2019) found that all dimensions of experiential advertising positively impact advertisement credibility and, sensory advertisements exert the greatest impact when compared to rational advertisements. It is expected that online environments will likely evolve and engage more with the consumer's emotional perceptions (Petit et al., 2019).

Neuromarketing has become an area of interest, as an effective tool for identifying the unspoken response of consumers to the marketing stimuli and plays an important role in the theoretical development of consumer decision-making (Spence, 2019). Neuromarketing is a field of marketing that combines perspectives of marketing, neuroscience, economics, decision theory, and psychology (Smidts et al., 2014). Neuromarketing uses non-invasive brain imaging technology to directly measure the response of a customer's brain to the marketing stimuli, superseding the traditional survey methods. It can effectively reveal the underlying reasons for consumer behaviour and predict consumers' decision-making processes (Morin, 2011; Nilashi et al., 2020; Vecchiato, 2011).

## **2.2. Attitude towards the ad**

Attitude towards advertising is characterized as the predisposition to respond positively or negatively to a particular advertising stimulus during a particular experience (MacKenzie & Lutz, 1989). Consumers' thoughts and feelings influence their attitudes towards advertising, and this attitude has emerged as one of the most critical predictors of advertising efficacy (Mehta, 2000). The impact on consumer attitudes may be related to the advertisement or brand being promoted (Baack et al., 2015; Shaouf et al., 2016). Attitude can be defined as a set of motivational, emotional, perceptual, and cognitive processes related to some aspect of the environment that influence a favorable or unfavorable response to an object (Hawkins & Mothersbaugh, 2010). The behavior of an individual is not always determined by rationale but also by emotional aspects.



Sometimes even consumers believe that they don't consider advertising when evaluating a product, but the analysis of emotional traits shows the opposite (Raluca et. al, 2010).

Orquin and Loose (2013) point out that visual attention impairs the individual's perception of a visual stimulus while limiting and controlling it. Therefore, advertising is one of the key strategies that can be used to encourage positive changes in consumer attitudes. Attitude towards advertising is one way of assessing effectiveness as it is related to attitude towards a product/brand and thus indicative of purchase intent (Lutz et al., 1983). Lee et al. (2016) found that the level of information and entertainment influences positive attitudes towards advertising. These attitudes, in turn, positively influenced attitudes towards the brand and collectively impacted purchase intent. Attitudes can also be characterized as a common and constant evaluation of people, objects, advertisements, or problems (Solomon, 2004). Evaluating the attitude towards advertising is a fundamental concept of only one of the factors that determine attitude towards a particular advertisement (Lutz, 1985). There is a considerable relationship between informativeness, entertainment, reliability, and social media advertising value. This positive value affects consumers' attitudes toward social media advertising and their behavioral responses (Hamouda, 2018). Chakrabarty and Yelkur (2005) define attitudes toward advertising as consumers' propensity to respond positively or negatively to a particular message. The attitudes relate to both mobile advertising and the approach used for delivery (Chowdhury et al., 2006).

### **2.3. Tourism and travel ads**

As visual content has become more popular, modern philosophers have emphasized the aesthetics of tourism (Kirillova & Wassler, 2019). Unlike mass consumer goods with general appeal, the tourism aesthetic is unique in that it offers multisensory, engaging, and vivid experiences (Jóhannesson, 2018; Kirillova et al., 2014). Therefore, the tourism sector stands out since its premise is to offer an emotional journey (Gao & Kerstetter, 2018) by evoking feelings (Lund et al., 2018). However, while it is recognized that visual content is associated with aesthetic judgments and that the positive attitude

toward attractive destination imagery led to higher intention to visit that destination, the aesthetic aspect has been largely overlooked in the tourism literature (Al-Kwafi, 2015; Kirillova & Wassler, 2019; Scott et al., 2020). Tourists evaluate aesthetics based on color, complexity, and thus spatial characteristics associated with travel destinations (Hall et al., 2020). Among these, color is not the only relevant aspect of tourism aesthetics (Kirillova & Wassler, 2019), but also one of the underlying but profound factors related to emotional experiences (Poels & Dewitte, 2019). Despite being highly influential, perceived aesthetics include other multisensory properties besides vision (Kirillova et al., 2014).

#### **2.4. Stimulus-Organism-Response (SOR) and visual stimuli**

The Stimulus-Organism-Response (SOR) theory was originally developed by Pavlov (1902). Afterwards, SOR was further investigated by Mehrabian and Russell (1974), they suggested that environmental stimuli directly affect organisms, therefore influencing the behavioral response. Stimuli have been defined as the factors that cause response processes in the individual (Eroglu et al., 2001). A stimulus is a trigger that arouses consumers and can be external; for example, marketing stimuli, or internal, for example, consumer personality traits (Chan et al., 2017). Organism refers to consumers' emotional responses such as arousal, and the behavioral response indicates the consumers' reactions (Chan et al., 2017). Visual aesthetics are widely considered a key factor in achieving the intended effect of an ad (Shaouf et al., 2016). Vision is the prevailing sense in the digital world, being, also the most studied among researchers (Biswas et al., 2019; Krishna, 2012). When consumers search for and proceed to buy products, they are exposed to various specific stimuli related to brands, such as color shapes, product types, background design elements, slogans, mascots, and characters (Brakus et al., 2009). Animations are widely employed in marketing contexts (for instance in advertising (Bruce, Murthi, & Rao, 2017)).

#### 2.4.1. Dynamism

Product images are typically displayed in a static or dynamic format. Humans naturally prefer moving objects, as dynamics can lead to heart rate slowdowns and changes in brain activity (Sundar & Kalyanaraman, 2004). Although traditional elements of design and aesthetics such as scale, proportion, and negative space can influence consumer response to digital advertising, what makes digital media unique is its ability to incorporate dynamics as an aesthetic element of design (Mourey & Elder, 2019). Dynamic images are the conventional format used in advertisements as they can capture consumer attention leading to superior engagement rates and are therefore expected to progressively substitute static images (Cian et al., 2014). The same authors stated that animated images on a web page can stimulate higher levels of pleasure compared to static images, leading to an increase in consumer purchase intentions. Using video formats in advertising has proven to be a very effective tool to motivate consumers to make commercial transactions (Alijani et al., 2010).

However, animations are not positive in all scenarios: when used as backgrounds, it has been found that they can evoke negative attitudes towards advertising, and under high-animation conditions, subjects can experience negative thoughts and unpleasant feelings (Heo, 2000; Stevenson et al., 2000). Roggeveen et al. (2015) show how dynamics in the presentation format, by using a video representation instead of a static image representation, leads to greater imagination of an experience and greater participation, which in turn improves the preference for hedonic products. Expressive imagery (audio-visual format) receives a higher engagement and dynamism can impact consumers' emotions and their digital attitudes (Kusumasondjaja, 2020; Murtarelli et al., 2022). Also in tourism ads, more interactive imagery leads to a higher recall and engagement from consumers (Muñoz-Leiva et al., 2018; Yousaf et al., 2021). Therefore, we formulate the following hypothesis:

*H1a: Dynamic (vs. static) layout significantly affects the attitude towards the ad.*

#### 2.4.2. Layout complexity

Advertising layout refers to the composition of images and text and it may affect consumers' attention, attitudes toward the advertisement, and purchase intentions (Pileliene & Grigaliunaite, 2016). Visual complexity is principally represented by the number of elements, organization, and diversity of colors. A higher visual complexity results in a greater degree of chaos (Oliva et al., 2004). Thus, the lower the complexity level of advertising layout, the shorter the processing time it requires. The brand presented with the lowest complexity level layout is recalled better and presents a greater chance to produce positive attitudes that affect purchase intention (Pilelienė & Grigaliūnaitė, 2016). Regarding food advertising, a higher level of visual complexity generates more pleasure and arousal than less complex advertising (Kusumasondjaja & Tjiptono, 2019). Jang et al. (2018) found that visual complexity was appreciated by high sensation seekers. Thus, we propose the following hypothesis:

*H1b: Complex (vs. minimalist) layout significantly affects the attitude towards the ad.*

#### 2.4.3. Colours

Ettis (2017) recognized that about 80% of the stimuli we take in are visual, most of which are color-based. Similarly, Elliot and Maier (2007) claim that all human-processed visual stimuli contain color information. Colors are abundant in everyone's routine and can have a tremendous impact on consumer perception, engagement, behavior, and even feelings (Jonaskaite et al., 2016; Labrecque & Milne, 2012). Warm and cool variations of colors have also shown differences in how they affect emotions and behavior (Bagchi & Cheema, 2012; Crowley, 1993). The cool hue transmits calm, delight, and pleasure and allows for a lengthy observation. In contrast, warm hues induce enthusiasm and thoughtless decisions, being red is often used to highlight a call-to-action button (Bellizzi & Hite, 1992). Although the highest percentage of color research focuses on hues, the other two dimensions, saturation, and lightness, are also gaining attention (Hagtvedt,

2019). Saturated colors tend to be more exciting, and arousal has been implicated in the work of Buechel and Townshend (2018) as a mediating factor linking saturation to expected product taste. Colors can create different emotions by changing the level of saturation and brightness, the hue, and the color combinations, and, also, affect the consumers' attitude towards a product (Bai & Xue, 2021; Wiedmann, 2019). Hence, the following hypothesis is presented:

*H1c- Chromatic (vs. achromatic) significantly affects the attitude towards the ad.*

## **2.5. The highly sensitive person (HSP)**

Sensitivity is a complex concept. There are major differences between individuals and their responses to external stimuli (Belsky & Pluess, 2009). The Highly Sensitive Person (HSP) is characterized by increased awareness and noteworthiness to react to environmental stimuli, especially significant in social circumstances. Higher sensitivity is often mistaken for shyness, weakness, or, even, unsociability (Aron & Aron, 1997). This type of person has more intricate sensory processing with more prominent attention to detail (Aron & Aron, 1997).

