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The Impact of Visual Advertising Techniques on Consumers' Purchase Intention of a Chocolate Bar: The Mediating Role of Taste Perception

Sara Silva Simão
152118176

Dissertation written under the supervision of
Prof. Paulo Romeiro

ABSTRACT

The Impact of Visual Advertising Techniques on Consumers' Purchase Intention of a
Chocolate Bar: The Mediating Role of Taste Perception

Sara Silva Simão

Billions and billions of dollars are annually spent on advertisement. The Food Packaged Goods industry is no exception.

This is because advertising is a powerful weapon to influence the consumers' purchase intention and taste perception. Complementarily, it is also known that taste is a key-attribute in food acquisition.

Albeit, food advertisement is mainly used to induce buying intentions and rarely attempts to affect taste perceptions.

But what if taste perception explains the relationship between consumer exposure to visual ads and their intention to purchase Food Packaged Goods? What if marketers can skew these taste perceptions through the usage of different advertising techniques?

This research sought to answer these questions using Endorsement and Sensory Marketing. Each of these practices had a Traditional advert (i.e. only presenting the product) serving as control.

Accordingly, seven pictorial adverts were created from the ground up based on three research procedures: Pre-Online Survey, Focus Group and Semi-Structured Interviews. Subsequently, the hypotheses were tested using a cross-sectional online questionnaire.

Findings suggest that taste perception largely mediates the relationship between visual advertising and purchase intention. Moreover, Sensory Marketing demonstrated to be extremely effective when deployed in adverts. On the other hand, Endorsement is surprisingly inadvisable since it achieved similar outcomes to Traditional advertising, or even inferior. Given this, it is believed that managers should invest on techniques that subtly influence consumers, going unnoticed as marketing intending to persuade.

The advertising world has been changing, and this research is proof of that.

Keywords: Visual Advertising, Taste Perception, Endorsement, Sensory Marketing, Olfactory Stimulation, Food Packaged Goods, Chocolate Bar

SUMÁRIO

O Impacto de Técnicas de Publicidade Visual na Intenção de Compra de Barras de Chocolate pelos Consumidores: O Papel Mediador da Perceção de Sabor

Sara Silva Simão

Biliões e biliões de dólares são anualmente gastos em publicidade. Na indústria de produtos alimentares embalados não é exceção.

De facto, a publicidade é uma arma poderosa para influenciar intenções de compra e perceções de sabor. Complementarmente, também se sabe que o sabor é um atributo chave para a aquisição destes bens.

Todavia, a publicidade é maioritariamente utilizada para promover intenções de compra, invulgarmente tencionando afetar o sabor percebido.

Mas e se a perceção de sabor explicar a relação entre anúncios pictóricos e a intenção de adquirir produtos alimentares? E se os marketers puderem afetar essas perceções através da utilização de técnicas de publicidade?

Esta investigação visa responder a estas questões utilizando Endorsement e Marketing Sensorial. Cada uma destas práticas foi acompanhada por um anúncio Tradicional (isto é, apenas apresentando o produto) servindo como controlo.

Por conseguinte, sete anúncios foram criados tendo por base três estudos: Pré-Questionário Online, Grupo de Foco e Entrevistas Semi-Estruturadas.

Posteriormente, as hipóteses foram testadas através de um questionário online transversal.

Os resultados revelaram que a perceção de sabor medeia consideravelmente a relação entre publicidade visual e a intenção de compra.

Ademais, a utilização de Marketing Sensorial em anúncios provou ser extremamente eficaz. Por outro lado, Endorsement demonstrou ser surpreendentemente desaconselhável visto alcançar semelhantes, ou até piores, resultados que publicidade Tradicional. Dado isto, acredita-se que os managers devem apostar em técnicas que influenciem os consumidores subtilmente, passando despercebidas como técnicas de marketing.

O mundo da publicidade está em transformação e esta pesquisa é a prova disso.

Palavras-Chave: Publicidade Visual, Perceção de Sabor, Endorsement, Marketing Sensorial, Estimulação Olfativa, Produtos Alimentares Embalados, Barra de Chocolate

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"I would maintain that thanks are the highest form of thought, and that gratitude is happiness doubled by wonder" – Gilbert K. Chesterton

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GLOSSARY

FPG - Food Packaged Goods

CHAPTER 1: INTRODUCTION

1.1 Background and Problem Statement

The advertising world has changed. Long gone are the times when advertisers could only rely on mass media outlets. In this day and age, companies communicate more and more through online formats. The proof lies in the evolution of its definition. What began as "selling through print" (Starch, 1923) is nowadays well beyond that; it is about impacting people (Dahlen & Rosengren, 2016).

However, one aspect remains inalterable: advertising efficiency is of the utmost importance for marketing managers (Cheong, De Gregorio, & Kim, 2014) as it is considered an investment (Danaher & Rust, 1994). Indeed, billions and billions of dollars are spent in advertisement. The Food Packaged Goods industry is no exception. To give a sense, the forecasts for the year 2020 predicted an expense of 5,37 billion U.S. dollars advertising food in the United States alone (Statista, 2019).

In fact, these campaigns are a powerful weapon to influence companies' sales revenues (Harlan E. Spotts, Marc G. Weinberger, 2019), as they affect both the consumers' intent to purchase and their judgements about product quality (Mela, Gupta, & Lehmann, 1997).

It is also known that taste perception, which is conceptually related to quality (Elder & Krishna, 2010), is considered a key driver for consumers' intention to buy FPG (Glanz, Basil, Maibach, Goldberg, & Snyder, 1997; Jo & Lusk, 2018; Tepper & Trail, 1998).

Despite food advertisement being mainly used to induce buying intentions, it rarely tries to influence taste perceptions (Elder & Krishna, 2010).

But what if taste perception explains the relationship between consumer exposure to ads and the intention to purchase FPG? What if managers can skew these taste perceptions through the usage of different advertising techniques?

This investigation aims at exploring whether visual advertising techniques – Endorsement and Sensory Marketing – exert their effect on consumers' purchase intention through taste perceptions.

In more detail, it discusses the role of Endorsement and Sensory Marketing in driving advertisement efficiency. In regard to Endorsement, the study is based on a 2 (Celebrity: Yes, No) * 2 (Expert: Yes, No) matrix. As for Sensory Marketing, only the olfactory stimulation is addressed, given the pure pictorial advertising context of this study.

In summary, the underlined problem statement can be defined as:

How does taste perception impact the relationship between food visual advertising techniques and the consumers' purchase intention?

The underlined research questions framed to solve the above problem statement are the following:

RQ$_1$: Which Endorsement type is the most efficient?

RQ$_2$: Among Endorsement and Sensory Marketing, which has the strongest effect in advertising?

RQ$_3$: Does taste perception explain the relationship between visual advertising techniques and the consumers' purchase intention?

1.2 Relevance

The impact of diverse advertising techniques on purchase intention is broadly explored in literature. Simultaneously, it has been shown that taste perception is a key-factor in consumers' desire to purchase FPG. However, there is a profound lack of investigation about the taste perception role in the efficiency of FPG advertising campaigns.

If the main hypothesis of this study is confirmed, managers must radically change their focus and start to develop ads to affect taste perceptions. This issue is of the utmost relevance in an industry with such a high ad expenditure as this.

Moreover, academic literature rarely compares the efficiency of different advertising techniques, which is crucial in obtaining actionable managerial recommendations. For this reason, this research compares Endorsement and Sensory Marketing techniques.

In terms of Sensory Marketing, little attention has been paid to the influence of olfactory inputs on consumer decision-making. Simultaneously, scholars request research addressing sensory perceptions in a purely visual advertising context (Elder & Krishna, 2012). Consequently, this research ventures out in a little-explored field of research.

Moreover, some recommendations might be extended to restaurant ads, thereby enlarging the relevance sphere of this dissertation.

In brief, the aim of this study is to shed a new light on food advertisement efficiency.

1.3 Research Methods

With the goal of solving the research problem at hand, both secondary and primary data will be gathered. The preliminary step will be to critically review the existing literature to date, in the form of secondary data, so that studied relationships between the underlying variables are

identified. This will pave the way to generating hypotheses and further on analyzing the primary data results. Subsequently, the model will have to bloom from a conceptual to an operational level. In order to successfully accomplish this transition, four primary data studies will be carried out. Firstly, an online survey will be used to choose the most proper food category for pursuing this investigation. Secondly, a focus group will be conducted for the selection of the most appropriate Celebrity endorsers to be employed in the main study. In the light of these results, the visual stimuli will be developed from the ground up. Thirdly, to ensure these ads will convey the desired messages, semi-structured interviews will be conducted. Lastly, to test the hypotheses, a cross-sectional questionnaire with a built-in experimental design will be employed. It will be distributed via the Internet to simulate a virtual advertising context. Respondents will be randomly assigned to one of seven groups, each corresponding to one of the visual advertising stimuli created:

a) Endorsement – Celebrity Expert, Celebrity Non-Expert, Non-Celebrity Expert, Non-Celebrity Non-Expert and No Endorser (serving as control group)

b) Sensory Marketing - Smell Stimulation and No Smell Stimulation (serving as control group)

Furthermore, this questionnaire includes sections to assess: (1) respondents' consumption and buying behavior, (2) their preferences within the food category (3) their perceptions about the taste of the advertised product, (4) the inherent intention to purchase it, (5) and their demographic characteristics.

1.4 Dissertation Outline

The present dissertation is divided into five chapters. The following chapter is vital to the development of the hypotheses underlying this investigation, since it presents a literature review that comprises a critical analysis at the existing academic knowledge regarding advertising, including Endorsement and Sensory Marketing, purchase intention and taste perception.

The third chapter aims at providing a detailed description of the methodology for carrying out this investigation. In order to enable one to replicate this project, every study is extensively described, including immanent specifications about how data is collected, measured and analyzed. Here the results from the pre-survey, focus group and interviews are presented.

The purpose of the fourth chapter is to present the results originated from the explanatory study, specifying how data should be interpreted. The fifth and final chapter consists of a conclusion that comprises the main discoveries in the light of the literature review, managerial and academic implications from this research, limitations and proposals for further research.

CHAPTER 2: LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

This chapter consists of a theoretical framework on the themes under investigation. Here, the existing knowledge about the research topics is summarized, compared and critically analyzed, providing a basis to formulate hypotheses.

Firstly, the concept of advertising is addressed and subdivided into Endorsement and Sensory Marketing techniques. Subsequently, purchase intention literature is discussed, followed by taste perception.

Lastly, the conceptual framework is presented, providing a big picture of the proposed relationships between variables and the inherent hypotheses.

2.1 Advertising

Gone are the days when advertising had one single and consensual definition. The first recognized conceptualization of the term was created in 1923 by Daniel Starch, for whom advertising was "selling through print" (Richards & Curran, 2002). Albeit basic, it was aligned with the exclusive media format accessible at the time (Dahlen & Rosengren, 2016).

As time went by, literature was divided into two mainstream currents of thought, based on whether the purpose of research was to define the word or to understand how ads affect consumers. Concerning the first current, by the end of the 20th century, several definitions were emerging, with the same roots: (1) paid, (2) non-personal communication, (3) known sponsor, (4) mass media format and (5) persuasion/influence (Richards & Curran, 2002). Simultaneously and in contrast, academic journals studying advertising hierarchy of effects deemed ads as an input for generating a response from consumers (Vakratsas & Ambler, 1999).

An undeniable fact for both literature approaches is that technology and media progress trigger the evolution of advertising, and that is the reason why definitions and ad effects need to be constantly updated (Kerr & Schultz, 2010). Thus, instead of the technological developments having murdered advertisement as predicted (Rust & Oliver, 1994), they fostered its expansion (Dahlen & Rosengren, 2016).

As a result of these advances, Richards and Curran (2002) defined it as "a paid, mediated form of communication from an identifiable source, designed to persuade the receiver to take some action, now or in the future".

However, over time, three dynamics were evolving in the real-world of advertising business: (1) novel media and formats, (2) changes in consumer behavior and (3) prolonged ad effects (Laczniak, 2016). To integrate these elements, advertising was re-conceptualized as a communication started by a brand with the purpose of impacting people (Dahlen & Rosengren,

2016). This definition follows a marketing scholar's mindset, considering *paid* and *mediated* too restrictive to approach advertising research (Dahlen & Rosengren, 2016).

Contrarily, there is a mass communication mindset for which the new conceptualization is not appropriate, since advertising should be differentiated from other communication types (Huh, 2016). Therefore, the working definition was criticized for being too vast (Stewart, 2016) and over-inclusive (Huh, 2016), in such a way that it no longer sounds like advertising (Rust, 2016). Nonetheless, simultaneously, some consider that it clearly distinguishes what is and is not advertising (Eisend, 2016).

Despite this unconformity, research segments advertising into visual and verbal (Hirschman, 1986; Mitchell, 1986) or into copy and executional elements (David A. Aaker, 1993). The visual component is characterized by being processed more unconsciously and automatically than verbal elements (Elder & Krishna, 2010).

2.1.1 Endorsement

Endorsement is a widespread advertising technique (Kamins, 1990) used to promote products and services (Halonen-Knight & Hurmerinta, 2010) with the aim of influencing consumer behavior (Dean, 1999). In fact, it can affect purchase intentions, product evaluations (Coelho do Vale & Verga Matos, 2017), brand attitudes, attitudes towards ads (Amos, Holmes, & Strutton, 2008), message recalls (Friedman & Friedman, 1979), brand recognition (Petty, Cacioppo, & Schumann, 1983) or even risk perceptions (Biswas, Biswas, & Das, 2006). For this reason, literature has invoked several explanations for its efficiency, such as the Meaning Transfer Model, Source Model Theory, Match-Up Hypothesis and Processes of Identification versus Internalization.

Endorsement, regardless of type, was demonstrated to be more effective than Traditional advertising (i.e. without Endorsement) (Friedman, Termini, & Washington, 1976), inducing both purchase intention and taste perception. But there are different types of endorsers (e.g. Celebrity, Expert and Typical Consumers (Fireworker & Friedman, 1977)), and its choice should lie in the campaign's objective, the endorser themselves (Friedman & Friedman, 1979) and company related factors (Coelho do Vale & Verga Matos, 2017). This research is based on a matrix with endorser familiarity and expertise factors and, therefore, four types of endorsers are examined: Celebrity Non-Expert, Celebrity Expert, Non-Celebrity Expert and Non-Celebrity Non-Expert (i.e. Typical Consumer).

