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# The Impact of Music in Consumer Behavior: Applied to Television Commercials of Fast Moving Consumer Goods

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BUSINESS
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Department of Marketing, Operations and General Management

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## Resumo

As nossas vidas estão repletas de música, ela acompanha os nossos dias, fica na nossa cabeça, traz recordações e tem a capacidade de alterar os nossos sentimentos e emoções. A música tem o poder de ser uma ferramenta extraordinária, caso seja usada de forma sábia e utilizando todas as suas capacidades. Desta forma, as emoções e as ações que a música origina nos consumidores são um fator crucial no universo empresarial. Os maketeers podem tomar decisões mais eficazes e eficientes se tiverem um melhor entendimento de como a publicidade é beneficiada com o uso da música.

Assim, esta dissertação estuda o impacto que a música dos anúncios televisivos pode ter no comportamento dos consumidores. Neste estudo, anúncios de bens de consumo rápido do setor das bebidas foram manipulados e analisados de forma a investigar mais profundamente o tópico em causa. A pesquisa complementa e combina os estudos anteriores, tendo em consideração uma variedade de emoções e analisando os diferentes elementos que envolvem a existência de música num anúncio. São abordados e testados conceitos como reconhecimento da marca, congruência entre os elementos do anúncio, intenções de compra, sentimentos e emoções.

Os resultados demonstram que as emoções transmitidas através da música têm, como esperado, uma influência significativa na perceção dos visualizadores relativamente à marca e ao produto, e consequentemente têm impacto nas intenções de compra dos consumidores.



**Palavras-Chave:**

Publicidade; Reconhecimento da Marca; Comportamento do Consumidor; Emoções; Música; Intenções de Compra

## Abstract

Our lives are filled with music, it follows our days, stays in our minds, brings memories, and has the capacity of changing our feelings and emotions. Music has the power of being an extraordinary tool, if used wisely and operating its full capacities. Hence, the emotions and actions that music origins in consumers are a crucial input in business. Better understand in how the publicity world can benefit the most from the use of music, can help marketeers to make more effective and efficient decisions.

Therefore, this dissertation aims to study the impact that background music of television commercials has in consumer's behaviour. In this study, commercials from fast moving consumer goods in the beverages sector, were manipulated and analysed in order to further investigate the topic. The research combines and complements previous studies by taking in consideration a variety range of emotions and analysing different features that involve the music elements in a commercial. Concepts like brand recall, congruency of advertising elements, purchase intentions, moods and emotions are addressed and tested.

The results show that the emotions transmitted through music have, as expected, a significant influence on the perception of the listener towards the brand and product, and consequently the impact on purchase intention of consumers.



**Key Words:**

Advertising; Brand Recall; Consumer Behaviour; Emotions; Music; Purchase Intentions

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# 1. Introduction

## 1.1 Research Gap

Music is an essential element in people's daily life. It is used for emotion regulation, identity development and social bonding (Rentfrow, 2012).

Nowadays, managers and marketeers invest time and money searching for the best way to use music, as it also plays a fundamental role in business. Television commercials, where music plays a critical part, remain one of the most influential mediums of the 21s century. According to the Statista Website, in 2023, revenue of television advertising is forecasted to exceed 177 billion dollars worldwide (Guttmann, 2020).

Given the relevance of advertising, it is essential that the commercial is effective and that consumers enjoy it. Therefore, it is important to establish what does make an advertisement likeable. As per the Leather et al. (1994), music quality is one of the five principal components that captures a reaction in viewers. In fast moving consumer goods (FMCG) advertising, this fact is more notable, since the commercials must be original and attention grabbing in order to be effective, and music contributes to those aspects. Thus, it is fundamental to understand the impact that music has on people. The emotions and actions music causes in consumers are an essential input in business (Çupi & Morina, 2020).

Several authors considered and analysed the impact of music in consumers perception and behaviour towards a brand and product. Levrini et al., (2019) studied the impact of music in brand recognition that is a great measure for advertisement effectiveness. The lyrics of a song are another feature of music that impacts consumers, being able to also increase brand recall (Akella & Moh, 2019).

Furthermore, the congruency between the emotions inducted by music (Gabrielsson, 2002), and the emotions regarding the purchase occasions can influence the purchase intentions of the consumer (Alpert & Alpert, 1990). Previous studies in the literature classify music focusing only on gender and musical structures and only consider basic emotions such as happiness and sadness. However, music can be classified not only in gender or musical characteristics but also in further additional moods that causes in people (Widowati et al., 2018). Bartel (1992), Asmus (1985), and

Juslin and Laukka (2004), developed adjective scales intended specifically for the measurement of musically induced emotions. Those scales show quite a range of different emotions, rather than the "basic" ones, that were commonly investigated by authors.

### 1.2 Research Aim

The present study has the aim of complement and combine previous studies while further analysing the influence that music in commercials has on consumer's perspective of the brand and its impact on the purchase intentions towards a product.

To achieve the stipulated goal, this study is funded on the following research questions concerning the impact of music in the perceived emotions of consumers and their purchase intentiones.

RQ1: A commercial that transmitted a variety of different emotions, if congruent with the advertising elements, can have a positive impact in consumer's purchase intentions?

RQ2: Are there significant differences on purchase intentions when comparing a commercial with music and a commercial without music?

# 2. Literature Review

## 2.1 Importance of Music in Commercials

"Music in advertising can be used to attract the listener's attention, carry the advertised product's message, and act as a mnemonic device. Music also creates excitement and adds energy to the message being conveyed in an advertisement" (Heaton & Paris, p. 1).

Humans are connected to sounds and react to them, hence using music in marketing is a very strong brand strategy (Levrini et al., 2019). Companies that use music in their commercials earn the highest income in their sales, because the music brings the costumer closer to the product (Çupi & Morina, 2020).

According to Hamid et al. (2019), music can help young consumers to understand and mentally process the information transmitted in an advertisement more effectively. The authors performed a study, based on the Elaboration Likelihood Model (ELM), developed by Petty and Cacioppo (1986) that focuses on two routes of persuasion: central and peripheral. The main difference between the two is that in the central route the attitudes take in consideration relevant information of the object, on the other hand in the peripheral route the attitudes do not persist of active thinking towards the object.

The study of Hamid et al. (2019) focused on young consumers view, had two strands: the consumer's judgement and the consumer's updated behaviour. The first one led to the conclusion that young consumers perception becomes stronger in the presence of music, which indirectly attracts the attention to the advertisement and consequently has an impact on the attitude of the consumer towards the advertised product. The second strand reveals that young consumer's choices to buy the advertised product/service are constantly changing and being updated accordingly to their mood and preference which is inducted by the music. Thus, leading to the main conclusion that the choice of current and appropriate music used in advertisement causes a positive impact on young consumers and indirectly persuades them on their decision-making process to the advertised product.

Lantos and Craton (2012) created a model of consumer response to advertising in order to understand the consequences of using music in commercials. The model has four variables that stem the audience response to music in commercials: the listening situation, the musical stimulus, listener characteristics and the listener's advertising processing strategy.

The listening situation is the context were commercial's music plays, which is often in a break from a program content. Usually, consumers listen to the advertisement music, voluntarily or involuntarily while engaged in other activities. This variable can be of good influence in the consumer response to advertising if the music in the advertisement is congruent with the program content that it follows, or with the social context and ongoing activities of the consumer.

The musical stimulus is the variable in the model that takes in consideration the role that music plays in the commercial, foreground or background; the musical source that can be an original composition, an existing tune or an adaptation of an existing music; the structural characteristics which are the following time, pitch, texture and complexity; the musical artist and performance; and the genre and music style which according to the authors is a critical factor to gain attention to the commercial in a first impression.

The listener characteristics variable takes in account features from the consumer such as musical taste, age, sex, culture, personality, lifestyle and others, that will influence the listener's response to music in a commercial.

The fourth variable, the advertisement processing strategy, is defined by the authors as the way consumers acquire information or meaning from an advertisement. Lantos and Craton (2012), state that their model of consumer response to advertising can determine the nature of advertisement processing of a target audience and determine which persuasion theories are more effective, so that managers and marketers can adapt their use of music accordingly.

However, there are some distinctive options regarding the effects of music in commercials. The study of Craton and Lantos (2011) reflects on the fact that there is a lot of heterogeneity when it comes to music preferences. For example, an ad music can be effective in a particular commercial but for some member of the target market might be ineffective. Thus, the authors support the theory that music can be irrelevant to the message of the advertisement and that even distracts the consumer from processing the message content.

Background music (ad music) must be carefully selected, and this selection must consider all the attributes that background music has as well as the level of consumer involvement. Following are important features to have in consideration when choosing an ad music: product fit (how well background music matches the product), familiarity (enhances the consumer's emotional response to music) and consumers involvement (high and low involvement situations, where in high-involvement situation the consumer's pay more attention and are more present) (Jeon et al., 2014).

## 2.2 The effect of Music in Emotions

Various types of studies correlating music and emotions have been executed, either investigating the emotional response to music or investigating what factors in the musical structure influenced the perceived emotions. It is then necessary to distinguish emotion perception and emotion induction (emotion felt). Emotion perception is perceiving the music expression but not necessarily feeling that emotion, on the other hand emotion induction is feeling the emotion being transmitted, is the listener's emotional response to the music. When it comes to music, the relationship between these two variables is mainly positive, meaning that the emotion perceived of the music is the same emotion felt by the listener (Gabrielsson, 2002).

Juslin and Laukka (2004), support the idea that social context has a significant influence on music and emotion. People chose to listen music to enhance or change their emotions or even to evoke emotional memories. This suggests that music may induce several different emotions that can be considered "basic" (happiness and sadness) as well as non-basic emotions (nostalgic, peaceful and amused for example).

The dimensional model and the categorical model are two types of models used to study music emotion recognition. The dimensional model represents emotions usually based in two dimensions, one is valance related to pleasure and displeasure and the other is arousal related to activation and deactivation. Some authors use a third dimension in this model called dominance which dealing with the difference between dominant and submissive emotions. The categorical model represents all emotions that derive from a set of basic emotions which are happiness, sadness, fear, and anger (Song et al., 2015). This model is often used in the studies of the perceived emotions (Song & Dixon, 2015).

## 2.3 Music Classification and Music Intelligence

It is a natural process, for a human being, to feel all kind of emotions while listening to music. However, it's a common difficulty among the authors to classify music into the emotions they transmit. Music can be felt differently depending on the listener. Measuring and quantifying the feelings and emotions transmitted through music it's a complex task giving the subjectivity of the theme.

Music is usually classified by genre, like pop, rock, metal jazz and so on. But genre is a more common indicator compared to mood, which is much more personal and subjective, for example a song that is considered sad by most people may not be sad to others. Those are the reasons that drove Widowati et al. (2018) to develop a method to classify music into moods like happy, sad, angry, and peaceful. The music elements used to develop this method were pitch, pulse clarity, tempo, key and scale, and the classification algorithms used was Convolutional Neural Networks (CNN). All the songs used in the study were labelled with a value of excitement and an average value of chemistry. Excitement meaning the listener feelings when hearing the song and the chemistry meaning the connection between the listener and the song. The results show that the authors were able to classify music into those four mentioned moods with an accuracy of 82% on average.