Sensory Processing Sensitivity (SPS) is conceptualized as a personality trait and not a disorder (Aron et al., 2012). It is related to other traits such as irritability, introversion, and emotional negativity. All of these have demonstrated sensitivity to external stimuli. HSPs have a three-factor structure in-to involving excitation, low sensory threshold, and aesthetic sensitivity (Aron & Aron, 1997). Past research has concluded that HSPs are more sensitive and responsive to slight contrasts in colors, sounds, and textures (Acevedo et al., 2014; Aron, 1997). Aron et al. (2012) defined Sensory Processing Sensitivity (SPS) as a mechanism in which sensory information, such as visual experiences feelings, and loud noises, are retrieved and processed by the brain. HSPs have increased susceptibility to environmental stimuli that can lead to strong emotional manifestations; depth of sensory information cognitive processing; sensitivity to subtle details, and predisposition to overstimulation.

People with high sensitivity take a lot, if not all, of the subtlety others, miss, what seems ordinary for the majority like strong lights and colors and loud music can be hyper-stimulating and even overwhelming to HSPs (Aron & Aron, 1997). Therefore, highly sensitive individuals tend to respond to a lower threshold of stimuli, being easily frustrated by the overwhelming number of external stimuli they must embrace in their quotidian. Therefore, the degree of arousal in the same situation, with the same amount of stimulation, differs considerably between HSPs, and non-HSPs (Aron & Aron, 1997). Thus, when confronted with the same ad, consumers could react differently accordingly to their level of sensitivity – this response could easily lead to sensory overload for HSPs (Krishna, 2012).

*H2: Attitude towards the ad is moderated by the level of HSP trait (Highly Sensitive vs Not Highly Sensitive).*

## 2.6. Theoretical model

All consumer’s experiences are based on the integration of sensory inputs, such as marketing stimuli, that affect later responses and behavior (Krishna, 2012). As HSPs are more predisposed to overstimulation when compared to what is considered normal in terms of sensory processes, we expect that HSPs would become overstimulated when exposed to specific visual stimuli (dynamic vs. static, complex vs minimalist layout, and chromatic vs. achromatic,). Thus, considering the literature reviewed in the last chapter the following theoretical model was elaborated:

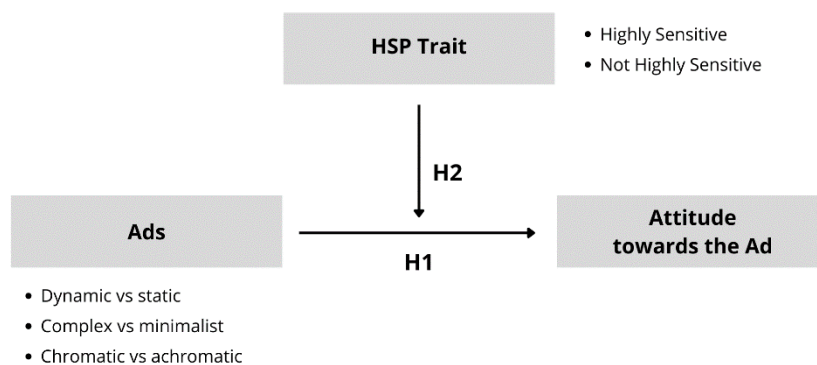


Image 1- Theoretical Model

### 3. METHODOLOGY

#### 3.1. Procedure and sample

To contribute and further provide new information about HSPs and their response to the components of visual stimuli in online ads, the present study was conducted following an experimental design approach. It follows an experimental method, where 3 conditions are considered as independent variables. The 3 experimental groups answer the same questions, but in each form were portrayed a different group of independent variables (dynamic vs. static; complex vs. minimalist; chromatic vs. achromatic). The questionnaire was elaborated on the platform Type Form and included an informed consent formulary. It was shared through social media platforms to share and obtain a higher number of responses, from April to May.

The sample consisted in 149 participants, divided as follows: 48 for dynamic vs. static layout; 52 for the complex vs. minimalist layout; and 49 for chromatic vs. achromatic. The respondents were all Portuguese, and the majority were females with a percentage of 63.09%, the males represented 36.24% of the sample and, "other" represented 0.67%. The centre of Portugal stands out as the region that assembled the most responses. In concern to the age gap a total of 45% had between 18 and 25 years old, followed by the 56 to 65 range with 20,1% (table 1).

Table 1- Demographic Percentages

<i>Variables</i>	<i>Percentage</i>
<b>Gender</b>	
Masculine	36.2
Feminine	63.1
Other	0.7
<b>Age Gap</b>	
18-25 years old	45.0
26-35 years old	18.1
36-45 years old	5.4
46-55 years old	11.4

56-65 years old 20.1

**Region**

North	0
Centre	86.6
Lisboa e Vale do Tejo	9.4
Alentejo	2.0
Algarve	2.0

**3.1.1. Stimulus and Measure**

The questionnaire was divided into 8 blocks, as follows:

Block 1 – Introduction, a brief explanation of the questionnaire, and some guidelines about the ideal environment to answer and better contribute to this study.

Block 2- First Independent Variable and First Dependent Variable, in the first ad was portrayed the image with the attribute in evaluation, meaning that the first ad corresponded to the dynamic, complex, or chromatic (image 2) depending on the questionnaire chosen by the respondent. The visual stimuli were created in Photoshop with three different scenarios, wild nature, beach, and cityscape.



Image 2- First set of ads (dynamic, complex and chromatic)

The ad was followed by a five-point Likert scale developed by Cho (1999), to assess if the attitude towards the ad visualized before was more positive or negative. This scale measures 8 different variables in the form of agreement with different sentences, 1 being “Totally Disagree” and 5 being “Totally Agree”, as demonstrated in the table below.



Table 2- Attitude Towards the Ad Scale (Cho, 1999)

<b>Attitude Scale- Item</b>	<b>Citation</b>
1. This ad is irritating.	Cho (1999)
2. I like this ad.	
3. This ad has good visual effects.	
4. This ad is eye-catching.	
5. This ad is annoying.	
6. This ad is informative.	
7. This ad draws my attention.	
8. I would enjoy seeing this ad again.	

Block 3 – Second Independent Variable and Second Dependent Variable, succeeding block 2 the second ad, without the attribute, corresponding to the static, minimalist and, achromatic (image 3) was presented followed by the same 5-point Likert scale, by Cho (1999) showcased in the table above (table 2).



Image 3- Second set of ads (static, minimalist and achromatic)

Block 4- Attention Check, a brief question about the context of the ads demonstrated previously to evaluate the attention of the respondent.

Block 5- Moderator Variable, the sensitivity of the respondent was assumed by this study as a moderator of the relation between the contrasting ads and the attitude towards them. Thus, to assess the degree of sensitivity, it was used the HSPs scale elaborated by Aron and Aron (1997). This scale has 27 questions that were rephrased into sentences to facilitate the reading of the respondent, using a 7-point Likert scale, 1 being “Totally Disagree” and 7 being “Totally Agree”, demonstrated in the table below.

