



Lisbon School
of Economics
& Management
Universidade de Lisboa

MASTERS IN MANAGEMENT (MIM)

MASTERS FINAL WORK

DISSERTATION

THE NOSTALGIA EFFECT: ANALYZING THE IMPACT OF MUSIC, VISUALS AND STORYTELLING IN ADVERTISING ON GEN Z'S CONSUMER RESPONSES

MARIA INÊS DE VASCONCELOS TAVARES PACHECO

JANUARY – 2026



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THE NOSTALGIA EFFECT: ANALYZING THE IMPACT OF MUSIC, VISUALS, AND STORYTELLING IN ADVERTISING ON GEN Z'S CONSUMER RESPONSES

ABSTRACT

This dissertation aims to study the use of nostalgic marketing, more precisely the presence of vicarious nostalgia in advertisements. This study intends to compare three specific nostalgic elements: music, storytelling, and visuals, in terms of how they differ in creating nostalgic feelings and affect purchase intention and willingness to pay. Thus, the main objective is to discover which nostalgic stimulus/element (or if all of them together) is the most effective on Generation Z consumers and whether this generation is influenced by social media fatigue (SMF) when it comes to creating nostalgic feelings.

This study used a quantitative, explanatory methodology with a non-probabilistic convenience sample. Data was collected through an online survey, which yielded a total of 327 valid responses.

The findings suggested that (1) different stimuli are capable of creating different levels of nostalgia; (2) when all stimuli are present, a higher level of nostalgic feeling is created; (3) the stimulus of music can be as powerful in creating a feeling of vicarious nostalgia as when all stimuli are together; (4) social media fatigue does not contribute significantly to the creation of nostalgic feelings; (5) vicarious nostalgic feelings have a positive effect on consumer reactions, namely on purchase intention and willingness to pay.

At the academic level, this research contributes to expanding the literature on vicarious nostalgia in marketing, focusing on elements of advertisements and creating relationships with variables that have been little explored in previous studies on vicarious nostalgia. At the business level, this study provides insights into nostalgic marketing and which retro elements should be applied, especially for Generation Z, enabling companies to create more effective advertising campaigns.

Key-words: Nostalgic Marketing, Vicarious Nostalgia, Advertising, Purchase Intention, Willingness to Pay, Social Media Fatigue

RESUMO

A presente dissertação visa estudar o uso de marketing nostálgico, mais precisamente a presença de *vicarious nostalgia* em anúncios. Este estudo pretende comparar três elementos nostálgicos específicos: a música, o *storytelling* e os elementos visuais, na forma como estes se diferenciam na criação de sentimento nostálgico e afetam a intenção de compra e a disposição para pagar mais. Desta forma, o principal objetivo é descobrir que estímulo/elemento nostálgico (ou se todos em conjunto) é mais eficaz no consumidor da Geração Z e se esta geração é influenciada pela fadiga das redes sociais no que toca à criação de sentimento nostálgico.

Neste estudo foi utilizada uma metodologia quantitativa, de natureza explanatória com uma amostragem não probabilística por conveniência. A recolha de dados foi através de um questionário online, onde obtiveram-se, no total, 327 respostas válidas.

Deste modo, conclui-se que (1) diferentes estímulos são capazes de criar diferentes níveis de nostalgia; (2) quando existe a presença de todos os estímulos cria-se um maior nível de sentimento nostálgico; (3) o estímulo da música consegue ser tão poderoso na criação de um sentimento de nostalgia vicariante como quando todos os estímulos estão juntos; (4) a fadiga das redes sociais não contribui, de forma significativa, para a criação de sentimento nostálgico; (5) o sentimento nostálgico vicariante tem um efeito positivo nas reações do consumidor, nomeadamente na intenção de compra e na disposição para pagar mais.

Ao nível académico, a presente investigação contribui para expandir a literatura sobre a *vicarious nostalgia* no marketing, focando-se em elementos de anúncios e criando relações com variáveis pouco exploradas em estudos anteriores sobre *vicarious nostalgia*. No que toca a nível empresarial, este estudo fornece *insights* sobre o marketing nostálgico e sobre que elementos retro devem ser aplicados, especialmente para a geração Z, permitindo às empresas criar campanhas publicitárias mais eficazes.

Palavras-chave: Marketing Nostálgico, Nostalgia Vicária, Publicidade, Intenção de Compra, Disposição para Pagar Mais, Fadiga das Redes Sociais

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CHAPTER 1 – INTRODUCTION

1.1 Theoretical context

The term “Nostalgia”, created in the 17th century by Johannes Hofer, comes from the Greek words “*nóstos*” which stands out for “homecoming” and “*álgos*” that means “longing” (Anspach, 1934). By the late 20th century, nostalgia expanded beyond a longing for home to a warm reflection on the past, distinguishing itself from homesickness and becoming recognised as a universal emotion, centered on people, places, or events (Sedikides et al., 2008). Regarding this, nostalgia can be defined as “a preference (general liking, positive attitude, or favorable affect) toward objects (people, places, or things) that were more common (popular, fashionable, or widely circulated) when one was younger (in early adulthood, in adolescence, in childhood, or even before birth)” (Holbrook & Schindler, 1991, p. 330). Furthermore, as it was explicitly said by Holbrook (1993), nostalgia can be felt by people that were not even born at the time that they are feeling nostalgic for. This phenomenon is called *vicarious nostalgia* (Merchant & Rose, 2013) or also *historical nostalgia* (Stern, 1992).

This “preference” that Holbrook and Schindler (1991) highlight, nostalgia, is commonly used as a marketing strategy by marketers, in the way that they explore the customers feelings to promote the company, product or service, resulting in the consumer “enchantment” and connection with the brand (Hartmann & Brunk, 2019). This strategy, nostalgic marketing, is not new, however it is gaining quite the popularity in the recent decades in various industries (Holak et al., 2008; Leigh et al., 2006) by using nostalgic themes, such as pictures, jingles or vintage themes in marketing and advertising messages (Singh et al., 2021). In fact, advertising in the field of marketing is very effective and important, as it can significantly influence consumer attitudes and behaviours, changing their minds about products and brands (Kaur & Hundal, 2017; Martins et al., 2019). In addition, this influence on consumer responses can vary depending on the characteristics of the advertisements, making some of the advertisements characteristics very significant, such as the inclusion of music, storytelling and visuals (Chou & Lien, 2014; Kang et al., 2020; Saine et al., 2018). Moreover, this

strategy can be used in a vicarious nostalgia way (Merchant & Rose, 2013), meaning that for marketers and companies to connect with their target through this strategy, they need to use references for a time that the target did not live through.

Generation Z, which includes people born between 1997 and 2012 (Ameen et al., 2023), is becoming the next major generation of consumers (Branca et al., 2025), and demonstrating particular nostalgic-oriented behaviour. Specifically, this influential generational group feels drawn to the past aesthetic (Dam et al., 2024) and its corresponding products, such as vintage clothing (Branca et al., 2025), feeling vicarious nostalgia towards past eras. Despite little academic work being known regarding this retro appeal specifically for Generation Z, it is interesting to investigate further the context of vicarious nostalgia and subsequently the ads in this context on Generation Z as this generation is presenting an appeal to the past and its items (Branca et al., 2025).

Thus, this study will examine the effect of different vintage nostalgic cues, more precisely on the potential of retro music, storytelling and visual elements on advertisements' effect on Generation Z' consumer responses.

1.2 Study Objectives

Nostalgic cues in advertisements have the ability to create feelings of connection and familiarity (Hartmann & Brunk, 2019). It is important to note that when these advertisements are directed at a generational group that did not experience the era in question, the effect is sustained through vicarious nostalgia (Merchant & Rose, 2013). This psychological mechanism allows the target audience to be affected and develop an emotional connection with the mediated past (Merchant & Rose, 2013), making the incorporation of nostalgic cues an effective engagement tool for Generation Z audiences, who have no direct contact with past eras. Therefore, this dissertation has as its main objective to understand whether the vicarious nostalgia stimuli in advertising, specifically through music, storytelling and visuals are effectively felt by Generation Z, and if so, which is the most effective. Additionally, it is

intended to investigate how this generation's ad-evoked nostalgic feelings interfere with their purchasing decisions, namely Purchase intention and Willingness to Pay.

Given the high incidence of social media fatigue (SMF) in this generation (Sharma et al., 2023), we also study the effect of SMF on how it could possibly vary these young people's perceptions on nostalgic stimuli.

Hence, the objective of this dissertation is to develop an explanatory model of the influence of nostalgia marketing on Generation Z's consumer behaviour and to test it empirically to confirm the proposed causal relationships.

1.3 Relevance of the Study

The term “nostalgia”, and consequently the term “vicarious nostalgia”, are commonly discussed in psychology and marketing, making it a current theme in our society (Kremer et al., 2022). However, regarding the marketing field, what is most studied by academics is the effect of nostalgic marketing in a general spectrum, not focusing on vicarious nostalgia (Yeh & Huan, 2014), neither specifying the impact of vicarious marketing in younger generations, giving Generation Z little literature relevance. The focus of this study on using a young target audience, Generation Z, is explained by their consumption patterns and their personal characteristics. They are characterized by pursuing uniqueness and things that they have not experienced or things that give them the sense of social connectedness, making them a special target for this concern (Lasaleta et al., 2014), especially taking into consideration that they grew up in a digital era, with easy access to content from the past (Ameen, et al., 2023).

Furthermore, in existing studies on nostalgia and its effect on consumer behaviour, many of them focus on how nostalgia can be a tool to use in an advertising context (Brown et al., 1998; Muehling & Pascal, 2011; Muehling & Sprott, 2004; Pascal et al., 2002), however, most of the studies do not focus on vicarious nostalgia specifically. Therefore, this study intends to give valuable insights to the existing literature on vicarious nostalgia in advertising (Merchant & Rose, 2013) taking into consideration certain advertising elements, such as music, storytelling and visuals.

Thus, this study aims to contribute to the theoretical literature on nostalgia by expanding the concept of 'vicarious nostalgia' and applying it specifically to Generation Z, and by extending existing knowledge on these topics, giving valuable insights of the generation Z attitudes and in their consumer responses when in contact with nostalgic content. On a particular level, this study provides insights for marketers, managers, and companies to understand Generation Z consumption patterns and attitudes regarding nostalgic advertisements. This way, the conclusions allow them to create nostalgic campaigns that evoke positive emotions in this audience, reflecting in better consumer responses.

1.4 Dissertation structure

This Master's Thesis is organised into six chapters: (1) introduction, (2) literature review, (3) conceptual model, (4) methodology, (5) data analysis, (6) discussion of results, theoretical and practical contributions, and finally limitations and suggestions for future research. The first chapter introduces the research question and objectives, emphasizing the significance of the topic being investigated. In the second chapter, the main topics under analysis are presented, namely nostalgia marketing, historical (or vicarious) nostalgia, Gen Z's consumer behaviour, consumer responses and advertising appeals. Chapter 3 presents and explains the conceptual model developed. Chapter 4 describes the research methodology planning, including the type of study, the purpose of study, the data collection procedures, the sample profile and target population, the measurement instruments, and data processing. In Chapter 5, the analysis and interpretation of the data are covered, and in Chapter 6 the discussion of the results, conclusions of the study, and the respective answers to the research questions and objectives. Still in Chapter 6 the main academic and practical contributions of the study, and the limitations identified throughout the research and suggestions for future research are identified.

CHAPTER 2 – LITERATURE REVIEW

2.1 Concept of Nostalgia in Marketing

The concept of nostalgia has received attention from researchers in various domains, such as marketing and psychology (Kremer et al., 2022). The term, nostalgia, is considered to be “a positively balanced complex feeling, emotion, or mood produced by reflection on things (objects, persons, experiences, ideas) associated with the past” (Holak & Havlena, 1998, p.218). It can be used in a marketing context as a strategy that consists in evoking the nostalgic feeling in customers hearts and minds by its application through “advertising, product design and positioning, and the revival of products from the past” [retro products] (Holak & Havlena, 1998, p.218). If well executed, nostalgic appeals can transport consumers to a positively perceived and fantasized past, evoking favorable emotional responses that may enhance attitudes toward the company or product (Dam et al., 2024; Merchant & Rose, 2013). The nostalgia effect on people can come not only from nostalgic marketing strategies but also from other sources, such as movies or series that highlight the past or were made in the past, family or through music (Holak & Havlena, 1992; Holbrook, 2003). However, it is a bittersweet strategy as it could create not so happy emotions in the consumers (Holak & Havlena, 1998). Nostalgic marketing has been documented in the academic literature since before the start of the 21st century (Leigh et al., 2006) and has continued to grow in relevance, now demonstrating a significant market presence in 2025 (Richter, 2025; Technavio, 2025). This trend is visible in the resurgence of several retro products in mainstream consumption. Consider for instance, the vinyl records which have been growing for the past decades, reaching 43,6 million vinyls sold in 2024 (Richter, 2025) and that the CAGR (Compound Annual Growth Rate) is estimated to grow at a rate of 9.3% from 2024 to 2029 (Technavio, 2025).

In essence, in a marketing context, nostalgia can be seen as a relationship between marketers and consumers, since marketers create nostalgic marketing strategies in order to captivate consumers, allowing them to figuratively travel back in time while valuing brands as special

(Dam, et al., 2024). Hence, to better understand the use of nostalgia in marketing and consequently in advertising, Stern (1992) identified two different types of nostalgia that can be used in marketing: Personal nostalgia and Historical nostalgia.

2.1.1 Types of nostalgia

Personal nostalgia consists of the tendency to sentimentalize one's personally established memories of the past (Stern, 1992). It is also “a preference toward objects that were more common when one was younger” (Holbrook & Schindler, 1991, p.330) and is capable of evoking emotions by reconnecting people with meaningful moments from their life (Holak & Havlena, 1998). In addition, Merchant et al. (2013) defined that personal nostalgia is a multidimensional experience with cognitive and affective components.

On the other hand, historical nostalgia is the intention of reliving a time that is considered superior in one's eyes, a “Golden Age” (Pascal et al., 2002; Stern, 1992). It defends that nostalgia can be experienced by a person even if they do not have a direct experience with the object or the past event, creating fantasies about them (Holak & Havlena, 1998). This thought fits also into Holbrooks's framework (Lasaleta et al., 2014), which definition also stands for vicarious nostalgia (Merchant & Rose, 2013).