2.1.1.1 Celebrity Non-Expert Endorsement

Celebrity Non-Experts are public figures who benefit from their recognition to appear with advertised products (McCracken, 1989). These individuals are famous due to their achievements in other areas than that of the advertised product category (Friedman et al., 1976). Celebrity advertisement can impact consumers through an identification process (Biswas et al., 2006). This is a process of social influence which occurs when people try to embody the endorser's identity by adopting their beliefs and actions (Kelman, 1961). This is also related with The Meaning Transfer Model, in which Celebrities convey their symbolic characteristics and inherent meanings (Erdogan, 1999) to endorsed products which, in turn, transfer these meanings, values or qualities to consumers (McCracken, 1989).

For this reason, the associations transferred by Celebrities are more powerful and profound than those from Non-Celebrities (McCracken, 1989). Even though, Celebrities are not always more effective (Biswas et al., 2006) since research suggests that it depends upon several factors, such as the product category being endorsed.

2.1.1.2 Celebrity Expert Endorsement

Some Celebrities have come to be known to the public due to successful achievements in the advertised product area (Frieden, 1984), being considered Celebrity Experts. To be effective, their knowledge does not need to be realistic, but rather only be perceived as so by the audience (Erdogan, 1999; Ohanian, 1991).

Considering the Source-Effects Theory, expertise was found to be the third highest influential source on the effectiveness of Celebrity Endorsement (Amos et al., 2008). Indeed, the more of an Expert a Celebrity is considered to be, the more likely they are to induce greater intentions to buy (Ohanian, 1991) and to enhance quality perceptions of a product (Erdogan, 1999).

On the other hand, this expertise can also be approached in the light of the Match-Up Hypothesis (Till & Busler, 2000). Accordingly, a high fit between the Celebrity and the advertised product, driven by expertise, would improve a campaign's effectiveness.

2.1.1.3 Non-Celebrity Expert Endorsement

Non-Celebrity Experts are anonymous individuals or groups of specialists in the advertised product category (Friedman & Friedman, 1979), with an above-average knowledge level in that field (Rossiter & Smidts, 2012) acquired through training or education (Friedman et al., 1976). Their effectiveness accrues from consumers perceiving these endorsers' as sources of valid information (Tedeschi, 1972), and therefore being persuaded through an internalization process

(Biswas et al., 2006). This means that individuals can be influenced by Expert endorsers when their recommendations seem suitable to solve a problem (Kelman, 1961).

However, this process occurrence is, to a great extent, contingent on the advertised product. For non-durable products, which is the case of FPG, Celebrity Non-Expert Endorsement is likely to be more effective than Non-Celebrity Expert. This is due to the fact that those goods commonly require low involvement levels with the purchase and consumers just process the content of their adverts peripherally (Biswas et al., 2006; Kelman, 1961; Petty et al., 1983). Therefore, in FPG, the identification process would be more effective than the internalization (Kelman, 1961).

2.1.1.4 Non-Celebrity Non-Expert Endorsement

Non-Celebrity Non-Expert endorsers commonly represent the Typical Consumers of the endorsed product. They are ordinary individuals whose knowledge of the product category is derived from repeated use (Friedman et al., 1976).

Their effectiveness lies in their appeal of similarity, and both processes of identification and internalization are expected to occur (Friedman & Friedman, 1979). This is because consumers feel similar, and therefore identify, with these endorsers while simultaneously endow them with a certain degree of expertise. Furthermore, it was found that this type is the most effective for food Endorsement, generating higher purchase intentions and better attitudes towards the product (Friedman & Friedman, 1979).

Based on Endorsement literature, the following hypotheses are derived:

H1.a: Endorser Advertising has a higher impact on taste perception than No Endoresment Advertising

H1.b: Endorser Advertising has a higher impact on purchase intention than No Endoresment Advertising

H2.a: Celebrity Expert Endorser Advertising has a higher impact on taste perception than Celebrity Non-Expert Endorser Advertising

H2.b: Celebrity Expert Endorser Advertising has a higher impact on purchase intention than Celebrity Non-Expert Endorser Advertising

H3.a: Celebrity Non-Expert Endorser Advertising has a higher impact on taste perception than Non-Celebrity Expert Endorser Advertising

H3.b: Celebrity Non-Expert Endorser Advertising has a higher impact on purchase intention than Non-Celebrity Expert Endorser Advertising

H4.a Non-Celebrity Non-Expert Endorser Advertising has the highest impact on taste perception

H4.b Non-Celebrity Non-Expert Endorser Advertising has the highest impact on purchase intention

2.1.2 Sensory Marketing

Sensory Marketing is defined as "marketing that engages the consumers' senses and affects their perception, judgment and behavior" (Krishna, 2012).

It is common knowledge that there are five senses (vision, smell, taste, hearing and touch) which capture external stimuli through sensory receptors (eye, nose, mouth, ear and skin, respectively) (Mather, 2016), producing a neural and instantaneous response (i.e. sensation) that is posteriorly understood through the perception process (Coelho do Vale, 2018; Krishna, 2012; Mather, 2016).

Sensory cues can be provided in advertisement (Coelho do Vale, 2018; Krishna, Cian, & Sokolova, 2016) and they are effective because they constitute non-explicit guidelines about a product attribute (Sengupta & Gorn, 2002), going unnoticed as marketing techniques, and consequently not being approached with the typical blocking effect of the audience to campaigns (Jones, 2015). Hence, food companies can strategically enhance the sensory nature of their products through ads (Bublitz, Peracchio, & Block, 2010), as they have the potential to modify taste perception both before (Elder & Krishna, 2010) and after (Braun, 1999) actual food consumption. Unfortunately, though, the majority of food manufactures do not take advantage of this opportunity since commercials rarely try to influence the taste perception of products (Elder & Krishna, 2010). Nevertheless, some companies are beginning to understand the potential of ads stimulating senses (Krishna, 2012) and their ability to arouse expectations about food taste and aroma (Dianoux, Petrovici, & Minondo, 2013).

This study sought to understand if Sensory Marketing can drive advertising effectiveness, in a purely visual context, and thus Olfactory Stimulation is the scope of the research. Given that, the following subchapter is focused on how sight and smell interact with taste.

2.1.2.1 Interaction of Senses

It is crystal clear that gustatory cells in the tongue can distinguish five elements: saltiness, bitterness, sweetness, sourness and umami (Ikeda, 2002). However, taste counts on more than just the tongue, since it is resultant from the blending of all five senses (Ackerman, 1990).

In regard to sight, which is generally the sense responsible for creating the first impression to prospects (Yang & Chen, 2015), pictures with food do not just stimulate visual brain zones as they also trigger gustatory cerebrum areas which suggest the inherent taste (Simmons, Martin, & Barsalou, 2005).

As for scent, the connection between taste-scent for familiar products is so powerful that it becomes difficult to disassociate them (Krishna, 2013; Rozin, 1982).

Some studies suggest that one can imagine odors because scents are retrieved in memory based on prior experiences. Accordingly, it was found that the desire to eat increases if consumers are presented with pictures of food, accompanied by a verbal request for them to imagine the inherent scent (Krishna, Morrin, & Sayin, 2014).

Scarce is the literature where the interaction of senses has been addressed (Krishna, 2012). Nonetheless, it is known that advertising claims that appeal to multi-senses improve the taste perception of a product when compared to ad copies that exclusively mention taste (Elder & Krishna, 2010). But for these interactions to happen, consumer knowledge about the product is essential for them to be able to imagine taste and smell only from visual sensory input (Schlosser, 2003).

Adding to the previous literature the premise that tastier food items generate a greater buying intention (Jo & Lusk, 2018), the following hypothesis are proposed:

H5.a: Smell Stimulation Advertising has a higher impact on taste perception than No Smell Stimulation Advertising

H5.b: Smell Stimulation Advertising has a higher impact on purchase intention than No Smell Stimulation Advertising

H6: Sensory Marketing has a higher impact on both taste perception and purchase intention than Endorsement in Advertising

2.2 Purchase Intention

Purchase intention mirrors consumers' predictions about their own buying actions (Schlosser, 2003). These prognosis may be based on customers imagining themselves using the product, which in turn will be dependent on how they perceive its quality (Chang & Wildt, 1994; Schlosser, 2003).

Thus, purchase intention is an essential concept in marketing (Morrison, 1979) as marketers use this metric for evaluating consumers' willingness to acquire (Kotler & Keller, 2012) both pre and post-launch products (Morwitz, Steckel, & Gupta, 2007).

Due to its capability to predict actual purchases (Chang & Wildt, 1994; Jamieson & Bass, 1989), this measure is commonly used to forecast sales as well as to support a wide range of managerial decisions (Armstrong, Morwitz, & Kumar, 2000).

The food industry is no exception, given that purchase intention is considered an indicator to anticipate the success of new food products releases (Kytö, Virtanen, & Mustonen, 2019). However, the majority of these products flop during the first year of their lives (Nielsen, 2014). In line with this, some authors argue that for packaged goods, purchase intentions are less powerfully correlated with actual buying behaviors when compared to durable goods (Morwitz et al., 2007; Wright & Macrae, 2007) because of the different levels of effort required in the decision-making process (Manohar U. Kalwani, 1982). Additionally, the tendency of consumers to seek variety in low involvement product categories, such as food (Kotler & Armstrong, 2013), may be considered a hindrance for them to accurately predict their real behavior (Inman, 2001; Morwitz et al., 2007).

Furthermore, purchase intention presupposes that actions are rational, although it is known that consumers can behave with little-conscious effort (Lindström, 2010).

In contrast, Kytö et al. (2019) stated that when purchase intention is based on the consumers' perception and expectation about a Food Packaged Good, it is a significant measure in forecasting buying behavior.

In turn, adverts can stimulate purchase intention (David A. Aaker, 1993) which is a classical indicator of advertising effectiveness (Poels & Dewitte, 2006). Having said that, the wideness of literature where the relationship between ads and purchase intention is studied is not surprising.

Albeit the mentioned constraints, this measure is broadly used by marketing scholars as a proxy for actual buying decisions.

Thus, for the purpose of the present dissertation, purchase intention is considered to be a measure able to explore the effectiveness of visual advertising techniques as well as a significant predictor of consumers' purchase behavior.

2.3 Taste Perception

Nowadays, food decision-making can be mostly grounded on healthiness and taste perceptions (Bublitz et al., 2010). Regarding the latter, Jo & Lusk (2018) stated that it positively affects consumers' desire to purchase a product and other authors even go so far as considering taste the most relevant variable on food choices (Glanz et al., 1997; Tepper & Trail, 1998). Moreover, when consumers are looking for variety, food sensory attributes such as taste underlie their buying decisions (Inman, 2001). This dissertation focuses its scope on unhealthy and appetizing food packaged goods, so, conceptually, it seems plausible to consider taste perception - which comprises perceived quality, deliciousness and taste (Elder & Krishna, 2010) - the core benefit sought by consumers.

In regard to the formation of taste perception, one can straightforwardly expect that it counts on food intrinsic cues, although it can also rely on less evident hints as advertising (Elder & Krishna, 2010; Krishna, 2012), which in turn can affect consumer opinions about a product.

Furthermore, in literature, some scholars studied taste perception processed in a cognitive context, which is characterized for a higher conscious level in the formation of perceptions (e.g. Elder & Krishna, 2010; Hoegg & Alba, 2007), while others use a more automatic and less deliberated approach (e.g. Raghunathan, Naylor, & Hoyer, 2006).

In the present research, a more automatic mechanism is implied to occur, since visual ads - without the verbal component - stimulate audience mainly below-consciousness (Elder & Krishna, 2010).

Therefore, prior literature review leads to the formulation of the subsequent hypothesis:

> *H7: Taste perception mediates the effect of visual advertising techniques on purchase intention*

2.4 Conceptual Framework

The following illustration summarily structures the relationships between variables and the inherent hypotheses under research:
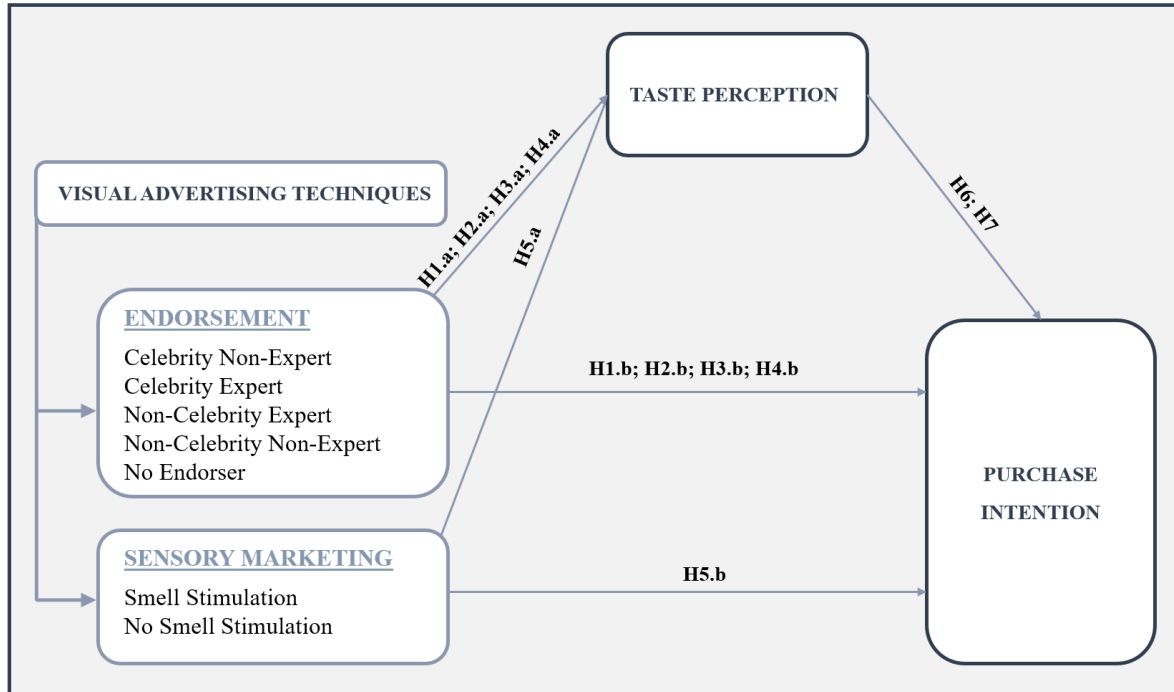
Figure 1: Conceptual Framework

CHAPTER 3: METHODOLOGY

The present chapter aims to expose how the research questions and above-mentioned hypothesis should be answered. Firstly, it is discussed the research approach used while conducting this study. Then, the secondary data topic is covered, followed by a detailed description of the primary data used. The primary data sub-chapter is chronologically organized considering the four studies conducted and includes immanent specifications about how data is collected, measured and analyzed.