Music Intelligence (MI) is defined by Krishnan et al. (2014) as the capacity to feel, to respond and to understand music. Hence, consumer MI can be divided in three items: affective MI (capacity to feel), behavioural MI (capacity to respond) and cognitive MI (capacity to understand). Given this information and a series of studies the authors tested and created a psychometrically scale for MI (non-technical, musically speaking) which proves to be valid. This scale can potentially be applied to consumer research allowing to understand an audience behaviour given a music experience.

## 2.4 The Importance of Music Lyrics

Another way of classifying music is through the lyrics of the song, which can be an excellent source of information of moods and emotions (Akella & Moh, 2019).

In an advertisement, the lyrics of the song are somehow related to the message being transmitted to the consumers. That relation can be categorized in 4 groups: focus on the emotions; focus on the main character's image; focus on the narrative; focus on the relation of the characters with the brand or product.

Focus on the emotions: Lyrics are used to provoke emotions on the audience and emphasize the emotions that the characters are felling in the commercial.

Focus on the main character's imagine: When the idea of a commercial is to focus on the main character's image, the lyrics serve that purpose by triggering associations and by reinforcing and direct the audience attention to that aspect of the commercial.

Focus on the narrative: Lyrics are used to underline the narrative that is being showed in the commercial, giving additional details or just describing the story itself.

Focus on the relation of the characters with the brand or product: In these commercials, lyrics enhance the importance that the brand/product has to the character as a way of transmitting to the audience the same connection that they can possibly have with the brand/product (Anisimova et al., 2014).

### 2.5 The Effect of Music in Brand Recall

In early studies of the subject, Tom (1990) performed an exploratory study investigating the role of music as a memory factor. In order to do so, the study approached three types of music used in television commercials such as, hit music, parodies of hit music and music recorded specifically for commercials. The results demonstrated that the most effective stimuli of memory is the music created specifically for the advertised product, followed by the parodies of hit music that made a reference to the product, and lastly the least effective is the hit music which usually does not mention the name of the product. Tom (1990) concluded that the more similar the information at the points of input and output, the more effective they are as cues for recall.

Music is significant in brand recall. Popular music, for some individuals, can have a significant impact in attention and memory (Allan, 2006). If consumers are frequently exposed to the ad music, they will engage with it, creating a positive impact in their minds (Aggarwal & Iyer, 2019). Brand

awareness, which comprises brand recall, should be broadly seen as an important goal to reach by marketers since it brings numerous advantages to the brand (Macdonald & Sharp, 1996).

North et al. (2004) study concludes that there is a better recall of brand/product being advertised, when there is fit between the music and the other advertising elements then when that fit does not exist. Voice fit, is another advertising element addressed in this study, suggesting that "different voices might also carry meaning beyond that of the specific words spoken". The study also concludes that voice fit advertisements increase brand/product recall and not only increase the liking of the advertisement but also increases the purchase intention of the consumers.

Levrini et al. (2019) study on musical priming and brand recall, lead to the finding of a positive correlation between music priming effect and brand recall, meaning brand recognition. The authors also point to the conclusion that emotional background music can provoke emotional responses in consumers.

Although recall is a great measure for advertisement effectiveness, it has been really criticized for favouring more "rational" commercials over more "emotional" ones. Contradicting the previous, Mehta and Purvis (2006), state that if emotional content is well executed it can increase recall.

The authors Fraser and Bradford (2012) defend that changes in the background music of commercials interrupt the processing of information that is being transmitted, reducing message recall. The changes in music timber of the background instruments can cause distraction in the listener. However, the negative effect in the recall depends on the structural characteristics of the music, and if the music is composed by a faster tempo it will enable the building of similar sounds into streams, reducing distraction and not reducing the recall. Additionally, the author Olsen (1995) state that using background silence only to highlight information results in higher perceived information what in turn improves greater recall.

### 2.6 Music Influence in Purchase Intentions and Purchase Occasions

Apert and Alpert (1990) studied the influence of music on mood and purchase intentions. The authors used previous studies regarding music's structure profiles that include features like harmony, tempo, dynamics and rhythm which variations can classify a music as being happy or

sad. For example, over the year's researchers came to the conclusion that a fast music (faster tempo) tends to be more happy/pleasant than a slow music (Bruner, 1990). In order to test their hypotheses, Apert and Alpert (1990) presented to their audience a combination of three different friendship greeting cards (classified in happy, sad and neutral) with sad music, happy music and no music. The results let to the conclusion that music structure of background music in commercials may have significant influence over the emotional responses of an audience, showing that it may exist a link between music structural elements and the mood of the audience. They also conclude that sad music was more effective in influencing purchase intent than were happy music and silence.

Fifteen years later, Alpert et al. (2005) further extended the research on the topic, concluding that if the music of a commercial is congruent with the mood of the purchase occasion it has a positive relation with purchase intentions. This means that a happy mood (induced by a happy music) that coincides with a happy purchase occasion, leads to higher purchase intentions. The contrary occurs when the mentioned elements are not in accordance with each other. This similarly applies to the congruity of sad mood (caused by a sad song) and sad purchase occasion which also improves the purchase intent.

Given the importance of the constructs purchase intentions, attitude towards the brand and attitude towards the ad, which are taken in consideration by these previous authors and are analysed in many marketing studies. Spears and Singh (2004), addressed this concern and developed valid measures for purchase intentions and attitude towards the brand, using scales that could facilitate findings across studies.

### 2.7 Fast Moving Consumer Goods and Advertising

FMCG markets are defined as relatively inexpensive, frequently purchased and rapidly consumed items on which buyers exert only minimal purchasing effort (Dibb et al., 2006, as citied in Leahy, 2011).

Leather et al. (1994) studied factors which extract certain FMCG television commercials to be more likeable to their intended target. According to the authors these factors, can be measured and identified, and should be similar to all commercials for FMCG. Their study concluded that there are five principal components that capture a reaction in viewers: whether an advertisement is

stimulating; its relevance; the dynamism inherent or incorporated in its situational vignette, aided, and abetted by; its music quality; and its positive character distinctiveness. This means that an advertisement needs to be stimulating to capture viewers' attention and if also relevant can led the viewers to reflect on purchase intentions. This study suggested that commercials that are stimulating, have a greater dynamism and better music quality are more liked.

Advertising that shows emotional appeals have a more positive impact rather than advertising with rational appeal when considering a low involvement product. The opposite occurs when considering high involvement products, the rational appeals have a significantly positive effect on consumers (Akbari, 2015). This reinforces the importance of music in FMCG commercials, which are low involvement products, and the emotional feature is more relevant.

One more factor that can significantly influence consumers perception in FMCG commercials is celebrity endorsement. FMCG can be divided in 4 product categories: Home and Personal, Foods and Beverages, Cigarettes and Alcohol. According to, Parmar and Patel (2014), which studied the differences in consumers perception between celebrity and non-celebrity advertisements, the Beverages sector was the one that significantly different from the others with a higher score for advertisement with celebrity. The publicity that the celebrity makes of a product is accepted as testimonial by the consumers, increases acceptance and positively influences consumers to purchase that brand. Additionally, celebrity endorsement helps to captures consumer attention and creates more impact in consumer's mind.

### 2.8 Music Congruency with the Commercial

Hung (2000) studied the effects of music in congruent/incongruent television advertising. The results supported the proposition that music could help create meaning in advertising and led to the conclusion that advertisement components (music and visual elements) that were congruent created a context that helped viewers interpret the commercial. The opposite occurs when a commercial is composed by incongruent elements, creating difficulty for the viewers to connect the components into a common context.

Hung (2000), states that music, as an element of television advertising, works among the other advertisement components to create the cultural context that builds the information transmitted to consumers.

According to Galan (2009), it is possible to combine both affective (likeability) and cognitive (congruency) influences and to study the relations of these two approaches to obtain a better understanding of music in advertising. In the study executed by Galan (2009), musical likeability has a significant impact to advertising responses, which reinforces the studies of Alpert and Alpert (1990) showing that a music with high please scores could improve the attitude toward the advertisement, attitude toward the brand, and intentions to buy. However, regarding the cognitive influence, the results show that the impact of congruency is not stronger. The author defends that the reason for that can be explained by the fact that congruency can also have an affective influence. All these outcomes let Galan (2009) to the main conclusion that the influence of likeability on attitude towards the advertisement is stronger in the case of cognitive involvement.

## 3. Hypotheses and Model

Considering all the literature previously addressed, which in general lead to the conclusion that music has a significant and important impact on consumer perception and consumer behaviour, the hypotheses and model of this study were elaborated.

Based on Allan (2006) findings, and more recent studies from Levrini et al. (2019), the first and third hypotheses were developed, covering the effect that music used in television commercials can have on brand recall. Additionally, Anisimova et al. (2014) studies about the lyrics of the songs, and how lyrics can enhance the importance of the brand/product, lead to the formulation on the second hypothesis which completes the segment of this present study, that analyses the interaction of music and brand recall:

**H1:** Background music in television commercials causes a positive impact on brand recall.

**H2:** The lyrics of a music ad causes a positive impact on brand recall.

**H3:** Brand recall, caused by advertising music, has a positive impact on purchase intentions.

According to the studies, described in the literature above, that acknowledge the fact that music induces several different emotions in the listeners (Juslin and Laukka, 2004; Gabrielsson, 2002), and the fact that music improves the attitude toward the advertisement, attitude toward the brand and intentions to buy (Galan, 2009), the fourth was developed:

**H4:** The emotions caused by music in a commercial, have positive impact on purchase intentions.

Moreover, as mentioned above, the advertisement components (music and visual elements) when congruent created a context that helped viewers interpret the commercial (Hung, 2000). Also, if the music of a commercial is congruent with the mood of the purchase occasion it has a positive relation with purchase intentions (Alpert et al., 2005). However, given the products covered in the commercials of the present study, it is considered more effective to use the emotions felt when consuming the product rather than the emotions felt on the purchase occasion, since that FMCG are low involvement products. Therefore, the fifth hypothesis was created based on this assumption:

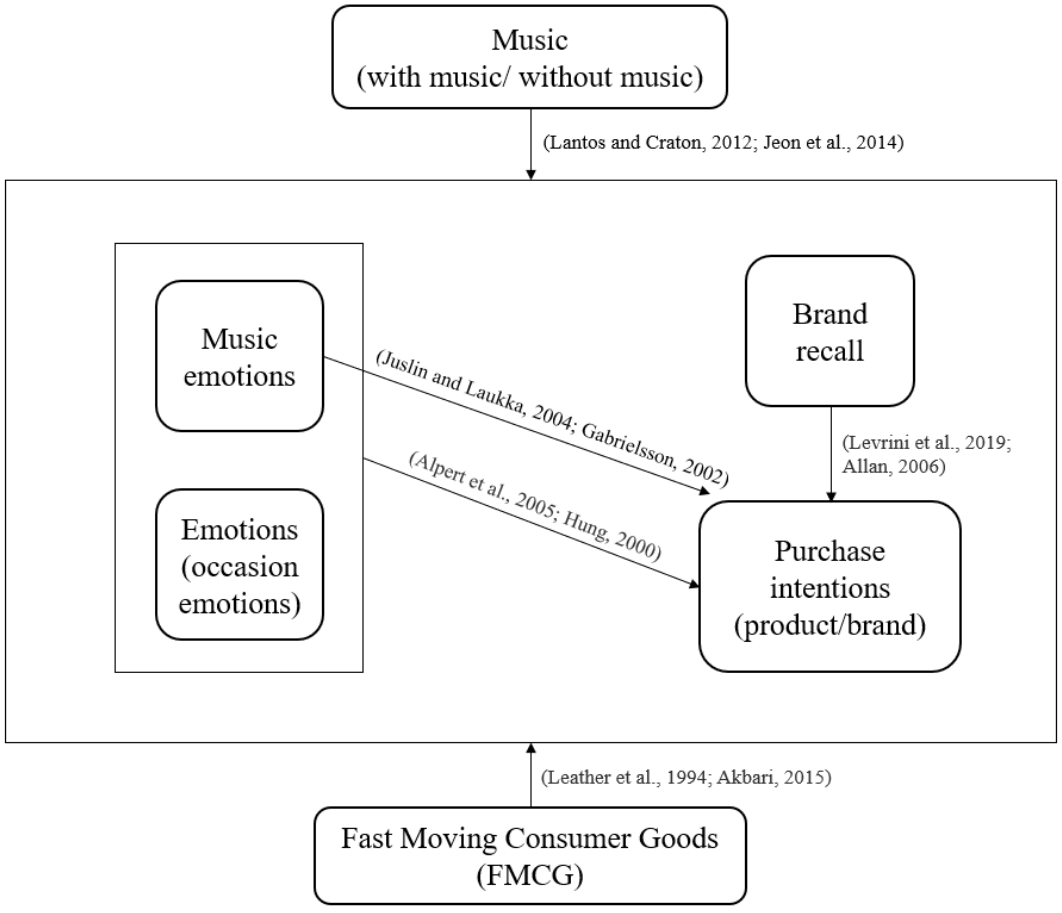
**H5:** The emotions caused by music in a commercial, when congruent with the consumption occasion, have a positive impact on purchase intentions.

Lastly, a more embracing hypothesis was assembled, with the aim of covering all the above-mentioned studies and have a general approach of the impact of music in advertising:

**H6:** A commercial with music in it will have a more positive impact on purchase intentions than a commercial with no music.

Based on the six hypotheses previously mentioned, was developed the model that support this study, represented below, in figure 3.1.

*Figure 3.1 - Conceptual Model*



# 4. Methodology

## 4.1. Research Context

In order to test the hypotheses defined previously, an online survey was conducted with the aim of studying and analysing the impact of music in consumers behaviour.

The research context of this study were Portuguese television commercials, being the target population of the study everyone that watches Portuguese television and as consequence watch Portuguese commercials. The aim was to reach people with different characteristics, personality, age, musical taste etc, to have diversified and reliable information. However, the age range of respondents was between 18 and 65 years old.

The range of industries and sectors that television commercials cover is countless, going from automobiles to pharmaceutical industry. Thus, given the importance of music in FMCG commercials, stated before, and to have a more concrete and focused approach, the commercials considered are solely from the food industry, more concretely beverage commercials.

The survey was built on the analysis and comparison of two different commercials of the same product category. The products are from the same category, beverages, to have a more cohesive approach and to avoid having needless variables to be taken in consideration and making the results less viable. The two commercials had different approaches, one being more outgoing, friendly, and exiting, and as contrast the other commercial was more calm, emotional, and delicate. Since the goal is to study the impact of music, the music of both commercials will match their respective emotions, accordingly to the different approaches.

## 4.2. Survey

The questionnaire was created using Qualtrics and was mainly shared though social media (Facebook, WhatsApp, and Instagram). Data was collected from the 6th of June until 18th of July 2021. The final survey was established by four similar questionnaires, that were randomly distributed. The participants would receive a link which would randomly provide one of the four questionnaires for the participant reply. The four questionnaires had the exact same questions, the

only difference between them was the commercial they showed on the beginning. The difference between the questionnaires will be further explained in the next paragraphs.

Two commercials of the beverage sector were chosen for this study. The ads were chosen based on the emotions they transmitted and the recognition they had at the time they were aired on national television. The goal was to have opposite and contrasting emotions between them and containing different emotions rather than the considered basic ones (happiness and sadness).

The ads chosen were “Sagres Somos Nós” from the beer brand Sagres and “Um bom dia com um pequeno-almoço” from the brand Mimosa.

“Sagres Somos Nós” was aired in 2011, and is a very exciting, agitated, and patriotic commercial that was meant to establish a new signature and a new era for the brand stated. The action is mainly based on a bar, showing friends drinking bear, having a good time, playing games, and ends with people getting together in the streets showing support to the Portuguese national soccer team. It counts with the participation of Portuguese celebrities, musicians, and famous soccer players. The music is also called “Sagres Somos Nós”, was created especially for the commercial and it was interpretated by Tim (from Xutos & Pontapés), Diogo Dias (Klepht) and Expensive Soul, all famous Portuguese singers, and bands (Meios e Publicidade, 2011). The combination of the images and the song following it, communicates emotions like excitement, cheerfulness, humours, and patriotism.

“Um bom dia com um pequeno-almoço”, aired in 2017, is a commercial that follows the strategy of the brand by enhancing happy moments in family and focusing on the essential of choosing the right nutrients for the wellbeing of the entire family. The ad illustrates the previous concept by showing a family happily singing and dancing while preparing and eating a healthy breakfast. It has the participation of Lúcia Moniz, a Portuguese singer and actress, singing the soundtrack song of the commercial, a cover of “Morning Breeze” (Marketeer, 2017). This song, as well as the ad itself, transmit calm, relaxing, nostalgic, and loving emotions to their audience.

Since the aim of the study was to analyse the impact of music, the music itself was the variable that needed to be impacted on the commercials. Therefore, each ad was edited, in order to erase every logo of the brands and a version of the commercial without the music was created, remaining just the images. In total were created four videos, one of Sagres ad with music and other

for Sagres ad without music; the same was done for Mimosa, one video of Mimosa ad with music and the other video of Mimosa ad without music (appendix A).

In that way, four questionnaires were generated, applying the same logic:

- Q1: Sagres with music;
- Q2: Sagres without music;
- Q3: Mimosa with music;
- Q4: Mimosa without music.

The questionnaire starts by presenting the video of the commercial which is followed by a group of questions about it. It begins asking the participants if they had already watched that commercial before and an open-ended question, to test the brand recall, asking if the participant knew, and if yes, to write what brand was presented on the commercial.

The next question is the only difference that exists between all four questionnaires, since it requires for the participant to listen to the song, being only present on Q1 and Q3 that have the non-manipulated commercials and include the original music. To access whether the lyrics of the song have an influence on brand recall, it was measured the degree of agreement of the participants with the statement “The lyrics of the song influenced me on the brand identification”, using a 5-point Likert scale, ranging from “strongly disagree” to “strongly agree”.

Then, it was asked to the participants to rate from 0 to 100 how much they felt the following emotions while they were watching the commercial: happy, relaxed, sad, emotional, bored, nostalgic, tense, amused, angry, patriotic, interested and calm. The emotions where chosen based on the adjective scales used for measuring musically induced emotions, as proposed by Juslin and Laukka (2004) and Asmus (1985) (appendix A).

With the aim of measuring the purchase intentions of the participants, it was used a 5-point Likert scale, ranging from “definitely do not intend to buy” to “definitely intended to buy” (Spears & Singh, 2004).

Afterwards, in order to understand if the emotions felt by the participants when seeing the commercial were congruent with the purchase occasion and consuming occasion, four scenarios were stablished, and asked the participants to choose the scenario where they most frequently buy and/or consume the product. The scenarios are the following: birthday parties, family picnics,

gatherings with friends and meals in family. These occasions were stablished based on the context of the commercials and the product itself.

Then, the same question, about the emotions felt when seeing the commercial was asked again, but this time asking the participants to rate the emotions they feel when consuming the product on the occasion previously selected by them.

Lastly, the questionnaire ended with a set of sociodemographic questions such as gender, age, education level and location. The fours surveys are presented in appendix A.

### 4.3. Participants

The survey had a total of 486 participants, of which only 300 replies where suitable and taken in consideration for this study.

The numbers of replies obtained for each questionnaire is the following: Q1 – 77 (25.7%) participants; Q2 – 75 (25.0%) participants; Q3 – 72 (24.0%) participants; Q4 – 76 (25.3%) participants.

Out of the viable replies 70.2% were from women, 29.4% were men. The highest number of participants live in Lisbon and Setubal, with the respective percentages of 45.5% and 44.2%.

The age of the participants mainly ranged between 26 and 35 years old, followed by age gaps 18-25, 36-45 and 46-55 with the respective percentages 29.0%, 25.3%, 19.8% and 16.4%.

Regarding the education level, 42.3% of participants had a bachelor's degree, 23.4% finished high school, and 17.5% had a master's degree.

The below table 4.1 summarizes the results, concerning the sociodemographic analyses, for each questionnaire.