This type of nostalgia can be perceived as a “playful nostalgia” mode since it consists of showing a past that highlights a time on its aesthetic culture, “cultural style” and “retro makers of taste”, which are frequently driven by consumers without lived experience, enchanting them (Hartmann & Brunk, 2019). Moreover, Kulczynski and Hook (2024) study introduced and focused on a specific type in vicarious nostalgia called “vintage anemoia”. This term stands out for the one's “emotional connection to the past and appreciation for the aesthetics, fashion, styles, design, and cultural elements associated with vintage cues, irrespective of a specific historical period or individual lived experiences” (p.129). Since this term reflects vicarious nostalgia, it is important to state that its definition is also linked to marketing and, focusing on the present study, to vicarious advertising, in the way that by inducing vintage and retro references in ads, it can evoke positive responses from consumers

(Kulczynski & Hook, 2024). Nevertheless, many scholars studying vicarious nostalgic marketing have concluded that one of the reasons consumers are attracted to this type of nostalgia is that it can provide a sense of social stability (Han & Newman, 2022). Han and Newman (2022) argued that, when faced with a perceived threat to the stability of their social or cultural system, people resort to historical nostalgia as a mechanism to restore a sense of stability and permanence, something perceived as absent in the present.

Although personal nostalgia is superior in eliciting individual affective responses (Marchegiani & Phau, 2013), historical (or vicarious) nostalgia is fundamental to consumer research. It fulfils a distinct psychological and social role, providing stability to the social system (Han & Newman, 2022) and reinforcing the intertemporal connection in the face of threats to meaning (Sarial-Abi et al., 2017).

2.2 Generation Z

According to the Generational Cohort Theory (GCT) by Strauss & Howe (1991), people can be divided into cohorts based on the period of time they were born, since they experienced the same economic, political, technological and social environment in their early life. Therefore, they develop the same characteristics, values, and behaviours within each cohort (Heller, 1993).

Different academics have stated that Generation Z, also known as “Gen Z”, corresponds to different age gaps. For instance, Ameen et al. (2023) referenced that it corresponds to the people born between 1997 and 2012, while Priporas et al. (2024) state that it is the group of people from 1995 to 2012. This study is going to reference Gen Z as people born between 1997 and 2012. This generation is characterized by being “digital natives”, hence since they were born they had a close interaction with technologies, screens, internet and social media, shaping their actions in the virtual space (Ameen et al., 2023).

Regarding the GCT, Gen Z grew up in a constantly changing environment distinguished by the 2008 economic crisis, climate change and the COVID-19 pandemic (Sakdiyakorn et al., 2021; Smith, 2019). This set of adverse circumstances has led this generation to be resilient

(Branca et al., 2025), tolerant, committed to sustainability, pragmatic, image conscious and possessing strong ethical concerns in consumption (Bravo et al., 2020; Aktan & Kethüda, 2024; Lopes et al., 2024). In terms of their behaviour as 21st-century consumers, this generation's purchasing decisions are shaped by their hedonic values, social influences and personality (Lopes et al., 2024). They are price-sensitive, pragmatic, and budget-conscious consumers (Djafarova & Foots, 2021) who want to make value-conscious purchases (Goldring & Azab, 2021), always wanting to know how a product can benefit them (Joshi & Garg, 2021). In addition, this generation has high expectations of brands, wanting them to be transparent, socially responsible and to provide them with customisation opportunities and personalised experiences (Narayanan, 2022; Priporas et al., 2024).

On the other hand, it is crucial to highlight that Gen Z is rising as a powerful consumer segment that greatly influences global market trends (Aktan & Kethüda, 2024). Hence, with Gen Z pointing to become a leading force in the global workforce and consumer landscape (Yamane & Kaneko, 2021), an understanding of Gen Z's motivations and consumption behaviours is essential for marketers and brands aiming to have effective strategic approaches (Branca et al., 2025).

2.3 The S-O-R model

The S-O-R (stimulus-organism-response) model was created by Mehrabian and Russell (1974) and emerged as an approach within psychology. This theory states that outside factors can influence individuals' internal states that lead to observable responses, including consumption (Erensoy et al., 2024). The model highlights three stages: The first is the Stimulus (S) that represents the external entities, which can be an object or any environmental stimuli that can influence an individual. In the management context, it can be marketing mix variables and other environmental inputs, such as advertising. The second is the Organism (O). It is the extent of interpreting visual or other types of information into specific mental states. These interpretations can encompass cognitive and emotional activities such as attention, perception, motivation, and affection. Lastly, the last stage is the Response (R) that refers to the reaction that a person has toward the stimulus based on the emotional

and cognitive generation. This could be expressed through psychological or behavioural responses (Tong et al., 2022). Prior studies have used the S–O–R framework across many fields to explain how people behave in response to external stimuli (Erensoy et al., 2024; Spears & Singh, 2004; Tong et al., 2022). Therefore, considering that the theme of this dissertation regards consumer responses evoked by nostalgic advertisements, this model, by considering an individual's reactions to external and internal stimuli and their cognitive and emotional states, would be suitable to efficiently make conclusions on the nostalgia effect on Generation Z consumers.

2.4 Organism: Feelings of nostalgia

Feelings or moods are emotional responses to a communication message, which are not perceived as qualities of the message, but rather as the emotional state of the viewers of the message at the moment of exposure to the message (Spears & Singh, 2004). Regarding the model chosen for this investigation, the Organism (O) is going to correspond to the feelings evoked by the advertisements' elements, more precisely, to the nostalgia feeling that may be caused by the exposure to those elements. Nostalgic feeling can be defined as a predominantly bittersweet emotional state, triggered by the affective memory of an idealised past (Holbrook, 1993). It is capable of increasing feelings of belonging and social connection, and raising self-esteem (Sedikides et al., 2008).

2.5 Stimulus: Advertising in Nostalgic Marketing

In this study, the stimulus corresponds to the advertisements, specifically the presence of certain elements of an ad, namely, music, storytelling and visuals. Advertisements are widely recognized as a stimulus within the Stimulus-Organism-Response (S-O-R) framework, existing already many studies that investigate advertisements characteristics or advertising content as stimuli (Djafarova & Foots, 2021; Sharma et al., 2023). According to the American Marketing Association (2025), advertising is a paid communication tool whose purpose is to inform or persuade an audience to take a specific action, namely buying a product, subscribing to a service or interacting with a brand. Regarding this, advertisements are used to get people's attention and make them interested. They can be shown through

different formats such as television, social media, search engines, and more (American Marketing Association, 2025). Therefore, advertising is considered a key component of marketing and, by extension, nostalgic marketing. Thus, nostalgic advertising consists of using cues or themes in the advertisement that flash back to the past (Muehling et al., 2014), with the objective of creating positive emotions and favorable attitudes towards the brand or product (Singh et al., 2021). These cues or themes are often used within the main elements of an advertisement and can be demonstrated through pictures, jingles, among others (Singh et al., 2021). These essential elements make an advertisement emotionally appealing to consumers, evoking emotional responses, such as warmth, joy, gratitude, and affection, that are necessary for an advertisement to be nostalgic (Holak & Havlena, 1998; Chou & Lien, 2014). This study will focus on three key elements of advertising: music, storytelling, and visual imagery, which all will be examined within the context of (vicarious) nostalgic advertising, focusing on their possible effect of creating nostalgic feelings in consumers.

2.5.1 Music

The use of music in advertising is widespread and very significant (Chou & Lien, 2014) as it has the ability to attract attention and improve memorisation, for example when using well-known or personally meaningful songs (Allan, 2006; Kellaris et al., 1993). Similarly, music can help advertisements evoke emotional and symbolical responses and differentiate with a distinct style or identity for the ad's brand, thereby contributing to how consumers relate to it (Scott, 1990). Furthermore, music can reinforce cultural or contextual cues in the advertisement (Hung, 2000), as well as support message congruency, improving attitudes towards the brand, purchase intention and memorisation (Oakes, 2007). Given the importance of music in advertising, Chou and Lien (2014) investigated how the use of old or familiar songs can evoke feelings of nostalgia in consumers. Their study showed that auditory stimuli, such as popular songs, can trigger nostalgia even when the rest of the advertisement is not related to the past. In addition, old or period-style music proved to be particularly effective, as it offers a recognisable element from the past that can make advertisements more nostalgic. This nostalgic response generates more positive attitudes towards the

advertisement and the familiar and old songs tend to elicit nostalgic thoughts and emotions that reinforce the overall persuasive impact of the advertisement.

2.5.2 Storytelling

Another element to consider is the presence of storytelling. Storytelling is defined in the context of a fundamental form of strategic communication whose objective is to present a cohesive narrative that generates an immersive experience in the consumer (Van Laer et al., 2014). Regarding its presence in advertising, Kang et al. (2020) noted that this has been a very common technique to use, playing a crucial role in creating emotional connections between consumers and brands. Advertisements, by presenting information in a narrative format, engage with the audience through characters and situations with which the audience identifies, making the message more memorable and meaningful (Kang et al., 2020; Pakuchi et al., 2021). Kang et al (2020) also found that the stories created and narrated evoked emotions such as empathy, enthusiasm, and inspiration, which reinforced consumers' positive feelings towards the brand, increasing engagement, trust, and word of mouth. In this way, we can link the use of storytelling to the narrative transport theory, as this theory, studied by many academics (e.g. Green and Brock, 2002 and Houghton, 2021), argues that storytelling can lead the audience into a state of immersion and temporary detachment from reality, known as the transport effect, allowing the audience to identify with the characters and attribute emotional meanings to the brands and products presented (Houghton, 2021). This way, transportation into a narrative world is described as “the process of temporarily leaving one's reality behind and emerging from the experience somehow different from the person one was before entering the milieu of the narrative” (Green et al., 2004, p. 315, cited by Kang et al., 2020).

Thus, we can relate the quote from Green et al. (2004) to the definition of vicarious nostalgia, enabling people to create fantasies around the past (Hartmann & Brunk, 2019; Holak & Havlena, 1998). This idea is linked to the literature on ad-evoked vicarious nostalgic feelings (Merchant & Rose, 2013), which demonstrates that this type of advertising is capable of strengthening consumers' emotional bond with the brand, thus producing an effect similar to

what storytelling has in the advertising context. Therefore, it is logical to suggest that the effect of transportation in advertisements that is associated with positive emotional responses and behavioural outcomes, could also happen in a vicarious form of nostalgic advertising.

2.5.3 Visual

The final element to be studied will be the impact of visual imagery in advertisements, since image design choices materially influence how audiences process a message and what they decide (Saine et al., 2018). These visual elements are therefore responsible for translating abstract marketing ideas into something that consumers can easily understand, such as symbols of tradition, innovation or longevity (Pecot et al., 2022). In the study by Pecot et al. (2022), the authors noted that the visual elements of advertisements can also evoke collective or cultural nostalgia, connecting consumers to the advertisement and the brand. These visual elements, such as vintage typography, illustration, ornaments, or desaturated colour palettes, can evoke an idealised and comforting past or even to certain periods of time (Pecot et al., 2022). Thus, this study is consistent with the role of nostalgia in marketing and its effect in advertising, which consists of creating positive emotions and increasing brand connection (Merchant & Rose, 2013; Muehling & Pascal, 2011). Furthermore, according to Pecot, et al. (2022) study, these nostalgic appeals can “take different forms: from childhood memories to bucolic scenes and idealised representations of the past” (p.128) and can represent a way of escaping the present or reliving the past.

Moreover, Generation Z, the target of this study, is increasing a strong appeal to vintage products and aesthetics that can be explained for their intention and need for uniqueness (Branca et al., 2025). Retro and vintage products become more attractive since this type of products are rare and more desirable than mass-produced ones (Branca et al., 2025). For these reasons, it can be concluded that Gen Z, according to the study by Kulczynski and Hook (2024), by possessing an aesthetic attraction and a retro appeal, have vintage anemoia. Thus, it is clear that this retro appeal may be one of the conditions that leads Gen Z to feel more connected to nostalgia for a past that they did not experience themselves. In this way, it can

be assumed that the visuals of an advertisement are connected to the phenomenon of vintage anemoia, since it mainly reflects the aesthetic attraction, which itself is visual.

Given the previous discussion, this study hypothesizes that:

H1: Retro elements in a) music create a greater nostalgic feeling in consumers compared to b) storytelling, and c) visuals, which occupy the second and third positions, respectively.

2.6 Social Media Fatigue

Social Media Fatigue (SMF) is a growing phenomenon characterized by negative emotional responses, such as tiredness, boredom or burnout, in consumers resulting from excessive use of social media (Dhir et al., 2019). The causes of SMF include compulsive use of social media, privacy concerns and fear of missing out (FOMO) (Dhir et al., 2018). SMF can affect people physically and psychologically, with outcomes such as decreased academic performance and reduced use of social media or even temporary withdrawal (Dhir et al., 2019). Social media fatigue can occur in any generation, since everyone can use social media. However, this topic is more widely studied in younger generations, especially in Generation Z, since they use social media more frequently (Hysa et al., 2021).

Additionally, the use of smartphones and social media is increasing and becoming addictive to Generation Z and consequently changing their behaviour and decision making (Sharma et al., 2023). According to the McKinsey Health Institute's (MHI) 2022 Global Gen Z Survey, this generation is more likely to extract negative feelings caused by social media than other generations (McKinsey & Company, 2024). In addition, when studied this "dark side" of technology, scholars found that it created threats to the mental stability of this young generation (Dhir et al., 2018; Talwar et al., 2019), manifesting in anxiety, information overload and SMF (Bermes, 2021; Dhir et al., 2019; Fang et al., 2020). As mentioned, Gen Z's proximity to technology and social media creates threats to their mental stability, which may be connected to one of the reasons why this generation may have an interest in a past they did not live (Han & Newman, 2022). Han and Newman's (2022) study states that

perceived threats to sociocultural stability lead people to seek historical nostalgia as a means of regaining the sense of stability and belonging, perceived as lost in the present. Thus, based on literature, it can be said that the negative outcomes of technology use, such as SMF, which represents a perceived threat to stability (Dhir et al., 2018; Talwar et al., 2019), can potentiate the way that Gen Z's perceive the advertisement retro stimulus, namely music, storytelling and visual cues. Thus the following hypothesis is conducted:

H2: Gen Z's nostalgic feeling from retro stimulus cues (Music, Storytelling, Visual Cues) in advertisements varies with their level of social media fatigue.

2.7. Consumer Responses

2.7.1 Purchase Intention

Purchase Intention concerns someone's likelihood of planning or willing to purchase a particular product or service in the future (Wu et al., 2011). Purchase intention is greatly influenced by advertisements, given their effectiveness in shaping consumer emotions and attitudes (Smit et al., 2006). Several studies show that the likeability of an advertisement, while increasing brand preference, also increases purchase intention (Jiang et al., 2024; Smit et al., 2006). Thus, appealing advertisement content is related to increased purchase intention (Kaur et al., 2022).

Past studies have concluded that when nostalgia marketing takes place, it has a positive impact on consumers' purchase intentions (Gonzalez-Cavazos et al., 2025). If well used, nostalgia tends to create positive and favourable attitudes towards the brand or product (Lasaleta et al., 2014), which creates a situation where consumers become more inclined to consider or purchase products that evoke associated memories (Singh et al., 2021). In the study by Muehling and Sprott (2004), the authors concluded that nostalgic references in advertisements influence the type of thoughts consumers have while being exposed to the advertisement and that these thoughts subsequently influence their attitudes towards the advertisement and the brand.