3.1 Research Approach

For this stage, it is vital to have in mind that the ultimate goal of this dissertation is to expand the knowledge in the advertising effectiveness field, exploring how two different visual techniques can be effectively used to achieve sales objectives of a campaign and, more importantly, to discover the intrinsic nature of this interaction through the consideration of taste perception as the potential responsible agent.

To clearly define the research problem and find relationships between the underlying variables, the preliminary step was to critically review the existing literature to date, in the form of secondary data. As shown in the previous chapter, this academic theory was the starting point for developing hypotheses and building the conceptual framework, using a deductive reasoning approach. What is more, to move closer to meeting research objectives, this model had to bloom from a conceptual to an operational level.

Thus, in order to accomplish this transition, both exploratory and explanatory research methods were employed through the collection of primary data.

First and foremost, to avoid possible researcher bias in the choice of a food category to carry out this dissertation, a pre-online survey was used.

Thereafter, a focus group was particularly useful in generating insights about the most appropriate Celebrity and Celebrity Expert endorsers to be employed further in the main questionnaire.

Subsequently, after the creation of visual stimuli, it was crucial to assess whether respondents would interpret the pictorial ads as desired. Therefore, semi-structured interviews would seem to be the best method to accomplish the above-stated objective. Although this method has the disadvantage of using a small sample (Boyce & Associate, 2006), it would allow interviewees to individually and freely explore their thoughts about the displayed images (Saunders, Lewis, & Thornhill, 2008).

At last, an explanatory research was conducted for ascertaining the cause-effect relationships between visual advertising techniques, consumers' purchase intent and taste perceptions (Saunders et al., 2008). For this purpose, an online questionnaire was employed.

3.2 Secondary Data

Secondary data did not directly allow the attainment of the goals proposed for this dissertation (Saunders et al., 2008), notwithstanding its usage had been indispensable for understanding the existent knowledge in the field. This data, predominantly based on academic journals and mostly set out in the former chapter, enabled the definition of a logical and consistent path towards the development of theoretical relationships between the variables. This, in turn, resulted on the generation of a conceptual framework which was imperative for formulating a suitable research design. Moreover, secondary data is onwards used to astutely interpret the primary data results (Malhotra, Birks, & Wills, 2012).

3.3 Primary Data

To tackle the research questions, data had to be originally collected and interpreted through four different studies which took place chronologically as follows: (1) Category Identification (2) Endorsers Selection (3) Stimuli Interpretation and (4) Main Study.

3.3.1 Category Identification

First of all, an appetizing food category had to be chosen in such a way that it should stimulate, as much as possible, the consumers' taste perception. Hence, to avoid investigator bias and ensure rigor in the category selecting process, a pre-study was conducted.

3.3.1.1 Data Collection

Since it was intended to collect an opinion variable (Dillman, 2007) in a structured, standardized and quantitative form (Kothari, 2004) regarding taste perceptions of different food categories, a questionnaire was suitable.

This survey was spread in an online basis because of its high-speed data generation virtue, and was only available in English given that the investigation was not limited to a specific nationality.

The following were the main basis to filter the categories to be presented in the questionnaire: (1) past literature related to taste, (2) the heuristic intuition that unhealthy food is tasty (Jo & Lusk, 2018; Raghunathan et al., 2006) and (3) the ability of categories to stimulate the smell sense through an image. Taking all these factors into consideration, the fifteen categories

chosen were: cheese, chocolate bar, frozen pizza, jam, canned beans, liquid topping, cake mix, bolognese sauce, instant soup, cappuccino sachets, bacon, cream carbonara sauce, instant noodles, frozen lasagna and risotto. As the high variety within product lines could give rise to doubts of interpretation, the categories were specified in terms of flavor (Appendix 1).

Concerning the target of this pre-study, it seemed plausible that those who were going to elect the category were buyers of FPG. Thus, at the beginning of the questionnaire there was one screening question exclusively allowing respondents that purchase FPG at least once in three months to continue with the inquiry process. This question consisted of the first section of the survey, being followed by the taste measurement and ending with a block to collect the demographics (Appendix 1). The underlying sample was selected through a convenience non-random technique which, in spite of being prone to a certain bias degree, it would seem to be the best option given the resources and time constraints (Kothari, 2004; Saunders et al., 2008).

3.3.1.2 Measurement

With the purpose of measuring respondents' perception about the taste of the fifteen referred food products, a construct beforehand applied by Elder and Krishna (2010) was used. It involved a three-item scale, comprised for perceived taste, quality and deliciousness which aided in overcoming the restrictions of such an abstract concept as taste perception is. The mentioned items were measured using a seven-point Likert scale (from 1=Very Poor to 7=Very Good).

3.3.1.3 Analysis and Results

This research study resorted to Qualtrics and SPSS softwares to collect and analyze, respectively, the inherent quantitative data. From a total of 203 completed answers, 7 were excluded for not meeting the purchase frequency requirement. In the first place, frequency statistics were conducted to characterize the 196 valid respondents demographically and in terms of their buying behavior (Appendix 2). Although gender-wise there was a relatively uniform distribution, the typical respondent of this pre-survey was a Portuguese, aged between 18 and 24 years old, holding a bachelor's degree and accustomed to purchasing FPG from one to three times a week.

Afterwards, Cronbach's Alpha coefficient was performed. This measure was calculated separately for all categories as well as in aggregated form (Appendix 3). The taste, quality and deliciousness scale presented an excellent reliability index – all Cronbach's α were above or

only slightly below 0,9 - demonstrating that the construct has a very good internal consistency (George, D., & Mallery, 2003) (Appendix 3).

Last but certainly not least, Descriptive statistics were performed to indicate which food product generated the highest level of taste perception. Regarding the results (Appendix 4), milk chocolate bar yielded the highest mean ($M \cong 6$) and the lowest standard deviation ($S \cong 1,2$). Henceforth, it is perfectly justifiable to consider a chocolate bar, specifically the milk variety, as the perfect category for pursuing this investigation.

3.3.1.4 New Product and Brand Development

In order to prevent consumer bias regarding pre-developed taste perceptions about known products, a fictitious brand and product were created. Thus, through Adobe Photoshop and Adobe Illustrator CC 2016, a new packaging and logo were designed, and the Choka Milk Chocolate Bar was created.

Figure 2: Choka Milk Chocolate Bar – Product Images

3.3.2 Endorsers Selection

Succeeding the food category choice, it was the moment to select the most proper Celebrity Non-Expert and Celebrity Expert endorsers to be employed in the main survey. Towards this end, a focus group was carried out.

3.3.2.1 Data Collection

With the aim of understanding which well-known figures should be chosen, a focus group of one-hour length, which counted with the participation of eight elements from a convenience sample, was organized. The participants, from five different nationalities, were chocolate lovers and had a similar age (Appendix 5), in order to ensure they felt comfortable sharing opinions with each other (Rabiee, 2004). This session appeared to be the most suitable procedure for gathering the intended insights (Saunders et al., 2008), as it would promote the interaction between individuals.

The meeting was structured into four main sections (Appendix 6). Firstly, there was a warm-up phase where session details were briefly explained, and subsequently attendees were invited to introduce themselves. The second part was anchored in the Match-Up Hypothesis (Erdogan, 1999). For this reason, participants were asked to imagine that a new milk chocolate bar would be launched by a new brand named Choka, and managers needed to decide two Celebrities to endorse it: one whose profession is other than related with cooking, and the other should be a famous cook. Inspired by Ohanian (1990) technique, they were given three minutes to individually list, without overthinking, Celebrity Non-Expert and Celebrity Expert names, in two respective columns. Afterwards, focusing on one column at a time, elements were encouraged to share their suggestions until all suggested names were ranked based on their mention frequency. The most mentioned names were particularly debated in order to reach a consensus on the most adequate two endorsers for each group. After reaching an agreement, a questionnaire was personally distributed to be individually filled. The first question was dedicated to understand Celebrities' familiarity, the second to assess their likability among participants (Amos et al., 2008) and the third was sustained by the expertise dimension of the Source-Credibility Scale (Ohanian, 1990).

3.3.2.2 Measurement

An endorser's familiarity is related with how the figure is recognized due to exposure (Erdogan, 1999) and its popularity is a worthwhile contributor for the present purpose.

The Q Score considers one question measuring participants' familiarity with the Celebrity and other to determine how popular the personality is (Shimp & Andrews, 2013), as shown in the figure below. It is noteworthy that the popularity construct was slightly adapted to ensure the usage of a balanced scale (Malhotra et al., 2012).

Q SCORE

Q1) Familiarity
Have you heard of this person?
Yes __
No __

Q2) Popularity
If you answered *Yes*, please rate the celebrity:
One of my least favorites __
Very poor __
Poor __
Fair __
Good __
Very good __
One of my favorites __

$$Q\ Score = \frac{\%\ respondents\ selecting\ "one\ of\ my\ favorites"\ in\ Q2}{\%\ respondents\ selecting\ "Yes"\ in\ Q1}$$

Note: Adapted from Shimp and Andrews (2013)
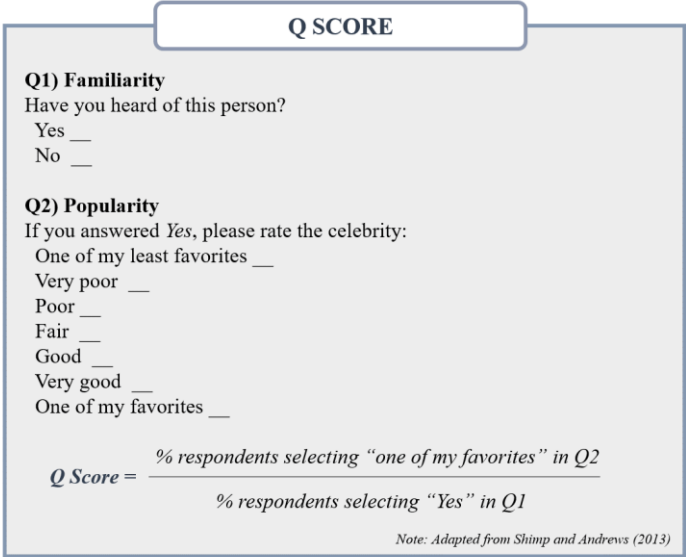
Figure 3: Q Score

Regarding expertise, it was crucial to guarantee that the chosen Chef, besides being recognizable and popular, was considered the most expert in the field. For that reason and in line with Ohanian (1990), a seven-point rating semantic differential scale based on five items, as can be observed in the following figure, was used to quantify the Celebrities' perceived expertise. To decrease the likelihood of the respondents solely reading the left adjectives, the original scale was adjusted and the poles were purposefully swapped (Saunders et al., 2008).

CELEBRITY EXPERTISE

Q3) For endorsing a milk chocolate bar, please evaluate the expertise of the celebrity

Not an expert	__ __ __ __ __ __ __	Expert
Experienced	__ __ __ __ __ __ __	Inexperienced
Unknowledgeable	__ __ __ __ __ __ __	Knowledgeable
Qualified	__ __ __ __ __ __ __	Unqualified
Unskilled	__ __ __ __ __ __ __	Skilled

Note: Adapted from Ohanian (1990)
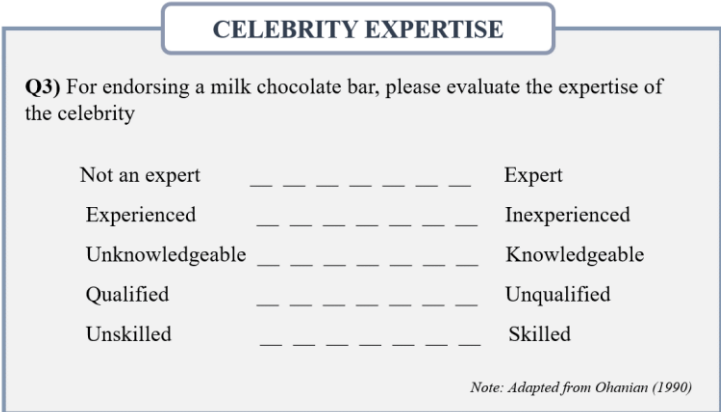
Figure 4: Celebrity Expertise

Lastly, the endorsers who obtained the most appropriate overall rating were selected to be used in the main study.

3.3.2.3 Results

As a result, the actor Pierce Brosnan was the selected character to represent the Non-Expert famous person and Gordon Ramsay to represent the Chef Celebrity. Below is presented a scheme summarizing the main insights and conclusions obtained throughout the focus group. More detailed information is presented in Appendix 7.

FOCUS GROUP RESULTS

Celebrity Non-Expert

LIST PHASE	TOP-NAMED PHASE	TOP-TWO PHASE	Q SCORE	EXPERTISE
33 ≠ Names Mentioned	Beyoncé II / Kylie Jenner II / Pierce Brosnan II / George Clooney II / Zach Galifianakis II	Pierce Brosnan / Zach Galifianakis / MAIN REASONS: Be well-known, loved and suitable / Not be associated with a food brand	*Pierce Brosnan* $\frac{37,5\%}{100\%} = 0,375$ / *Zach Galifianakis* $\frac{12,5\%}{100\%} = 0,125$	*Pierce Brosnan* $\frac{25}{8} = 3,125$ / *Zach Galifianakis* $\frac{27}{8} = 3,375$

Celebrity Expert

LIST PHASE	TOP-NAMED PHASE	TOP-TWO PHASE	Q SCORE	EXPERTISE
13 Mentioned ≠ Names	Gordon Ramsay VIII / Jamie Oliver VII / Martha Stewart II	Gordon Ramsay / Martha Stewart / MAIN REASONS: Be expert and empathetic / Do not be health-focused	*Gordon Ramsay* $\frac{25\%}{100\%} = 0,25$ / *Martha Stewart* $\frac{0\%}{87,5\%} = 0$	*Gordon Ramsay* $\frac{55,4}{8} = 6,925$ / *Martha Stewart* $\frac{46}{7} = 6,571$

Figure 5: Focus Group Results

3.3.3 Stimuli Interpretation

The pictorial ad stimuli were produced from the ground up, in the light of the studies' results. The figure below depicts the seven scenarios developed.