*Table 4.1 - Sociodemographic Analyses 1*

| | | Q1 | | Q2 | | Q3 | | Q4 | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N | % | N | % | N | % | N | % | N | % |
| **Gender** | Female | 47 | 61.8 | 53 | 74.6 | 49 | 76.6 | 49 | 69.0 | 198 | 70.5 |
| | Male | 29 | 38.2 | 18 | 25.4 | 14 | 21.9 | 22 | 31.0 | 83 | 29.5 |
| | **Subtotal** | **76** | **100** | **71** | **100** | **63** | **98.5** | **71** | **100** | **281** | **100** |
| **Age** | 18-25 | 14 | 18.7 | 16 | 21.9 | 22 | 31.4 | 22 | 29.3 | 74 | 25.3 |
| | 26-35 | 25 | 33.3 | 18 | 24.7 | 22 | 31.4 | 20 | 26.7 | 85 | 29.0 |
| | 36-45 | 18 | 24.0 | 11 | 15.1 | 11 | 15.7 | 18 | 24.0 | 58 | 19.8 |
| | 46-55 | 12 | 16.0 | 17 | 23.3 | 9 | 12.9 | 10 | 13.3 | 48 | 16.4 |
| | 56-65 | 6 | 8.0 | 9 | 12.3 | 5 | 7.1 | 5 | 6.7 | 25 | 8.5 |
| | >65 | 0 | 0.0 | 2 | 2.7 | 1 | 1.4 | 0 | 0.0 | 3 | 1.0 |
| | **Subtotal** | **75** | **100** | **73** | **100** | **70** | **99.9** | **75** | **100** | **293** | **100** |
| **Eduaction Level** | Middle School | 3 | 3.9 | 9 | 12.5 | 2 | 2.9 | 3 | 4.0 | 17 | 5.8 |
| | High School | 15 | 19.7 | 23 | 31.9 | 15 | 22.1 | 15 | 20.0 | 68 | 23.4 |
| | Bachelor Degree | 33 | 43.4 | 26 | 36.1 | 25 | 36.8 | 39 | 52.0 | 123 | 42.3 |
| | Post Graduation | 7 | 9.2 | 6 | 8.3 | 6 | 8.8 | 9 | 12.0 | 28 | 9.6 |
| | Master Degree | 16 | 21.1 | 7 | 9.7 | 20 | 29.4 | 8 | 10.7 | 51 | 17.5 |
| | Doctorate | 1 | 1.3 | 0 | 0.0 | 0 | 0 | 1 | 1.3 | 2 | 0.7 |
| | Other | 1 | 1.3 | 1 | 1.4 | 0 | 0 | 0 | 0.0 | 2 | 0.7 |
| | **Subtotal** | **76** | **99.9** | **72** | **99.9** | **68** | **100** | **75** | **100** | **291** | **100** |
| **Locations** | Lisboa | 29 | 38.2 | 45 | 61.6 | 24 | 35.3 | 35 | 46.7 | 133 | 45.5 |
| | Setubal | 37 | 48.7 | 24 | 32.9 | 33 | 48.5 | 35 | 46.7 | 129 | 44.2 |
| | North | 4 | 5.2 | 1 | 1.4 | 5 | 7.4 | 1 | 1.3 | 11 | 3.8 |
| | Center | 2 | 2.6 | 1 | 1.4 | 5 | 7.4 | 3 | 4.0 | 11 | 3.8 |
| | South | 3 | 3.9 | 2 | 2.8 | 1 | 1.5 | 1 | 1.3 | 7 | 2.4 |
| | Islands | 1 | 1.3 | 0 | 0 | 0 | 0 | 0 | 0.0 | 1 | 0.3 |
| | **Subtotal** | **76** | **99.9** | **73** | **100.1** | **68** | **100.1** | **75** | **100** | **292** | **100** |

## 4.4 Data Treatment

Several statistical analyses were performed in this study, in order to test the formulated hypotheses, namely parametric and non-parametric hypothesis tests and multiple linear regression analysis. In the analyses, the significance level considered was 5% ($\alpha = 0.05$).

To test the influence of music on brand recall it was processed a chi-square test of independence to analyse if there is a relationship between participants that watched the commercial with music and correctly identified the brand.

The parametric T-test was performed to analyse if the brand recall, caused by music, had an impact on purchase intentions, and if a commercial with music has more impact on purchase intentions than a commercial without music.

Additionally, a linear regression was used to demonstrate the influence the emotions, caused by music ad, has on purchase intentions.

# 5. Results

## 5.1 Descriptive Analysis

Regarding the percentage of participants that had watched the commercial before, on Q1 and Q2 was respectively 82.9% and 77%. Additionally, on Q1, 71.4% correctly identified the brand however on Q2 as expected the percentage was much lower of 45.3%.

On Q3 and Q4 the results were similar, for Q3 the percentage of participants that correctly identified the brand (70.8%) was higher than on Q4 (25%). Likewise, 81.9% of respondents had watched the ad on Q3 and 76.3% on Q4.

Moreover, on Q1 and Q3, the only ones that included a question regarding the lyrics of the song, 72.8% felt influenced by the lyrics of the song on Q1 and 59.7% on Q3 (appendix B, table 5 and table 6).

Regarding the consumption habits of the participants on Q1 and Q2, 70.1% and 61.3% buys the product represented on the commercial but only 68.8% and 54.7% consumes the product, respectively. For Q3 and Q4 the results were the following, 67.6% and 76.0% buys the product represented on the commercial but only 62.0% and 57.3% consumes the product, respectively.

Concerning the scenarios for buying and consuming the product, for Q1 and Q2 the most identified scenario was gatherings with friends on both buying (Q1 = 55.6%; Q2 = 63.0%) and consumption (Q1 = 58,5%; Q2 = 65.9%). However, on Q3 and Q4, the most identified scenario was meals in family equally on both scenarios buying (Q3 = 87.5%; Q4 = 87.7%) and consumption (Q3 = 97.7%; Q4 = 88.4%).

The below table 5.1 presents the sum up of the descriptive analyses realized on all four questionnaires. Further details can be found in appendix B, regarding the descriptive analyses of the surveys.

*Table 5.1 - Descriptive Analyses*

| | | Q1 - Sagres with music (n=77) | | Q2 - Sagres without music (n=75) | | Q3 - Mimosa with music (n=72) | | Q4 - Mimosa without music (n=76) | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N | % | N | % | N | % | N | % | N | % |
| **Had watched the commercial before** | Yes | 63 | 82.9 | 57 | 77.0 | 59 | 81.9 | 58 | 76.3 | 237 | 79.5 |
| | No | 13 | 17.1 | 17 | 23.0 | 13 | 18.1 | 18 | 23.7 | 61 | 20.5 |
| | **Subtotal** | **76** | **100** | **74** | **100** | **72** | **100** | **76** | **100** | **298** | **100** |
| **Correctly identified the brand** | Yes | 55 | 71.4 | 34 | 45.3 | 51 | 70.8 | 19 | 25.0 | 159 | 53.0 |
| | No | 22 | 28.6 | 41 | 54.7 | 21 | 29.2 | 57 | 75.0 | 141 | 47.0 |
| | **Subtotal** | **77** | **100** | **75** | **100** | **72** | **100** | **76** | **100** | **300** | **100** |
| **Habit of buying the product featured in the ad** | Yes | 54 | 70.1 | 46 | 61.3 | 48 | 67.6 | 57 | 76.0 | 205 | 68.8 |
| | No | 23 | 29.9 | 29 | 38.7 | 23 | 32.4 | 18 | 24.0 | 93 | 31.2 |
| | **Subtotal** | **77** | **100** | **75** | **100** | **71** | **100** | **75** | **100** | **298** | **100** |
| **Purchase occasions** | Birthday parties | 10 | 18.5 | 10 | 21.7 | 3 | 6.3 | 5 | 8.8 | 28 | 13.7 |
| | Family picnics | 4 | 7.4 | 3 | 6.5 | 0 | 0.0 | 1 | 1.8 | 8 | 3.9 |
| | Gatherings with friends | 30 | 55.6 | 29 | 63.0 | 3 | 6.3 | 1 | 1.8 | 63 | 30.7 |
| | Meals in family | 10 | 18.5 | 4 | 8.7 | 42 | 87.5 | 50 | 87.7 | 106 | 51.7 |
| | **Subtotal** | **54** | **100** | **46** | **99.9** | **48** | **100.1** | **57** | **100** | **205** | **100** |
| **Habit of consuming the product featured in the ad** | Yes | 53 | 68.8 | 41 | 54.7 | 44 | 62.0 | 43 | 57.3 | 181 | 60.7 |
| | No | 24 | 31.2 | 34 | 45.3 | 27 | 38.0 | 32 | 42.7 | 117 | 39.3 |
| | **Subtotal** | **77** | **100** | **75** | **100** | **71** | **100** | **75** | **100** | **298** | **100** |
| **Consumption occasions** | Birthday parties | 11 | 20.8 | 8 | 19.5 | 0 | 0.0 | 2 | 4.7 | 21 | 11.6 |
| | Family picnics | 4 | 7.5 | 1 | 2.4 | 1 | 2.3 | 1 | 2.3 | 7 | 3.9 |
| | Gatherings with friends | 31 | 58.5 | 28 | 68.3 | 0 | 0.0 | 2 | 4.7 | 61 | 33.7 |
| | Meals in family | 7 | 13.2 | 4 | 9.8 | 43 | 97.7 | 38 | 88.4 | 92 | 50.8 |
| | **Subtotal** | **53** | **100** | **41** | **100** | **44** | **100** | **43** | **100.1** | **181** | **100** |
| | | | | | | | | | | | |
| | | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** |
| **Influence of lyrics in brand identification** | | 4 | 1.147 | - | - | 4 | 1.182 | - | - | 4 | 1.167 |
| **Probability of buying the product from the brand represented on the commercial** | | 4 | 1.133 | 3 | 1.317 | 4 | 1.152 | 2 | 1.061 | 3 | 1.259 |
| **Probability of buying the product represented on the commercial independently of the brand** | | 4 | 1.151 | 3 | 1.431 | 4 | 1.161 | 3 | 1.075 | 3 | 1.272 |

## 5.2 Hypotheses Testing

**5.2.1 Hypothesis 1 -** Background music in television commercials causes a positive impact on brand recall.

To test **hypothesis 1** (H1), a chi-square test of independence was done to measure if the participants who correctly identified the brand were positively impacted by music. For the brand Sagres, the relationship between these variables is significant (chi-square statistic = 10.661; df=1; $p < 0.01$), meaning that the music influenced the brand recall. Results show that the percentage of participants that correctly identified the brand while watching the commercial without music is 38,2% and on the other hand the percentage of participants that correctly identified the brand while watching the commercial with music is 61.8%. These results show that H1 is verified for the commercial of Sagres (appendix C, table 15 and table 16).

For the brand Mimosa, the relationship between the same variables is also significant (chi-square statistic = 31.159; df = 1; $p < 0.01$). From the crosstabulation the results are the following, 27.1% of participants correctly identified the brand while watching the commercial without music whereas 72,9% correctly identified the brand when watching the commercial with music (appendix C, table 17 and table 18).

These results show that the variables taken in consideration are dependent and have a significant association between them. This validates H1 for both commercials, meaning that music has a positive impact on brand recall.

### **5.2.2 Hypothesis 2 -** The lyrics of a music ad causes a positive impact on brand recall.

In order to test **hypothesis 2** (H2) and study the impact of the lyrics of a music ad has in brand recall a combination of data was taken in consideration. Firstly, a frequency table was elaborate for the brand identification answers and secondly another frequency table was elaborated for the brand identification answers combined with the degree of agreement of the participants to the statement "The lyrics of the song influenced me on the brand identification". This degree of agreement was measured through a Likert Scale and was only taken in consideration the replies of the participants that choose "Agree" or "Strongly Agree", that is, the participants that had the perception of being influenced by the lyrics of the song. These frequency tables were elaborated for both Sagres and Mimosa commercials, but only taking in consideration the questionnaires that presented the commercial with music, which were the ones where the respondents were exposed to the lyrics of the song.