Table 3- Highly Sensitive Person Scale (Aron & Aron, 1997)

<i>Highly Sensitive Person Scale- Item</i>	<i>Citation</i>
1. I'm easily overwhelmed by strong sensory input.	Aron &
2. I seem to be aware of subtleties in your environment.	Aron (1997)
3. Other people's moods affect me.	
4. I tend to be more sensitive to pain.	
5. I find myself needing to withdraw during busy days, into bed, or into a darkened room or any place where I can have some privacy and relief from stimulation.	
6. I'm particularly sensitive to the effects of caffeine.	
7. I'm easily overwhelmed by things like bright lights, strong smells, coarse fabrics, or sirens close by.	
8. I have a rich, complex inner life.	
9. I'm made uncomfortable by loud noises.	
10. I'm deeply moved by the arts or music.	
11. My nervous system sometimes feels so frazzled that I just have to go off by myself.	
12. I'm conscientious.	
13. I startle easily.	
14. I get rattled when I have a lot to do in a short amount of time.	
15. When people are uncomfortable in a physical environment, I tend to know what needs to be done to make it more comfortable (like changing the lighting or the seating).	
16. I'm annoyed when people try to get you to do too many things at once.	
17. I try hard to avoid making mistakes or forgetting things.	
18. I make a point to avoid violent movies and TV shows.	
19. I become unpleasantly aroused when a lot is going on around me.	
20. Being very hungry create a strong reaction in me, disrupting my concentration or mood.	
21. Changes in my life shake me up.	
22. I notice and enjoy delicate or fine scents, tastes, sounds, and works of art.	
23. I find it unpleasant to have a lot going on at once.	
24. I make it a high priority to arrange my life to avoid upsetting or overwhelming situations.	
25. I'm bothered by intense stimuli, like loud noises or chaotic scenes.	
26. When I must compete or be observed while performing a task, I become so nervous or shaky that I do much worse than I would otherwise.	
27. When I was a child, my parents or teachers seem to see me as sensitive or shy.	

Block 6- Manipulation Check and Attention Check, composed of a question to verify the realism of the set of ads with a 7-point Likert scale, 1 being “Not Realist at all”

and 7 being “Extremely Realist”, and a question to verify again the attention of the respondent with the identification of the contrast applied in the ads, meaning, if the ads displayed before had a contrast of chromatic vs achromatic, complex vs minimalist, or, dynamic vs static.

Block 7- Tranquillity, a question based on a 7-point Likert scale to access how tranquil the location was, as it could influence the sensory input and consequently the veracity of the answers.

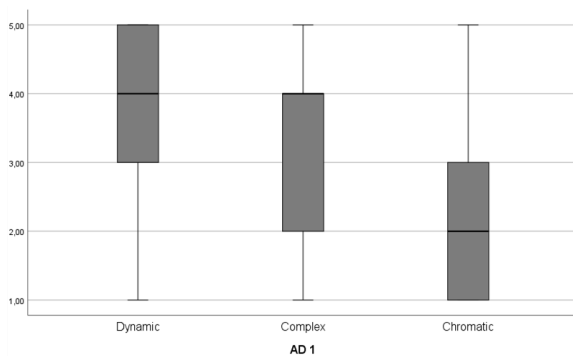
Block 8- Demographic Data, a set of questions to better characterize the sample, composed by age gap, gender, and region.

To analyze the data Microsoft Excel was initially used for the treatment and coding of all the variables to facilitate the input of the data into SPSS.

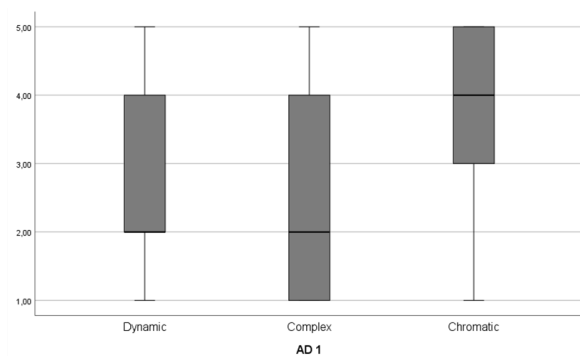
## 4. RESULTS

### 4.1. Attitude towards the ad

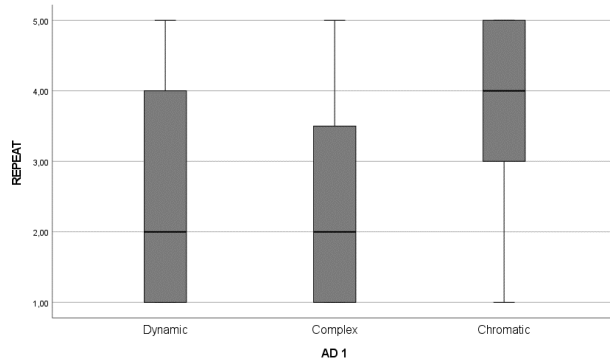
The attitude towards the ad was evaluated, as mentioned in the chapter above, using a 5-point Likert Scale with 8 different items. Preceding the inferential study, to analyze our research hypotheses, a descriptive analysis of some data considered relevant was made to frame the results. Considering the first set of ads, featuring the attribute (dynamic, complex, and chromatic), the attitude varies according to the item in question. The chromatic ad had the most positive attitude compared to the dynamic and complex, getting the highest scores in all positive items, “I like this ad”, “This ad has good visual effects”, “This ad is eye-catching”, “and This ad is informative”, “This ad draws my attention” and, “I would enjoy seeing this ad again” and the lowest scores in the negative items “This ad is irritating” and, “This ad is annoying”. The dynamic ad was considered the most annoying and the complex ad had the lowest score when it comes to likeability, both had low scores on the will of the respondents to see them again (graphics 1, 2, and 3).



Graphic 1- “This ad is irritating”

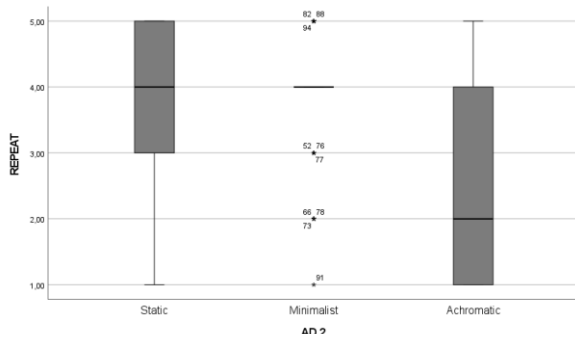


Graphic 2- “I like this ad”

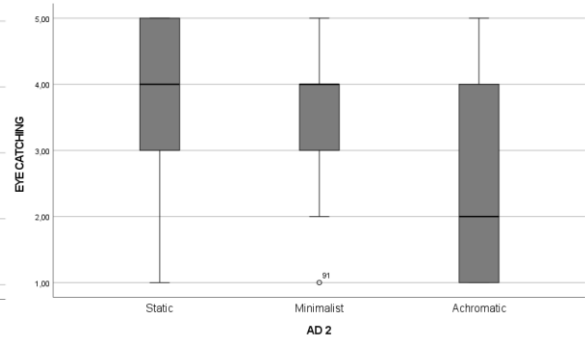


**Graphic 3- "I would enjoy seeing this ad again"**

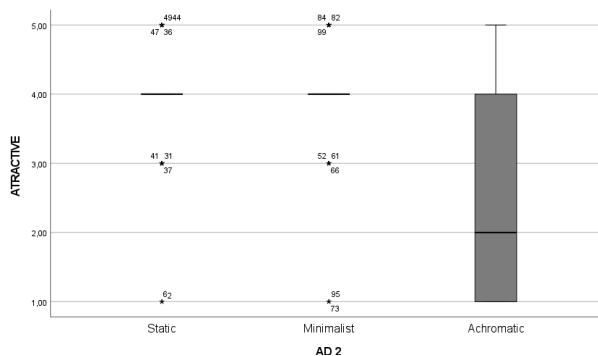
In regard to the second set of ads (static, minimalist, and achromatic), the achromatic brings the least consensus on the items "I would enjoy seeing this again", "This ad is attractive" and, "This ad is eye-catching", having the values very dispersed, in opposition in the static and minimalist ad the values in the first 2 items were all concentrated on the value 4, having some extreme outliers signalled with an asterisk\* as seen in the group of graphics below (graphic 4, 5 and 6)



**Graphic 4- "I would enjoy seeing this ad again"**



**Graphic 5- "This ad is eye catching"**



**Graphic 6- "This ad is attractive"**

Considering the theoretical model and the formulated hypotheses an independent Sample T-Test was conducted. Before the implementation of the T-test, guaranteeing the requirement regarding normality (by the size of the subsamples, >30), the Levene test was applied to test the equality of variances in the subpopulations (null hypothesis). To calculate the mean of the attitude towards each set of ads the negative items (“This ad is irritating.” and, “This ad is annoying”) were reversed.

#### 4.1.1. Dynamic vs. Static

Starting with the Dynamic vs. Static ad, the T-Test was applied. Observing the Levene test (table 4) the *p-value* is inferior to 0.05 ( $p < 0.001$ ), so it can be concluded that equal variances are not assumed, and H0 is rejected.

Table 4- Levene Test, Dynamic vs Static

	Z	SIG
LEVENE TEST	27,307	0,001

With reference to the values of the T-Test table seen below (table 4), the p-value is inferior to 0.001 which means that, for a level of significance of 5%, there is statistically significant evidence that the relative means of the attitude toward the dynamic ad vs the attitude towards the static ad are not equal. Results show that the average attitude towards static ads ( $M=3.2202$ ) is more positive than the attitude towards dynamic ads ( $M=2.6408$ ),  $t(71.939)=- 3.444$  and Cohen’s D= 0.833 (table 5).