ENDORSEMENT

Expert — Non-Expert

	Expert	Non-Expert	
Celebrity	CELEBRITY EXPERT — GORDON RAMSAY	CELEBRITY NON-EXPERT — PIERCE BROSNAN	NO ENDORSER — CONTROL GROUP
Non-Celebrity	NON-CELEBRITY EXPERT — UNKNOWN CHEF	NON-CELEBRITY NON-EXPERT — TYPICAL CONSUMER	

Between-Subjects Design

SENSORY MARKETING

SMELL STIMULATION WITH STEAM	NO SMELL STIMULATION WITHOUT STEAM — CONTROL GROUP

Note: Each square represents one of the seven ad stimuli

Figure 6: Stimuli Scenarios

To foster a high-quality outcome, the images were taken in two photographic studios by a professional photographer. As some pictures entailed photographic manipulation, not only did this dissertation count on a photographer but it also benefited from an image editor. The resorted image editing software was Adobe Photoshop CS6 2019.

The following were the Endorsement visual stimuli created:

Figure 7: Endorsement – Celebrity Expert

Figure 8: Endorsement – Non-Celebrity Expert

Miguel Rodrigues is a Portuguese Chef who accepted to be photographed with Choka.

Figure 9: Endorsement – Celebrity Non-Expert

Figure 10: Endorsement – Non-Celebrity Non-Expert

Sofia Borges is a chocolate lover who accepted to be photographed with Choka.

Figure 11: No Endorsement (Control Group)

All the decorative elements, of the present and the following images, were chosen and arranged by the researcher and the photographer.

The succeeding images represent the developed Sensory Marketing stimuli:

Figure 12: Sensory Marketing – No Smell Stimulation (Control Group)

Figure 13: Sensory Marketing – Smell Stimulation (Version 1)

With the purpose of understanding the extent to which these ads conveyed the desired stimulus, a qualitative study was conducted.

3.3.3.1 Data Collection

To uncover how respondents interpreted the images, semi-structured interviews appeared to be the most viable approach (Saunders et al., 2008). This research technique, typified by the usage of open-ended questions (Boyce & Associate, 2006), enabled the investigator to understand a person's thoughts induced by each stimulus.

Consequently, ten interviews were conducted with a convenience sample of milk chocolate lovers. To ensure, as far as possible, this sample could lead to reliable findings, the selected participants were from different nationalities, age-ranges and genders (Appendix 8). Six of the interviews were conducted face-to-face, and the remaining were internet-mediated through video call as these interviewees were living across borders. However, research was divided on whether or not online-interviews are able to provide the necessary interactivity levels (Mann & Stewart, 2000).

Every interview was audio-recorded for later transcription and, if applicable, translation into English. Of the total, three were held in English while the others in Portuguese.

The script, developed to guarantee the congruence between interviews (Boyce & Associate, 2006), was designed so that each image was addressed at a time (Appendix 9), via computer to simulate the virtual context in which respondents would see the advertisement in the main survey later on.

3.3.3.2 Results

The sample size used was considered enough since from the sixth interview onwards there were no incremental interpretations. The interviewees interpreted six of the seven stimuli as intended, so there were reasonable grounds for believing that those were clearly represented (Appendix 9). It was felt that the Smell Stimulation advertisement did not entirely achieve its purpose as participants were excessively focused on the hand pouring chocolate, in the upper left corner of the image (Appendix 9). On one hand, 90% of participants expressed that the photography captured different possible chocolate use stages (e.g. *"This hand reminds me of cooking"* – female). On the other hand, the steam attracted the attention of nearly half of the interviewees, and when questioned about what it was conveying all of them stated the chocolate smell. The fact that respondents did not spontaneously mention this relationship is in line with the below-consciousness advertising processing, in which this investigation has taken place (Elder & Krishna, 2010). Since this image conveyed an ambiguous message, a new version was created from the ground up, in line with the mentioned guidelines. Therefore, the Version 2 of this stimulus presented a greater steam cloud and simultaneously did not contain the pouring-cue.

Consequently, a second meeting was scheduled with each interviewee. All of them interpreted this version as intended (Appendix 9). Thus, the following version will be used for Olfactory Stimulation instead of the previous one.

Figure 14: Sensory Marketing – Smell Stimulation (Version 2)

3.3.4 Main Study

To understand the underlying relationships between the variables, quantitative data was collected and analyzed based on a casual-research approach built-in an experimental design (Saunders et al., 2008). This enabled the hypotheses to be tested and the research objectives to be met.

3.3.4.1 Data Collection

An online survey was spread, mainly through social media platforms, from November 21st to November 26th, 2019. Regarding the online data gathering, not only did it provide a high speed information collection but it also replicated a virtual visual advertising environment. This questionnaire was based on a cross-sectional design comprising seven scenarios, each corresponding to one of the seven visual advertising stimuli, in which participants were randomly allocated. In relation to the reasons for using a convenience sampling technique and employing English in the survey, they were the same as the ones stated in the pre-questionnaire (Sub-Chapter 3.1.1.1). Moreover, a pilot survey was conducted with ten individuals.

The target for the questionnaire were all those who consume or buy a chocolate bar at least once in three months. Accordingly, two questions were initially displayed in the survey, in a way that non-eligible respondents were excluded. This was followed by a section that assessed respondent preferences for the main four chocolate bar types. Those who expressed chocolate milk aversion were directly forwarded to the demographics block. Contrarily, for those who stated to be milk chocolate appreciators, one of the stimuli was randomly displayed, and after that two sections were presented regarding taste perception and purchase intention, which the order of appearance was also randomized. The last section addressed respondents' demographic characteristics (Appendix 10).

Albeit a total of 856 responses had been gathered, 227 of them were discarded from the analysis for (1) incompleteness, (2) ineligibility of respondents or (3) inconsistency in answers. Therefore, only 629 cases were valid, being handled through the pairwise deletion method.

3.3.4.2 Measurement

In order to understand respondent perceptions about the taste of the advertised milk chocolate bar, the construct previously used in the pre-questionnaire was applied (Sub-Chapter 3.3.1.2). This model suggested by Elder & Krishna (2010) is a three-item scale comprising perceived taste, quality and deliciousness which in turn are measured through a Likert scale ranging from 1=Very Poor to 7=Very Good.

As for purchase intention, according to Bao, Bao and Sheng (2011), it can be measured through a Likert scale, asking for the respondents' agreement degree with three statements: "The likelihood of my purchasing this product is very high", "The probability that I would try this product is very high" and "My willingness to buy this product is very high". These sentences were customized with the product name. The scale had seven response categories from 1=Strongly Disagree to 7=Strongly Agree (Bao et al., 2011).

CONSTRUCT	SCALE	NUMBER OF ITEMS	LITERATURE
Taste Perception	7-point Likert Scale	3	(Elder & Krishna, 2010)
Purchase Intention	7-point Likert Scale	3	(Bao et al., 2011)

Table 1: Operational Model

Despite less important, a dichotomous question, inspired by Shimp and Andrews (2013) - "Have you heard of this person?" – was used to assess the familiarity of respondents with the Celebrities presented in the two inherent stimuli.

3.3.4.3 Data Analysis

Once again, data was collected and analyzed through Qualtrics and SPSS softwares, respectively.

Initially, the data preparation process was described, and then the sample was demographically characterized mainly through frequency statistics. Subsequently, the reliability of the constructs was assessed through Cronbach's alpha and their quality was ranked based on the guidelines proposed by George and Mallery (2003).

Thereafter, Endorsement and Sensory Marketing hypotheses were tested using Mann-Whitney U Test, for comparisons between two groups, and Kruskal-Wallis H Test, for comparisons of more than two groups.

Later, to test to what extend visual advertising techniques impact consumers' purchase intention through taste perception, Hayes' PROCESS model 4 was employed (Bolin, 2014) (Appendix 46). Since this mediation involved a multicategorical independent variable (i.e. groups assigned to ads), the general linear modelling approach developed by Hayes and Preacher (2014) was used and the indicator coding strategy was employed (Figure 15).

Furthermore, to identify the profile of the Typical Consumer of milk chocolate bars, Chi-Square was performed.

Finally, a Spearman Correlation analysis was carried out for a better understanding of how preferences of different types of chocolate are related. For all the statistical tests, the significance level was set at 5%.
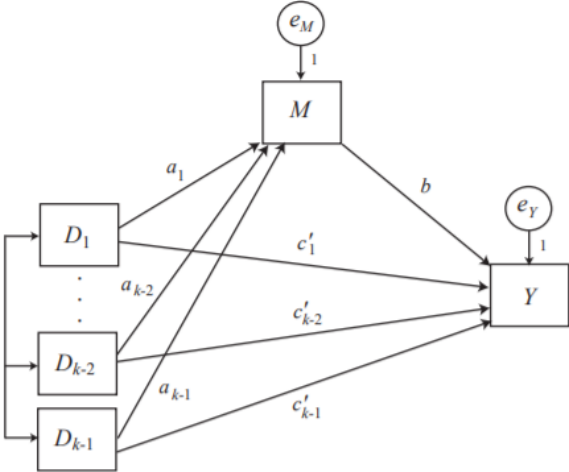
Figure 15: Model 4 – Mediation with a Multicategorical Independent Variable

CHAPTER 4: RESULTS AND DISCUSSION

The following chapter is devoted to the main study results. A description of quantitative data analysis is provided aiming at characterizing the sample, testing the hypotheses and the full-model, identifying the typical milk chocolate consumer as well as preference correlations.

4.1 Data-Preparation Process

A total of 856 questionnaires were initiated. After they were checked for completeness, only 668 were accepted. Wherefore, it is implied a response rate of 78% which suggests that the survey was efficiently designed (Saunders et al., 2008). When editing and cleaning the data, 33 participants were dropped from the analysis as neither had bought nor consumed a chocolate bar in the preceding three months, and another 6 were discarded for inconsistent answers. This led to 629 valid answers which were handled through the pairwise deletion method. Therefore, the sample size will vary based on the analysis at hand (Malhotra et al., 2012). This procedure appears to be suitable as: (1) the sample size is considerably large, (2) there are only 85 missing answers in blocks four and five, and (3) the variables will not be associated (Malhotra et al., 2012). Accordingly, since 63 respondents did not appreciate milk chocolate, only 566 were evenly exposed to one of the stimuli. Furthermore, from the 80 allocated to Celebrity Expert stimulus, 14 did not recognize Gordon Ramsay. Along the same line, 8 of the 79 allocated to Celebrity Non-Expert group were not familiar with Pierce Brosnan. For this reason, those participants, who did not answer the fourth and fifth blocks, were treated as if they had not been presented to any stimulus. These cases alongside with those who were not actually exposed to any image, were recoded to belong to Group 0 - "G0". The table below shows the amount of valid answers per block and the participants distribution over groups.

Figure 16: Distribution of Valid Responses by Block

4.2 Sample Characterization

Although the sample was composed by twenty-two different nationalities from four continents - Europe (98,41%), America (0,95%), Asia (0,48%) and Africa (0,16%) - the vast majority of those surveyed were Portuguese (90,9%). Furthermore, there was a predominance of women (65,5%) over men (34,5%) and most respondents held higher education qualifications (65,4%), belonged to an age group ranging from 18 to 34 (73,2%) and were employed (58%). Additionally, nearly three-quarters of participants had a gross income of up to 1499€/month (74,6%). In terms of their chocolate consumption habits, there was an almost uniform division into rare (27,8%), occasional (35,3%) and frequent (26,9%) consumers, without considering the very frequent ones (9,5%). Regarding their buying behavior, a large proportion were rare (36,1%) or occasional (36,2%) purchasers of chocolate. When it comes to preferences, milk chocolate was the favorite type among respondents (M =5,78; S =1,51) (Appendix 12), being the variety with the highest percentage of positive judgements (85,5%) (Appendix 13).

By analyzing all these characteristics across the seven groups, one can conclude that their latent sub-samples are identical which ensures the existence of homogeneity between them (Appendix 11). Nonetheless, this characterization mirrors usage of a non-probabilistic technique whereby the likelihood of the sample being representative of the total population is very low (Saunders et al., 2008).

4.3 Measures Reliability

Despite both taste perception and purchase intention scales have been previously validated in literature, it was found necessary to assess their reliability considering the sample under analysis. For the measurement of the internal consistency, Cronbach's alpha coefficient was employed and its quality was ranked based on the guidelines proposed by George and Mallery (2003) (Appendix 14).

The combination of perceived taste, quality and deliciousness to form the taste perception scale turned out an excellent reliability index, with a Cronbach's α of 0,908, demonstrating that this construct had a great internal consistency (Table 2). This measure was also performed for each of the seven groups and all the values were ranged from 0,84 to 0,924 (Appendix 14).

For the measure of purchase intention, the scale had a coefficient α equal to 0,886, showing a good reliability and indicating a positive internal consistency (Table 2). When considering for each group separately, the coefficient varied from 0,845 to 0,925 (Appendix 14).

Therefore, there was no need for the deletion of any item from the constructs.

CONSTRUCT	CRONBACH'S ALPHA	QUALITY	N OF ITEMS
Taste Perception General	0,908	Excellent	3
Purchase Intention General	0,886	Good	3

Table 2: Cronbach's Alphas

4.4 Results from the Hypotheses Testing

The nature of the hypotheses presupposed a comparison between two (H2.a; H2.b; H3.a; H3.b; H5.a and H5.b) or more groups assigned to adverts (H1.a; H1.b; H4.a and H4.b), in terms of their taste perceptions and purchase intentions of the chocolate bar. Additionally, no participant was exposed to more than one advert wherefore it was ensured independence of observations. This scenario would indicate the appropriateness of Independent Samples T-Test (for two groups comparisons) and One-Way ANOVA (for more than two treatments). To guarantee the feasibility of these statistical tests, a preliminary check of their assumptions was made. By performing the Kolmogorov-Smirnov Test, it was found that taste perception and purchase intention were not approximately normally distributed for all groups (Appendix 15), and, therefore, the fifth assumption was not satisfied (Laerd Statistics, 2016). To overcome the fact that the data failed the normality assumption, nonparametric tests were employed. More precisely: (1) Mann-Whitney U Test was the alternative to Independent-Samples T-Test and (2) Kruskal-Wallis H Test was the surrogate for One-Way ANOVA. To ensure that Mann-Whitney U Test and Kruskal-Wallis H Test could give rise to valid results, assumptions were verified beforehand. Firstly, the dependent variables were measured at an ordinal level since Likert scales were used. Secondly, the Mann-Whitney U Test exclusively compares two groups at time (G1 versus G2, G2 versus G3, G6 versus G7), while Kruskal-Wallis H Test is commonly applied for at least three categorical groups (G1, G2, G3, G4 and G5 simultaneously). Thirdly, the questionnaire was designed to ensure the participants were allocated to one and only one group whereby there was independence of observations. Lastly, the dependent variables were not normally distributed, as previously shown in Appendix 15. Based on the foregoing, Mann-Whitney U Test and Kruskal-Wallis H Test could properly analyze the data.