In the table 5.2, the term "influence perception" represents the percentage of participants who stated that they were influenced by the lyrics of the song. The results show that on Sagres commercial 72.8% (on a sample 77 respondents) of the participants agreed to be influenced and on Mimosa commercial 61.4% (on a sample of 70 respondents) of participants agreed to the same. However, to understand if being influenced by the lyrics of the song had an impact on brand recall, it was necessary to restrict the sample to the participants that effectively, correctly identified the brand, represented by the term "correct influence perception". In Sagres and Mimosa commercial,

85.7% and 93.0% of the participants respectively, were positively impact by the lyrics of the song, which validates H2 (appendix D, tables 19,20,21 and 22).

*Table 5.2 - Influence of lyrics in brand recall*

| | Q1 - Sagres with music (n=77) | | Q3 - Mimosa with music (n=70) | | Total | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| **Influence Perception** | 56 | 72.8 | 43 | 61.4 | 99 | 67.3 |
| **Correct Influence Perception** | 48 | 85.7 | 40 | 93.0 | 88 | 88.9 |

Additionally, a frequency table was used to measure the percentage of participants that correctly identified the brand but stated that they were not influenced by the lyrics of the song, by choosing one of the options “do not agree nor disagree”, “disagree” or “strongly disagree”. The results were 33.3% out of 21 participants correctly identified the brand for Sagres and stated that they were not influenced by the lyrics, and 40.7% out of 27 participants acted the same way for Mimosa commercial (appendix D, table 23 and table 24).

**5.2.3 Hypothesis 3 -** Brand recall, caused by advertising music, has a positive impact on purchase intentions.

To test **hypothesis 3** (H3) a T-test was performed between commercials with and without music for the variables PA (probability of buying the product from the brand represented on the commercial) and PB (probability of buying the product represented on the commercial independently of the brand). This procedure was performed on both Sagres and Mimosa ads, selecting only the participants that correctly identified the brand (brand recall).

The results for Sagres were the following: the PA for the commercial with music ($M$ = 4.11, $SD$ = 1.165) compared with the PA for the commercial without music ($M$ = 3.15, $SD$ = 1.417) demonstrated that there is a significant difference between the variables ($t(87) = 3.481$, $p = 0.001$). Regarding the PB for the commercial with music ($M$ = 4.02, $SD$ = 1.147) compared with the PB for the commercial without music ($M$ = 3.21, $SD$ = 1.591) demonstrated again that there is a

significant difference between the variables ($t$(54.170) = 2,590, $p$ = 0.012). The results mean that the probability of buying the product is higher between those who saw the commercial with music (appendix E, table 25 and table 26).

The results for Mimosa succeed on: the PA for the commercial with music ($M$ = 3.65, $SD$ = 1.128) compared with the PA for the commercial without music ($M$ = 3.37, $SD$ = 1.212) demonstrated that there is a not a significant difference between the variables ($t$(68) = 0.901, $p$ = 0.371). Regarding the PB for the commercial with music ($M$ = 3.59, $SD$ = 1.099) compared with the PB for the commercial without music ($M$ = 3.42, $SD$ = 1.261) also demonstrated that there is a not a significant difference between the variables ($t$(68) = 0.544, $p$ = 0.614). Therefore, in the case of the Mimosa commercial, the probability of buying the product is similar among all the participants (appendix E, table 27 and table 28).

According to these T-test results, the H3 is verified on the Sagres commercial, showing that brand recall, caused by add music, has a positive impact on purchase intentions. However, on Mimosa commercial, the H3 is not verified since there is no significant difference between the commercial with music from the commercial without music.

**5.2.4 Hypothesis 4 -** The emotions caused by music in a commercial have positive impact on purchase intentions.

In order to test **hypothesis 4** (H4), a linear regression was used to measure the impact of the emotions felt by the participants while watching the ad with music, on the purchase intentions. The linear regression proved to be significant in both Sagres ($F$(2;74) = 12.978, $p$ = 0.000) and Mimosa ($F$(2;68) = 15.160, $p$ = 0.000) (appendix F, tables 29,30, 32 and 33).

The results show that for Sagres ad, the emotions that better explain the model, by 26%, are patriotic and irritated (non-standardized coefficients of 0.010 and -0.055, respectively), meaning that these are the emotions that have more impact on purchase intentions (represented by variable PA), however patriotic has a positive impact while irritated has a negative impact (appendix F, table 31).

In Mimosa commercial, the emotions relaxed and bored explain 30.8% of the model. The emotion relaxed, positively influences the purchase intentions and on the opposite the emotion

bored negatively impacts the purchase intentions (non-standardized coefficients of 0.015 and -0.028, respectively) (appendix F, table 34).

Therefore, it is acceptable to concluded that emotions have an impact on purchase intentions. As expected, this conclusion verifies H4, despite the impact being positive or negative depending on the mood transmitted by the emotion.

**5.2.5 Hypothesis 5 -** The emotions caused by music in a commercial, when congruent with the purchase occasion, have a positive impact on purchase intentions.

Then, to test **hypothesis 5** (H5), it was necessary to analyse the congruence between the emotions felt while watching the commercial, caused by music, and the emotions felt when consuming the product represented on the commercial. There were stablish degrees of congruence, like 50% congruence, 60% congruence, 70% congruence, 80 % congruence and 90% congruence. The goal was to perform a T-test for each level of congruence. However, it was only possible to calculate the T-test for a congruence of 50%, because when the degree rose to 60% the sample size was reducing for numbers that were not viable to conduct the test. With a congruence of 60% the sample size was only 7, with 70% the sample size was 3 and with 80% congruence the sample size was 2.

The results for a congruence of 50%, combining both commercials, with a sample size of 19, demonstrated that the variables are not significantly different ($t(177) = 0.582$, $p = 0.561$), which means that having a congruence level higher or lower than 50% does not impact the purchase intentions (appendix G, table 35 and table 36).

Thus, with a congruence of 50% between the emotions caused by ad music and the emotions felt on the consuming occasion, there is no impact on the purchase intentions. Since it was not possible to study a higher level of congruence, the H5 was not verified.

**5.2.6 Hypothesis 6 -** A commercial with music in it will have a more positive impact on purchase intentions than a commercial with no music.

Finally, to test **hypothesis 6** (H6) which overall covers the main goal of this study, to analyse the impact of music on consumer behaviour, a procedure similar to the one executed for H3, was performed. A T-test was processed between commercials with and without music for the variables PA and PB, however this time not only taking into account the participants that correctly identified the brand, but all the participants for both Sagres and Mimosa adds.

For Sagres, the results obtained were the PA for the commercial with music ($M$ = 3.92, $SD$ = 1.133) compared with the PA for the commercial without music ($M$ = 2.91, $SD$ = 1.317) demonstrated that there is a significant difference between the variables ($t(150) = 5.100$, $p = 0.000$). Regarding the PB for the commercial with music ($M$ = 3.79, $SD$ = 1.151) compared with the PB for the commercial without music ($M$ = 2.92, $SD$ = 1.431) demonstrated that there is also a significant difference between the variables ($t(141.815) = 4.134$ , $p = 0.000$) (appendix H, table 37 and table 38).

The results for Mimosa, as happened in Sagres ad, show that there is a significant difference ($t(145) = 3.890$, $p = 0.000$) between the PA for the commercial with music ($M$ = 3.39, $SD$ = 1.152) and the PA for the commercial without music ($M$ = 2.68, $SD$ = 1.061). The same is verified for PB, showing that the PB for the commercial with music ($M$ = 3.41, $SD$ = 1.161) compared with the PB for the commercial without music ($M$ = 2.79, $SD$ = 1.075) demonstrated that there is a significant difference between the variables ($t(144) = 3.377$, $p = 0.001$) (appendix H, table 39 and table 40).

It is now possible to conclude that a commercial that includes background music has a more positive impact on purchase intentions than a commercial without music, which validates H6.

# 6. Conclusion

The goal of this study was to analyse the influence of music in consumer behaviour. To do so, the study focused mainly on television commercials and the music that was presented on the background. It covers many aspects that involve the music presence in an ad, such as brand recall, the lyrics of the song, the emotions transmitted to the viewers, and the relevance of the congruency between the advertisement components (music and visual elements) and the purchase intentions. The products presented on the commercials are FMCG, in the beverages sector, meaning that are products with low involvement, and therefore require a more emotional appeal, to have a greater impact in the consumers (Akbari, 2015). Both commercials selected for survey of this study, address celebrity endorsement which can significantly influence consumers perception, especially in the beverages sector, since it helps to captures consumer attention and creates a greater impression in consumer's mind (Parmar & Patel, 2014).

The main findings of this study lead to the conclusion that music, definitely, has a decisive and important impact on consumers perception and consequently on consumers behaviour towards the brand and in purchase intentions. Regarding the different variables studied, it was possible verify that the background music of an ad causes a positive impact on brand recall, and in turn brand recall has a positive impact on purchase intentions (Levrini et al., 2019). It was also concluded that the lyrics of the song helped the consumers with the identification of the brand, meaning that the lyrics also promote brand recall (Anisimova et al., 2014).

Unfortunately, due to the sample size, it was not possible to verify the effects of congruency between the emotions and the consumption occasion, in the purchase intentions. However, it was possible to conclude that emotions caused by music, if positive (patriotic and relaxed, for example), have a positive impact on purchase intentions.

Furthermore, between the two commercials used in this analysis, Sagres had a higher influence on purchase intentions (compared with the commercial without music) then Mimosa. This might be due to the fact the Sagres commercial is more stimulating and dynamic, and uses more celebrity endorsement, having celebrities from all fields (actor, singers and soccer players), which are factors that bring more likeability to the commercial and capture the viewer's attention.

Lastly, as expected, giving all the results previously stated, this dissertation concludes that a commercial with background music has a greater impact on purchase intentions than a commercial without music. All these conclusions fulfil the main objective of this dissertation, by analysing the effects of music and reassuring the importance of music, not only in marketing but also in all aspects of people's lives.

### 6.1 Implications

The implications of this study, as previously stated, are quite relevant for marketing and business. Given the main conclusion of this dissertation, that music has a significant impact in consumers, it is wise to better understand how the publicity world can benefit the most from the use of this variable (music). In this dissertation it was verified that by using music in a commercial it is possible to increase important features of a marketing strategy, like brand recognition and the purchase intentions of the consumers. Having the right knowledge, techniques, and measures to use the song that better fits a certain commercial can improve the consumers perception of the commercial and their reaction towards the brand. The finding of this dissertation can help marketeers to make more efficient and effective decision when it comes to music and advertising.

### 6.2 Limitations of this study

The main limitation of this study, as mentioned above, was the incapability of verifying the hypothesis five, regarding the increase in purchase intentions when the congruency between the emotions and the consumptions occasion was verified. To test this hypothesis, it was necessary to choose the participants replies that were showed congruency between the mentioned variables. Unfortunately, there were not enough answer that were congruent, consequently the sample size was considerably small and would compromising the viability of the test.