Table 5- T-Test, Dynamic vs. Static

T-TEST				
	T	DF	SIG	MD
EQUAL VARIANCES NOT ASSUMED	-3.444	71.939	<0.001	-0.57939

#### 4.1.2. Complex vs. Minimalist

Also, when applied to this attribute, the *p-value*, on the Levene Test is inferior to 0.05 ( $p < 0.001$ ) so, as described before, it can be concluded that the H0 is rejected, and the equal variances are not assumed (Table 6).

Table 6-Levene Test, Complex vs Minimalist

	Z	SIG
LEVENE TEST	61.016	<0.001

Since the *p-value*, on the T-teste table (table 6) is inferior to 0,05 ( $p < 0.001$ ) it can be considered that, for a level of significance of 5%, there is statistically significant evidence that the relative means of the attitude towards the complex ad vs the attitude towards the minimalist ad are not equal, being that the average attitude towards the complex ad ( $M=2.7129$ ) is more negative than the average attitude towards the minimalist ad ( $M=3.2473$ ),  $t(67.318)=-3.383$  and Cohen’s  $D= 0.798$  (table 7).

Table 7- T-Test, Complex vs Minimalist

	T-TEST			
	T	DF	SIG	MD
EQUAL VARIANCES NOT ASSUMED	-3.383	67.318	<0.001	-0.53431

#### 4.1.3. Chromatic vs. Achromatic

Observing the Levene Test (table 8), the *p-value* is inferior to 0.05 ( $p < 0.001$ ) thus the H0 is rejected, and the variances are assumed as not equal.

Table 8-Levene Test, Chromativ vs. Achromatic

	Z	SIG
LEVENE TEST	12.486	<0.001

As the *p-value* presented on the T-Test is inferior to 0,05 ( $p < 0.001$ ), it can be considered that, for a level of significance of 5%, there is statistically significant evidence that the relative means of the attitude towards the chromatic ad vs the attitude towards the achromatic ad are not equal, and in this case, the attitude towards the chromatic ad ( $M = 3.8467$ ) is more positive than the attitude towards the achromatic ad ( $M = 2.5841$ ),  $t(80.462) = -7.607$  and Cohen’s  $D = 0.822$  (table 9).

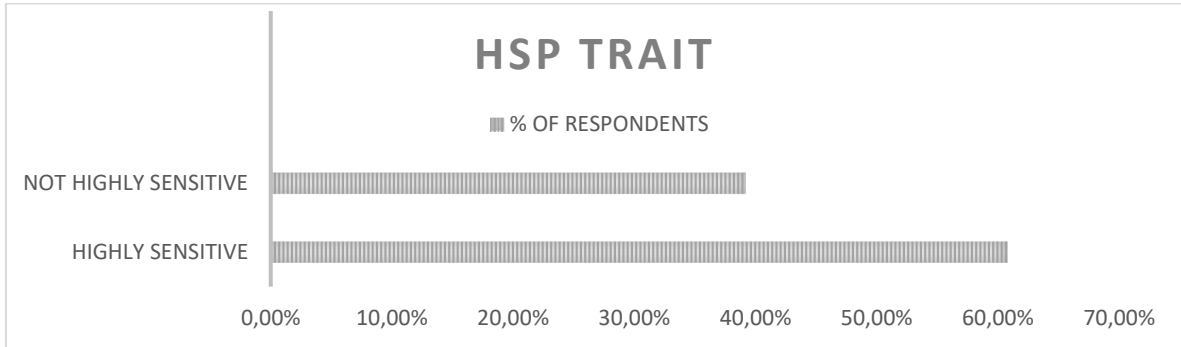
Table 9- T-Test, Chromatic vs Achromatic

T-TEST				
	T	DF	SIG	MD
EQUAL VARIANCES NOT ASSUMED	-7.607	80.462	<0.001	-1.26265

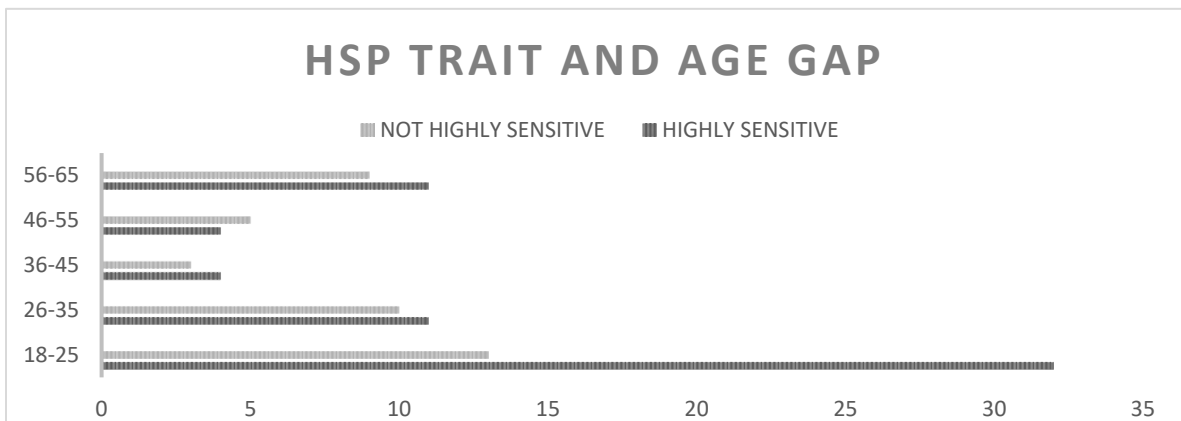
## 4.2. HSP trait

Regarding the degree of the HSP trait, the majority of the respondents, according to the Highly Sensitive Person Scale, were considered Highly Sensitive, meaning that the most frequent value of the responses was from 5 through 7 representing 60.8% (graphic 7). The Highly Sensitive were more prominent in the 18-25 age gap, representing most respondents in this group (Graphic 8).





Graphic 7- HSP trait



Graphic 8- HSP trait and Age Gap

The HSP trait was considered as the moderator between the contrasting ads and the attitude towards them. To assess if this moderation was existent and valid it was run a hierarchical multiple regression. The regression had two models, to determine the increase in variation explained by the addition of an interaction term between the contrasting Ads (variable AD) and the HSP trait level (Variable HS) to the main effects model. Therefore, Model 1 contained the dependent variable (Attitude), the independent (AD) and dummy variable (HS), and Model 2 which included the same variables as Model 1 plus the interaction term added to the model (AD\*HS).

Table 10- Regression Model Results

Model 2	R square	R Square Change	Df 1	Df 2	F change	F change Sig.
Dynamic vs Static	0.414	0.188	1	94	30.209	<0.001
Complex vs Minimalist	0.502	0.218	1	98	42.840	<0.001
Chromatic vs Achromatic	0.434	0.050	1	94	8.323	0.005

Analyzing the “Dynamic vs Static” line, in the table above, we can observe that the value of “R-squared change” shows a 18.8% increase in variation, which is explained by the addition of the interaction term. We can also perceive that this increase is statistically significant ( $p < 0.001$ ), thus, the addition of the AD\*HS interaction term explains a significant portion of the additional variability. Hence, the results display evidenced by a statistically significant increase in total explained variation of 18.8%,  $F(1,94) = 30.209$ ,  $p < 0.001$ . The coefficient of the interaction term ( $B = -1.565$ ,  $t = -5.496$ ) was, also, statistically significant ( $p < 0.001$ ), indicating that the “HSP trait” moderates the relationship between “Attitude Towards Advertising” and “Dynamic vs. Static” adverts.

Apropos of the “Complex vs. Minimalist”, the results show an increase of 21.8% in the variation of the “R-squared change” with the addition of the interaction term (AD\*HS). The  $p$ -value  $< 0.001$  proves that this increase is statistically significant, and the addition of the interaction term improves the explanation of the model by a large proportion of 21.8%,  $F(1,98) = 42.840$ ,  $p < 0.001$ . The coefficient of the interaction term ( $B = -1.793$ ,  $t = -7.957$ ) was statistically significant ( $p < 0.001$ ) as well, suggesting that the “HSP trait” moderates the relationship between “Attitude Towards Advertising” and “Complex vs. Minimalist” ads.

Considering the chromatic vs. achromatic ads, the "*R Square Change*", shows an increase in variation of 5% explained by the addition of the interaction term. We can also observe that this increase is statistically significant ( $p=0.005$ ) thus, the AD\*HS interaction term explains a small but significant proportion of extra variability (i.e., 5%),  $F(1.94)=8.323$ ,  $p=0.005$ . With a 5% significance level (as  $p\text{-value}=0.005<0.05$ ), the coefficient of the interaction term ( $B=0.892$ ,  $t=2.885$ ) was statistically significant indicating that "HSP trait" moderates the relationship between "Attitude Towards the Ad" and "Chromatic vs. Achromatic Ad".