This present study questions the presence of nostalgia in advertisements in a vicarious form. According to Merchant and Rose (2013), when advertising is used vicariously, either by referring to previous periods or through other types of cues, it increases consumers' emotional involvement, strengthens brand heritage and brand attachment. Equally, according to Marchegiani and Phau (2013), advertising that evokes historical (vicarious) nostalgia can positively influence consumers' emotional reactions and attitudes. These appeals recall collective memories and evoke feelings of warmth, serenity, and tenderness, strengthening consumers' connection with the brands (Marchegiani & Phau, 2013). Therefore, it is understood that the use of advertisements is very important for a brand to increase the purchase intention of its consumers, and that, therefore, when vicarious nostalgia is applied in advertisements, since this type of nostalgia creates positive attitudes and feelings in the audience, it can generate very positive results in consumers' purchase intentions.

As such, the following hypothesis is proposed:

H3: The feelings of nostalgia derived from nostalgic advertising have positive impact on purchase intentions

2.7.2 Willingness to pay

Willingness to pay (WTP) is defined as the maximum price a consumer is willing to pay for a given quantity of a product or service (Wertenbroch & Skiera, 2002). This concept is widely recognized and applied in both practical and academic contexts. Marketers use WTP as a key metric to determine optimal pricing for products and services, while academics study how various factors, such as advertising, affect consumers' willingness to pay (He et al., 2023). In this last case, advertising significantly increases willingness to pay, as it improves consumers' perception of product quality (Tsui, 2012). In addition, nostalgia marketing has also an impact on the consumer's willingness to pay. In Lasaleta et al. (2014) study, they highlighted that nostalgia decreases price sensitivity and can make consumers more willing to spend, making them feel socially connected and fulfilled.

Furthermore, in Gonzalez-Cavazos' et al. (2025) study, they also looked into the direct relationship between nostalgic marketing and willingness to pay in Generation Z. The results showed that the presence of nostalgia is positively associated with Gen Z's willingness to pay. They concluded that this generation exhibited a higher willingness to pay than Generation X, indicating a stronger generational sensitivity to monetary valuation when nostalgic emotions are triggered. In contrast, Generation X's responses remained relatively stable, as their nostalgia appears to be already internalized and thus less likely to influence spending behaviour. Thus, as studies by Gonzalez-Cavazos et al. (2025) and Lasaleta et al. (2014) indicate, when consumers are in a nostalgic state, they tend to decrease their price sensitivity and have a greater willingness to pay. Therefore, it can be said that, given that advertisements with nostalgic references (even if perceived vicariously) tend to elicit emotional responses, transporting the audience to a positive state of mind about themselves and the brand (Merchant & Rose, 2013; Muehling & Pascal, 2011), they will have an influence on willingness to pay.

As such, this study proposes that:

H4: The feelings of nostalgia derived from nostalgic advertising have a positive impact on willingness to pay

CHAPTER 3 - CONCEPTUAL MODEL

The proposed conceptual model (Figure 1) is based on the SOR model: the stimuli (S) are the advertisements' retro elements, specifically music, storytelling and visual cues that in the ad could possibly send one to a nostalgic state. Therefore, in this context, advertisements' elements function as an environmental input. The organism (O) is represented by nostalgic feelings and emotions arising from consumers' exposure to the retro element in the nostalgic advertising. Finally, the response (R) consists of purchase intention and willingness to pay, as these are the reactions to be studied resulting from personal response to exposure to cues in the advertisement. Purchase intention and willingness to pay correspond to the Gonzalez-Cavazos et al. (2025) study as they highlighted the impact of nostalgia in these

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responses. However, the present investigation is going to specify advertising, since the previous authors did not focus on any marketing categories.

To complement the conceptual model, it is going to be tested if social media fatigue (SMF) can affect Gen Z's nostalgic feelings created by the different nostalgic elements. Thus, since people that spend much time on social media, like Gen Z's, tend to have higher levels of SMF, it could possibly vary the nostalgia feeling caused by nostalgic cues.

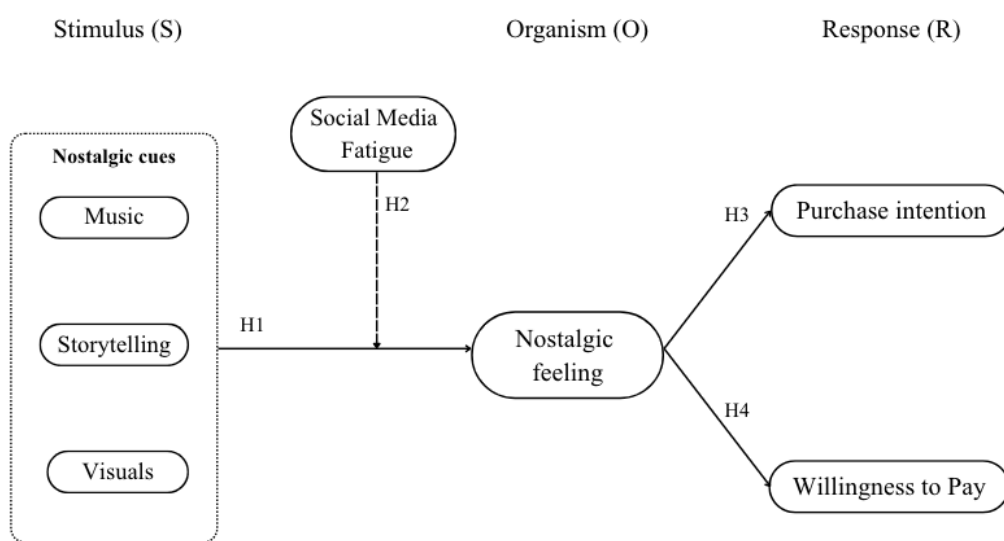


Figure 1: Conceptual model

CHAPTER 4 – METHODOLOGY

4.1 Type of Study

The study aims to understand the effect of retro elements, more precisely music, storytelling, and visuals, on Generation Z consumers' nostalgic feeling and to understand the effect of this feeling on their purchase intention and willingness to pay. Therefore, the type of research in this study is exploratory, as it aims to clarify the understanding of a problem/phenomenon (Saunders et al., 2009). In addition, a deductive approach was adopted. This choice was justified as a survey was utilized to empirically test the proposed derived literature review

hypotheses. The methodological choice was a single quantitative method, since only one form of data collection was used, more precisely, an online survey (Saunders et al., 2009). The research strategy used was an online survey, as it allows the collection of a larger amount of data in an economical and easily analysable manner (Saunders et al., 2009). In terms of philosophy, this study can be classified as positivist, taking into account the research and the intention to study in an objective manner. Lastly, the time horizon is cross-sectional, as it is limited to a specific moment in time (Saunders et al., 2009).

4.2 Population and Sampling

This study focuses on young people belonging to Generation Z, defining Generation Z as the group of people born between 1997 and 2012 (Ameen et al., 2023). Thus, the target audience consists of people who, in the year this research was conducted (2025), were between the ages of 13 and 28. Taking this into account, it was necessary to resort to Law No. 58/2019, published in *Diário da República* on August 8, 2019, which stipulates that minors who have reached the age of 13 may give their consent to the processing of personal data provided that they are fully aware of their rights and that the procedures are complied with in accordance with the measures of the GDPR and CNPD (Assembleia da República, 2019). To define the study sample, a non-probabilistic sampling technique was used, employing a convenience approach, more specifically the snowball technique, since the survey was shared via social media and word of mouth (Saunders et al., 2009). Therefore, it should be noted that as the present sample is not representative of the population as a whole, the findings are vulnerable to bias.

4.3. Data collection

Initially, secondary data was collected, namely through scientific articles and specialist books, which enabled the research problem and corresponding research hypotheses to be defined. In order to obtain answers to the research problem, primary data was collected through a self-administered online survey using Qualtrics XM software. Before the survey was released, a pre-test was conducted to ensure the consistency of the questions and videos

and to avoid problems related to the comprehension and accuracy of the data (Saunders et al., 2009). The pre-test was open between 19 of December and 21 of December, covering a convenience sample of 10 respondents, with the necessary changes and corrections to questions made based on the feedback received. The survey was shared online through the researcher's personal social media accounts and those of her friends, namely through WhatsApp and Instagram, between 22 of December of 2025 and 5 of January of 2026, obtaining a total of 458 responses, but only 327 were considered valid. Furthermore, it is important to note that all ethical issues were respected, with the purpose of the data being explained and the confidentiality and anonymity of the respondents and their data being guaranteed.

4.4 Survey

The survey was available in two versions: English and Portuguese, so that users could answer the questions in the language they feel more comfortable with. For this reason, the survey has an option on top enabling the choice. The questionnaire is then divided into eight sections: the presentation of the study, which includes an introduction, an explanation of the purpose and the rights of respondents, as well as a filter question. This filter question aims to determine whether respondents belong to Generation Z, and it is only possible to continue with the survey if this is true. The second section has 6 questions in order to understand the respondents preferences. The third section presents a set of questions concerning Social Media Fatigue (SMF) in order to understand whether it affects Generation Z perception of ad stimulus. The fourth section presents only music as a retro stimulus and a photo of Coca-Cola (the subject that is advertised). Following this, it is presented a set of questions in order to assess the existence of nostalgic ad-evoked feelings about the music element, purchase intention and willingness to pay. Section five has the same format as section four, changing only the retro element. Thus, in this section, the retro element will be storytelling, showing the same picture of Coca-Cola as in the previous section. After exposure to the audio, the same questions as in the previous section will appear, varying only for the storytelling context, when necessary. In the sixth section, it is presented only a promotional video of

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Coca-Cola with no sound, being the visuals the only retro stimuli. At the end of this section, questions are presented about the existence of nostalgic ad-evoked feelings about the visual element in the video, purchase intention and willingness to pay. Section seven presents an advertisement with all of the retro stimulus in it. More precisely, it is shown the video from section six and in the background the storytelling and music from section five and section four, specifically. Followed by the same questions as the previous sections, thus corresponding to the test control. It is also extremely important to note that these different forms of stimulus always advertise the same product/brand, namely Coca-Cola, varying only the retro element in order to study more effectively.

To effectively create this different stimulus different platforms were used. Firstly for the music stimuli it was chosen and downloaded from YouTube the music “I Get Around” (1964) from *The Beach Boys*, since this song is linked to a time associated with youth, freedom, and its sound is also immediately recognizable and directed to that era (1960's). For the Storytelling, Artificial Intelligence, namely *ChatGPT* was used to help write the prompt for it to contain nostalgic cues (“*give me a storytelling to be narrated for a nostalgic advertisement for Coca-Cola. It should align with the following sentence: those days of intense heat when not even a swimming pool could cool you down completely, listening to the radio and in the company of friends*”). Furthermore, the platform *JoggAI* was used to create the audio voice presented in the audio of section five. Moreover, the promotional video, used in section six, is a Coca-Cola advertisement from the summer of 2025. The choice of this video was based on the clothes that the people in it were wearing and also the fact that the palette of colour used is more saturated. The real video was adapted, more specifically, it was cut using the app *Capcut*, in order to have a shorter time frame and not to have elements that could be associated with modern times. The ad shown in section seven with all the elements was edited also using *Capcut*. The set of stimuli used (advertisements) and the respective explanations and transcripts can be found in Appendix 1.

The eighth and final section concerns the socio-demographic data of the respondents, namely gender, educational qualifications, professional status, and nationality. The survey has 24 questions and is available in Appendix 2.

4.5 Measurement Scales

In order to measure the constructs of this study, different scales that had already been tested and validated in previous studies were adapted. The main variable of this study, nostalgic feeling activated by the different stimuli, was operationalized using Merchant and Rose's (2013) "Fantasies about Past Eras" scale. Although this scale has a cognitive focus, it is a proxy for nostalgic feeling, as Merchant and Rose's (2013) model itself argues that "Fantasies about Past Eras" functions as a direct antecedent of the affective component, i.e. Emotions (nostalgic feeling). Therefore, measuring the strength of the fantasy by using Merchant and Rose's items captures the essential activating mechanism by which vicarious nostalgia is generated and becomes felt (Merchant & Rose, 2013, p. 2623). Moreover 3 items, namely "*I imagined I was there in the simple and pure times shown in the ad*", "*I fantasized I was wearing the clothes in the time periods shown in the ad*" and "*I imagined I was participating in the traditions and rituals of the past shown in the ad*" were not used because the nostalgic feeling variable has to be measured equally in all of the different stimuli, and since these previous items require a visual stimuli their inclusion would not make sense in the study of this variable. Regarding this, the remaining 6 items from this scale were rewritten according to the stimulus. Concerning the scales relating to social media fatigue (SMF), the three items from the study by Sharma et al. (2023) were adapted. On the other hand, three questions about purchase intention were adapted from Poirier et al. (2024) study. Willingness to pay (WTP) was measured using an adaptation of three items from Can et al. (2023). The items from all studies were measured using a 7-point Likert-type agreement scale, ranging from 1 (Strongly Disagree) to 7 (Strongly Agree), except for the social media fatigue scale that consists of a 5-point Likert-type agreement scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). It is worth noting that all scales were adapted and translated to the context and objective of the present study, as can be seen in Appendix 3.

CHAPTER 5 – DATA ANALYSIS

5.1 Sample Characterization

Regarding the characterisation of the sample (Appendix 4), 52% are female, 46.8% are male, and 1.12% identify as non-binary/third gender or preferred not to say. As mentioned throughout the study, all respondents belonged to Generation Z, born between 1997 and 2012. In terms of educational qualifications, more than half of respondents have a bachelor's degree (63%), followed by a master's degree (21.4%), high-school (13.5%), higher professional technical course (1.8%) and 3rd cycle (0.3%). Regarding their current professional situation, 45.9% of respondents said they were students, 22% said they were working students, 26.9% were employed, 2.8% were self-employed, and 2.4% of respondents were unemployed. In terms of the nationality of respondents, the majority were Portuguese (89.9%), followed by respondents from Spain (1.5%), Germany (1.5%) and Italy (1.2%). It is important to note that 4.5% of respondents in total are from the following countries: Austria, Brazil, Chile, France, Luxembourg, Netherlands, Norway, Russia, Slovakia and the USA.

Regarding social media use, 3.7% referred that their daily time on social media was less than 1 hour, 18.7% said 1 to 2 hours, 36.7% said 2 to 3 hours, 22.9% spend 3 to 4 hours, 17.4% more than 4 hours, and 0.6% reported that they did not use social media at all.