Moreover, other limitations can be found on the survey. In order to identify and measure the purchase/consumptions occasions, it was necessary to limit the options into four scenarios, but in reality, consumers have multiple other scenarios and occasions for buying and consuming the presented products. Additionally, it was requested to the participants to measure their emotions in a scale of 0 to 100%. This implies a certain subjectivity, since the emotions that the

participants though they felt might not be the exact emotion they were actually feeling or might not be in the exact intensity.

### 6.3 Ideas for future research

Considering the number of different features that surround the existence of music in a commercial, some of them already addressed in this research, it would be interesting to further investigate other aspects. For example, the relationship between the music and the image of the commercial, if there is a better fit of a certain type of song to the images and the story of the commercial. Also, the relationship between music and silence, to test if breaks of silence between the music can better capture the attention of the audience and it can be used to increase brand recall and purchase intentions.

It would also be useful to further investigate if whether or not exists a certain type of music that suits better a certain type of product.

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# 8. Appendices

## **Appendix A** – Questionnaire's formulation

*Table 8.38 - Adjective scales intended to measure musically induced emotions, from Juslin and Laukka (2004).*

| Bartel (1992) | Asmus (1985) | Juslin & Laukka (this study) |
|---|---|---|
| Unmoved-moved | *Evil factor*: anger, rage. Cruelty, hate, frustrated | Happy |
| Emotional–unemotional | *Sensual factor*: love, tender, beautiful, romantic | Relaxed |
| Forgettable–unforgettable | *Potency factor*: victorious, heroic, stately, patriotic, majestic | Sad |
| Joyful-sad | *Humour factor*: comical, humorous, amused, playful, cheerful | Moved |
| Inspiring–uninspiring | *Pastoral factor*: peaceful, calm, relaxed, gentle, pleasant | Bored |
| Exciting–depressing | *Longing factor*: yearning, longing, lonely | Nostalgic |
| Deadening–enlivening | *Depression factor*: depressed, dreary, blue, sad, gloomy | Tense |
| Cold–hot | *Sedative factor*: contemplative, reflective, serene, tranquil, sedative | Amused |
| Dejected–elated | *Activity* factor: determined, vibrant, vigorous, exuberant | Solemn |
| Thrilling–boring | | Tender |
| Distasteful–delightful | | Interested |
| Pleasant–disturbing | | Angry |
| | | Spiritual |
| | | Longing |
| | | Pleasurable |

**Links for the original commercials:**

Sagres: https://www.youtube.com/watch?v=cPfdQqskTQs&ab_channel=CervejaSagres

Mimosa:
https://www.youtube.com/watch?v=5rx4KRChf2o&ab_channel=Mimosa%C3%A9parteden%C3%B3s

**Links for the manipulated commercials:**

Sagres with music: https://youtu.be/_cdXacAROuM

Sagres without music: https://youtu.be/Ey0h4_KFatE

Mimosa with music: https://youtu.be/yM_7A4diKGo

Mimosa without music: https://youtu.be/U5HoV19OgtY

**Example of questionnaire** – Q1 Sagres with music:

ISCTE Instituto Universitário de Lisboa

**O Impacto da Música no Comportamento dos Consumidores: Aplicado a Anúncios Comerciais no Setor Alimentar**

**Antes de mais queria agradecer a sua disponibilidade para responder a este questionário.**

**Sou aluna do segundo ano do mestrado de Gestão, na universidade ISCTE Business School. O presente questionário serve de suporte para o estudo da minha dissertação, que tem como objetivo analisar o impacto da música no comportamento dos consumidores.**

**É importante realçar que todos os dados são confidenciais e utilizados somente para fins académicos.**

**Peço que responda de forma honesta e de acordo com as suas experiências e gostos pessoais. O questionário tem uma duração de cerca de 5 minutos. Caso tenha alguma dúvida não hesite em contactar-me: vbgfa@iscte-iul.pt**

ISCTE Instituto Universitário de Lisboa

**Por favor assista, atentamente, ao vídeo seguinte e certifique-se que consegue ouvir o áudio:**


→

ISCTE Instituto Universitário de Lisboa

**Já tinha assistido a este anúncio anteriormente?**

- ○ Sim
- ○ Não

**Sabe qual é a marca do produto apresentado no anúncio? Se sim, indique qual.**

**Diga-nos o seu grau de concordância com a seguinte afirmação: "A letra da música influenciou-me na identificação da marca"**

- ○ Discordo totalmente
- ○ Discordo
- ○ Não concordo, nem discordo
- ○ Concordo
- ○ Concordo totalmente

→

ISCTE Instituto Universitário de Lisboa

**Após assistir ao anúncio, em que grau sentiu cada uma das seguintes emoções?**

0 10 20 30 40 50 60 70 80 90 100

Contente

Relaxado

Triste

Comovido

Aborrecido

Nostálgico

Tenso

Divertido

Irritado

Patriótico

Interessado

Calmo

→

ISCTE Instituto Universitário de Lisboa

**Qual a probabilidade de comprar o produto da marca apresentada no anúncio?**

| | 1 - Definitivamente não compraria | 2 | 3 | 4 | 5 - Definitivamente compraria |
|---|---|---|---|---|---|
| Probabilidade de comprar o produto da marca apresentada no anúncio | ○ | ○ | ○ | ○ | ○ |

**Qual a probabilidade de comprar o produto apresentado no anúncio, independentemente da marca?**

| | 1 - Definitivamente não compraria | 2 | 3 | 4 | 5 - Definitivamente compraria |
|---|---|---|---|---|---|
| Probabilidade de comprar o produto apresentado no anúncio, independentemente da marca | ○ | ○ | ○ | ○ | ○ |

→

ISCTE Instituto Universitário de Lisboa

**Por favor, responda às perguntas seguintes, tendo em consideração os seus hábitos de compra e consumo.**

**Tem por hábito comprar o produto apresentado no anúncio (mesmo que seja de uma marca diferente)?**

- (●) Sim
- ( ) Não

**Para qual das seguintes ocasiões costuma comprar o produto apresentado no anúncio? (escolha a opção que com maior frequência o compra)**

- ( ) Festas de aniversário
- ( ) Piqueniques em família
- ( ) Convívio com amigos
- ( ) Refeições em família

**Tem por hábito consumir o produto apresentado no anúncio (mesmo que seja de uma marca diferente)?**

- (●) Sim
- ( ) Não

**Em qual das seguintes ocasiões costuma consumir o produto apresentado no anúncio? (escolha a opção que com maior frequência o consome)**

- ( ) Festa de aniversário
- ( ) Piqueniques em família
- ( ) Convívio com amigos
- ( ) Refeições em família

→

**Tendo em conta a ocasião de consumo que selecionou na pergunta anterior, qual o grau que associa às seguintes emoções?**
**Por exemplo: Se selecionou a opção "Festas de aniversário", defina qual o grau que sente cada uma das seguintes emoções, em festas de aniversário, ao consumir o produto apresentado no anúncio.**

0 10 20 30 40 50 60 70 80 90 100

Contente

Relaxado

Triste

Comovido

Aborrecido

Nostálgico

Tenso

Divertido

Irritado

Patriótico

Interessado

Calmo

ISCTE Instituto Universitário de Lisboa

**Género:**

- ○ Feminino
- ○ Masculino
- ○ Prefiro não dizer

**Idade:**

- ○ < 18
- ○ 18-25
- ○ 26-35
- ○ 36-45
- ○ 46-55
- ○ 56-65
- ○ > 65

**Último grau de escolaridade concluído:**

- ○ Ensino Básico
- ○ Ensino Secundário
- ○ Licenciatura
- ○ Pós-Graduação
- ○ Mestrado
- ○ Doutoramento
- ○ Outro

**Localidade:**

- ○ Açores
- ○ Aveiro
- ○ Beja
- ○ Braga
- ○ Bragança
- ○ Castelo Branco
- ○ Coimbra
- ○ Évora
- ○ Faro
- ○ Guarda
- ○ Leira
- ○ Lisboa
- ○ Madeira
- ○ Portalegre
- ○ Porto
- ○ Santarém
- ○ Setúbal
- ○ Viana do Castelo
- ○ Vila Real
- ○ Viseu


## **Appendix B –** Descriptive Analyses

*Table 8.39 - Influence of lyrics on brand identification Q1*

| | | Frequency | Percentage | Valid Percentage | Cumulative Percentage |
|---|---|---|---|---|---|
| Valid | Strongly disagree | 4 | 5,2 | 5,2 | 5,2 |
| | Disagree | 7 | 9,1 | 9,1 | 14,3 |
| | Do not agree or disagree | 10 | 13,0 | 13,0 | 27,3 |
| | Agree | 29 | 37,7 | 37,7 | 64,9 |
| | Strongly agree | 27 | 35,1 | 35,1 | 100,0 |
| | Total | 77 | 100,0 | 100,0 | |

*Table 8.40 - Influence of lyrics on brand identification Q3*

| | | Frequency | Percentage | Valid Percentage | Cumulative Percentage |
|---|---|---|---|---|---|
| Valid | Strongly disagree | 3 | 4,2 | 4,3 | 4,3 |
| | Disagree | 12 | 16,7 | 17,1 | 21,4 |
| | Do not agree or disagree | 12 | 16,7 | 17,1 | 38,6 |
| | Agree | 24 | 33,3 | 34,3 | 72,9 |
| | Strongly agree | 19 | 26,4 | 27,1 | 100,0 |
| | Total | 70 | 97,2 | 100,0 | |
| Missing | System | 2 | 2,8 | | |
| Total | | 72 | 100,0 | | |

*Table 8.41 - Probability of buying the product from the brand represented on the commercial Q1*

| | | Frequency | Percentage | Valid Percentage | Cumulative Percentage |
|---|---|---|---|---|---|
| Valid | 1 - Definitely do not intend to buy | 4 | 5,2 | 5,2 | 5,2 |
| | 2 | 4 | 5,2 | 5,2 | 10,4 |
| | 3 | 16 | 20,8 | 20,8 | 31,2 |
| | 4 | 23 | 29,9 | 29,9 | 61,0 |
| | 5 - Definitely intended to buy | 30 | 39,0 | 39,0 | 100,0 |
| | Total | 77 | 100,0 | 100,0 | |

*Table 42.8 - Probability of buying the product represented on the commercial independently of the brand Q1*

| | | Frequency | Percentage | Valid Percentage | Cumulative Percentage |
|---|---|---|---|---|---|
| Valid | 1 - Definitely do not intend to buy | 4 | 5,2 | 5,2 | 5,2 |
| | 2 | 6 | 7,8 | 7,8 | 13,0 |
| | 3 | 18 | 23,4 | 23,4 | 36,4 |
| | 4 | 23 | 29,9 | 29,9 | 66,2 |
| | 5 - Definitely intended to buy | 26 | 33,8 | 33,8 | 100,0 |
| | Total | 77 | 100,0 | 100,0 | |