**Table 11- Coefficient, AD\*HS**

AD*HS	Coefficient		
	B	t	Sig.
Dynamic vs. Static	-1.565	-5.496	<0.001
Complex vs. Minimalist	-1.793	-7.957	<0.001
Chromatic vs. Achromatic	0.892	2.885	0.005

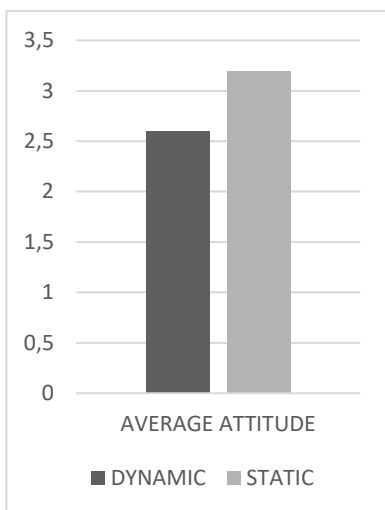
To summarize, in terms of the significance of the coefficient that measures the moderating effect of the variable "HSP trait", for the usual levels of significance (5%, and 10%) there is statistically significant evidence to considerate the inclusion of the interaction term in the model described above. It can now be concluded that in all three models the effect that the "Complementary Ads" have on the "Attitude" of the consumer is moderated by the variable "HSP trait".

### 4.3. Tranquillity and manipulation check

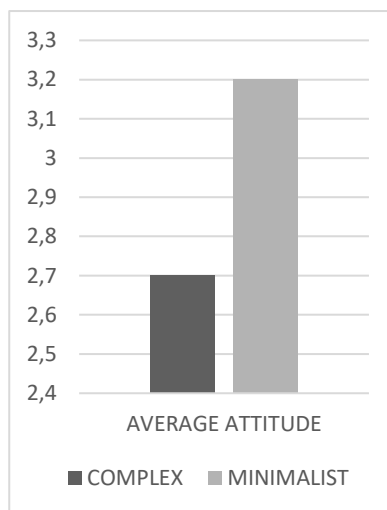
The tranquillity and the realism of the fictional ads were assessed resulting in 64.4% of the respondents considering the surrounding environment "Very Tranquil" giving it a score of 6 on a scale of 1 to 7, and 53.7% considering the adverts "Very Realistic", with also 6 being the most frequent answer.

#### 4.4. Validation of hypotheses

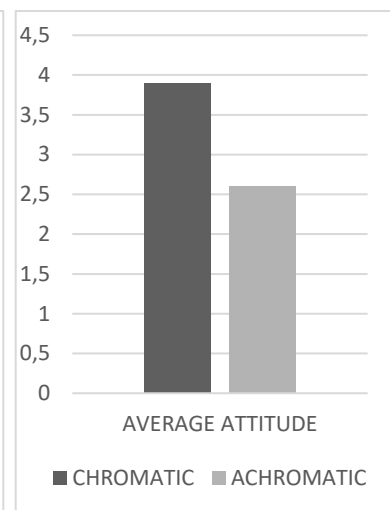
Considering the results was observed that there was a clear distinction between the respondents' attitudes towards the three different pairs of adverts, thus all the parameters in H1 (H1a, H1b, and, H1c) were confirmed by the statistical evidence, through the implementation of hypothesis tests (with the rejection of the equality of the subgroup averages, in all cases) and whose following graphic representations elucidate us about these same conclusions (graphics 9, 10, 11).



Graphic 9- Average attitude on dynamic vs static ads

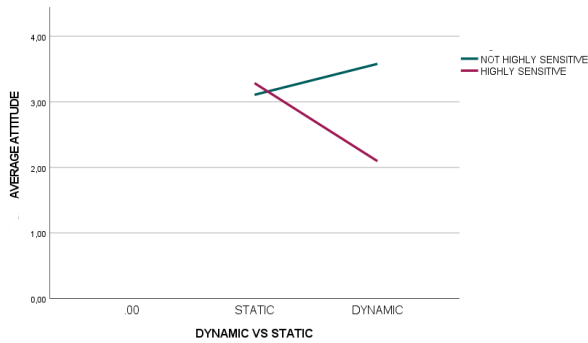


Graphic 10- Average attitude on complex vs minimalist ads

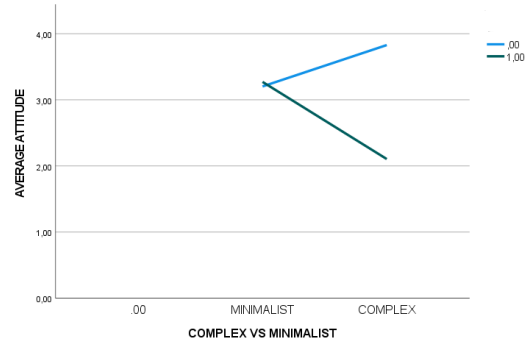


Graphic 11- Average attitude on chromatic vs achromatic ads

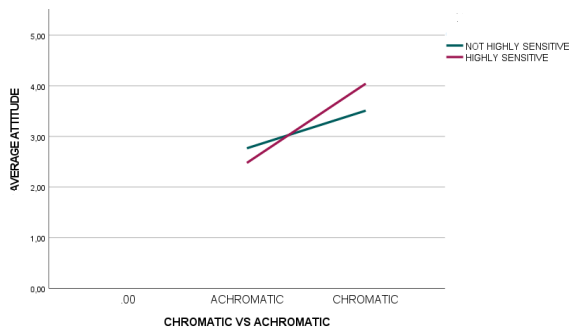
The moderating effect of the HSP trait was proved by the results of the regression model as it appears to have a statistically significant effect on the relation between the complementary ads and the attitude towards them. Thus, H2 was validated, and it's visible in the graphics below how the "Not highly sensitive" and the "Highly sensitive" differ when it comes to the attitudes towards the two ads (graphics 12, 13 and 14).



**Graphic 12- Interaction between HSP trait and the attitude towards the Dynamic vs Static**



**Graphic 13- Interaction between HSP trait and the attitude towards the Complex vs Minimalist**



**Graphic 14- Interaction between HSP trait and the attitude towards the Chromatic vs Achromatic**

## 5. DISCUSSION

In this research, we intended to assess how contrasting ads' characteristics (dynamism, layout complexity, and color) affected the attitude of the respondents. Furthermore, the HSP trait was considered as the moderator of this relationship which was demonstrated in the theoretical model presented in the first chapter. Concerning the variable "attitude", the static ad was considered the most attractive contrasting with the dynamic that was deemed as the most irritating. While some researchers believe that dynamic imagery is intrinsically more appealing to the human eye, and that in the online world it will replace static imagery (Cian et al., 2014), the statistical results demonstrate the opposite. This small sample of consumers, prefer and, ultimately, have a more positive attitude towards a static ad when it's directly compared with a fully dynamic one.

In the matter of layout complexity, it was expected that the advert with a higher degree of complexity had an average more negative attitude than a simpler and more minimalist ad. Oliva et al. (2004) stated that a higher degree of complexity leads to a higher degree of perceived chaos which can be detrimental to the consumer's attitude. This was confirmed by the results since the respondents evaluated the complex ad as the least attractive and with the worst visual effects. When comparing chromatic with achromatic imagery the preference for the presence of color was clear. Color is considered one of the most relevant and impactful visual stimuli, it can shift and sculp consumers' perspectives and attitudes, particularly when it comes to tourism aesthetics (Kirillova & Wassler, 2019). Since the ad was based on a beach setting it was expected for the consumers to have a more positive attitude towards the colored picture as it brings a sense of familiarity and pleasure. The chromatic ad had an overall higher average attitude and was considered one of the most attractive and likable.

Observing the moderating effect of the HSP trait, when comparing the dynamic vs. static ads, the Highly Sensitive respondents had a more prominent decrease in the average attitude towards the dynamic ad. What corresponds to the intrinsic characteristics of easy overstimulation and overall higher sensitivity to external stimuli

described by Aron and Aron (1997). Regarding the complex vs minimalist ad, a pronounced reduction it's also shown by the Highly Sensitive when considering the complex ad. Once more revealing how sensitivity can have an important role in conditioning the reaction and attitude towards an online advert. It's also important to highlight the small increase in the average attitude towards the complex ad by the Not Highly Sensitive.

Lastly, comparing the effects of the HSP trait on the average attitude towards the chromatic vs achromatic ads it is visible that the difference between Highly Sensitive and Not Highly Sensitive is much lower, which could mean that, even though the HSP trait has a statistically significant moderating effect on this relation, it has a lower impact on the attitude when compared with the above, and that ads with color (vs achromatic) create a more positive attitude in both ends of the HSP scale.