As for respondents' relationship with vintage/retro products, the majority like this type of products (84.1%). The retro/vintage products mentioned most fondly were, in the following order: Clothing (68.5%), Films or series (62.1%), Cameras (39.8%), Audio equipment (30%), Shoes/trainers (23.9%), Audio equipment (30%) and Food and drinks (8%). A portion of respondents (1.9%) mentioned other types of products such as CDs, books, furniture, video games, antiques, watches and cars. When asked about retro advertising, the majority (57.8%) said they had seen retro advertising, 28.7% said they were not sure and 13.5% said they had not seen it. When asked what element attracts their attention most when viewing retro advertising, the majority, 64.5%, answered image, followed by 22.3% who said music and 12.5% who mentioned storytelling. For this question, as there was no exclusion for those who

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had never seen retro advertising, the answer to this question from these people is assumed to be advertising in general rather than retro advertising.

5.2 Principal Component Analysis (PCA) and Reliability Analysis

In order to verify that the items used in the survey are valid and accurate, a Principal Component Analysis (PCA) and a Reliability Analysis were performed. These analyses were used to the SMF construct and to the nostalgic feeling, purchasing intention and willingness to pay constructs. The analysis focused on the aggregate responses to the complete advertisement (all stimuli combined) rather than to each individual element. It was decided to analyse only the complete advertisement, as it represents the holistic integration of all stimuli. Therefore assumed that the analyses will be consistent regardless of the stimulus. The results can be found in Table 1 and in more detail on Appendix 5.

Table 1 - Principal Component Analysis (PCA) and Reliability Analysis

INDEX	PRINCIPAL COMPONENT ANALYSIS (PCA)		RELIABILITY ANALYSIS
	KMO (1)	Bartlett's test of sphericity	Cronbach's Alpha
		Sig. (p)	
SMF	0.724	<0,001	0.842
Nostagic Feeling_AdTotal	0.912	<0,001	0.951
PI_AdTotal	0.748	<0,001	0.924
WTP_AdTotal	0.730	<0,001	0.901

*A significance level of 5% was considered.

Source: Own elaboration.

Regarding Principal Component Analysis (PCA), it was found that the values obtained for KMO fell within acceptable values, ranging from 0.724 to 0.912, indicating the suitability of PCA (Mooi & Sarstedt, 2014). In relation to Bartlett's test of sphericity, the significance values were all below $p < 0.001$. Thus, they were considered significant, confirming once again the suitability of PCA (Mooi & Sarstedt, 2014).

Next, a reliability analysis was performed, with Cronbach's alpha values ranging from 0.842 to 0.951, thus showing high internal consistency (Pallant, 2016) since they have a coefficient greater than 0.7 and less than 1 (Pallant, 2016).

5.3 Validation of hypotheses

5.3.1 Nostalgic elements and the feeling of Nostalgia

In order to compare the impact that the three retro elements (music, storytelling and visuals), have on nostalgic feelings (H1), a repeated measures ANOVA test was used (Appendix 6). This type of test was chosen because it allows us to compare the different stimuli within the same group of participants, using identical scales for all constructs (Field, 2013).

Firstly, preliminary analysis of the repeated measures ANOVA test, showed that the assumption of sphericity was violated (Mauchly's $W=0.797, p < .001$). Therefore, results are reported using Greenhouse-Geisser corrected degrees of freedom ($\epsilon=0.889$). The results show that there is a statistically significant difference in the nostalgia levels generated by the stimuli ($F(2.67, 869.02)=130.05, p < .001, \eta^2=.285$). Next, the following descending order of means for each case was concluded: complete advertisement ($M=4.336$), music ($M=4.124$), visuals ($M=3.517$) and storytelling ($M=2.670$). It was thus concluded that the complete advertisement is the strongest and storytelling is the weakest. However, although the advertisement with all stimuli has the highest mean ($M=4.336$), pairwise comparisons with Bonferroni adjustment reveal the difference between this construct and the music construct ($M=4.124$) is not significant ($p=.110$). Thus, it suggests that the feeling of nostalgia created through music can generate as much nostalgic feeling as an advertisement with all retro elements. Conversely, storytelling was identified as the significantly weakest element in

evoking nostalgia among Generation Z ($p < .001$ compared to all other stimuli). Therefore, H1 is partially accepted since it has been proven that different stimuli create different levels of nostalgia, but that the visual and storytelling elements are reversed in the H1's sequence and only the order of the first stimulus is supported.

5.3.2 Social Media Fatigue and its role in shaping Nostalgic Feeling

In the context of this study, the feeling of nostalgia is believed to vary according to the level of social media fatigue a person possesses. Therefore, four one-way ANOVAs tests were performed to determine whether SMF would have an effect on the appeal of retro elements in advertisements. In order for this to happen, it was necessary to separate the results of the SMF mean into three groups, varying according to the level of SMF. Hence, a histogram was conducted and with the respective analysis the following groups were formed: low SMF (1.00 to 2.00), moderate SMF (2.01 to 3.50) and high SMF (3.51 to 5.00) (Appendix 7). Thus, four one-way ANOVAs were performed to determine whether SMF had a significant influence on the creation of nostalgic feelings in the different stimuli and in the complete advertisement (Appendix 7). In these tests, the previous groups (low SMF, moderate SMF and high SMF) are the independent variables and the mean of the nostalgic feeling in the different stimuli and the complete ad corresponds to the dependent variable (each one in an one-way ANOVA).

Regarding the complete advertisement, the results indicated that there was no significant effect of SMF levels on nostalgia for the three levels of SMF ($F(2,324)=0.983, p=.375$). In relation to the music stimulus, although the means between the different levels of SMF are statistically equal ($p=0.511 < 0.05$), the results showed no statistically significant differences between the three SMF groups ($F(2,324)=.672, p=.511, \eta^2=.004$). Similar to the music stimulus, the one-way ANOVA for the storytelling condition revealed no statistically significant differences in nostalgic feeling across the different levels of SMF ($F(2,324)=.722, p=.486, \eta^2=.004$). Finally, in regard to the visual stimulus, the one-way ANOVA for the visual condition showed no statistically significant differences across the social media fatigue groups ($F(2,324)=1.542, p=.216, \eta^2=.009$). These findings suggest that

regardless of the participants' level of fatigue on social media and regardless of the stimuli, their nostalgic response remains consistent. Therefore H2 was rejected.

5.3.3 Consumer responses: Purchase Intention and Willingness to Pay

5.3.3.1 Purchase Intention as a Response

In order to study purchase intention as a response, H3, a linear regression was conducted to understand whether nostalgia/nostalgic feelings affects purchase intention. In this test, the nostalgic feeling caused by the stimulus is the independent variable and the purchase intention is the dependent variable. The results can be found in Appendix 8, including the preliminary analysis of the assumptions necessary for performing a linear regression. All assumptions were tested and validated prior to analysis. The model is statistically significant as a whole ($F(1,325)=208.28, p<.001$) and explains 39.1% of the variance in purchase intention ($R^2=.391$) (Appendix 8 - Section 1). Furthermore, the positive coefficient ($\beta=.625, t=14.43, p<.001$) confirms that higher levels of nostalgia lead to higher purchase intention, thus supporting H3.

Next, it was decided to study whether any of the elements caused more purchase intention than others, since, as seen in 5.3.1, the retro music element causes a higher level of nostalgia. Therefore, with this in mind, the repeated measures ANOVA test was used, but with other variables in order to understand whether music causes greater purchase intention or whether another element stands out (Appendix 8 - Section 2). Preliminary tests showed a violation of sphericity (Mauchly's $W=0.794, p<.001$). Therefore, Greenhouse-Geisser corrected results are reported ($\epsilon=.873$). Taking that into consideration and looking at the "*Tests of within-subjects Effects*" in section 2 of Appendix 8, it can be concluded that the test reveals significant differences between stimuli ($F(2.62,853.38)=127.19, p<.001$). Pairwise comparisons using Bonferroni adjustment confirmed that all differences between stimuli are statistically significant ($p<.05$).

Furthermore, through this test, the following averages were concluded: complete advertisement ($M=4.5168$), visuals ($M=4.000$), music ($M=3.7064$), and storytelling ($M=2.8940$). The complete advertisement was what created the most purchase intention and, simultaneously with what was discovered in 5.3.1, storytelling continues to have a lesser impact on the respondents. Notably, while music was the primary driver of emotion (H1), visual elements proved to be more effective in translating that emotion into purchase intention within this sample.

5.3.3.2 Willingness to Pay as a Response

To determine willingness to pay as a response to the nostalgic feeling created by nostalgia, H4, a linear regression was performed. In this case, the nostalgic feeling caused by the stimulus is the independent variable and the willingness to pay is the dependent variable. The results can be found in Appendix 9, including the preliminary analysis of the assumptions necessary for performing a linear regression. All assumptions were tested and validated prior to analysis. The model proved to be statistically significant ($F(1,325)=130.97, p<.001$), explaining 28.7% of the variance in WTP ($R^2=.287$) (Appendix 9 - Section 1). The positive and significant coefficient ($\beta=.536, t=11.44, p<.001$) confirms that nostalgic feelings positively influence the amount consumers are willing to pay, thus supporting H4.

Next, a repeated measures ANOVA test was performed in order to understand which retro elements caused greater willingness to pay among respondents. Since the assumption of sphericity was violated (Mauchly's $W=0.748, p<.001$), results are reported with Greenhouse-Geisser correction ($\epsilon=.829$). The test confirms significant differences between the stimuli ($F(2.49,810.65)=78.05, p<.001, \eta^2=.193$). Furthermore, the following means in descending order were found: complete advertisement ($M=3.3211$), visuals ($M=2.9460$), music ($M=2.6188$), and storytelling ($M=2.2977$). Pairwise comparisons with Bonferroni adjustment show that all differences are statistically significant ($p<.001$). These findings reinforce the previous conclusions, which stand on the fact that while music is the most

effective element in evoking nostalgia, visual elements have a more pronounced impact on economic behavioural responses (WTP and Purchase Intention) than music alone.

CHAPTER 6 - DISCUSSION AND CONCLUSION

6.1 Discussion of Results

To answer the first research question, the nostalgic feelings of respondents were analysed with the use of three different retro elements of an advertisement (music, storytelling, and visuals). Additionally to these 3 elements, the respondents also evaluated the complete ad (all the stimulus together) accordingly with their feelings of nostalgia. As expected and in accordance with the study hypothesis, it was found that the presence of these retro elements causes nostalgic feelings in people and that the level of nostalgic feeling differs from stimuli (retro element) to stimuli. Nevertheless, it is important to state that the mean of nostalgic feeling of certain stimuli are low, not even reaching the value of 3 in a scale of 1 to 7, for instance the case of Storytelling ($M=2.670$), revealing that certain stimuli are not perceived as much relevant for Gen Z's as other stimuli. Thus, it can be said that this study concludes that vicarious nostalgia, when used in marketing, in this case more specifically in advertisements, is felt by people who did not live in the time referred to, in line with the ideology of several authors (Dam et al., 2024; Holak & Havlena, 1998; Merchant & Rose, 2013). In addition to proving that the feeling of vicarious nostalgia occurs, this study allowed us to discover and compare the performance of different stimuli in creating a nostalgic feeling. Thus, it was found that the use of retro (old) music creates significantly the same level of vicarious nostalgia in viewers as when they are exposed to an advertisement that contains all the elements, thus highlighting the importance and power of music in creating nostalgic feelings in consumers (Chou and Lien, 2014). In relation to visuals and storytelling, these had a lower level of nostalgia creation, necessarily in that order. One of the reasons for this significant difference between the constructs can be explained by the use of a well-known song from the 1960s that is already familiar to the public, while the storytelling and visuals are not associated with anything they have heard/seen in the past and therefore the correspondents do not feel nostalgic.

With regard to the second research question, social media fatigue, contrary to what was expected, there was no relationship between social media fatigue and feelings of nostalgia in any of the cases. These results differ from the literature used for this study. This research topic follows the theory of Han and Newman (2022), which argues that a threat to sociocultural stability leads people to seek vicarious nostalgia as a means of regaining a sense of stability and belonging. In this study, SMF is perceived as the threat to sociocultural stability (Dhir et al., 2018; Talwar et al., 2019), therefore it was unexpected. However, since there is no previous evidence on existing literature on SMF creating feelings of nostalgia and that the hypothesis of nostalgic feeling varying according to the level of social media fatigue was not supported by these specific data, this study indicates that the two concepts are not related.

Regarding the third research question on the effect of the nostalgic feeling created by retro elements, it was found that individuals in a nostalgic mood have an intention to purchase, aligning perfectly with the existing literature (Gonzalez-Cavazos et al., 2025). More precisely, Gonzalez-Cavazos et al. (2025) stated that nostalgic marketing positively influences purchase intention in Generation Z. Regarding the present investigation, in terms of the effectiveness of the different elements, the advertisement with all the elements together had the highest level of purchase intention, followed by the visual element, contrary to what was expected during the testing of this investigation's hypothesis, since the nostalgic feeling was stronger with the music. After the visuals, music and finally storytelling were found to create a lower level of purchase intention. One reason that may explain the rise of visuals compared to music is that visual elements may be more informative/decisive for purchase intention (Saine et al., 2018), while musical elements may touch the consumer's emotions (Scott, 1990).

Regarding the fourth question of the study, it was found that there is willingness to pay stemming from nostalgic feelings, thus confirming existing studies (Lasaleta et al., 2014; Gonzalez-Cavazos et al., 2025). Accordingly, Gonzalez-Cavazos et al. (2025) concluded that the presence of nostalgia (not necessarily vicarious) is positively related to willingness to pay

in Generation Z and, together with Lasaleta et al. (2014), both assert that when consumers are in a nostalgic state, they tend to decrease their price sensitivity and have a greater willingness to pay. In the present study, willingness to pay had a relatively lower mean compared to the purchase intention construct, however the different elements are in the same order, i.e., first the complete advertisement, then the visuals, followed by the music and finally the storytelling. In all measures, storytelling was the element that performed worst in all variables, leading to the conclusion that it is the element that is least appealing to Generation Z when it is nostalgic. The low mean may indicate that when using only storytelling by voice-over, it can not be evocative enough to trigger a connection with an era the participants did not personally experience, which limited the detail of the period presented.

6.2 Academic Contributions

In academic terms, the main key point is that this study serves to expand knowledge about nostalgic marketing, more precisely about vicarious nostalgia and how it is applied and effective in advertisements. Nostalgic marketing on advertising context has been explored in the literature (Brown et al., 1998; Muehling & Sprott, 2004; Pascal et al., 2002), however it is important to advance the understanding of the use of specifically vicarious nostalgia in advertisements and in its components, contributing to the existing body of literature (Merchant & Rose, 2013).