*Table 8.9 - Probability of buying the product from the brand represented on the commercial Q2*

| | | Frequency | Percentage | Valid Percentage | Cumulative Percentage |
|---|---|---|---|---|---|
| Valid | 1 - Definitely do not intend to buy | 12 | 16,0 | 16,0 | 16,0 |
| | 2 | 19 | 25,3 | 25,3 | 41,3 |
| | 3 | 21 | 28,0 | 28,0 | 69,3 |
| | 4 | 10 | 13,3 | 13,3 | 82,7 |
| | 5 - Definitely intended to buy | 13 | 17,3 | 17,3 | 100,0 |
| | Total | 75 | 100,0 | 100,0 | |

*Table 8.10 - Probability of buying the product represented on the commercial independently of the brand Q2*

| | | Frequency | Percentage | Valid Percentage | Cumulative Percentage |
|---|---|---|---|---|---|
| Valid | 1 - Definitely do not intend to buy | 15 | 20,0 | 20,0 | 20,0 |
| | 2 | 17 | 22,7 | 22,7 | 42,7 |
| | 3 | 19 | 25,3 | 25,3 | 68,0 |
| | 4 | 7 | 9,3 | 9,3 | 77,3 |
| | 5 - Definitely intended to buy | 17 | 22,7 | 22,7 | 100,0 |
| | Total | 75 | 100,0 | 100,0 | |

*Table 8.43 - Probability of buying the product from the brand represented on the commercial Q3*

| | | Frequency | Percentage | Valid Percentage | Cumulative Percentage |
|---|---|---|---|---|---|
| Valid | 1 - Definitely do not intend to buy | 7 | 9,7 | 9,9 | 9,9 |
| | 2 | 7 | 9,7 | 9,9 | 19,7 |
| | 3 | 18 | 25,0 | 25,4 | 45,1 |
| | 4 | 29 | 40,3 | 40,8 | 85,9 |
| | 5 - Definitely intended to buy | 10 | 13,9 | 14,1 | 100,0 |
| | Total | 71 | 98,6 | 100,0 | |
| Missing | System | 1 | 1,4 | | |
| Total | | 72 | 100,0 | | |

*Table 8.44 - Probability of buying the product represented on the commercial independently of the brand Q3*

| | | Frequency | Percentage | Valid Percentage | Cumulative Percentage |
|---|---|---|---|---|---|
| Valid | 1 - Definitely do not intend to buy | 7 | 9,7 | 10,0 | 10,0 |
| | 2 | 6 | 8,3 | 8,6 | 18,6 |
| | 3 | 19 | 26,4 | 27,1 | 45,7 |
| | 4 | 27 | 37,5 | 38,6 | 84,3 |
| | 5 - Definitely intended to buy | 11 | 15,3 | 15,7 | 100,0 |
| | Total | 70 | 97,2 | 100,0 | |
| Missing | System | 2 | 2,8 | | |
| Total | | | 100,0 | | |

*Table 8.45 - Probability of buying the product from the brand represented on the commercial Q4*

| | | Frequency | Percentage | Valid Percentage | Cumulative Percentage |
|---|---|---|---|---|---|
| Valid | 1 - Definitely do not intend to buy | 6 | 7,9 | 7,9 | 7,9 |
| | 2 | 33 | 43,4 | 43,4 | 51,3 |
| | 3 | 23 | 30,3 | 30,3 | 81,6 |
| | 4 | 7 | 9,2 | 9,2 | 90,8 |
| | 5 - Definitely intended to buy | 7 | 9,2 | 9,2 | 100,0 |
| | Total | 76 | 100,0 | 100,0 | |

*Table 8.46 - Probability of buying the product represented on the commercial independently of the brand Q4*

| | | Frequency | Percentage | Valid Percentage | Cumulative Percentage |
|---|---|---|---|---|---|
| Valid | 1 - Definitely do not intend to buy | 6 | 7,9 | 7,9 | 7,9 |
| | 2 | 29 | 38,2 | 38,2 | 46,1 |
| | 3 | 22 | 28,9 | 28,9 | 75,0 |
| | 4 | 13 | 17,1 | 17,1 | 92,1 |
| | 5 - Definitely intended to buy | 6 | 7,9 | 7,9 | 100,0 |
| | Total | 76 | 100,0 | 100,0 | |

## **Appendix C –** Hypotheses Tests for H1

*Table 8.47 - H1: Cross tabulation for Q1 and Q2*

| | | | Brand Identification | | |
|---|---|---|---|---|---|
| | | | Yes | No | Total |
| Survey | Sagres with music | Count | 55 | 22 | 77 |
| | | Expected count | 45.1 | 31.9 | 77.0 |
| | | % of Survey | 71,4% | 28,6% | 100,0% |
| | | % of brand identification | 61.8% | 34.9% | 50.7% |
| | | % do Total | 36,2% | 14,5% | 50,7% |
| | Sagres without music | Count | 34 | 41 | 75 |
| | | Expected count | 43,9 | 31,1 | 75,0 |
| | | % of Survey | 45.3% | 54.7% | 100.0% |
| | | % of brand identification | 38.2% | 65.1% | 49.3% |
| | | % do Total | 22,4% | 27,0% | 49,3% |
| Total | | Count | 89 | 63 | 152 |
| | | Expected count | 89.0 | 63.0 | 152.0 |
| | | % of Survey | 58.6% | 41.4% | 100.0% |
| | | % of brand identification | 100,0% | 100,0% | 100,0% |
| | | % do Total | 58,6% | 41,4% | 100,0% |

*Table 8.48 - H1: Chi-square tests for Q1 and Q2*

| | Value | df | Asymptotic Significance (Bilateral) | Exact sig (2 sides) | Exact sig (1 side) |
|---|---|---|---|---|---|
| Pearson chi-square | 10,661[a] | 1 | ,001 | | |
| Continuity Correction[b] | 9.613 | 1 | .002 | | |
| Likelihood Ratio | 10.796 | 1 | .001 | | |
| Fisher's exact test | | | | .002 | .001 |
| Linear by Linear Association | 10,591 | 1 | ,001 | | |
| N of Valid Cases | 152 | | | | |

a. 0 cells (,0%) expected a count less than 5. Minimum expected count is 31,09.

b. Computed only for a 2X2 table.

*Table 8.49 - H1: Cross tabulation for Q3 and Q4*

| | | | Brand Identification | | |
|---|---|---|---|---|---|
| | | | Yes | No | Total |
| Survey | Mimosa with music | Count | 51 | 21 | 72 |
| | | Expected count | 34.1 | 37.9 | 72.0 |
| | | % of Survey | 70,8% | 29,2% | 100,0% |
| | | % of brand identification | 72.9% | 26.9% | 48.6% |
| | | % do Total | 34,5% | 14,2% | 48,6% |
| | Mimosa without music | Count | 19 | 57 | 76 |
| | | Expected count | 35,9 | 40,1 | 76,0 |
| | | % of Survey | 25.0% | 75.0% | 100.0% |
| | | % of brand identification | 27.1% | 73.1% | 51.4% |
| | | % do Total | 12,8% | 38,5% | 51,4% |
| Total | | Count | | 78 | 148 |
| | | Expected count | | 78.0 | 148.0 |
| | | % of Survey | | 52.7% | 100.0% |
| | | % of brand identification | | 100,0% | 100,0% |
| | | % do Total | | 52,7% | 100,0% |

*Table 8.50 - H1: Chi-square tests for Q3 and Q4*

| | Value | df | Asymptotic Significance (Bilateral) | Exact sig (2 sides) | Exact sig (1 side) |
|---|---|---|---|---|---|
| Pearson chi-square | 31,159[a] | 1 | ,000 | | |
| Continuity Correction[b] | 29.347 | 1 | .000 | | |
| Likelihood Ratio | 32.340 | 1 | .000 | | |
| Fisher's exact test | | | | .000 | .000 |
| Linear by Linear Association | 30,948 | 1 | ,000 | | |
| N of Valid Cases | 148 | | | | |

a. 0 cells (,0%) expected a count less than 5. Minimum expected count is 34,05.

b. Computed only for a 2X2 table.

## **Appendix D –** Hypotheses Tests for H2

*Table 8.51 - H2: Influence of lyrics in brand recall Q1*

| | | Frequency | Percentage | Valid Percentage |
|---|---|---|---|---|
| Valid | Strongly disagree | 4 | 5,2 | 5,2 |
| | Disagree | 7 | 9,1 | 9,1 |
| | Do not agree or disagree | 10 | 13,0 | 13,0 |
| | Agree | 29 | 37,7 | 37,7 |
| | Strongly agree | 27 | 35,1 | 35,1 |
| | Total | 77 | 100,0 | 100,0 |

*Table 8.52 - H2: Influence of lyrics in brand recall Q2*

| | | Frequency | Percentage | Valid Percentage |
|---|---|---|---|---|
| Valid | Strongly disagree | 3 | 4,2 | 4,3 |
| | Disagree | 12 | 16,7 | 17,1 |
| | Do not agree or disagree | 12 | 16,7 | 17,1 |
| | Agree | 24 | 33,3 | 34,3 |
| | Strongly agree | 19 | 26,4 | 27,1 |
| | Total | 70 | 97,2 | 100,0 |
| Missing | System | 2 | 2,8 | |
| Total | | | 100,0 | |

*Table 8.53 - Correctly identify the brand while being influenced by lyrics Q1*

| | | Frequency | Percentage | Valid Percentage |
|---|---|---|---|---|
| Valid | Yes | 48 | 85,7 | 85,7 |
| | No | 8 | 14,3 | 14,3 |
| | Total | 56 | 100,0 | 100,0 |

*Table 8.54 - Correctly identify the brand while being influenced by lyrics Q3*

| | | Frequency | Percentage | Valid Percentage |
|---|---|---|---|---|
| Valid | Yes | 40 | 93,0 | 93,0 |
| | No | 3 | 7,0 | 7,0 |
| | Total | 43 | 100,0 | 100,0 |

*Table 8.55 - Correctly identify the brand while not being influenced by lyrics Q1*

| | | Frequency | Percentage | Valid Percentage |
|---|---|---|---|---|
| Valid | Yes | 7 | 33,3 | 33,3 |
| | No | 14 | 66,7 | 66,7 |
| | Total | 21 | 100,0 | 100,0 |

*Table 8.56 - Correctly identify the brand while not being influenced by lyrics Q3*

| | | Frequency | Percentage | Valid Percentage |
|---|---|---|---|---|
| Valid | Yes | 11 | 40,7 | 40,7 |
| | No | 16 | 59,3 | 59,3 |
| | Total | 27 | 100,0 | 100,0 |