### **5.1. Theoretical and Practical Implications**

This study aimed to contribute to a better understanding of the highly sensitive person as a potential consumer. Considering, once more, is predicted by Aron and Aron (1997) that at least 20% of the population is highly sensitive or has a considerable degree of sensitivity, it becomes important to portray and study this specific type of consumer. As we live in a more digital and consequently more visually stimulating environment with online ads surfacing and scaling into new heights, it can be considered valuable to brands and companies to scale down and look through the new necessities of an overstimulated buyer. Through this study, it was found that, not only, different ad elements can have a substantial impact on the attitude of the consumer, but also that the spectrum of sensibility has a moderating effect on this attitude. Theoretically, this investigation opens an opportunity for new researchers to contribute to the knowledge of consumer behavior, and practically it can portray a fresh perspective for brands that, for some consumers, "less is more".

## 5.2. Limitations and Suggestions for future research

As an investigation this study has various limitations, starting with a small sample with only Portuguese respondents that are not similarly distributed between Highly Sensitive and Not Highly Sensitive. Moreover, the environment of the respondents should, ideally, be controlled to minimize exposure to other stimuli, which was not possible with the use of an online based questionnaire. Considering that the fictional ads used in this study were focused on the tourism field this same experimental method can be applied in other areas for further understanding and comparison between behaviors of the highly Sensitive consumer. Other variables of online ads as, color saturation or brightness, and even music or sound could be considered for new studies. The lack of information regarding the Highly Sensitive Person as a consumer brings a wide range of opportunities for new investigations.

Likewise, this research depended exclusively on the responses to an online questionnaire what implies a big limitation. To complement this study and have more accurate results, an experimental approach based on neuromarketing could be an important addition. This methodology would permit to capture consumers' cognitive responses to the stimuli and compare them to the responses of the online questionnaire. An EEG device like NeuroSky can be utilised, this allows researchers to measure brain waves like Beta, Theta, Alfa and Delta. Each of which represent different states of relaxation, imagination, engagement and learning respectively. The experiment would occur in a controlled environment with multiple volunteer respondents, the stimuli would be showed randomly in pairs (dynamic vs. static; complex vs. minimalist; and chromatic vs. achromatic) with a 10 second interval, and the results would be analysed taking into consideration the HSP score (Highly Sensitive or Not Highly Sensitive) of each participant. The data collected from the EEG would be compared with the responses given in the online questionnaire allowing a better understanding of the Highly Sensitive Person and their behaviour as consumers.



## 6. CONCLUSION

Consumer buying behavior research needs continuous information and studies that can shed some light on a consumer that is mutating at a higher rate than ever. This study aimed to contribute and aggregate knowledge about a specific personality trait, the HSP trait, that vastly changes the way the consumer lives and interprets internal and external stimuli. It can be concluded that the selection of the elements present in adverts is of extreme importance when it comes to the effect it has on the consumer attitude. Brands need to be aware of the needs and traits of their target audiences to achieve better outcomes.

The results show substantial statistical evidence that people with a higher sensitivity have a more positive attitude towards ads with less visual stimuli when compared to an overly stimulating ad, specific ads with a higher complexity or dynamism tend to be negatively portrayed by this type of consumer. The highly sensitive consumer has a more positive attitude towards static (vs dynamic), minimal (vs complex), and chromatic (vs achromatic) ads. This study opens new doors and opportunities for future research in the field of a Highly Sensitive Consumer living in an overly stimulant digital world.

### **Notes:**

This research work was presented at the 3rd Digital Marketing and eCommerce Conference, Universitat de Barcelona, Barcelona, Spain, June 29th-30<sup>th</sup> and posteriorly published in the book *Advances in Digital Marketing and eCommerce*. Subsequently, we received an invitation to submit an extended version to the *Scientific Journal of Electronic Commerce Research*.

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## **APPENDICES**

### **I- Questionnaire Links**

<https://zrn061gx5dg.typeform.com/to/T8FPqicM>

<https://zrn061gx5dg.typeform.com/to/y3lxx9BW>

<https://zrn061gx5dg.typeform.com/to/uglzCluA>

## Questionário

### Bloco 1- Introdução

Caro participante, este questionário foi elaborado com o intuito de obter um maior conhecimento sobre a sensibilidade a estímulos externos e como esta influência a sua atitude para com um anúncio. Os dados recolhidos serão apenas utilizados para o complemento da dissertação de mestrado em Gestão de Marketing.

Para a realização deste questionário é importante estar num espaço tranquilo.

O questionário tem uma duração aproximada de 5 minutos e é de cariz voluntário.

Agradeço desde já a sua participação!

Os dados serão recolhidos de forma anónima e serão usados exclusivamente para esta investigação. A sua identidade nunca será divulgada. A sua participação é totalmente voluntária. Tem a liberdade de participar, ou não, como voluntário(a) e está no seu direito se desejar abandonar o questionário, em qualquer altura.

Muito obrigado, desde já, pela sua participação.

Clique aqui para confirmar que leu as informações anteriores e que consente voluntariamente em participar deste estudo.

-----Novo Slide-----

### Bloco 2 a- Variável Independente

Irá visualizar um anúncio relativo a viagens, por favor observe-o com atenção:

- 1a (dinâmico) ou 2a (complexo) ou 3a (cromático)

-----Novo Slide-----

### Bloco 3a – Variável dependente (atitude perante o anúncio)

Considerando o anúncio que viu classifique as seguintes frases quanto à sua concordância: 1 (Discordo Totalmente) a 5 (Concordo Totalmente):

- Gostei deste anúncio
- Este anúncio é irritante.
- Gostava de ver este anúncio outra vez.
- Este anúncio tem bons efeitos visuais.
- Este anúncio é chato.

- Este anúncio capta a minha atenção.

- Este anúncio é informativo.

-----Novo Slide-----

#### **Bloco 2b- Variável Independente**

Irá visualizar um anúncio relativo a viagens, por favor observe-o com atenção:

- 1b (estático) ou 2b (minimalista) ou 3b (acromático)

-----Novo Slide-----

#### **Bloco 3b – Variável dependente (atitude perante o anúncio)**

Considerando o anúncio que viu classifique as seguintes frases quanto à sua concordância: 1 (Discordo Totalmente) a 5 (Concordo Totalmente):

- Gostei deste anúncio

- Este anúncio é irritante.

- Costava de ver este anúncio outra vez.

- Este anúncio tem bons efeitos visuais.

- Este anúncio é chato.

- Este anúncio capta a minha atenção.

- Este anúncio é informativo.

-----Novo Slide-----

#### **Bloco 4- Attention Check**

Por favor, indique qual o contexto dos anúncios que acabou de visualizar: (opções em ordem random)

- Viagens;

- Alimentação;

- Roupas e acessórios;

- Produtos Cosméticos;

-----Novo Slide-----

#### **Bloco 5 – Escala de HSP \***

Por favor, indique o seu grau de concordância, de 1 a 7, com as afirmações seguintes:

- 1-Discordo totalmente; 7-Concordo totalmente

-----Novo Slide-----

**Bloco 6- Manipulation & Attention Check**

**- Verificar o Realismo do anúncio**

Por favor, indique o quão realistas são os anúncios que acabou de visualizar:

Escala 1 (Nada realista) -7 (Extremamente realista)

-----Novo Slide-----

**- Identificação dos contrastes aplicados (random)**

Os anúncios que acabou de visualizar descrevem...

- Um contraste de acromático (sem cor) vs cromático (com cor);
- Um contraste de composição minimalista vs complexa;
- Um contraste de composição estática vs dinâmica;

-----Novo Slide-----

Quão tranquilo foi o local onde realizou o questionário?

1-7 ESCALA

-----Novo Slide-----

**Bloco 7 – Dados demográficos**

- Género

Masculino

Feminino

Outro

-----Novo Slide-----

- Idade

18-25 anos.

26-35 anos.

36-45 anos.

46-55 anos.

56-65 anos.

Mais de 65 anos.

-----Novo Slide-----

- Região

Norte.

Centro.

Lisboa e Vale do Tejo.

Alentejo.

Algarve.

Ilhas.