Due to the fact that the groups had different shapes, both for purchase intention and taste perception, results will be presented taking into consideration the mean ranks (Laerd Statistics, 2015; Lund & Lund, 2013).

4.4.1 Endorsement

H1.a: Endorser Advertising has a higher impact on taste perception than No Endoresment Advertising

To assess differences in taste perception between endorser adverts (G1, G2, G3 and G4) and no endorser campaigns (i.e. control group, G5), Kruskal-Wallis H Test was carried out. The results from the test revealed that there was a statistically significant difference in taste perception between the treatments (*Test Statistic*=171,903; *p*<0,001), and so the null hypothesis (i.e. the distribution of taste perception is the same across the five stimuli) was rejected (Appendix 16). To determine whether differences could lie between G5 and the remaining groups, post hoc tests were run (Appendix 17). Thus, pairwise comparisons indicated that taste perception for the No Endorsement condition (*M* = 5,4444; *SD* = 0,92374) was statistically significantly higher than G2 (*M* = 3,9671; *SD* = 0,94307), G3 (*M* = 4,0161; *SD* = 0,93835), G4 (*M* = 2,7912, *SD* = 1,36120) (Appendix 18). Although in the No Endorser condition there was a higher mean value (*M* = 5,4444; *SD* = 0,92374), it did not significantly differ from the G1 condition (i.e. Celebrity Expert) (*M* = 4,8687; *SD* = 0,90370; *p*>0,05).

Taken together, the results unexpectedly suggest that No Endorsement Advertising does have a better impact on taste perception than Endorsement Advertising. This is valid except for the Celebrity Expert Endorser Advertising which had the same effect as the No Endorsement condition. Therefore, H1.a is rejected.

H1.b: Endorser Advertising has a higher impact on purchase intention than No Endoresment Advertising

With the aim of determining differences in purchase intention between endorser (G1, G2, G3 and G4) and no endorser adverts (i.e. control group, G5), Kruskal-Wallis H Test was conducted. The results showed that there was a statistically significant difference in purchase intention between the groups (*Test Statistic*=177,308; *p*<0,001), and so the null hypothesis (i.e. the distribution of purchase intention is the same across the five stimuli) was rejected (Appendix 19). Moreover, post hoc tests were conducted (Appendix 20) to get a better understanding of which pairs differed. The comparisons suggested that the purchase intention for the No Endorsement condition (*M* = 6,0385; *SD* = 0,69003) was statistically significantly higher than G2 (*M* = 4,4883; *SD* = 1,09084), G3 (*M* = 4,5582; *SD* = 0,88362), G4 (*M* = 3,0843, *SD* = 1,45933) (Appendix 21). Again, even though the no endorser advert had shown a higher mean value (*M* = 6,0385; *SD* = 0,69003), it was not significantly different from the G1 condition (i.e. Celebrity Expert) (*M* = 5,4596; *SD* = 0,82641; *p*>0,05).

Just as in taste perception, data suggests that No Endorsement Advertising do have a more favorable effect on purchase intention than Endorsement Advertising. Although, Celebrity Expert Endorser Advertising had the same effect as the No Endorsement Advertising. Consequently, H1.b is rejected.

H2.a: Celebrity Expert Endorser Advertising has a higher impact on taste perception than Celebrity Non-Expert Endorser Advertising

The Mann-Whitney U Test was used to understand whether taste perception differed based on Celebrity expertise (i.e. comparison between the group assigned to the ad with the Celebrity Expert (G1) and the group allocated to the Celebrity Non-Expert (G2)). On average, G1 showed higher mean values (M=4,8687$; SD$=0,90370) than G2 (M=3,9671$; SD$=0,94307) (Appendix 22). Additionally, the higher mean rank (87,99) of G1 suggests that taste perception was greater for this group than for G2 (51,35) (Appendix 23). Furthermore, the data suggests that taste perception in G1 was statistically significantly higher than in G2 (U = 1089,500; p <0,001) (Appendix 24).

Hence, it can be concluded that Celebrity Expert Endorser Advertising has a greater impact on taste perception than Celebrity Non-Expert Endorser Advertising, which validates the hypothesis H2.a.

H2.b: Celebrity Expert Endorser Advertising has a higher impact on purchase intention than Celebrity Non-Expert Endorser Advertising

Once again, Mann-Whitney U Test was employed to analyze whether purchase intention differed based on Celebrity expertise (i.e. comparison between the group assigned to the ad with the Celebrity Expert (G1) and the group allocated to the Celebrity Non-Expert (G2)). On average, G1 showed higher mean values (M=5,4596$; SD$=0,82641) than G2 (M=4,4883$; SD=1,09084) (Appendix 25). Additionally, the higher mean rank (87,46) of G1 suggests that purchase intention was greater for this group than for G2 (51,46) (Appendix 26). Furthermore, the data suggests that purchase intention in G1 was statistically significantly higher than G2 (U = 1098,000; p<0,001) (Appendix 27).

Hence, it can be concluded that Celebrity Expert Endorser Advertising has a greater impact on purchase intention than Celebrity Non-Expert Endorser Advertising. Consequently, the hypothesis H2.b is supported.

H3.a: Celebrity Non-Expert Endorser Advertising has a higher impact on taste perception than Non-Celebrity Expert Endorser Advertising

In this analysis, Mann-Whitney U Test was performed to compare differences on taste perception between the ad with the Celebrity Non-Expert (G2) and the ad with the Non-Celebrity Expert (G3). The means of G2 ($M=3,9671$; $SD=0,94307$) and G3 ($M=4,0161$; $SD=0,93835$) had similar values (Appendix 28). Moreover, the mean rank of G2 (74,19) was slightly lower than that of G3 (80,33) (Appendix 29). From the data, it can be concluded that there are no statistically significant differences between G2 and G3 in taste perception ($U = 2711,500$; $p>0,05$) (Appendix 30).

Surprisingly, it was found that Celebrity Non-Expert Endorser Advertising and Non-Celebrity Expert Endorser Advertising have similar effect on taste perception of the advertised product. Consequently, the hypothesis H3.a is rejected.

H3.b: Celebrity Non-Expert Endorser Advertising has a higher impact on purchase intention than Non-Celebrity Expert Endorser Advertising

Again, Mann-Whitney U Test was conducted to test the differences between the ad with the Celebrity Non-Expert (G2) and the ad with the Non-Celebrity Expert (G3), this time on purchase intention. The results indicated that the means values were similar for both G2 ($M=4,4883$; $SD=1,09084$) and G3 ($M=4,5582$; $SD=0,88362$) (Appendix 31). As for mean ranks, G2 (73,20) was only slightly lower than G3 (81,17) (Appendix 32). Additionally, no statically significant difference was found between G2 and G3 on purchase intention ($U = 2641,500$; $p>0,05$) (Appendix 33).

In view hereof, Celebrity Non-Expert Endorser Advertising and Non-Celebrity Expert Endorser Advertising impact similarly the consumers' purchase intention. As a result, the hypothesis H3.b is rejected.

H4.a Non-Celebrity Non-Expert Endorser Advertising has the highest impact on taste perception

Kruskal-Wallis H Test was used to identify differences in taste perception between advertising using the Typical Consumer (G4) versus other endorsers (G1, G2 and G3). It was found a statistically significant difference between the treatments (*Test Statistic*=102,293; $p<0,001$), and so it was rejected that the distribution of taste perception was the same across the four groups (Appendix 34). Post hoc tests (Appendix 35) suggested that the Typical Consumer advert ($M = 2,7912$, $SD =1,36120$) was statistically significantly lower than G1 ($M = 4,8687$;

SD = 0,90370), G2 (*M* = 3,9671; *SD* = 0,94307) and G3 (*M* = 4,0161; *SD* = 0,93835) (Appendix 36).

Unexpectedly, Non-Celebrity Non-Expert Endorser Advertising does have the poorest impact on taste perception comparing with any other endorser used. Hence, H4.a is rejected.

H4.b Non-Celebrity Non-Expert Endorser Advertising has the highest impact on purchase intention

As for purchase intention, to determine whether the advert using Typical Consumers (G4) differed from those that presented other endorsers (G1, G2 and G3), Kruskal-Wallis H Test was employed. The results have proven that there was a statistically significant difference between the groups (*Test Statistic*= 107,208; *p* <0,001) and therefore the distribution could not be equal across the stimuli (Appendix 37). Post hoc tests (Appendix 38) showed that the Typical Consumer advert (*M* = 3,0843, *SD* = 1,45933) was statistically significantly lower when compared with G1 (*M* = 5,4596; *SD* = 0,82641), G2 (*M* = 4,4883; *SD* = 1,09084) and G3 (*M* = 4,5582; *SD* = 0,88362) (Appendix 39).

Consequently, Non-Celebrity Non-Expert Endorser Advertising does have a worse effect on purchase intention than any other endorser condition. Therefore, H4.b cannot be validated.

4.4.2 Sensory Marketing

H5.a: Smell Stimulation Advertising has a higher impact on taste perception than No Smell Stimulation Advertising

In this analysis, Mann-Whitney U Test was conducted to assess whether taste perception differed based on Sensory Advertising (i.e. comparison between the group assigned to the ad with Olfactory Stimulation (G6) and the control group (G7)). On average, G6 showed higher mean values (*M*=6,0171; *SD*=0,75190) than G7 (*M*=5,3765; *SD*=0,93122) (Appendix 40). Similarly, the higher mean rank (101,99) of G6 suggests that taste perception was greater for this group than for G7 (63,65) (Appendix 41). From the data, it can be affirmed that taste perceptions in G6 was statistically significantly higher than G7 (*U* = 1755,500; *p* <0,001) (Appendix 42).

It can be concluded that Smell Stimulation Advertising has a greater impact on taste perception than No Smell Stimulation Advertising, and the hypothesis H5.a. is therefore supported.

H5.b: Smell Stimulation Advertising has a higher impact on purchase intention than No Smell Stimulation Advertising

Once more Mann-Whitney U Test was performed to test the differences between G6 and G7, this time on purchase intention. On average, G6 showed higher mean values (*M=6,4530; SD=0,63103*) than G7 *(M=5,7098; SD=0,66426)* (Appendix 43). Besides, the higher mean rank (106,65) of G6 suggests that the intent to purchase was greater for this group than for G7 (59,38) (Appendix 44). From the data, it can be confirmed that purchase intention in G6 was statistically significantly higher than in G7 ($U = 1392,000$; $p<0,001$) (Appendix 45).

It is, therefore, concluded that Smell Stimulation Advertising has a greater impact on purchase intention than No Smell Stimulation Advertising. For this reason, the hypothesis H5.b. is validated.

4.4.3 Full-Model

H7: Taste perception mediates the effect of visual advertising techniques on purchase intention

To perform this statistical mediation analysis, Hayes' PROCESS model 4 was employed (Hayes, 2013), which resulted in the matrix set out in Appendix 46. Since this mediation involved a multicategorical independent variable (groups assigned to stimuli), the general linear modelling approach developed by Hayes and Preacher (2014) was used. This model entails an analysis of how each group differ from a reference group.

Therefore, the seven groups were aggregated to produce the three conditions of interest: Control (G5 and G7 – i.e. Traditional advertisement without neither of the two techniques), Sensory Marketing (G6) and Endorsement (G1 to G4). These three were represented using the indicator coding strategy, which automatically created two dummy variables: X_1 coding the Control condition, X_2 coding the Sensory Marketing, and the Endorsement functioning as the reference category and receiving a code of 0 on X_1 and X_2 (Appendix 47).

For this reason, this analysis also served to test the following hypothesis:

H6: Sensory Marketing has a higher impact on both taste perception and purchase intention than Endorsement in Advertising

The results found that all the pathways in the model were significant (Figure 17 and Appendix 48). Moreover, 37,49% of the variance in purchase intention was explained by the model (R-Squared = 0,3749).

In this model, a_1 (1,5542) and a_2 (2,1623) represent the mean differences in the taste perception between the Control and Sensory Marketing conditions, respectively, relative to the Endorsement condition. Therefore, Control ads yielded to 1,5542 more units in taste perception of the advertised product than Endorsement ads, and Sensory Advertising produced 2,1623 more units on taste perception of the advertised product than Endorsement ads. Besides, for estimating the effect of taste perception on purchase intention, holding condition constant, those who better evaluated the chocolate bar in terms of its taste also had higher intentions to buy it (b=0,7762). Thus, the relative indirect effects of visual ads on purchase intention through taste perception are:

$$a_1b = 1,5542 \times 0,7762 = 1,2063$$
$$a_2b = 2,1623 \times 0,7762 = 1,6783$$

Comparing with the Endorsement condition, those assigned to the Control condition had intentions to buy that were 1,2063 units higher stemmed from the positive effect of the Traditional ad (i.e. Control) on taste perception of the chocolate bar, which in turn increased the intent to purchase it. Likewise, those allocated to the Sensory Marketing stimulus were 1,6783 units more willing to buy the chocolate bar than those allocated to the Endorsement adverts as a result of the positive effect of Olfactory Stimulation on the taste perception, which in turn resulted in a higher intention to purchase it. Furthermore, bootstrap confidence intervals do not straddle zero (X_1, 95% CI = 0,9988 to 1,4308; X_2, 95% CI = 1,4387 to 1,9268), suggesting that both Control and Sensory Marketing conditions, relative to the reference group, indirectly influence purchase intention through taste perception. Therefore, it can be deemed, with 95% confidence, that the relative indirect effect is positive and statistically different from zero and, thus, confirming the existence of mediation.

However, since the relative direct effect of visual advertising on purchase intention is significant ($p < 0,001$), taste perception does not entirely account for the relationship, only partially mediating the effect. In fact, adjusting for group differences in taste perception, those who were exposed to Control advertisement reported intentions to buy that were 0,3263 units ($c'_1 = 0,3263$) higher than those who were exposed to Endorsement advertising, while those who were presented to the Sensory Advertising were willing 0,4403 more units ($c'_2 = 0,4403$) to buy the product than those who were presented to Endorsement stimuli. In view of the above, Sensory Marketing has a higher impact on both taste perception and purchase intention than Endorsement in Advertising and the hypothesis H6 is therefore supported.

Nonetheless the latent limitations (Hayes & Preacher, 2014), relative direct versus indirect effects were expressed as a ratio of the inherent total effect ($c_1 = 1{,}5326$; $c_2 = 2{,}1186$). As a result, 79% (for both X_1 and X_2) of the effect of visual advertising on purchase intention occurred indirectly through taste perceptions. Taking this into consideration, there is a partial mediation and the hypothesis H7 is validated.