## **Appendix E –** Hypotheses Tests for H3

*Table 8.57 - H3: Group statistics for PA and PB in Q1 and Q2*

| | Survey | N | Mean | Error deviation | Mean standard error |
|---|---|---|---|---|---|
| Probability of buying the product from the brand represented on the commercial | Sagres with music | 55 | 4,11 | 1,165 | ,157 |
| | Sagres without music | 34 | 3,15 | 1,417 | ,243 |
| Probability of buying the product represented on the commercial independently of the brand | Sagres with music | 55 | 4,02 | 1,147 | ,155 |
| | Sagres without music | 34 | 3,21 | 1,591 | ,273 |

*Table 8.58 - H3: Independent sample test for PA and PB in Q1 and Q2*

| | | Levene's test for equality of variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 95% Confidence Interval of Difference | |
| | | Z | Sig. | t | df | Sig. (2 ends) | Average difference | Standard error of difference | Inferior | Superior |
| Probability of buying the product from the brand represented on the commercial | Equal variances assumed | 2,232 | 0,139 | 3,481 | 87 | 0,001 | 0,962 | 0,276 | 0,413 | 1,511 |
| | Equal variances not assumed | | | 3,324 | 59,961 | 0,002 | 0,962 | 0,289 | 0,383 | 1,541 |
| Probability of buying the product represented on the commercial | Equal variances assumed | 9,018 | 0,003 | 2,794 | 87 | 0,006 | 0,812 | 0,291 | 0,234 | 1,390 |
| | Equal variances not assumed | | | 2,590 | 54,170 | 0,012 | 0,812 | 0,314 | 0,184 | 1,441 |

*Table 8.59 - H3: Group statistics for PA and PB in Q3 and Q4*

| | Survey | N | Mean | Error deviation | Mean standard error |
|---|---|---|---|---|---|
| Probability of buying the product from the brand represented on the commercial | Mimosa with music | 51 | 3,65 | 1,128 | ,158 |
| | Mimosa without music | 19 | 3,37 | 1,212 | ,278 |
| Probability of buying the product represented on the commercial independently of the brand | Mimosa with music | 51 | 3,59 | 1,099 | ,154 |
| | Mimosa without music | 19 | 3,42 | 1,261 | ,289 |

*Table 8.60 - H3: Independent sample test for PA and PB in Q3 and Q4*

| | | Levene's test for equality of variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 95% Confidence Interval of Difference | |
| | | Z | Sig. | t | df | Sig. (2 ends) | Average difference | Standard error of difference | Inferior | Superior |
| Probability of buying the product from the brand represented on the commercial | Equal variances assumed | 0,210 | 0,648 | 0,901 | 68 | 0,371 | 0,279 | 0,309 | -0,339 | 0,896 |
| | Equal variances not assumed | | | 0,872 | 30,369 | 0,390 | 0,279 | 0,320 | -0,374 | 0,931 |
| Probability of buying the product represented on the commercial independently of the | Equal variances assumed | 0,682 | 0,412 | 0,544 | 68 | 0,588 | 0,167 | 0,307 | -0,446 | 0,781 |
| | Equal variances not assumed | | | 0,510 | 28,788 | 0,614 | 0,167 | 0,328 | -0,503 | 0,838 |

## **Appendix F –** Hypotheses Tests for H4

*Table 8.61 - H4: Model summary for PA in Q1*

| Model | R | R squared | Adjusted R squared | Standard error of estimate |
|---|---|---|---|---|
| 1 | ,392[a] | ,154 | ,142 | 1,049 |
| 2 | ,510[b] | ,260 | ,240 | ,988 |

a. Predictors: (Constant), 4j - Patriotic

b. Predictors: (Constant), 4j - Patriotic, 4i - Irritated

*Table 8.62 - H4: ANOVA for Q1*

| Model | | Sum of squares | df | Medium square | Z | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 14,981 | 1 | 14,981 | 13,611 | ,000[b] |
| | Resíduo | 82,551 | 75 | 1,101 | | |
| | Total | 97,532 | 76 | | | |
| 2 | Regression | 25,327 | 2 | 12,663 | 12,978 | ,000[c] |
| | Resíduo | 72,205 | 74 | ,976 | | |
| | Total | 97,532 | 76 | | | |

a. Dependent Variable: Probability of buying the product from the brand represented on the commercial

a. Predictors: (Constant), 4j - Patriotic

b. Predictors: (Constant), 4j - Patriotic, 4i - Irritated

*Table 8.63 - H4: Coefficients of Q1*

| Model | | Non-standardized coefficients | | Standardized coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Error | Beta | t | Sig. |
| 1 | (Constant) | 3,245 | ,219 | | 14,814 | ,000 |
| | 4j - Patriotic | ,011 | ,003 | ,392 | 3,689 | ,000 |
| 2 | (Constant) | 3,384 | ,211 | | 16,067 | ,000 |
| | 4j - Patriotic | ,010 | ,003 | ,367 | 3,658 | ,000 |
| | 4i - Irritated | -,055 | ,017 | -,327 | -3,256 | ,002 |

a. Dependent Variable: Probability of buying the product from the brand represented on the commercial

*Table 8.64 - Table 29 - H4: Model summary for PA in Q3*

| Model | R | R squared | Adjusted R squared | Standard error of estimate |
|---|---|---|---|---|
| 1 | ,492[a] | ,242 | ,231 | 1,011 |
| 2 | ,555[b] | ,308 | ,288 | ,972 |

a. Predictors: (Constant), 4b - Relaxed

b. Predictors: (Constant), 4b - Relaxed, 4e - Bored

*Table 8.65 - H4: ANOVA for Q3*

| Model | | Sum of squares | df | Medium square | Z | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 22,476 | 1 | 22,476 | 22,004 | ,000[b] |
| | Residue | 70,481 | 69 | 1,021 | | |
| | Total | 92,958 | 70 | | | |
| 2 | Regression | 28,667 | 2 | 14,333 | 15,160 | ,000[c] |
| | Residue | 64,291 | 68 | ,945 | | |
| | Total | 92,958 | 70 | | | |

a. Dependent Variable: Probability of buying the product from the brand represented on the commercial

a. Predictors: (Constant), 4b - Relaxed

b. Predictors: (Constant), 4b - Relaxed, 4e - Bored

*Table 8.66 - H4: Coefficients of Q3*

| Model | | Non-standardized coefficients | | Standardized coefficients | | Sig. |
|---|---|---|---|---|---|---|
| | | B | Error | Beta | t | B |
| 1 | (Constant) | 2,028 | ,315 | | 6,441 | ,000 |
| | 4b – Relaxed | ,020 | ,004 | ,492 | 4,691 | ,000 |
| 2 | (Constant) | 2,488 | ,352 | | 7,064 | ,000 |
| | 4b – Relaxed | ,015 | ,005 | ,365 | 3,254 | ,002 |
| | 4e - Bored | -,028 | ,011 | -,287 | -2,559 | ,013 |

a. Dependent Variable: Probability of buying the product from the brand represented on the commercial

## **Appendix G –** Hypotheses Tests for H5

*Table 8.67 - H5: Group Statistics*

| | PerCong | N | Mean | Deviation error | Mean standard error |
|---|---|---|---|---|---|
| Probability of buying the product from the brand represented on the commercial | >= ,50 | 19 | 3,68 | 1,003 | ,230 |
| | < ,50 | 160 | 3,66 | 1,127 | ,089 |

*Table 8.68 - H5: Independent sample test*

| | | Levene's test for equality of variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 95% Confidence Interval of Difference | |
| | | Z | Sig. | t | df | Sig. (2 ends) | Average difference | Standard error of difference | Inferior | Superior |
| Probability of buying the product from the brand represented on the commercial | Equal variances assumed | 0,821 | 0,366 | 0,103 | 177 | 0,918 | 0,028 | 0,271 | -0,506 | 0,562 |
| | Equal variances not assumed | | | 0,113 | 23,747 | 0,911 | 0,028 | 0,247 | -0,482 | 0,538 |

## **Appendix H –** Hypotheses Tests for H6

*Table 8.69 - H6: Group statistics for PA and PB in Q1 and Q2*

| | Survey | N | Mean | Error deviation | Mean standard error |
|---|---|---|---|---|---|
| Probability of buying the product from the brand represented on the commercial | Sagres with music | 77 | 3,92 | 1,133 | ,129 |
| | Sagres without music | 75 | 2,91 | 1,317 | ,152 |
| Probability of buying the product represented on the commercial independently of the brand | Sagres with music | 77 | 3,79 | 1,151 | ,131 |
| | Sagres without music | 75 | 2,92 | 1,431 | ,165 |

*Table 8.70 - H6: Independent sample test for PA and PB in Q1 and Q2*

| | | Levene's test for equality of variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 95% Confidence Interval of Difference | |
| | | Z | Sig. | t | df | Sig. (2 ends) | Average difference | Standard error of difference | Inferior | Superior |
| Probability of buying the product from the brand represented on the commercial | Equal variances assumed | 2,399 | 0,124 | 5,100 | 150 | 0,000 | 1,015 | 0,199 | 0,622 | 1,409 |
| | Equal variances not assumed | | | 5,090 | 145,510 | 0,000 | 1,015 | 0,199 | 0,621 | 1,410 |
| Probability of buying the product represented on the commercial independently of the | Equal variances assumed | 4,348 | 0,039 | 4,146 | 150 | 0,000 | 0,872 | 0,210 | 0,457 | 1,288 |
| | Equal variances not assumed | | | 4,134 | 141,815 | 0,000 | 0,872 | 0,211 | 0,455 | 1,289 |

*Table 8.71 - H6: Group statistics for PA and PB in Q3 and Q4*

| | Survey | N | Mean | Error deviation | Mean standard error |
|---|---|---|---|---|---|
| Probability of buying the product from the brand represented on the commercial | Mimosa with music | 71 | 3,39 | 1,152 | ,137 |
| | Mimosa without music | 76 | 2,68 | 1,061 | ,122 |
| Probability of buying the product represented on the commercial independently of the brand | Mimosa with music | 70 | 3,41 | 1,161 | ,139 |
| | Mimosa without music | 76 | 2,79 | 1,075 | ,123 |

*Table 8.72 - H6: Independent sample test for PA and PB in Q3 and Q4*

| | | Levene's test for equality of variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 95% Confidence Interval of Difference | |
| | | Z | Sig. | t | df | Sig. (2 ends) | Average difference | Standard error of difference | Inferior | Superior |
| Probability of buying the product from the brand represented on the commercial | Equal variances assumed | 0,700 | 0,404 | 3,890 | 145 | 0,000 | 0,710 | 0,183 | 0,349 | 1,071 |
| | Equal variances not assumed | | | 3,879 | 141,779 | 0,000 | 0,710 | 0,183 | 0,348 | 1,072 |
| Probability of buying the product represented on the commercial independently of the | Equal variances assumed | 0,392 | 0,532 | 3,377 | 144 | 0,001 | 0,625 | 0,185 | 0,259 | 0,991 |
| | Equal variances not assumed | | | 3,366 | 140,429 | 0,001 | 0,625 | 0,186 | 0,258 | 0,992 |