-----Novo Slide-----

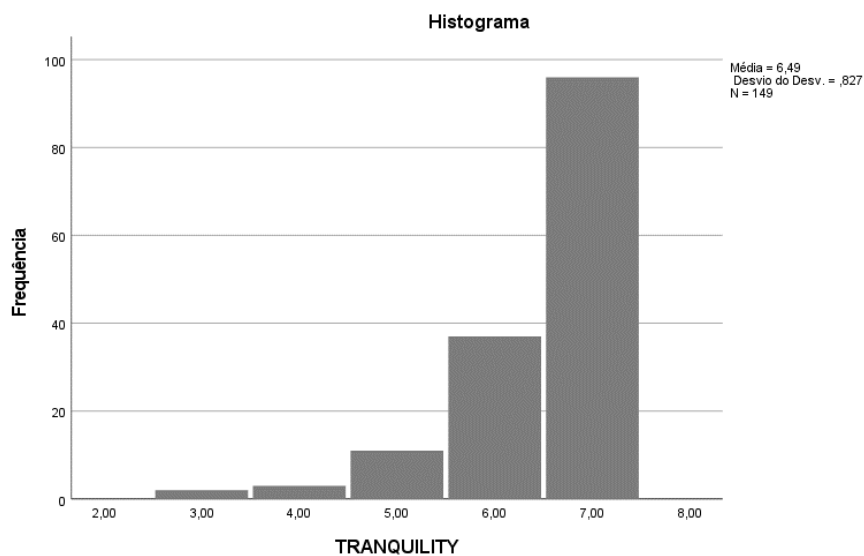
Obrigada pela participação e pelo seu tempo!

## II- Output SPSS

### - Sample

#### TRANQUILITY

	Frequency	Percentage	Percentage valid	Percentage accumulative
3,00	2	1,3	1,3	1,3
4,00	3	2,0	2,0	3,4
5,00	11	7,4	7,4	10,7
6,00	37	24,8	24,8	35,6
7,00	96	64,4	64,4	100,0
Total	149	100,0	100,0	

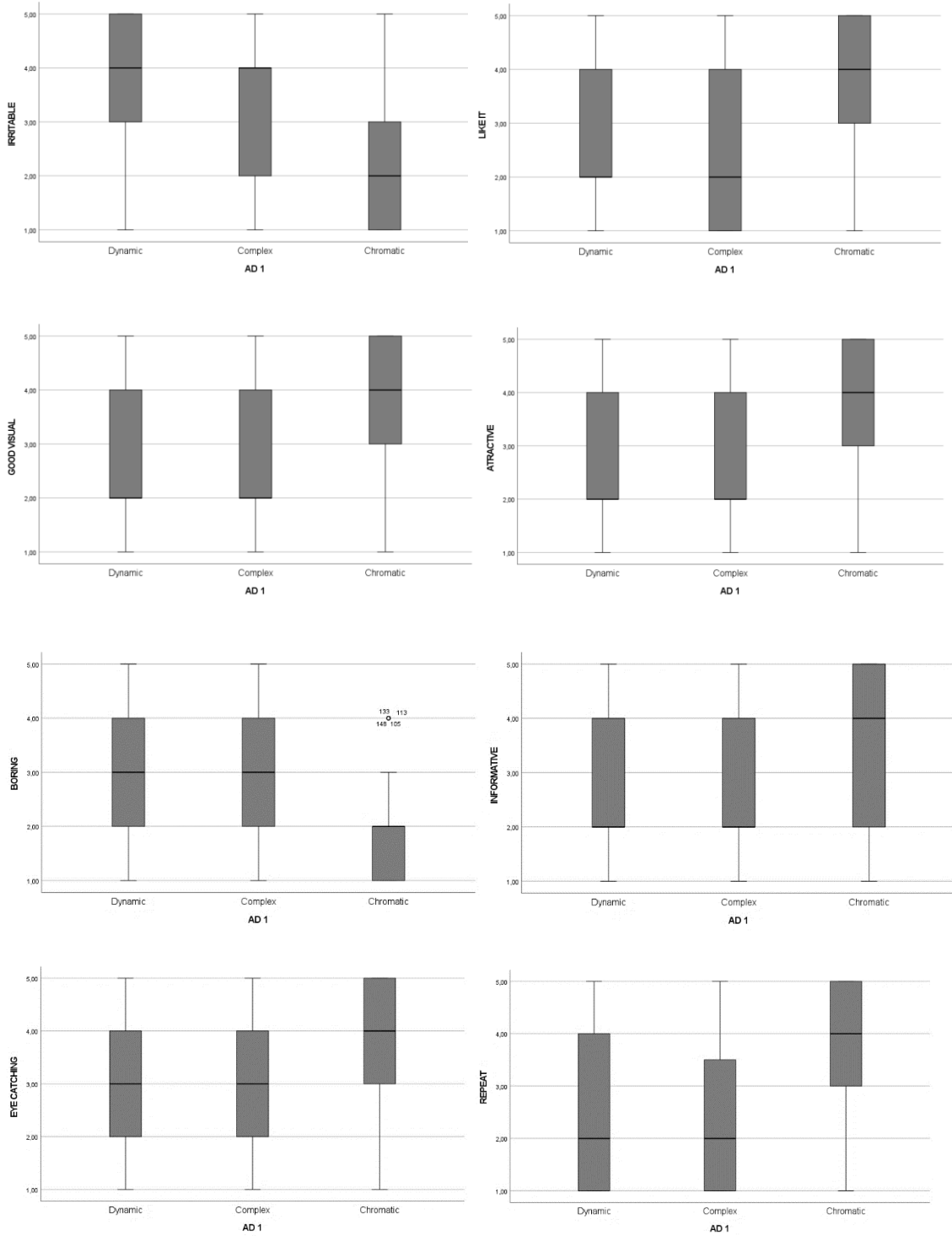


#### REALISM

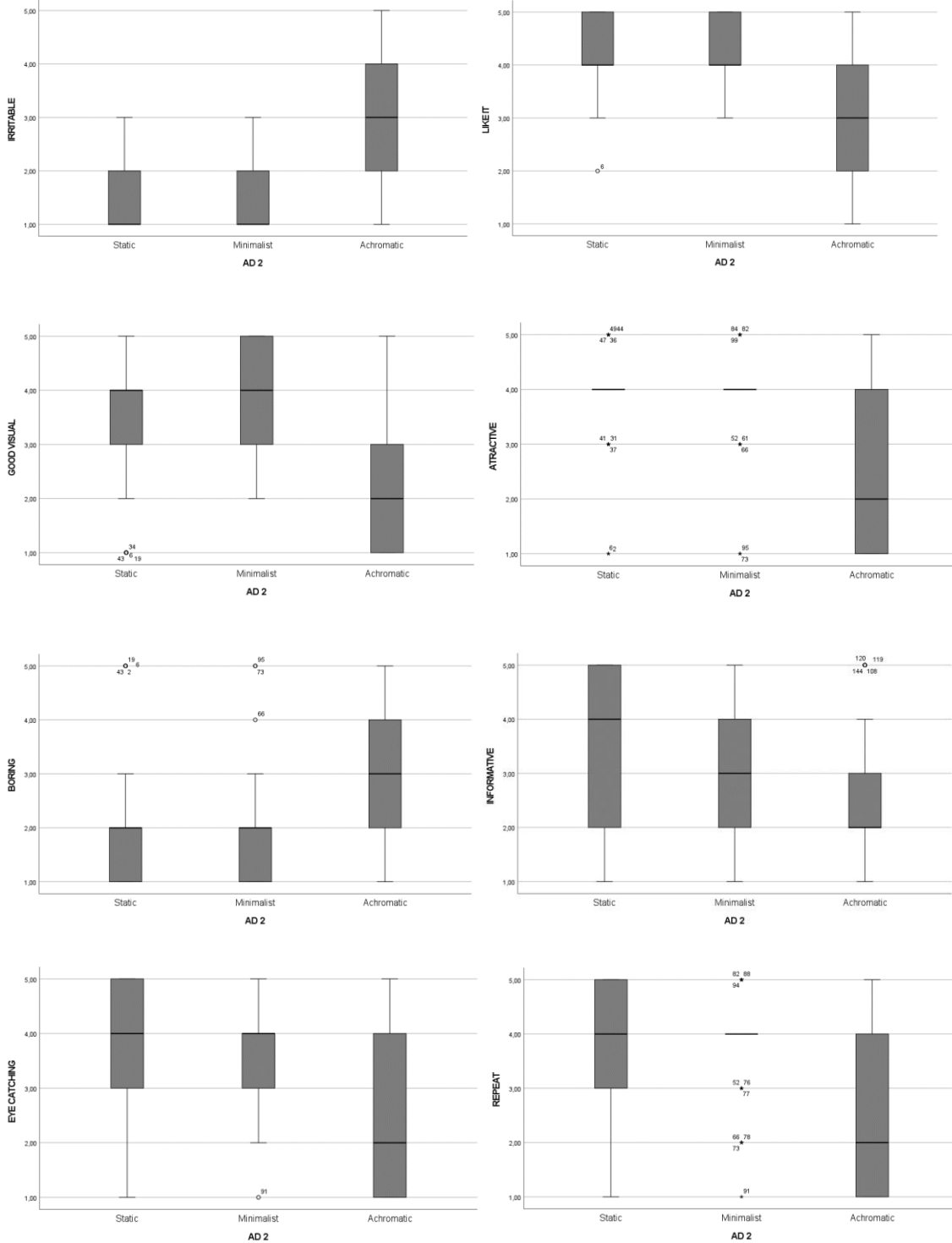
	Frequency	Percentage	Percentage valid	Percentage accumulative
Valid 3,00	11	7,4	7,4	7,4
4,00	15	10,1	10,1	17,4
5,00	23	15,4	15,4	32,9
6,00	80	53,7	53,7	86,6
7,00	20	13,4	13,4	100,0
Total	149	100,0	100,0	