On the other hand, although the hypothesis that social media fatigue has an effect on the creation of nostalgic feelings has been rejected, this study contributes to the literature by suggesting that vicarious nostalgia in Generation Z is something structural that does not depend on or is influenced by the digital environment in order to be felt. Therefore contributing to the literature stating that those two concepts are not related.

The investigation also contributes to the literature by distinguishing and comparing the effectiveness of different stimuli, having successfully developed an hierarchy of impact, with music standing out as the most effective isolated stimulus for generating nostalgia (evoking emotion), surpassing visuals and storytelling. However, at the same time, visual elements

proved to be more effective in converting behavioural intentions (Purchase Intention and WTP). Therefore, these conclusions are crucial for future research and the development of theories on nostalgic consumer behaviour and its journey. In addition, this research may also be important for future studies on different stimuli in advertisements (even if they are not nostalgic), since through the findings of this study, it was concluded that music is more closely linked to the creation of emotion and visuals in converting emotion into action.

6.3 Contributions to Management

In business terms, this study's main contribution is a greater understanding of the use of nostalgic marketing, more specifically the use of retro stimuli in advertisements. Thus, this study serves to show that companies wishing to create a nostalgic campaign should not opt for a single retro element, but rather for all of them, i.e., creating an advertising campaign that combines the soundtrack (music) with the visual aesthetics of the era and appropriate storytelling, thereby ensuring the possibility of a greater return. This is because in all cases (H1, H3 and H4), the advert with all the elements was the one with the highest mean. This study also allowed us to draw conclusions about the use of retro stimuli in advertisements targeting Generation Z. It allowed us to conclude that this generation does not value storytelling as much, at least in a narrative format, as other stimuli. Therefore, for this age group, companies should prioritise more sensory stimuli, such as visual images and music, over narratives that can be lengthy. According to the results of this study, this generation seems to respond better to nostalgic aesthetics rather than structured historical storytelling, therefore facing "vintage anemoia" (Kulczynski & Hook, 2024). A key finding of this study is the divergence between emotional engagement and behavioural response. While music was the stimuli that created more nostalgic feeling, the visual stimuli proved to be more effective in purchase intention and willingness to pay. Therefore, this study emphasizes the fact that companies could use retro soundtracks to create emotion and to capture attention, at the same time that they utilize a visual aesthetic such as vintage logos, period-specific color palettes, and typography (Pecot et al., 2022) to facilitate the transition from emotion to action. Finally, the study provides insights to brands and companies that the effectiveness of nostalgic

campaigns is not influenced nor limited to consumer segments with social media fatigue. Thus, brands can invest in retro aesthetics on any platform as it will resonate with Generation Z, regardless of their level of consumption or social media exhaustion.

6.4 Study Limitations and Research Suggestions

The first limitation of the study lies in the data analysis, which was carried out only quantitatively. In this sense, in future research, it is proposed that qualitative techniques be applied in order to deepen the research on ad-evoked vicarious nostalgic feelings. Still on this topic, the number of responses obtained (327) can be mentioned as a limitation, thus having a smaller sample for study is less relevant than having a higher number of respondents. One of the reasons for this low number of responses may have been the length and time it took to complete the questionnaire, as 131 incomplete responses were received.

Another limitation was the use of an existing brand that is well known and widely recognised by the public. This factor may have led respondents to answer not only based on what they saw or heard in the survey, but also on their own perception of the brand and their personal taste for Coca-Cola products. Therefore, it is proposed that, in the future, the use of retro elements in advertisements should be investigated using fictitious or unknown brands so that the results are not biased.

Additionally, another limitation is the fact that the advertisements are targeted at a product in the food and beverages sector, so it is also proposed that in the future there should be other quantitative and qualitative studies to measure whether nostalgic marketing works in other sectors or industries.

Another point that should be taken into consideration is the use of only one generation. Although the focus of the study is vicarious nostalgia, it would be interesting to compare the same stimuli (not necessarily those exactly used in this study) with people from different generations and see how their consumer behaviour and emotional responses differ. From there, it would be possible to gain further insights into whether personal nostalgia or historical nostalgia is more effective.

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Finally, the scale for measuring nostalgic feeling (Merchant & Rose, 2013) is defined as a limitation. Although the scale was constructed to measure evoked feelings of vicarious nostalgia and was adapted for the purposes of the present study, a scale that precisely studies nostalgic feeling would be necessary.

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APPENDIX

Appendix 1 - Stimulus

In the music and storytelling stimuli presentation, the following Coca-Cola image was shown to draw attention solely to the advertised product (brand).	
The following text corresponds to the Storytelling Transcript.	“On those hot days when even the pool couldn’t cool us down. The radio was on... The days were always the same. We knew that there was only one escape. A refresh! That cold shock was the reset that we needed. That was our summer, that was Coca-Cola!”

All stimuli can be found at this link, including the video and the complete advertisement:
https://drive.google.com/drive/folders/16H-1FRecM_iPnUzmr_CCgj_nHmz-Z1B5

Appendix 2 - Survey

1st section



English

This survey forms part of the research for a Master's degree at ISEG. The aim of this research is to understand the emotional and behavioural reactions of young people from Generation Z to advertisements with nostalgic elements (music, storytelling and visuals). This survey takes about 10 minutes to complete and the data collected will be anonymous and used exclusively for academic purposes. Thank you very much, your contribution is essential for the completion of my dissertation!

If you have any questions or concerns, please contact:
Maria Inês Pacheco
i62967@aln.iseg.ulisboa.pt

English

Are you between 13 and 28 years old?

☐ Yes

☐ No

2nd section - preferences questions

Do you like retro/vintage products?

☐ Strongly agree

☐ Somewhat agree

☐ Neither agree nor disagree

☐ Somewhat disagree

☐ Strongly disagree

Have you seen retro advertising?

☐ Yes

☐ No

☐ Not sure

What kind of vintage/retro products do you usually consume?

☐ Clothes

☐ Shoes/sneakers

☐ Cameras

☐ Movies or series

☐ Food and Beverages

☐ Audio equipment (e.g., vinyls)

☐ Other (please specify):

When you see retro advertising, what element catches your attention the most?

☐ Music

☐ Visuals

☐ Storytelling

☐ Other (please specify):

Seeing items from the past makes you nostalgic?

☐ Strongly agree

☐ Somewhat agree

☐ Neither agree nor disagree

☐ Somewhat disagree

☐ Strongly disagree

How often do you use social media per day?

☐ I do not use social media

☐ Less than 30 minutes

☐ 30 minutes to 1 hour

☐ 1 to 2 hours

☐ 2 to 3 hours

☐ More than 3 hours

3rd section - SMF questions

To what extent does your use of social media shape your state of mind? On a scale of 1 (strongly disagree) to 5 (strongly agree), indicate your level of agreement with the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
When I use social media these days, I get frustrated.	☐	☐	☐	☐	☐
I'm emotionally drained these days after using social media.	☐	☐	☐	☐	☐
I'm annoyed these days after spending a few hours on social media	☐	☐	☐	☐	☐

4th section - Music stimuli questions

Please listen to this audio for an advertisement for Coca-Cola:



Based only on what you just heard, indicate how much you agree with the following statements on a scale of 1 (strongly disagree) to 7 (strongly agree).

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I fantasized about the past when listening to this music.	☐	☐	☐	☐	☐	☐	☐
I imagined I was living in the past period that this music represents.	☐	☐	☐	☐	☐	☐	☐
The music took me back in time.	☐	☐	☐	☐	☐	☐	☐
When I listened to this music, I became lost in the period it represents.	☐	☐	☐	☐	☐	☐	☐
This music made me nostalgic for the time period it represents.	☐	☐	☐	☐	☐	☐	☐
After listening this music, my imagination was like an avalanche, I thought of all different things about the past.	☐	☐	☐	☐	☐	☐	☐

Based only on what you just heard, indicate how much you agree with the following statements on a scale of 1 (strongly disagree) to 7 (strongly agree).

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
With the use of this music for a Coca-Cola advertisement, I would consider purchasing Coca-Cola's products in the future.	☐	☐	☐	☐	☐	☐	☐
With the use of this music for a Coca-Cola advertisement, I am willing to recommend that others buy Coca-Cola's products.	☐	☐	☐	☐	☐	☐	☐
With the use of this music for a Coca-Cola advertisement, I would buy Coca-Cola's products rather than any other products available.	☐	☐	☐	☐	☐	☐	☐

Based only on what you just heard, indicate how much you agree with the following statements on a scale of 1 (strongly disagree) to 7 (strongly agree).

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
With the use of this music for a Coca-Cola advertisement, I am willing to pay a higher price for Coca-Cola's products.	☐	☐	☐	☐	☐	☐	☐
With the use of this music for a Coca-Cola advertisement, I am willing to pay a lot more for Coca-Cola's products.	☐	☐	☐	☐	☐	☐	☐
With the use of this music for a Coca-Cola advertisement, the price of Coca-Cola's products would have to rise substantially before I would choose a different product.	☐	☐	☐	☐	☐	☐	☐

5th section - Storytelling stimuli questions

Please listen to this second audio for an advertisement for Coca-Cola:



Based only on what you just heard, indicate how much you agree with the following statements on a scale of 1 (strongly disagree) to 7 (strongly agree).

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I fantasized about the past when listening to this story.	☐	☐	☐	☐	☐	☐	☐
I imagined I was living in the past period that this story represents.	☐	☐	☐	☐	☐	☐	☐
The story took me back in time.	☐	☐	☐	☐	☐	☐	☐
When I listened to this story, I became lost in the period it represents	☐	☐	☐	☐	☐	☐	☐
This story made me nostalgic for the time period it represents	☐	☐	☐	☐	☐	☐	☐
After listening this story, my imagination was like an avalanche, I thought of all different things about the past	☐	☐	☐	☐	☐	☐	☐

Based only on what you just heard, indicate how much you agree with the following statements on a scale of 1 (strongly disagree) to 7 (strongly agree).

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
With the use of this story for a Coca-Cola advertisement, I would consider purchasing Coca-Cola's products in the future.	☐	☐	☐	☐	☐	☐	☐
With the use of this story for a Coca-Cola advertisement, I am willing to recommend that others buy Coca-Cola's products.	☐	☐	☐	☐	☐	☐	☐
With the use of this story for a Coca-Cola advertisement, I would buy Coca-Cola's products rather than any other products available.	☐	☐	☐	☐	☐	☐	☐

Based only on what you just heard, indicate how much you agree with the following statements on a scale of 1 (strongly disagree) to 7 (strongly agree).

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
With the use of this story for a Coca-Cola advertisement, I am willing to pay a higher price for Coca-Cola's products.	☐	☐	☐	☐	☐	☐	☐
With the use of this story for a Coca-Cola advertisement, I am willing to pay a lot more for Coca-Cola's products.	☐	☐	☐	☐	☐	☐	☐
With the use of this story for a Coca-Cola advertisement, the price of Coca-Cola's products would have to rise substantially before I would choose a different product.	☐	☐	☐	☐	☐	☐	☐

6th section - visuals stimuli questions

Please visualize this video for an advertisement for Coca-Cola:



Based only on the video, indicate how much you agree with the following statements on a scale of 1 (strongly disagree) to 7 (strongly agree).

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I fantasized about the past when watching this video.	☐	☐	☐	☐	☐	☐	☐
I imagined I was living in the past period that this video represents.	☐	☐	☐	☐	☐	☐	☐
The video took me back in time.	☐	☐	☐	☐	☐	☐	☐
When I watched this video, I became lost in the period it represents.	☐	☐	☐	☐	☐	☐	☐
This video made me nostalgic for the time period it represents.	☐	☐	☐	☐	☐	☐	☐
After watching this video, my imagination was like an avalanche, I thought of all different things about the past.	☐	☐	☐	☐	☐	☐	☐

Based only on the video, indicate how much you agree with the following statements on a scale of 1 (strongly disagree) to 7 (strongly agree).

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
With the use of this video for a Coca-Cola's advertisement, I would consider purchasing Coca-Cola's products in the future.	☐	☐	☐	☐	☐	☐	☐
With the use of this video for a Coca-Cola's advertisement, I am willing to recommend that others buy Coca-Cola's products.	☐	☐	☐	☐	☐	☐	☐
With the use of this video for a Coca-Cola advertisement, I would buy Coca-Cola's products rather than any other products available.	☐	☐	☐	☐	☐	☐	☐

Based only on the video, indicate how much you agree with the following statements on a scale of 1 (strongly disagree) to 7 (strongly agree).

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
With the use of this video for a Coca-Cola advertisement, I am willing to pay a higher price for Coca-Cola's products.	☐	☐	☐	☐	☐	☐	☐
With the use of this video for a Coca-Cola advertisement, I am willing to pay a lot more for Coca-Cola's products.	☐	☐	☐	☐	☐	☐	☐
With the use of this video for a Coca-Cola advertisement, the price of Coca-Cola's products would have to rise substantially before I would choose a different product.	☐	☐	☐	☐	☐	☐	☐

7th section - All stimuli questions

Please visualize this advertisement for Coca-Cola:



Based only on the advertisement, indicate how much you agree with the following statements on a scale of 1 (strongly disagree) to 7 (strongly agree).

[illegible]

Maria Inês Pacheco

Based only on the advertisement, indicate how much you agree with the following statements on a scale of 1 (strongly disagree) to 7 (strongly agree).

[illegible]

Based only on the advertisement, indicate how much you agree with the following statements on a scale of 1 (strongly disagree) to 7 (strongly agree).

[illegible]

8th section - Demographic questions

How do you describe your self?

- ☐ Male
- ☐ Female
- ☐ Non-binary / third gender
- ☐ Prefer not to say

What is the highest level of education you have completed?

- ☐ 2nd cycle of basic education (6th year)
- ☐ 3rd cycle of basic education
- ☐ Secondary education
- ☐ Higher professional technical course
- ☐ Bachelor's degree
- ☐ Master's degree
- ☐ Doctorate

Please select which country you are from.

What is your professional status?