Note: p<0,05*, p<0,01**, p<0,001***
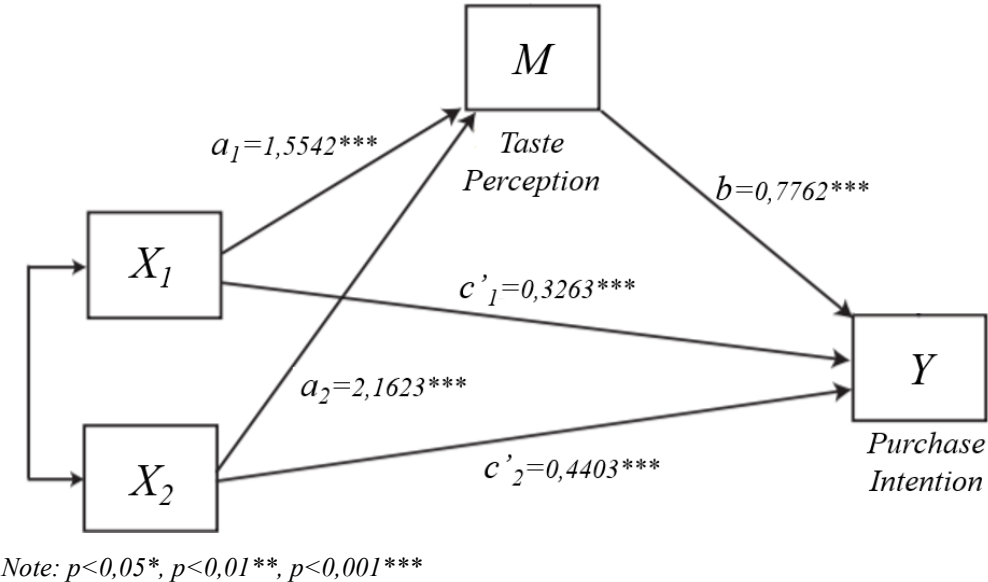
Figure 17: Statistical Model – Estimated Model Coefficients

4.4.4 Further Results

4.4.4.1 Typical Consumer

In order to get a better understanding about the demographic profile of the Typical Consumer of milk chocolate, an analysis was made. For this purpose, Chi-Square was conducted to assess whether there was an association between milk chocolate preferences and (1) Gender, (2) Age, (3) Education and (4) Income. In all these cases, Phi Coefficient (ϕ) was used as the common indicator to determine the strength of associations, since this would enable the comparison between characteristics.

Regarding gender, there was a statistically significant relationship between like a little of milk chocolate and being a male (*Adjusted Residual* $= 3{,}1 > Z_{0,995} = 2{,}576$), as well as between like a great deal and being female (*Adjusted Residual* $= 2{,}3 > Z_{0,975} = 1{,}96$) (Appendix 49). Given that $p < 0{,}05$, milk chocolate preferences and gender are not independent, having a strength of association of 0,141 ($\chi^2 = 12{,}468$; $\phi = 0{,}141$) (Appendices 50 and 51). Hence, results suggest that the Typical Consumer is female.

As for age, there was a statistically significant association between dislike a great amount of milk chocolate bars and being aged from 55 to 64 years (*Adjusted Residual = 3,8 > $Z_{0,995}$ = 2,576*); and dislike a moderate amount and be aged from 45 to 54 years (*Adjusted Residual = 2,1 > $Z_{0,975}$ = 1,96*); as well as like a great deal and be from 18 to 24 years (*Adjusted Residual = 2,7 > $Z_{0,995}$ = 2,576*) (Appendix 52). Considering that $p < 0,01$, the null hypothesis (i.e. the two variables are independent) is rejected. Moreover, age and milk chocolate preferences are associated with a strength of 0,306 (χ^2 =58,845; ϕ = 0,306) (Appendices 53 and 54). As the age decreases, the enjoyment for milk chocolate bar increases, and the Typical Consumer is aged from 18 to 24 years old.

It was found that educational level (χ^2 = 17,762; $p > 0,05$) and income (χ^2 = 55,850; $p > 0,05$) are independents from milk chocolate preferences (Appendices 55 and 56).

Therefore, data suggests that the Typical Consumer of milk chocolate bars is a woman with 18-24 years. Although the Non-Celebrity Non-Expert Endorser used was female, she had 45 years old. Given that age is even stronger associated with the milk chocolate preferences than gender, the Typical Consumer was not properly depicted.

4.4.4.2 Preference Correlations

A Spearman Correlation analysis was performed to test the relationships between milk, white and dark and ruby chocolate bars preferences (Laerd Statistics, 2013). Results (Appendix 57) showed a statistically significant positive association between milk and white chocolate preferences (r_s = 0,329, $p < 0,001$); and a negative correlation between milk and dark (r_s = -0,196, $p<0,001$). This means that higher preference levels for milk chocolate bars are associated with higher levels of white chocolate preferences and simultaneously lower levels of dark chocolate tastes. Besides, there were significantly positive correlations between ruby chocolate bar preferences and all the other types.

CHAPTER 5: CONCLUSIONS AND LIMITATIONS

This chapter provides an outline of the findings and conclusions drawn by combining the results with literature. Besides, the implications which arise from this study are highlighted, for both practitioners and academics. Finally, limitations are identified, and future research topics are proposed.

5.1 Main Findings & Conclusions

The pre-survey results indicated that the best product category to carry out this research would be chocolate bars, more precisely of the milk chocolate type.

To minimize brand familiarity effects, a fictitious brand, named Choka, and product had to be developed. As a result, a designer was hired to create the packaging for this milk chocolate bar. In the focus group, Gordon Ramsay was chosen to represent the Celebrity Expert treatment, and Pierce Brosnan for the Celebrity Non-Expert.

In the light of these results, the following seven pictorial adverts were developed from the group up, with the assistance of a professional photographer and an image editor.

Figure 18: Created Visual Stimuli

Afterwards, semi-structured interviews allowed to ensure that respondents interpreted these ads as intended. Finally, the main study was conducted, and data was gathered through an online survey. In the following, the conclusions of each of the research questions are presented.

5.1.1 Which Endorsement Type is the Most Efficient?

To answer this first research question, a 2 (Celebrity: Yes, No) * 2 (Expert: Yes, No) between-subjects design was employed.

The results indicated that Celebrity Experts are the most efficient endorsers of FPG. In fact, a positive effect for Celebrity expertise was found, both for taste perception and purchase intention, suggesting that not only is it enough to use a Celebrity but also who is knowledgeable in the field.

Furthermore, the expertise of a Non-Celebrity makes up for the lack of a Celebrity-Product congruency of an endorser. This means that the use of Non-Celebrity Experts (e.g. unrecognized chefs) or Celebrity Non-Experts (e.g. famous actors) is indifferent in terms of impacting taste perception and purchase intention. Against past literature, the results suggest that the identification process driven by a Celebrity (i.e. when a consumer attempts to establish the identity associated with a Celebrity) may be somewhat neutralized by the internalization process brought about by an Expert (i.e. when a consumer attempts to solve a problem and needs accreditation of a specialist).

A possible reason could be that consumers are becoming more demanding in frequent purchasing product categories, needing quality assurance from experts and/or processing adverts of FPG less peripherally than ever before (Biswas et al., 2006). But obviously, further research will be necessary to confirm this presupposition.

Moreover, according to this research, Non-Celebrity Non-Expert (i.e. Typical Consumer) is the least effective type to endorse FPG. However, this result might be dubious since it was found that the Typical Consumer of the advertised product was aged between 18 and 24 years old while the depicted one was 45 years old. Thus, the influence may not have worked because of consumers' lack of self-identification with the endorser (Friedman & Friedman, 1979).

The figure below illustrates the main conclusions regarding Endorsement effectiveness:

Figure 19: Research Question 1 – Conclusion

In summary, when it comes to comparing treatments with the same expertise, Celebrities have a more positive impact in increasing purchase intentions and enhancing taste perceptions than Non-Celebrities. Regarding familiarity manipulation, Experts produce better results than Non-Experts.

5.1.2 Among Endorsement and Sensory Marketing which has the Strongest Effect in Advertising?

Three conditions of interest were created: Endorsement (using the four endorser treatments), Sensory Marketing (using the advertisement that stimulates smell) and Traditional (using the control group of each technique, i.e. simply promoting the product without employing neither an endorser nor olfactory stimuli).

It emerged that Olfactory Stimulation advertisement is more effective than Traditional in generating taste perceptions and intent to buy FPG. That comes as no surprise, since literature points towards the ability of Sensory Marketing affecting perceptions and behaviours (e.g. Elder & Krishna, 2010, 2012; Krishna, 2013; Krishna, Cian, & Sokolova, 2016). In fact, this finding supports the concept of embodied cognition, according to which bodily sensations aid consumers making judgements and decisions, even below their consciousness.

Additionally, this study's results imply that Olfactory Advertising is more effective than Endorsement. Therefore, this research reinforces how powerful subtle stimuli can be. And all this potential may be because consumers do not see sensory cues as marketing, and therefore they are naïvely more prone to be influenced, mitigating their typical resistance to advertisement (Jones, 2015).

But the major surprise was sprung by the comparison between Endorsement and Traditional advertising. As it turned out, Traditional advertisement is more effective than Endorsement for impacting taste perception and purchase intention. This is valid except for the Celebrity Expert endorser which had an identical effect to the Traditional adverts.

It is believed that the overuse of Endorsement to promote a multitude of products and services (Choi, Lee, & Kim, 2005; Halonen-Knight & Hurmerinta, 2010) may have rather worn out its efficiency. It has possibly awakened consumers' awareness of this technique, triggering their usual blocking effect to persuasion (Jones, 2015).

The following figure depicts the key conclusions regarding advertising techniques effectiveness:

Note: ·····▶ Traditional Advertising is as effective as Celebrity Expert Advertising

Figure 20: Research Question 2 – Conclusion

5.1.3 Does Taste Perception Explain the Relationship between Visual Advertising Techniques and the Consumers' Purchase Intention?

The investigation confirmed researcher suspicions: FPG Visual Advertising indirectly influences purchase intention through taste perception. More specifically, 79% of the advertisement effect on intent to buy food products happens via taste perception.

This discovery entails a radical change in mindset for FPG advertisers and managers: adverts aiming to increase sales must primarily be created to affect the perceived taste of the product. This partial mediation can be pictured as seen below:
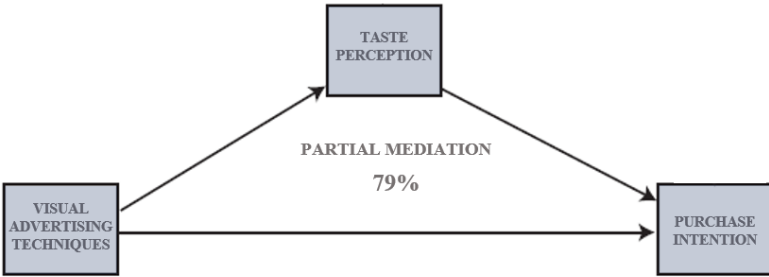
Figure 21: Research Question 3 – Conclusion

5.2 Managerial Implications

Food advertising has been mainly used to encourage purchase intent, and only seldom for affecting taste perceptions (Elder & Krishna, 2010).

What was unknown is that taste perceptions play a major role in the ability of pictorial adverts influencing buying intentions.

This research represents a major milestone in the food advertising practice. Marketers working in the FPG industry need to radically change their mindset and start to strategically plan their adverts to influence taste perception. After all, it is not as difficult as it may seem: it is about obtaining the right tools and using them wisely.

It is strongly recommended that advertisers take advantage of Sensory Marketing. Although it is still not widely used, it is a powerful technique to increase sales. Visually, it was found that Olfactory Stimulation can be accomplished through a steam graphic billowing from the product - a simple change for image editors, requiring no more than a few clicks on Photoshop. Obviously, managers should only consider this recommendation if the category at hand allows for Smell Stimulation.

Furthermore, when the objective is to increase sales, Endorsement technique is inadvisable. In fact, even Traditional advertising is managerially more attractive, as it is likely to cost much less and achieve the same or better outcomes.

Additionally, it was found that consumers who like milk chocolate bars tend to also like white, but not dark. Contrarily, those who like dark chocolate bars do not appreciate neither milk nor white types. Therefore, marketers working with chocolate bars should take this insight into consideration when making strategic decisions regarding line extensions. For example, milk type may cannibalize the white, or vice-versa, reducing product profits (Avery, 2016). On the other hand, adding a dark variety may promote complementarity in the line.

5.3 Academic Implications

Although prior literature has made a great effort in examining Endorsement, this is perhaps the first attempt at comparing it with other techniques. In fact, Traditional advertisement was compared to Endorsement but for over forty years (Friedman et al., 1976). However, the advertising world has been changing considerably, and much of what once was has been lost. This research is proof of that, since adverts without endorsers were here found to be as effective, or even more, than with it. For this reason, to disseminate breakthrough knowledge, academics need to adapt to this new reality.

Additionally, one of the goals of this investigation was to contribute to the growing research on Sensory Marketing. Indeed, business literature has paid little attention to the influence of olfactory inputs on consumer decision-making.

Finally, the discovery of the role of taste perception is a serious milestone in food advertising literature. This research is only the starting point for a new academic era in this field, which is expected to receive the attention it deserves.

5.4 Limitations and Further Research

Because this study faced budget and time constraints, one should be aware of its immanent limitations and what can further be done to overcome them.

The major limitation relates to results generalization regarding FPG categories, adverts interpretation and the population.

To begin with, the research was confined to one single category which may had led to concerns about results generalization for FPG industry. Therefore, further research into this issue studying different food categories, or even if the category is a moderator of this mediation, is needed.

Secondly, the qualitative nature of interviews does not allow to assure consumers in general will correctly interpret advertisements. Additionally, four of the ten interviews were internet-mediated, which some researchers argue to be a limitation in achieving the same levels of interactivity as face-to-face interviewing (Mann & Stewart, 2000).

Thirdly, on both online surveys, respondents were selected haphazardly, given that convenience sampling technique was employed. Therefore, samples should be regarded as non-representative and results cannot be, on statistical grounds, generalized. To tackle this issue, the study could be replicated using a representative sample and ideally present a higher number of respondents to each advert.