- Attitude towards the Ad- 8 items (set 1)



- Attitude towards the Ad- 8 items (set 2)



- **T-Tests**

	<b>DYNAMIC VS STATIC</b>	<b>N</b>	<b>Média</b>
<b>AVERAGE ATTITUDE</b>	DYNAMIC	49	2,6408
	STATIC	49	3,2202

	<b>COMPLEX VS MINIMALIST</b>	<b>N</b>	<b>Média</b>
<b>AVERAGE ATTITUDE</b>	COMPLEX	51	2,7129
	MINIMALIST	51	3,2473

	<b>CHROMATIC VS ACHROMATIC</b>	<b>N</b>	<b>Média</b>
<b>AVERAGE ATTITUDE</b>	ACHROMATIC	49	2,5841
	CHROMATIC	49	3,8467

- **Regression Model- 1**

Resumo do modelo <sup>c</sup>										
Modelo	R	R quadrado	R quadrado ajustado	Erro padrão da estimativa	Mudança de R quadrado	Estatísticas de mudança			Sig. Mudança F	Durbin-Watson
						Mudança F	df1	df2		
1	,475 <sup>a</sup>	,226	,209	,78087	,226	13,836	2	95	<,001	
2	,643 <sup>b</sup>	,414	,395	,68291	,188	30,209	1	94	<,001	2,133

a. Preditores: (Constante), HIGHLY SENSITIVE, DYNAMIC VS STATIC  
b. Preditores: (Constante), HIGHLY SENSITIVE, DYNAMIC VS STATIC, ADxHS  
c. Variável Dependente: AVERAGE ATTITUDE

ANOVA <sup>a</sup>						
Modelo		Soma dos Quadrados	df	Quadrado Médio	Z	Sig.
1	Regressão	16,874	2	8,437	13,836	<,001 <sup>b</sup>
	Resíduo	57,928	95	,610		
	Total	74,801	97			
2	Regressão	30,963	3	10,321	22,130	<,001 <sup>c</sup>
	Resíduo	43,839	94	,466		
	Total	74,801	97			

- a. Variável Dependente: AVERAGE ATTITUDE  
b. Preditores: (Constante), HIGHLY SENSITIVE, DYNAMIC VS STATIC  
c. Preditores: (Constante), HIGHLY SENSITIVE, DYNAMIC VS STATIC, ADxHS

Coeficientes <sup>a</sup>								
Modelo		Coeficientes não padronizados		Coeficientes padronizados		Sig.	95,0% Intervalo de Confiança para B	
		B	Erro Erro	Beta	t		Limite inferior	Limite superior
1	(Constante)	3,608	,152		23,767	<,001	3,307	3,909
	DYNAMIC VS STATIC	-,592	,158	-,339	-3,751	<,001	-,905	-,279
	HIGHLY SENSITIVE	-,613	,163	-,340	-3,766	<,001	-,936	-,290
2	(Constante)	3,108	,161		19,307	<,001	2,788	3,427
	DYNAMIC VS STATIC	,382	,225	,219	1,702	,092	-,064	,828
	HIGHLY SENSITIVE	,178	,202	,099	,878	,382	-,224	,580
	ADxHS	-1,565	,285	-,825	-5,496	<,001	-2,130	-,999

- a. Variável Dependente: AVERAGE ATTITUDE

- **Regression Model-2**

Resumo do modelo <sup>c</sup>										
Modelo	R	R quadrado	R quadrado ajustado	Erro padrão da estimativa	Mudança de R quadrado	Estatísticas de mudança			Sig. Mudança F	Durbin-Watson
						Mudança F	df1	df2		
1	,475 <sup>a</sup>	,226	,209	,78087	,226	13,836	2	95	<,001	
2	,643 <sup>b</sup>	,414	,395	,68291	,188	30,209	1	94	<,001	2,133

a. Preditores: (Constante), HIGHLY SENSITIVE, DYNAMIC VS STATIC  
b. Preditores: (Constante), HIGHLY SENSITIVE, DYNAMIC VS STATIC, ADxHS  
c. Variável Dependente: AVERAGE ATTITUDE

ANOVA <sup>a</sup>						
Modelo		Soma dos Quadrados	df	Quadrado Médio	Z	Sig.
1	Regressão	16,874	2	8,437	13,836	<,001 <sup>b</sup>
	Resíduo	57,928	95	,610		
	Total	74,801	97			
2	Regressão	30,963	3	10,321	22,130	<,001 <sup>c</sup>
	Resíduo	43,839	94	,466		
	Total	74,801	97			

a. Variável Dependente: AVERAGE ATTITUDE  
b. Preditores: (Constante), HIGHLY SENSITIVE, DYNAMIC VS STATIC  
c. Preditores: (Constante), HIGHLY SENSITIVE, DYNAMIC VS STATIC, ADxHS

Coeficientes <sup>a</sup>								
Modelo		Coeficientes não padronizados		Coeficientes padronizados		Sig.	95,0% Intervalo de Confiança para B	
		B	Erro Erro	Beta	t		Limite inferior	Limite superior
1	(Constante)	3,608	,152		23,767	<,001	3,307	3,909
	DYNAMIC VS STATIC	-,592	,158	-,339	-3,751	<,001	-,905	-,279
	HIGHLY SENSITIVE	-,613	,163	-,340	-3,766	<,001	-,936	-,290
2	(Constante)	3,108	,161		19,307	<,001	2,788	3,427
	DYNAMIC VS STATIC	,382	,225	,219	1,702	,092	-,064	,828
	HIGHLY SENSITIVE	,178	,202	,099	,878	,382	-,224	,580
	ADxHS	-1,565	,285	-,825	-5,496	<,001	-2,130	-,999

a. Variável Dependente: AVERAGE ATTITUDE

- **Regression Model - 3**

**Resumo do modelo<sup>c</sup>**

Modelo	R	R quadrado	R quadrado ajustado	Erro padrão da estimativa	Mudança de R quadrado	Estatísticas de mudança			Sig. Mudança F
						Mudança F	df1	df2	
1	,619 <sup>a</sup>	,384	,371	,82083	,384	29,581	2	95	<,001
2	,659 <sup>b</sup>	,434	,416	,79091	,050	8,323	1	94	,005

a. Preditores: (Constante), Highly Sensitive, CHROMATIC VS ACHROMATIC

b. Preditores: (Constante), Highly Sensitive, CHROMATIC VS ACHROMATIC, HSxAD

c. Variável Dependente: AVERAGE ATTITUDE

**ANOVA<sup>a</sup>**

Modelo		Soma dos Quadrados	df	Quadrado Médio	Z	Sig.
1	Regressão	39,860	2	19,930	29,581	<,001 <sup>b</sup>
	Resíduo	64,007	95	,674		
	Total	103,867	97			
2	Regressão	45,066	3	15,022	24,015	<,001 <sup>c</sup>
	Resíduo	58,801	94	,626		
	Total	103,867	97			

a. Variável Dependente: AVERAGE ATTITUDE

b. Preditores: (Constante), Highly Sensitive, CHROMATIC VS ACHROMATIC

c. Preditores: (Constante), Highly Sensitive, CHROMATIC VS ACHROMATIC, HSxAD

**Coefficientes<sup>a</sup>**

Modelo		Coefficients não padronizados		Coefficients padronizados		t	Sig.	95,0% Intervalo de Confiança para B		Correlações		
		B	Erro Erro	Beta				Limite inferior	Limite superior	Ordem zero	Parcial	Parte
1	(Constante)	2,488	,147			16,960	<,001	2,197	2,779			
	CHROMATIC VS ACHROMATIC	1,263	,166	,613		7,614	<,001	,933	1,592	,613	,616	,613
	Highly Sensitive	,181	,166	,088		1,090	,279	-,149	,511	,088	,111	,088
2	(Constante)	2,714	,162			16,789	<,001	2,393	3,035			
	CHROMATIC VS ACHROMATIC	,771	,234	,374		3,300	,001	,307	1,235	,613	,322	,256
	Highly Sensitive	-,246	,218	-,119		-1,127	,263	-,678	,187	,088	-,115	-,087
	HSxAD	,892	,309	,387		2,885	,005	,278	1,506	,554	,285	,224

a. Variável Dependente: AVERAGE ATTITUDE

## **Psychology and Marketing**

Indexação SCOPUS

Lista ABS 3

Tópico: Consumer Behavior; Marketing, Attitude towards advertisement.

<https://onlinelibrary.wiley.com/journal/15206793>

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Tópico: Consumer Behavior; Marketing.

<https://consumerresearcher.com/>