- ☐ Student
- ☐ Working student
- ☐ Self-employed
- ☐ Employed
- ☐ Unemployed

Appendix 3 - Measurement Scales

VARIABLES	AUTHORS	ORIGINAL ITEMS	ADAPTED ITEMS
Nostalgic Feeling (Music, Storytelling, Visuals, All)	Merchant & Rose (2013)	• [N1] I fantasized about the past when watching the ad • [N2] I imagined I was living in the past period shown in the ad • [N3] The ad took me back in time • [N4] When I saw the ad, I became lost in the period(s) shown • [N5] The ad made me nostalgic for the time period shown • [N6] After seeing the ad, my imagination was like an avalanche, I thought of all different things about the past	• [N1] I fantasized about the past when listening (viewing) to this music/story/video/ad • [N2] I imagined I was living in the past period that this music/story/video/ad represents • [N3] The music/story/video/ad took me back in time • [N4] When I listened (viewed) to the music/story/video/ad, I became lost in the period it represents • [N5] The music/story/video/ad made me nostalgic for the time period it represents • [N6] After listening (viewing) to this music/story/video/ad, my imagination was like an avalanche, I thought of all different things about the past
Social Media Fatigue	Sharma et al. (2023)	• [S1] When I use social media these days, I get frustrated. • [S2] I'm emotionally drained these days after using social media. • [S3] I'm annoyed these days after spending a few hours on social media	• [S1] When I use social media these days, I get frustrated. • [S2] I'm emotionally drained these days after using social media. • [S3] I'm annoyed these days after spending a few hours on social media
Purchase Intention	Poirier et al. (2024)	• [P1] I would consider purchasing this lawnmower in the future. • [P2] I am willing to recommend that others buy this lawnmower. • [P3] I would buy this lawnmower rather than any other lawnmowers available.	• [P1] I would consider purchasing the product shown in the music/story/video/ad in the future. • [P2] I am willing to recommend that others buy the product shown in the music/story/video/ad. • [P3] I would buy the product shown in the music/story/video/ad rather than any other products available.
Willingness to pay	Can et al. (2023)	• [W1] I am willing to pay a higher price for having a holiday in X. • [W2] I am willing to pay a lot more for a holiday in X. • [W3] The price of a holiday in X would have to rise substantially before I would choose a different destination.	• [W1] I am willing to pay a higher price for the product shown in music/story/video/ad. • [W2] I am willing to pay a lot more for the product shown in the music/story/video/ad. • [W3] The price of the product shown in the ad would have to rise substantially before I would choose a different product.

Appendix 4 - Sample Characterization

Indicator	Answer options	N	%
Gender	Male	153	46.8
	Female	170	52.0
	Non binary / third gender	3	.9
	Prefer not to say	1	.3
	Total	327	100
Academic qualifications	3rd cicle of basic education (9th grade)	1	.3
	High-school (secondary education)	44	13.5
	Professional/technical course	6	1.8
	Bachelor degree	206	63.0
	Masters degree	70	21.4
	Total	327	100.0
Professional status	Student	150	45.9
	Working student	72	22.0
	Self-employed	9	2.8
	Employed	88	26.9
	Unemployed	8	2.4
	Total	327	100.0
Country of residence	-	4	1.2
	Austria	1	.3
	Brazil	3	.9
	Chile	2	.6
	France	1	.3
	Germany	5	1.5
	Italy	4	1.2
	Luxembourg	2	.6
	Netherlands	2	.6
	Norway	1	.3
	Portugal	294	89.9
	Russia	1	.3
	Slovakia	1	.3
	Spain	5	1.5
	United States of America	1	.3
	Total	327	100.0

Indicator	Answer options	N	%
Have seen retro advertising	Yes	189	57.8
	No	44	13.5
	Not sure	94	28.7
	Total	327	100.0
Like for vintage/retro products	Strongly agree	109	33.3
	Somewhat agree	166	50.8
	Neither agree nor disagree	34	10.4
	Somewhat disagree	17	5.2
	Strongly disagree	1	.3
	Total	327	100.0
Favorite element of retro advertising	Music	150	45.9
	Image	72	22.0
	Storytelling	9	2.8
	Do not remember	1	0.3
	All the mentioned	1	0.3
	Total	327	100.0

Indicator	Answer options	N	%	% of cases
Vintage/retro products of consumption	Clothes	224	29.2	68.5%
	Shoes/Sneakers	78	10.2	23.9%
	Cameras	130	16.9	39.8%
	Movies or series	203	26.4	62.1%
	Food and beverages	26	3.4	8.0%
	Audio equipment	98	12.8	30.0%
	CDs	1	.3	
	Books	1	.3	
	Furniture	1	.3	
	Watches and Cars	1	.3	2.8%
	Antiques/collectibles	1	.3	
	Video games	1	.3	
	None	3	0.9	
	Total	327	100.0	234.9%

Indicator	Answer options	N	%
Seeing items from the past makes them nostalgic	Strongly agree	154	47.1
	Somewhat agree	124	37.9
	Neither agree nor disagree	35	10.7
	Somewhat disagree	12	3.7
	Strongly disagree	2	.6
	Total	327	100.0
Use of social media (hours)	Don not use social media	2	.6
	Less than a hour	12	3.7
	1 to 2 hours	61	18.7
	2 to 3 hours	120	36.7
	3 to 4 hours	75	22.9
	More than 4 hours	57	17.4
	Total	327	100.0

Appendix 5 - Principal Component Analysis (PCA) and Reliability Analysis

INDEX	ITEM	N	PRINCIPAL COMPONENT ANALYSIS (PCA)					RELIABILITY ANALYSIS		
			KMO (1)	Bartlett's test of sphericity		Total variance explained (%)	Comunalities Extraction	Cronbach's Alpha	Item-Total Statistics	
				Aprox. X ²	Sig. (p)				Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SMF	[S1]	327	0.724	406.279	<0,001	76.249	0.774	0.842	0.720	0.772
	[S2]						0.787		0.732	0.757
	[S3]						0.726		0.676	0.814
Nostagic Feeling_AdTotal	[N1]	327	0.912	2063.011	<0,001	80.375	0.853	0.951	0.883	0.937
	[N2]						0.867		0.894	0.936
	[N3]						0.869		0.896	0.936
	[N4]						0.675		0.753	0.952
	[N5]						0.812		0.855	0.941
	[N6]						0.746		0.807	0.946
PI_AdTotal	[P1]	327	0.748	774.424	<0,001	86.868	0.890	0.924	0.868	0.872
	[P2]						0.824		0.800	0.926
	[P3]						0.892		0.870	0.871
WTP_AdTotal	[W1]	327	0.730	656.100	<0,001	83.701	0.871	0.901	0.838	0.829
	[W2]						0.868		0.836	0.833
	[W3]						0.772		0.742	0.913

(1) Decay of correlations according to Mooi and Sarstedt (2014).

(2) A significance level of 5% was considered.

Source: Own elaboration.

Appendix 6 - Statistical Analysis for Nostalgic Feelings (H1)

Section 1 - Descriptive Statistics

Descriptive Statistics

Variable	Mean (M)	Std. Deviation	N
Mean_Nostalgia_Music	4.1239	1.32867	327
Mean_Nostalgia_Storytelling	2.6697	1.52574	327
Mean_Nostalgia_Visuals	3.5168	1.56684	327
Mean_Nostalgia_ALL	4.3359	1.57116	327

Section 2: Repeated Measures ANOVA

Multivariate Tests

Effect		Value	F	Hypothesis df	Error df	Sig. (p)	Partial Eta square
Stimulus	Pillai's Trace	.528	120.872	3.000	324.000	<.001	.528
	Wilks' Lambda	.472	120.872	3.000	324.000	<.001	.528
	Hotelling's Trace	1.119	120.872	3.000	324.000	<.001	.528
	Roy's Largest Root	1.119	120.872	3.000	324.000	<.001	.528
	Root						

Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig. (p)	Epsilonb		
					Greenhouse-Geisser	Huynh-Feldt	Inferior limit
Stimulus	.797	73.674	5	<.001	.889	.897	.333

Tests of Within-Subjects Effects

	Source	Type III Sum of Squares	df	Mean Square	F	Sig. (p)	Partial Eta Squared
stimulus	Sphericity considered	547.108	3	182.369	130.054	<.001	.285
	Greenhouse-Geisser	547.108	2.666	205.240	130.054	<.001	.285
	Huynh-Feldt	547.108	2.690	203.406	130.054	<.001	.285
	Lower limit	547.108	1.000	547.108	130.054	<.001	.285
Error(stimulus)	Sphericity considered	1371.406	978	1.402			
	Greenhouse-Geisser	1371.406	869.017	1.578			
	Huynh-Feldt	1371.406	876.853	1.564			
	Lower limit	1371.406	326.000	4.207			

Tests of Within-Subjects Contrasts

Source	stimulus	Type III Sum of Squares	df	Mean Square	F	Sig. (p)	Partial Eta square
Stimulus	Linear	35.967	1	35.967	22.550	<.001	.065
	Quadratic	422.435	1	422.435	325.931	<.001	.500
	Cubic	88.706	1	88.706	67.422	<.001	.171
Error(Stimulus)	Linear	519.969	326	1.595			
	Quadratic	422.524	326	1.296			
	Cubic	428.914	326	1.316			

Tests of Between-subjects effect

Source	Type III Sum of Squares	df	Mean Square	F	Sig. (p)	Partial Eta square
Intercept	17536.478	1	17536.478	3645.830	<.001	.918
Error	1568.063	326	4.810			

Estimated Marginal Means

stimulus	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1 - Music	4.124	.073	3.979	4.268
2 - Storytelling	2.670	.084	2.504	2.836
3 - Visuals	3.517	.087	3.346	3.687
4 - Complete Ad	4.336	.087	4.165	4.507

Multivariate Tests

Effect	Value	F	Hypothesis df	Error df	Sig. (p)	Partial Eta square
Pillai's Trace	.528	120.872a	3.000	324.000	<.001	.528
Wilks' Lambda	.472	120.872a	3.000	324.000	<.001	.528
Hotelling's Trace	1.119	120.872a	3.000	324.000	<.001	.528
Roy's Largest Root	1.119	120.872a	3.000	324.000	<.001	.528

Each F tests the multivariate effect of stimuli. These tests are based on linearly independent pairwise comparisons between the estimated marginal means.

a. Exact statistics

Pairwise Comparisons (Post-Hoc Bonferroni)

(I) stimulus	(J) stimulus	Mean Difference (I-J)	Std. Error	Sig. (p) ^b	95% Confidence Interval ^b	
					Lower Bound	Upper Bound
1	2	1.454*	.097	<.001	1.196	1.713
	3	.607*	.096	<.001	.351	.863
	4	-.212	.089	.110	-.449	.025
2	1	-1.454*	.097	<.001	-1.713	-1.196
	3	-.847*	.099	<.001	-1.110	-.584
	4	-1.666*	.101	<.001	-1.934	-1.399
3	1	-.607*	.096	<.001	-.863	-.351
	2	.847*	.099	<.001	.584	1.110
	4	-.819*	.069	<.001	-1.002	-.637
4	1	.212	.089	.110	-.025	.449
	2	1.666*	.101	<.001	1.399	1.934
	3	.819*	.069	<.001	.637	1.002

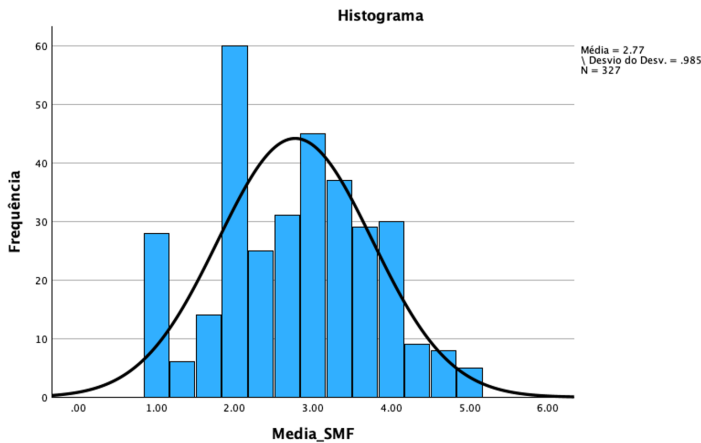
Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Appendix 7 - Statistical Analysis for Social Media Fatigue (H2)

Histogram



Section 1 - one way ANOVA for complete ad

Descriptives Statistics

Media_Nostalgia_ALL

SMF Level	N	Mean	Std. Deviation	Std. Error	95% confidence interval		Minimum	Maximum
low SMF	108	4.2515	1.62622	.15648	3.9413	4.5618	1.00	7.00
moderate SMF	138	4.2778	1.48298	.12624	4.0281	4.5274	1.00	7.00
high SMF	81	4.5473	1.64174	.18242	4.1843	4.9103	1.00	7.00
Total	327	4.3359	1.57116	.08689	4.1650	4.5068	1.00	7.00

Test of Homogeneity of Variances (Levene's Test)

		Levene Statistic	df1	df2	Sig. (p)
Media_Nostalgia_ALL	Based on Mean	.361	2	324	.697
	Based on Median	.209	2	324	.811
	Based on Median and with adjusted df	.209	2	307.763	.811
	Based on trimmed mean	.343	2	324	.710

ANOVA

Media_Nostalgia_ALL

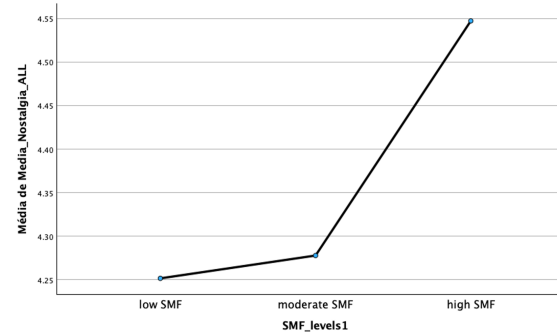
	Sum of Squares	df	Mean Square	F	Sig. (p)
Between Groups	4.855	2	2.428	.983	.375
Within Groups	799.892	324	2.469		
Total	804.748	326			

Multiple Comparisons (Tukey HSD)

Dependent variable: Media_Nostalgia_ALL
Tukey HSD

		Mean difference (I-J)	Std. Error	Sig. (p)	95% confidence interval	
SMF_levels1	SMF_levels1				Lower bound	Upper bound
low SMF	moderate SMF	-.02623	.20186	.991	-.5015	.4491
	high SMF	-.29578	.23095	.407	-.8396	.2480
moderate SMF	low SMF	.02623	.20186	.991	-.4491	.5015
	high SMF	-.26955	.21993	.439	-.7874	.2483
high SMF	low SMF	.29578	.23095	.407	-.2480	.8396
	moderate SMF	.26955	.21993	.439	-.2483	.7874

Gráficos de médias



ANOVA effect sizes^{a,b}

		Point estimate	95% confidence interval	
Media_Nostalgia_A LL	Eta-squared	.006	.000	.029
	Epsilon-squared	.000	-.006	.023
	Omega-squared (fixed-effect)	.000	-.006	.023
	Omega-squared (random-effect)	.000	-.003	.012

a. Eta squared and Epsilon squared are estimated based on the fixed effect model.

b. Negative but less biased estimates are retained, not rounded to zero.

Homogeneous Subsets (Tukey HSD)

Tukey HSD^{a,b}

		Subset for alpha = 0.05	
SMF_levels1	N	1	
low SMF	108	4.2515	
moderate SMF	138	4.2778	
high SMF	81	4.5473	
Sig. (p)		.365	

The means for the groups in homogeneous subsets are displayed.