Furthermore, the experimental nature of the main study entails as limitation the introduction of an artificial scenario, i.e. respondents are presented to the advert through a survey instead of an actual online advertisement context. Also, it used purchase intention as a proxy for the actual buying decisions. Albeit, intent to purchase might be an imperfect predictor of future consumer behavior, especially in the FPG industry (Morwitz et al., 2007; Wright & Macrae, 2007). Consequently, conclusions drawn about the impact of advertising on sales might be dubious. To overcome the two previous limitations, it is suggested to repeat this investigation through a real-world approach using field experiment.

Besides, a fictitious brand, and therefore unfamiliar, was used to conduct the study. So, it is not recommended to draw direct conclusions from this study for established brands. Future research should address postexperience advertising effects on taste perception and purchase intention, using products available in the marketplace.

Moreover, this investigation focused solely on pictorial advertising. Hence, it would be worthwhile to explore the topic in a verbal or video framing.

5.4.1 Endorsement

Regarding the Endorsement technique, this research consisted of a 2 (Celebrity: Yes, No) * 2 (Expert: Yes, No) between-subjects design. In order to have a more enriched view of the phenomenon, future investigations should use more levels of both endorser expertise and familiarity.

Additionally, the fact that this experiment used real-world endorsers could lead to perceived variances on unmeasured characteristics, such as endorser trustworthiness, attractiveness or performance. Hence, internal validity may have been slightly sacrificed in the name of ecological validity. It is suggested that future research strongly control external variables, for example through the usage of fictitious rather than real endorsers.

Considering the findings, further research should confirm the presupposition that consumers are becoming more demanding in FPG categories, needing quality assurance from experts and/or processing adverts less peripherally than ever before.

Moreover, the discovery that advertising without Endorsement (i.e. Traditional advertisement) is more effective than with is hoped to spur further exploration of this topic. For instance, it would be interesting to test if this phenomenon also applies to other outcomes such as: brand attitudes, attitudes towards ads, message recalls, brand recognition and risk perceptions. For this reason, it is strongly recommended that henceforth all Endorsement research includes a control version.

5.4.2 Sensory Marketing

Much of the research on Olfactory Marketing is focused on its effect on memory, lacking literature on its impact on purchase decisions. Simultaneously, the pure visual advertising context only allowed to engage the consumers' taste and smell. Therefore, this study was based on Sensory Marketing and senses interaction literature.

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APPENDICES

Appendix 1: Category Identification – Survey

Dear respondent,

First of all, thank you in advance for participating in this survey!

This questionnaire aims at deciding on the perfect **food category** for undertake my investigation! It will take no more than **5 minutes** to complete. I kindly ask you to answer the questions truthfully since what is important to me is to know your authentic opinions and perceptions. I would remind you that **there are no correct nor incorrect answers** and all of them are confidential, so your **anonymity is ensured**. The data gathered will exclusively be used for the purpose of my master's dissertation! In case of any doubt, please do not hesitate to send an e-mail to: srssimao@gmail.com.

My heartfelt thanks for the time you spend to help me to become a Master!

Block 1: Screening Questions

Before you begin, I want to ask you one simple but important question

Q1 – On average, how often did you purchase food packaged goods in the past three months?

- o Never (1)
- o Rarely (once a month or less) (2)
- o Occasionally (2-3 times a month) (3)
- o Frequently (1-3 times a week) (4)
- o Very Frequently (4 times a week or more) (5)

If Never choice is selected, Skip to the End of the Survey

Block 2: Taste Perception

Below are products from different categories of food packaged goods.

The purpose is to understand your taste perceptions regarding each of them.

Please indicate how you perceive the taste, quality and deliciousness of each food category, using a scale of 1=Very Poor, 2=Poor, 3=Fairly Poor, 4=Undecided, 5=Fairly Good, 6=Good and 7=Very Good.

Q2 – Please indicate the level that better describes your perceptions about the taste, quality and deliciousness of **mozzarella cheese**.

Q3 – Please indicate the level that better describes your perceptions about the taste, quality and deliciousness of **milk chocolate bar**.

Q4 – Please indicate the level that better describes your perceptions about the taste, quality and deliciousness of **frozen pizza margherita**.

Q5 – Please indicate the level that better describes your perceptions about the taste, quality and deliciousness of **strawberry jam**.

Q6 – Please indicate the level that better describes your perceptions about the taste, quality and deliciousness of **canned beans**.

Q7 – Please indicate the level that better describes your perceptions about the taste, quality and deliciousness of **liquid caramel topping**.

Q8 – Please indicate the level that better describes your perceptions about the taste, quality and deliciousness of **bolognese sauce**.

Q9 – Please indicate the level that better describes your perceptions about the taste, quality and deliciousness of **tomato instant soup**.

Q10 – Please indicate the level that better describes your perceptions about the taste, quality and deliciousness of **vanilla cake mix**.

Q11 – Please indicate the level that better describes your perceptions about the taste, quality and deliciousness of **cappuccino sachets**.

Q12– Please indicate the level that better describes your perceptions about the taste, quality and deliciousness of **bacon**.

Q13 – Please indicate the level that better describes your perceptions about the taste, quality and deliciousness of **chicken instant noodles**.

Q14 – Please indicate the level that better describes your perceptions about the taste, quality and deliciousness of **cream carbonara sauce**.

Q15 – Please indicate the level that better describes your perceptions about the taste, quality and deliciousness of **frozen lasagne**.

Q16 – Please indicate the level that better describes your perceptions about the taste, quality and deliciousness **mushroom risotto**.

	Very Poor (1)	Poor (2)	Fairly Poor (3)	Undecided (4)	Fairly Good (5)	Good (6)	Very Good (7)
Taste (1)							
Quality (2)							
Deliciousness (3)							

Note: This table was presented for each question

Block 3: Demographics

Now you are moving on to the final stage of this questionnaire.

Q17 – What is your gender?

- Male (1)
- Female (2)

Q18 – What is your age?

- Under 18 (1)
- 18-24 (2)
- 25-34 (3)
- 35-44 (4)
- 45-54 (5)
- 55-64 (6)
- 65 or older (7)

Q19 – What is your nationality?

- Portuguese (1)
- German (2)
- Italian (3)
- Spanish (4)
- French (5)
- Irish (6)
- Other: (7)_____

Q20 – What is the highest degree you have completed?

- Less than high school (1)
- High school graduate or equivalent (2)
- Bachelor Degree (3)
- Master Degree/MBA (4)
- PhD/Post-Doctoral Degree (5)

Q21 – What is your current occupation?

- Student (1)
- Student-Worker (2)
- Employed (3)
- Unemployed (4)
- Retired (5)

Q22 – What is your monthly gross income?

- Less than 500€ (1)
- 500€ – 999€ (2)
- 1000€ – 1499€ (3)
- 1500€ – 1999€ (4)
- 2000€ - 2499€ (5)
- 2500€ – 2999€ (6)
- 3000€ – 3499€ (7)
- 3500€ – 4000€ (8)
- More than 4000€ (9)

Appendix 2: Category Identification – Sample Characteristics (n=196)

FREQUENCY STATISTICS			
VARIABLE	VALUES	FREQUENCY	PERCENTAGE
Gender	Male	88	44,9
	Female	108	55,1
Age	Under 18	10	5,1
	18-24	84	42,9
	25-34	55	28,1
	35-44	24	12,2
	45-54	19	9,7
	55-64	3	0,5
	65 or older	1	0,5
Nationality	Portuguese	160	81,6
	German	16	8,2
	Italian	2	1,0
	Spanish	5	2,6
	French	6	3,1
	Irish	1	0,5
	Other*	6	3,1
Education	Less than high school	14	7,1
	High school graduate or equivalent	30	15,3
	Bachelor Degree	88	44,9
	Master Degree/MBA	60	30,6
	PhD/Post-Doctoral Degree	4	2,0
Occupation	Student	65	32,7

	Student-Worker	26	13,3
	Employed	98	50,0
	Unemployed	6	3,2
	Retired	2	1,0
Income	Less than 500€	60	30,6
	500€ – 999€	38	19,4
	1000€ – 1499€	49	25,0
	1500€ – 1999€	18	9,2
	2000€ - 2499€	12	6,1
	2500€ – 2999€	7	3,6
	3000€ – 3499€	5	2,6
	3500€ – 4000€	3	1,5
	More than 4000€	4	2,0
Frequency of Purchasing Food Packaged Goods	Rarely (once a month or less)	31	15,8
	Occasionally (2-3 times a month)	65	33,2
	Frequently (1-3 times a week)	75	38,3
	Very Frequently (4 times a week or more)	25	12,8

* Abkhazian, Austrian, Brazilian, Belgian, Lithuanian and Venezuelan

Appendix 3: Category Identification – Internal Consistency Reliability

RELIABILITY STATISTICS			
TASTE PERCEPTION OF:	CRONBACH´S ALFA	N OF ITEMS	QUALITY*
Mozzarella Cheese	0,936	3	Excellent
Milk Chocolate Bar	0,897	3	Excellent
Frozen Pizza Margherita	0,922	3	Excellent
Strawberry Jam	0,944	3	Excellent
Canned Beans	0,927	3	Excellent
Liquid Caramel Topping	0,892	3	Good
Bolognese Sauce	0,945	3	Excellent
Tomato Instant Soup	0,949	3	Excellent
Vanilla Cake Mix	0,932	3	Excellent
Cappuccino Sachets	0,941	3	Excellent
Bacon	0,904	3	Excellent
Chicken Instant Noodles	0,915	3	Excellent
Cream Carbonara Sauce	0,928	3	Excellent
Frozen Lasagne	0,916	3	Excellent
Mushroom Risotto	0,967	3	Excellent

* In accordance with George, D. and Mallery (2003)

In order to ensure the reliability of the instrument, three new variables were created: Mean_Taste, Mean_Quality and Mean_Deliciousness. As the name labels suggest, these were computed through an average of each item (taste, quality and deliciousness, respectively) of the fifteen food categories.

RELIABILITY STATISTICS			
TASTE PERCEPTION	CRONBACH´S ALFA	ITEMS	QUALITY*
General	0,938	3 Items: Mean_Taste; Mean_Quality; Mean_Deliciousness	Excellent

Appendix 4: Category Identification – Taste Perception Mean by Food Product

Each of the presented variables in the table was created based on the mean of the three-items (taste, quality and deliciousness) for each food product.

DESCRIPTIVE STATISTICS		
VARIABLE	MEAN	STD. DEVIATION
MilkChocolateBar_TastePerception	5,9830	1,15655
MozarellaCheese_TastePerception	5,0986	1,31458
Bacon_TastePerception	4,7194	1,60343
StrawberryJam_TastePerception	4,7007	1,43341
BologneseSauce_TastePerception	4,6701	1,44095
CappuccinoSachets_TastePerception	4,4881	1,40466
MushroomRisotto_TastePerception	4,4065	1,67188
LiquidCaramelTopping_TastePerception	4,1769	1,49887
CannedBeans_TastePerception	4,1582	1,53420
CreamCarbonaraSauce_TastePerception	4,1310	1,50796
FrozenLasagne_TastePerception	4,1054	1,67134
FrozenPizzaMargherita_TastePerception	4,0731	1,62242
VanillaCakeMix_TastePerception	4,0731	1,41935
ChickenInstantNoodles_TastePerception	3,7143	1,65586
TomatoInstantSoup_TastePerception	3,2891	1,59067

Appendix 5: Focus Group – Participants Characterization

NAME	NATIONALITY	EDUCATION	GENDER	AGE
Adrian Geislinger	Austrian	Bachelor's degree	M	26
Beatriz Santos	Portuguese	Bachelor's degree	F	21
Caroline Pülm	German	Bachelor's degree	F	24
Jan Boge	German	Bachelor's degree	M	24
Joana Dias	Portuguese	Bachelor's degree	F	24
Johannes Schriefers	German	Bachelor's degree	M	25
Kieran Genovese	Irish	Bachelor's degree	M	25
Oriane Eymery	French	Bachelor's degree	F	22

Appendix 6: Focus Group – Discussion Guide

65. **Warm-up** (5 minutes)

- <u>Summary of Research Procedure:</u> The session will last about one hour; it will be audio recorded.

- <u>Honesty Request:</u> There are no right nor wrong answers; be truthful.

- <u>Discussion Rules:</u> Avoid interrupting others' ideas; there is no order to share opinions; listen to other participants; do not dominate the debate.

- <u>Get-Acquainted Phase:</u> Moderator and participants introduce themselves.

- <u>Presentation of the Research Subject</u>: Celebrity endorsers choice.

2. Individual List (5 minutes)

- <u>Presentation of the Hypothetical Situation:</u> Contextualize that a new milk chocolate bar is going to be launched in the market by a new brand, Choka, and managers need to choose two celebrities to endorse the new product: (1) One celebrity whose recognition is due to something other than cuisine or food products and (2) One famous cuisine Chef. Point out that when choosing celebrities, participants should take into consideration the product to be endorsed.
Mention that celebrities must be internationally well-known.

- <u>Procedure Explanation and Execution:</u> Each attendee receives a sheet of paper containing two columns: (1) the left one heading is "Celebrity Non-Expert" and (2) the right one is entitled as "Celebrity Expert". Clarification of each column. Give participants three minutes to list all the celebrity names, appropriated for each column, they could remember.

3. Top Endorsers Selection (40 minutes)

Firstly, the left column – Celebrity Non-Expert Endorsers – names are addressed.

- Frequency of Mention: One participant is asked to say the first name written in the column, subsequently the moderator questions if someone also has mentioned that personality. Interactively, participants share their suggestions until all suggested names are ranked based on their mention frequency.

- Discussion: The most mentioned celebrities are discussed in detail; are explored the reasons for which the individuals have stated those names, and which would be the most appropriates for endorsing the product and why. A consensus among participants regarding the two-top endorsers has to be reached.

The same process is repeated for the right column – Celebrity Expert Endorsers.

4. Individual Questionnaire (10 minutes)

The top endorsers selected will be evaluated in terms of familiarity, popularity and expertise through a questionnaire.

- Survey Delivery: A four-pages questionnaire will be individually delivered to participants. Each page is destinated to one of the four top endorsers previously chosen.