- Uses the Harmonic Mean Sample Size = 103,981.
- The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Section 2 - one way ANOVA for Music

Descriptives Statistics

Media_Nostalgia_Musica

SMF Level	N	Mean	Std. Deviation	Std. Error	95% confidence interval		Minimum	Maximum
low SMF	108	4.0540	1.40423	.13512	3.7861	4.3219	1.00	7.00
moderate SMF	138	4.0930	1.27663	.10867	3.8781	4.3079	1.00	6.33
high SMF	81	4.2695	1.31750	.14639	3.9782	4.5609	1.00	6.83
Total	327	4.1239	1.32867	.07348	3.9793	4.2684	1.00	7.00

Test of Homogeneity of Variances (Levene's Test)

		Levene Statistic	df1	df2	Sig. (p)
Media_Nostalgia_Musica	Based on Mean	.548	2	324	.578
	Based on Median	.448	2	324	.639
	Based on Median and with adjusted df	.448	2	318.772	.639
	Based on trimmed mean	.563	2	324	.570

ANOVA

Media_Nostalgia_Musica

	Sum of Squares	df	Mean Square	F	Sig. (p)
Between Groups	2.378	2	1.189	.672	.511
Within Groups	573.134	324	1.769		
Total	575.512	326			

ANOVA effect sizes^{a,b}

		Point estimate	95% confidence interval	
			Lower bound	Upper bound
Media_Nostalgia_Musica	Eta-squared	.004	.000	.024
	Epsilon-squared	-.002	-.006	.018
	Omega-squared (fixed-effect)	-.002	-.006	.018
	Omega-squared (random-effect)	-.001	-.003	.009

a. Eta squared and Epsilon squared are estimated based on the fixed effect model.

b. Negative but less biased estimates are retained, not rounded to zero.

Multiple Comparisons (Tukey HSD)

Dependent variable: Media_Nostalgia_Musica

Tukey HSD

(I) SMF_levels1	(J) SMF_levels1	Mean difference (I-J)	Std. Error	Sig. (p)	95% confidence interval	
					Lower bound	Upper bound
low SMF	moderate SMF	-.03898	.17087	.972	-.4413	.3633
	high SMF	-.21553	.19549	.513	-.6758	.2448
moderate SMF	low SMF	.03898	.17087	.972	-.3633	.4413
	high SMF	-.17655	.18616	.610	-.6149	.2618
high SMF	low SMF	.21553	.19549	.513	-.2448	.6758
	moderate SMF	.17655	.18616	.610	-.2618	.6149

Homogeneous Subsets (Tukey HSD)

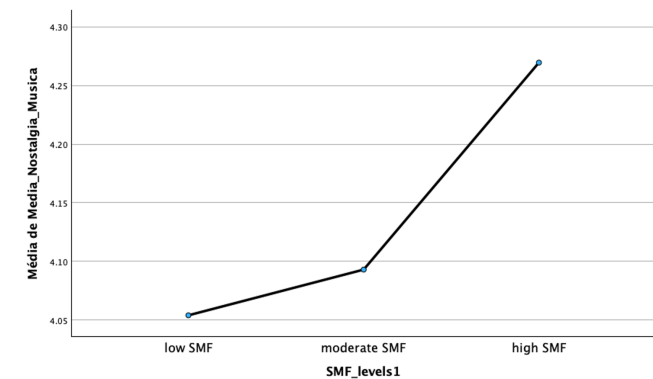
Tukey HSD^{a,b}

		Subset for alpha = 0.05
SMF_levels1	N	1
low SMF	108	4.0540
moderate SMF	138	4.0930
high SMF	81	4.2695
Sig. (p)		.473

The means for the groups in homogeneous subsets are displayed.

- Uses the Harmonic Mean Sample Size = 103,981.
- The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Gráficos de médias



Section 3 - one way ANOVA for Storytelling

Descriptives Statistics

Media_Nostalgia_STORYTELLING

SMF Level	N	Mean	Std. Deviation	Std. Error	95% confidence interval		Minimum	Maximum
low SMF	108	2.5386	1.40678	.13537	2.2702	2.8069	1.00	6.67
moderate SMF	138	2.6944	1.55822	.13264	2.4321	2.9567	1.00	6.50
high SMF	81	2.8025	1.62449	.18050	2.4433	3.1617	1.00	7.00
Total	327	2.6697	1.52574	.08437	2.5037	2.8357	1.00	7.00

Test of Homogeneity of Variances (Levene's Test)

		Levene Statistic	df1	df2	Sig. (p)
Media_Nostalgia_STORYTELLING	Based on Mean	2.370	2	324	.095
	Based on Median	2.059	2	324	.129
	Based on Median and with adjusted df	2.059	2	323.499	.129
	Based on trimmed mean	2.365	2	324	.096

ANOVA

Media_Nostalgia_STORYTELLING

	Sum of Squares	df	Mean Square	F	Sig. (p)
Between Groups	3.369	2	1.685	.722	.486
Within Groups	755.517	324	2.332		
Total	758.886	326			

ANOVA effect sizes^{a,b}

		Point estimate	95% confidence interval	
			Lower bound	Upper bound
Media_Nostalgia_STORYTELLING	Eta-squared	.004	.000	.025
	Epsilon-squared	-.002	-.006	.019
	Omega-squared (fixed-effect)	-.002	-.006	.019
	Omega-squared (random-effect)	-.001	-.003	.009

a. Eta squared and Epsilon squared are estimated based on the fixed effect model.

b. Negative but less biased estimates are retained, not rounded to zero.

Multiple Comparisons (Tukey HSD)

Dependent variable: Media_Nostalgia_STORYTELLING

Tukey HSD

(I) SMF_levels1	(J) SMF_levels1	Mean difference (I-J)	Std. Error	Sig. (p)	95% confidence interval	
low SMF	moderate SMF	-.15586	.19618	.707	-.6178	.3061
	high SMF	-.26389	.22445	.469	-.7924	.2646
moderate SMF	low SMF	.15586	.19618	.707	-.3061	.6178
	high SMF	-.10802	.21374	.869	-.6113	.3952
high SMF	low SMF	.26389	.22445	.469	-.2646	.7924
	moderate SMF	.10802	.21374	.869	-.3952	.6113

Homogeneous Subsets (Tukey HSD)

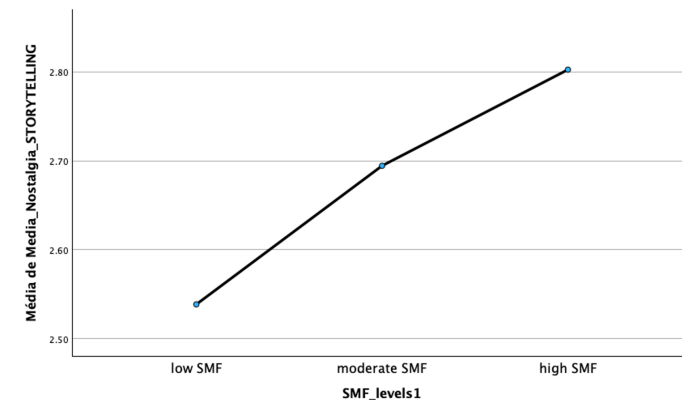
Tukey HSD^{a,b}

SMF_levels1	N	Subset for alpha = 0.05
low SMF	108	2.5386
moderate SMF	138	2.6944
high SMF	81	2.8025
Sig. (p)		.427

The means for the groups in homogeneous subsets are displayed.

- a. Uses the Harmonic Mean Sample Size = 103,981.
- b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Gráficos de médias



Section 4 - Visuals

Descriptives Statistics

Media_Nostalgia_VISUALS

SMF Level	N	Mean	Std. Deviation	Std. Error	95% confidence interval		Minimum	Maximum
low SMF	108	3.3843	1.61082	.15500	3.0770	3.6915	1.00	7.00
moderate SMF	138	3.4698	1.55661	.13251	3.2078	3.7318	1.00	7.00
high SMF	81	3.7737	1.51321	.16813	3.4391	4.1083	1.00	6.83
Total	327	3.5168	1.56684	.08665	3.3464	3.6873	1.00	7.00

Test of Homogeneity of Variances (Levene's Test)

		Levene Statistic	df1	df2	Sig. (p)
Media_Nostalgia_VISUALS	Based on Mean	1.091	2	324	.337
	Based on Median	1.185	2	324	.307
	Based on Median and with adjusted df	1.185	2	312.832	.307
	Based on trimmed mean	1.073	2	324	.343

ANOVA

Media_Nostalgia_VISUALS

	Sum of Squares	df	Mean Square	F	Sig. (p)
Between Groups	7.546	2	3.773	1.542	.216
Within Groups	792.778	324	2.447		
Total	800.324	326			

ANOVA effect sizes^{a,b}

		Point estimate	95% confidence interval	
			Lower bound	Upper bound
Media_Nostalgia_VISUALS	Eta-squared	.009	.000	.036
	Epsilon-squared	.003	-.006	.030
	Omega-squared (fixed-effect)	.003	-.006	.030
	Omega-squared (random-effect)	.002	-.003	.015

a. Eta squared and Epsilon squared are estimated based on the fixed effect model.

b. Negative but less biased estimates are retained, not rounded to zero.

Multiple Comparisons (Tukey HSD)

Dependent variable: Media_Nostalgia_VISUALS

Tukey HSD

(I) SMF levels1	(J) SMF levels1	Mean difference (I-J)	Std. Error	Sig. (p)	95% confidence interval	
low SMF	moderate SMF	-.08555	.20096	.905	-.5587	.3876
	high SMF	-.38940	.22992	.209	-.9308	.1520
moderate SMF	low SMF	.08555	.20096	.905	-.3876	.5587
	high SMF	-.30386	.21895	.348	-.8194	.2117
high SMF	low SMF	.38940	.22992	.209	-.1520	.9308
	moderate SMF	.30386	.21895	.348	-.2117	.8194

Homogeneous Subsets (Tukey HSD)

Tukey HSD^{a,b}

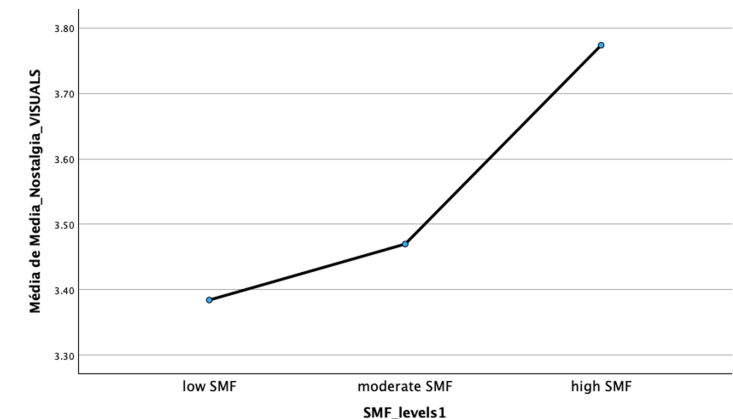
		Subset for alpha = 0.05	
SMF_levels1	N	1	
low SMF	108	3.3843	
moderate SMF	138	3.4698	
high SMF	81	3.7737	
Sig. (p)		.173	

The means for the groups in homogeneous subsets are displayed.

a. Uses the Harmonic Mean Sample Size = 103,981.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Gráficos de médias



Appendix 8 - Statistical Analysis for Purchase Intention (H3)

Preliminary analysis of the assumptions

VARIABLE	N	Normality test (1)		Independence of errors (2)	Residual statistics (3)	Collinearity Statistics (4)	
		K-S	Sig. (p)	Durbin-Watson	Media residual	Tolerância	FIV
(Constant)		-	-			-	-
Nostalgic Feeling	327	1.257	<0,001	1.990	0.000	1.000	1.000

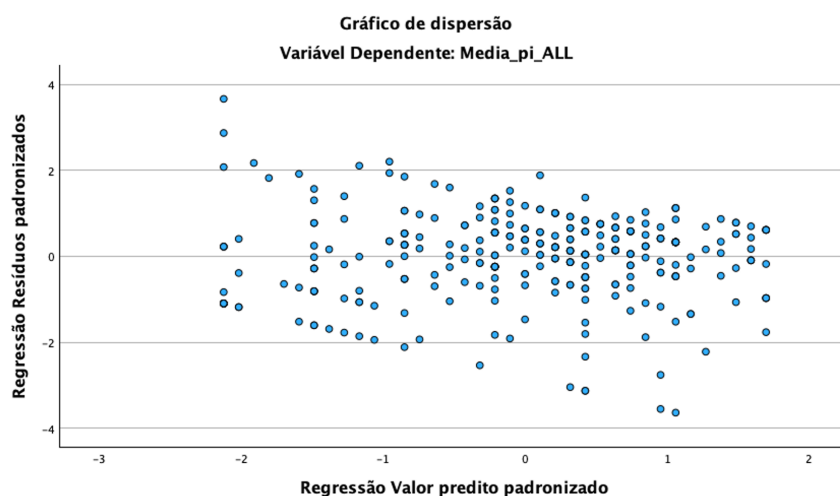
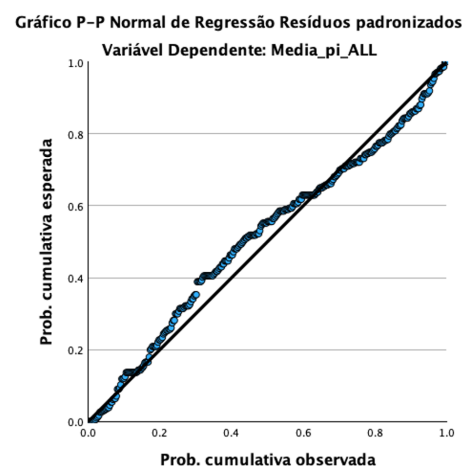
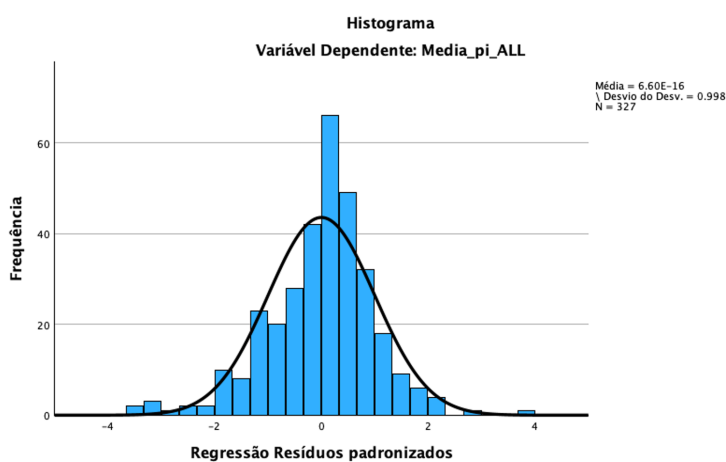
Predictors: (Constant), Nostalgic Feeling
 Dependent Variable: Purchase Intention
 A significance level of 5% was considered.

(1) According to the Kolmogorov-Smirnov (K-S) test, the residuals do not follow a perfectly normal distribution ($p < .001$). However, the normality assumption is guaranteed by the Central Limit Theorem (CLT), given that the sample size is significantly larger than 30 ($N = 327 > 30$).

(2) The Durbin-Watson statistic was checked to ensure there is no autocorrelation of errors. A value close to 2.0 indicates that the assumption of independent errors is satisfied.

(3) The mean of the residuals is zero (0.000), confirming that the expected error of the model is null.

(4) The Tolerance value and Variance Inflation Factor (VIF) values are 1.000 (above 0.1 and below 10, respectively), confirming the absence of multicollinearity.



Section 1 - Linear Regression (Predicting Purchase Intention)

Model Summary for Purchase Intention

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	.625	.391	.389	1.25878

ANOVA (Global Model Significance)

Model	Source	Sum of Squares	df	Mean Square	F	Sig. (p)
1	Regression	330.020	1	330.020	208.277	<.001
	Residual	514.971	325	1.585		
	Total	844.991	326			

Regression Coefficients

Predictors	B	Std. Error	β (Beta)	t	Sig. (p)
(Constant)	1.740	.205	--	8.505	<.001
Mean_Nostalgia_ALL	.640	.044	.625	14.432	<.001

Section 2- Repeated Measures ANOVA (Comparing Retro Elements)

Descriptive Statistics for Purchase Intention (by Stimulus)

Stimulus Condition	Mean (M)	Std. Deviation	N
Mean of PI in Complete Ad	4.5168	1.60997	327
Mean of PI in Visual Elements	4.0000	1.55976	327
Mean of PI in Music Elements	3.7064	1.39899	327
Mean of PI in Storytelling Elements	2.8940	1.47357	327

Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig. (p)	Greenhouse-Geisser
Stimulus PI	.794	74.809	5	<.001	.873

Tests of Within-Subjects Effects

	Source	Type III Sum of Squares	df	Mean Square	F	Sig. (p)	Partial Eta Squared
Stimulus_purchase	Sphericity considered	451.828	3	150.609	127.192	<.001	451.828
	Greenhouse-Geisser	451.828	2.618	172.603	127.192	<.001	451.828
	Huynh-Feldt	451.828	2.641	171.093	127.192	<.001	451.828
	Lower limit	451.828	1.000	451.828	127.192	<.001	451.828
Error(stimulus_purchase)	Sphericity considered	1158.061	978	1.184			1158.061
	Greenhouse-Geisser	1158.061	853.379	1.357			1158.061
	Huynh-Feldt	1158.061	860.910	1.345			1158.061
	Lower limit	1158.061	326.000	3.552			1158.061

Tests of Within-Subjects Contrasts

Source	stimulus	Type III Sum of Squares	df	Mean Square	F	Sig. (p)	Partial Eta square
Stimulus_purchase	Linear	204.568	1	204.568	143.271	<.001	204.568
	Quadratic	144.446	1	144.446	146.900	<.001	144.446
	Cubic	102.813	1	102.813	90.092	<.001	102.813
Error(Stimulus_purchase)	Linear	465.476	326	1.428			465.476
	Quadratic	320.554	326	.983			320.554
	Cubic	372.031	326	1.141			372.031

Tests of Between-subjects effect

Source	Type III Sum of Squares	df	Mean Square	F	Sig. (p)
Intercept	18682.373	1	18682.373	3335.481	<.001
Error	1825.960	326	5.601		

Multivariate Tests

Effect		Value	F	Hypothesis df	Error df	Sig. (p)	Partial Eta square
Stimulus	Pillai's Trace	.471	96.135 ^b	3.000	324.000	<.001	.471
	Wilks' Lambda	.529	96.135 ^b	3.000	324.000	<.001	.529
	Hotelling's Trace	.890	96.135 ^b	3.000	324.000	<.001	.890
	Roy's Largest Root	.890	96.135 ^b	3.000	324.000	<.001	.890

a. Design: Intercept Between-Subjects Design: Stimulus_PI
b. Exact statistics

Estimated Marginal Means: Stimulus_Purchase

Stimulus_Purchase	Mean	Std. Error	95% Confidence Interval (Lower Bound)	95% Confidence Interval (Upper Bound)
1 Music	3.706	.077	3.554	3.859
2 Storytelling	2.894	.081	2.734	3.054
3 Visuals	4.000	.086	3.830	4.170
4 Complete Ad	4.517	.089	4.342	4.692

Pairwise Comparisons (Post-Hoc Bonferroni)

(I)	(J)	Mean Difference (I-J)	Std. Error	Sig. (p) ^b	95% Confidence Interval ^b	
stimulis_purch	stimulis_pur				Lower Bound	Upper Bound
ase	chase					
1	2	.812*	.085	<.001	.587	1.038
	3	-.294*	.085	.004	-.519	-.068
	4	-.810*	.084	<.001	-1.033	-.587
2	1	-.812*	.085	<.001	-1.038	-.587
	3	-1.106*	.093	<.001	-1.353	-.859
	4	-1.623*	.096	<.001	-1.877	-1.369
3	1	.294*	.085	.004	.068	.519
	2	1.106*	.093	<.001	.859	1.353
	4	-.517*	.064	<.001	-.688	-.346
4	1	.810*	.084	<.001	.587	1.033
	2	1.623*	.096	<.001	1.369	1.877
	3	.517*	.064	<.001	.346	.688

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Appendix 9 - Statistical Analysis for Willingness to Pay (H4)

Preliminary analysis of the assumptions

VARIABLE	N	Normality test (1)		Independence of errors (2)	Residual statistics (3)	Collinearity Statistics (4)	
		K-S	Sig. (p)	Durbin-Watson	Media residual	Tolerância	FIV
(Constant)	327	-	-	2.030	0.000	-	-
Nostalgic Feeling		1.381	0.200			1.000	1.000

Predictors: (Constant), Nostalgic Feeling
 Dependent Variable: Willingness to Pay
 A significance level of 5% was considered.

1) According to Kolmogorov-Smirnov (K-S), the results yielded a significance value of .200 ($p > 0,05$). This strictly fulfills the assumption of normality, indicating that the residuals follow a normal distribution.

(2) The Durbin-Watson statistic was calculated to check for autocorrelation. The obtained value was 2.030, which is extremely close to the ideal value of 2.0. This confirms that there is no correlation between the residuals, satisfying the independence assumption.

(3) The model showed a residual mean of 0.000, confirming that the expected value of the error term is zero. This indicates that the regression line is perfectly centered relative to the observed data.

(4) The Tolerance value and Variance Inflation Factor (VIF) were both 1.000. These values are well within the acceptable limits (Tolerance > 0.1 and VIF < 10), confirming the total absence of multicollinearity in the model.

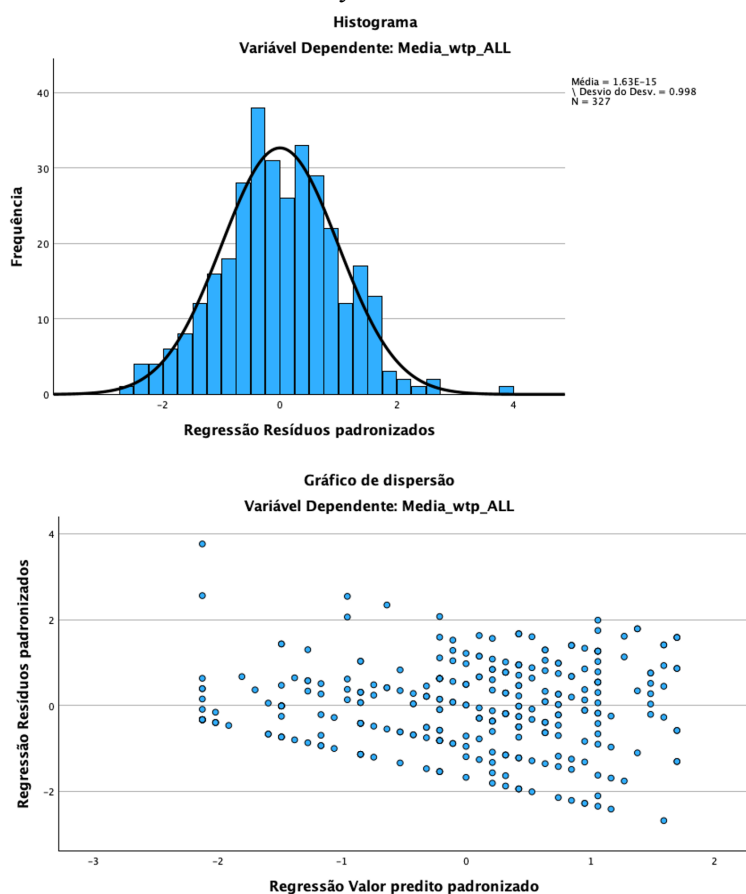
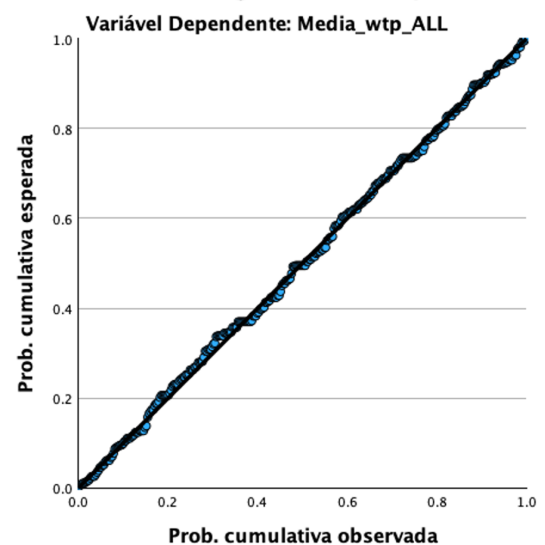


Gráfico P-P Normal de Regressão Resíduos padronizados



Section 1 - Linear Regression (Predicting Willingness to Pay)

Model Summary for Willingness to Pay

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	.536	.287	.285	1.38356

ANOVA^a

Model	Source	Sum of Squares	df	Mean Square	F
1	Regression	250.712	1	250.712	<.001 ^b
	Residual	622.128	325	1.914	
	Total	872.840	326		

a. Dependent Variable: Media_wtp_ALL (Mean of the willingness to pay in the complete ad)

b. Predictors: (Constant), Media_Nostalgia_ALL (Mean of the nostalgic feeling in the complete ad)

Regression Coefficients^a

Predictors	B	Std. Error	β (Beta)	t	Sig. (p)
(Constant)	.901	.225	—	4.006	<.001
Mean_Nostalgia_ALL	.558	.049	.536	11.444	<.001

a. Dependent Variable: Media_wtp_ALL (Mean of the willingness to pay in the complete ad)

Section 2- Repeated Measures ANOVA (Comparing Retro Elements)

Descriptive Statistics for Willingness to Pay (by Stimulus)

Stimulus Condition	Mean (M)	Std. Deviation	N
Mean of WTP in Music elements	2.6188	1.37960	327
Mean of WTP in Storytelling Elements	2.2977	1.26530	327
Mean of WTP in Visuals Elements	2.9460	1.53935	327
Mean of WTP in Complete Ad	3.3211	1.63628	327

Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig. (p)	Greenhouse-Geisser
Stimulus_WTP	.748	94.276	5	<.001	.829

Tests of Within-Subjects Effects

	Source	Type III Sum of Squares	df	Mean Square	F	Sig. (p)	Partial Eta Squared
Stimulis_WTP	Sphericity considered	189.001	3	63.000	78.045	<.001	.193
	Greenhouse-Geisser	189.001	2.487	76.006	78.045	<.001	.193
	Huynh-Feldt	189.001	2.507	75.381	78.045	<.001	.193
	Lower limit	189.001	1.000	189.001	78.045	<.001	.193
Erro(stimulis_WTP)	Sphericity considered	789.471	978	.807			
	Greenhouse-Geisser	789.471	810.650	.974			
	Huynh-Feldt	789.471	817.371	.966			
	Lower limit	789.471	326.000	2.422			

Tests of Within-Subjects Contrasts

Source	stimulus	Type III Sum of Squares	df	Mean Square	F	Sig. (p)	Partial Eta square
Stimulus_WTP	Linear	124.129	1	124.129	111.984	<.001	.256
P	Quadratic	39.627	1	39.627	64.445	<.001	.165
	Cubic	25.246	1	25.246	36.151	<.001	.100
Error(stimulus_WTP)	Linear	361.355	326	1.108			
	Quadratic	200.456	326	.615			
	Cubic	227.660	326	.698			

Tests of Between-subjects effect

Source	Type III Sum of Squares	df	Mean Square	F	Sig. (p)	Partial Eta square
Intercept	10224.502	1	10224.502	1668.055	<.001	.837
Error	1998.248	326	6.130			

Estimated Marginal Means

Stimulus_WTP	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1 - Music	2.619	.076	2.469	2.769
2 - Storytelling	2.298	.070	2.160	2.435
3 - Visuals	2.946	.085	2.779	3.113
4 - Complete Ad	3.321	.090	3.143	3.499

Multivariate Tests

Effect	Value	F	Hypothesis df	Error df	Sig. (p)	Partial Eta square
Pillai's Trace	.332	53.600 ^a	3.000	324.000	<.001	.332
Wilks' Lambda	.668	53.600 ^a	3.000	324.000	<.001	.332
Hotelling's Trace	.496	53.600 ^a	3.000	324.000	<.001	.332
Roy's Largest Root	.496	53.600 ^a	3.000	324.000	<.001	.332

Each F tests the multivariate effect of stimuli. These tests are based on linearly independent pairwise comparisons between the estimated marginal means.

a. Exact statistics

Pairwise Comparisons (Post-Hoc Bonferroni)

(I)	(J)	Mean	Std. Error	Sig. (p) ^b	95% Confidence Interval ^b	
stimulus_wtp	stimulus_wtp	Difference (I-J)			Lower Bound	Upper Bound
1	2	.321*	.063	<.001	.155	.487
	3	-.327*	.071	<.001	-.515	-.139
	4	-.702*	.073	<.001	-.896	-.509
2	1	-.321*	.063	<.001	-.487	-.155
	3	-.648*	.076	<.001	-.849	-.447
	4	-1.023*	.081	<.001	-1.240	-.807
3	1	.327*	.071	<.001	.139	.515
	2	.648*	.076	<.001	.447	.849
	4	-.375*	.055	<.001	-.521	-.230
4	1	.702*	.073	<.001	.509	.896
	2	1.023*	.081	<.001	.807	1.240
	3	.375*	.055	<.001	.230	.521

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.