QUESTIONNAIRE

CELEBRITY NAME: _____

Q1) Familiarity
Have you heard of this person?
Yes __
No __

Q2) Popularity
If you answered *Yes*, please rate the celebrity:
One of my least favorites __
Very poor __
Poor __
Fair __
Good __
Very good __
One of my favorites __

Q3) Expertise
For endorsing a chocolate bar, please evaluate the expertise of the celebrity

Not an expert	__ __ __ __ __ __ __	Expert
Experienced	__ __ __ __ __ __ __	Inexperienced
Unknowledgeable	__ __ __ __ __ __ __	Knowledgeable
Qualified	__ __ __ __ __ __ __	Unqualified
Unskilled	__ __ __ __ __ __ __	Skilled

Page 1

End of the focus group and to express gratitude for help

Appendix 7: Focus Group – Results

Regarding the Celebrity Non-Expert, a total of thirty-three different names were written in the individual lists, and the following five celebrities were mentioned twice: Beyoncé, Kylie Jenner, Pierce Brosnan, George Clooney and Zach Galifianakis. Of these only Kylie Jenner was not recognized by all participants and for that reason it was decided to not choose her for the Top-Two endorsers: *"It has already been demonstrated in this room that there may be people that do not know her"* – said a participant, and another added "*I believe she is pretty famous but I can see your point… She belongs to a specific world"*.

Furthermore, they saw Beyoncé as the least proper considering her *"too glamorous to endorse a chocolate"* going as far as doubting of her trustworthiness i.e. *"I would think: she has to be well paid to do this"*. Thus, George Clooney, Pierce Brosnan and Zach Galifianakis were all considered *"well-known and loved"* as well as *"suitable to endorse this type of product"*. Although, George Clooney was ruled out since *"he [was] already associated with another brand"* and for that motive another participant argued that *"[she] would be all for, just if it was a chocolate from Nespresso"*. Thereby, Pierce Brosnan and Zach Galifianakis were the chosen Top-Two to be presented in the questionnaire. Pierce Brosnan was the selected character to represent the Non-Expert famous as it had the highest Q Score with 0,375.

Regarding the Celebrity Expert, thirteen different personalities were proposed, and the most referenced names were: Gordon Ramsay, Jamie Oliver and Martha Stewart, respectively. Gordon Ramsay was immediately chosen to be one of the Top-Two since he was considered *"quite expert and fun"*. Jamie was excluded for being *"too much health-focused for chocolate"*. Notwithstanding Martha was considered *"a bit skinny"*, it was decided for her to be on the Top-Two. The conclusions drawn from the questionnaire analysis were that Martha was less famous, popular and expert than Gordon, and, as a result, Gordon Ramsay was selected to be the Chef Celebrity.

Appendix 8: Interviews – Participants Characterization

NAME	NATIONALITY	EDUCATION	OCCUPATION	GENDER	AGE
Anabela Zambaux	French	Bachelor's degree	Unemployed	F	54
Emerson Kachiungo	Angolan	Master's degree	Unemployed	M	25
Fátima Palma	Portuguese	Bachelor's degree	Employed	F	39
Fernando Aguiar	Brazilian	Master's degree	Employed	M	32
Maria Luisa Bernal	Spanish	High School	Retired	F	79
Maria Simão	Portuguese	Bachelor's degree	Employed	F	49
Michiel Wolf	Belgian	Bachelor's degree	Student	M	22
Pedro Rodrigues	Portuguese	Master's degree	Employed	M	23
Rita Sousa	Portuguese	Master's degree	Employed	F	23
Violette Devergies	French	High School	Student	F	19

Appendix 9: Interviews – Script, Analysis and Results

SECTION	QUESTIONS	
1. Introduction, Contextualization and Greeting	Firstly, I would like to express my heartfelt thanks for helping me. My name is Sara Simão and this interview is being conducted with the aim of understanding how you interpret seven ads that I will show you by computer. It will take you around 30 minutes. Do you give me your permission to record our conversation?	
2. Demographics	Gender	
	Age	
	Nationality	
	Education	
	Occupation	

SECTION	QUESTIONS	INTERPRETATION
3. Endorsement: Celebrity Expert	What do you think about this image? Who is endorsing the product? What do you think about this person?	1) All interviewees recognized Gordon Ramsay 2) They considered him as a *"a guru in the field"* – female and an *"international reference in gastronomy"*- female
		The image was interpreted as desired ✓
4. Endorsement: Non-Celebrity Expert	What do you think about this image? Who is endorsing the product? What do you think about this person?	1) All interviewees did not recognize the cook 2) They saw him as a cook *"recommending the chocolate"* – female as well as *"This gives me the assurance that it is a chocolate of quality"* – female
		The image was interpreted as desired ✓

5. Endorsement: **Celebrity Non-Expert**	What do you think about this image? Who is endorsing the product? What do you think about this person?	1) A large proportion of those interviewees recognized Pierce Brosnan as an actor 2) According to one interviewee *"This reminds me George Clooney and Nespresso"* – female, which is in line with the focus group insights
		The image was interpreted as desired ✓
6. Endorsement: **Non- Celebrity Non-Expert**	What do you think about this image? What do you think about this person? Why do you think she is appearing with the product?	1) None of the interviewees recognized the endorser: *"She is an ordinary person"* – male 2) Some interviewees stated that the woman may be a typical chocolate consumer: *"She seems to like chocolate"* – male, and *"It is a product that she consumes on a daily basis"* – male
		The image was interpreted as desired ✓
7. Endorsement: **No Endorser –** **Control Group**	What do you think about this image? Could you please compare it with the previous four images?	1) All interviewees stated that the chocolate bar was not accompanied by an endorser 2) Some interviewees expressed the opinion that it was used a closer up shot: *"Here the tablet is bigger"* – female and *"The packaging can be seen in more detail"* – male. In the real-world of advertising business, the non-use (use) of an endorser implies a bigger (smaller) emphasis on the product and therefore the stimulus was realistic.
		The image was interpreted as desired ✓
7. Sensory Marketing: **No Smell Stimulation**	Could you please describe this image? What does the image convey to you?	1) All interviewees described the image as expected
		The image was interpreted as desired ✓
8.1 Sensory Marketing: **Smell Stimulation** *Version 1*	Could you please describe this image? What does the image convey to you? How is it different from the previous?	1) It was felt that interviewees were more focused on the hand pouring chocolate than on the steam 2) A large proportion of those respondents expressed that the image conveyed a chocolate usage stage: *"This hand reminds me of cooking"* – female; *"The image highlights the various usages of chocolate!"* – male, and *"The woman is probably making a cake"* – female 3) Some of the interviewees noticed the steam. When asked what the steam was conveying, all of them mentioned the chocolate smell. The fact that this is not a straightforward relationship is explained by the latent unconscious context.

		The image was not interpreted as desired X
SECTION	QUESTIONS	
Closure	We are about to end our conversation. Would you like to add something? I am very grateful to you for your help!	
The "Smell Stimulation" image had to be re-created so that it would exclusively transmit smell. In order to accomplish this, the *Version 2* of this stimuli presented a greater steam cloud and simultaneously did not contain pouring cue (Sub-Chapter 3.3.3.2). Consequently, a second meeting was scheduled with each interviewee where the interpretation of this version was assessed.		
8.2 Sensory Marketing: Smell Stimulation *Version 2*	Could you please describe this image? What does the image convey to you? How is it different from the this [Show "No Smell Stimulation" image]?	1) All interviewees mentioned the steam presented in the image. When asked what it was conveying, every expressed that the image induces the smell: *"I can feel the smell!"* – female, age 23
		The image was interpreted as desired ✓

The quotes only referenced the interviewees gender for confidentiality reasons (Boyce & Associate, 2006).

Appendix 10: Main Study – Survey

Dear respondent,

First of all, thank you in advance for participating in this survey!

This questionnaire is about Visual Advertising Techniques Impact on Consumers' Purchase Intention and Taste Perception of a Chocolate Bar!

It will take no more than **4 minutes** to complete. I kindly ask you to answer the questions truthfully since what is important to me is to know your authentic perceptions and intentions. I would remind you that **there are no correct nor incorrect answers** and all of them are confidential, so your **anonymity is ensured**. The data gathered will be exclusively used for the purpose of my master's dissertation! In case of any doubt, please do not hesitate to send an e-mail to: srssimao@gmail.com (Sara Simão).

My heartfelt thanks for the time you spend to help me to become a Master!

Block 1: Screening Questions

Before you begin, I want to ask you two simple but important questions

Q3 – On average, how often did you **consume** a chocolate bar in the past three months?

- o   Never (1)
- o   Rarely (once a month or less) (2)
- o   Occasionally (2-3 times a month) (3)
- o   Frequently (1-3 times a week) (4)
- o   Very Frequently (4 times a week or more) (5)

Q4 – On average, how often did you **purchase** a chocolate bar in the past three months?

- o Never (1)
- o Rarely (once a month or less) (2)
- o Occasionally (2-3 times a month) (3)
- o Frequently (1-3 times a week) (4)
- o Very Frequently (4 times a week or more) (5)

If "Never" choices for both Q3 and Q4 are selected, Skip to the End of Survey

Block 2: Chocolate Type Preferences

Q5 – Please indicate the category that better describes how much you like Dark, Milk, White and Ruby chocolate bars, by using a scale from 1=Dislike a Great Deal to 7= Like a Great Deal.

	Dislike a Great Deal (1)	Dislike a Moderate Amount (2)	Dislike a Little (3)	Neither Like nor Dislike (4)	Like a Little (5)	Like a Moderate Amount (6)	Like a Great Deal (7)
Dark (with at least 70% cocoa solids) (1)							
Milk (with at least 20% cocoa solids) (2)							
White (does not contain cocoa solids) (3)							
Ruby (from ruby cocoa beans) (4)							

If for Milk Chocolate Type the selected category is less than or equal to 3 (Dislike a Little), Skip to Block 6 – Demographics

Block 3: Advertising Stimulus Display

Imagine that while you are surfing the Internet, the following visual advertising is displayed in your screen.

Randomly, display one of the seven visual advertising stimuli

Display the following Question if Group 1 or Pierce Brosnan (Group 2) were assigned:

Q7/Q11 – Have you heard of this person?

- o Yes (1)
- o No (2)

If "Yes" choice is selected, Skip to Block 4 – Taste Perception
If "No" choice is selected, Skip to Block 6 – Demographics

Block 4: Taste Perception

Q27 – Considering the visual advertising you saw, please indicate the category that better describes your perceptions of taste, quality and deliciousness of Choka Milk Chocolate Bar, by using a scale from 1=Very Poor to 7=Very Good.

	Very Poor (1)	Poor (2)	Fairly Poor (3)	Undecided (4)	Fairly Good (5)	Good (6)	Very Good (7)
Taste (1)							
Quality (2)							
Deliciousness (3)							

Block 5: Purchase Intention

Imagine you go to the supermarket's chocolate aisle looking to buy one, and you find the advertised bar on a shelf.

Q28 –Listed below are three statements about your intention to purchase Choka Milk Chocolate Bar. Please indicate how strongly you agree versus disagree with each of them by using a scale from 1=Strongly Disagree to 7=Strongly Agree.

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)
The likelihood of my purchasing Choka Milk Chocolate Bar is very high (1)							
The probability that I would try Choka Milk Chocolate Bar is very high (2)							
My willingness to buy Choka Milk Chocolate Bar is very high (3)							

Block 6: Demographics

Now you are moving on to the final stage of this questionnaire.

Q30 – What is your gender?

- o   Male (1)
- o   Female (2)

Q31 – What is your age?

- o   Under 18 (1)
- o   18-24 (2)
- o   25-34 (3)
- o   35-44 (4)
- o   55-64 (5)
- o   65 or older (6)

Q32 – What is your nationality?

- o   Portuguese (1)
- o   German (2)
- o   Italian (3)
- o   Spanish (4)
- o   French (5)
- o   Other: _____

Q33 – What is the highest degree you have completed?

- o Less than high school (1)
- o High school graduate or equivalent (2)
- o Bachelor Degree (3)
- o Master Degree/MBA (4)
- o PhD/Post-Doctoral Degree (5)

Q34 – What is your current occupation?

- o Student (1)
- o Student-Worker (2)
- o Employed (3)
- o Unemployed (4)
- o Retired (5)

Q35 – What is your monthly gross income?

- o Less than 500€ (1)
- o 500€ – 999€ (2)
- o 1000€ – 1499€ (3)
- o 1500€ – 1999€ (4)
- o 2000€ - 2499€ (5)
- o 2500€ – 2999€ (6)
- o 3000€ – 3499€ (7)
- o 3500€ – 4000€ (8)
- o More than 4000€ (9)

Appendix 11: Main Study – Sample Characteristics (n=629)

DEMOGRAPHICS – FREQUENCY STATISTICS									
VARIABLE	VALUES	G0	G1	G2	G3	G4	G5	G6	G7	TOTAL
Gender	Male	37,6%	31,8%	38,0%	30,1%	30,1%	33,3%	46,2%	29,4%	**34,5%**
	Female	62,4%	68,2%	62,0%	69,9%	69,9%	66,7%	53,8%	70,6%	**65,5%**
Age	Under 18	2,4%	3,0%	2,8%	2,4%	3,6%	2,6%	5,1%	2,4%	**3,0%**
	18-24	34,1%	50,0%	42,3%	54,2%	45,8%	35,9%	48,7%	52,9%	**45,5%**
	25-34	22,4%	31,8%	35,2%	22,9%	26,5%	34,6%	28,2%	22,4%	**27,7%**
	35-44	17,6%	7,6%	7,0%	7,2%	10,8%	12,8%	7,7%	10,6%	**10,3%**
	45-54	14,1%	6,1%	12,7%	8,4%	9,6%	9,0%	6,4%	8,2%	**9,4%**
	55-64	8,2%	1,5%	-	4,8%	3,6%	5,1%	1,3%	3,5%	**3,7%**
	65 or older	1,2%	-	-	-	-	-	2,6%	-	**0,5%**

VARIABLE	VALUES	G0	G1	G2	G3	G4	G5	G6	G7	TOTAL
DEMOGRAPHICS – FREQUENCY STATISTICS										
Nationality	Portuguese	87,1%	89,4%	91,5%	89,2%	95,2%	92,3%	89,7%	92,9%	**90,9%**
	French	1,2%	1,5%	1,4%	2,4%	1,2%	1,3%	1,3%	2,4%	**1,6%**
	Other	11,8%	9,1%	7,0%	8,4%	3,6%	6,4%	9,0%	4,7%	**7,5%**
Education	Less than High School	9,4%	12,1%	5,6%	3,6%	10,8%	2,6%	7,7%	9,4%	**7,6%**
	High School	30,6%	18,2%	28,2%	31,3%	31,3%	21,8%	38,5%	14,1%	**26,9%**
	Bachelor	29,4%	36,4%	39,4%	37,3%	34,9%	42,3%	26,9%	43,5%	**36,2%**
	Master	30,6%	33,3%	26,8%	27,7%	22,9%	32,1%	24,4%	31,8%	**28,6%**
	PhD	-	-	-	-	-	1,3%	2,6%	1,2%	**0,6%**
Occupation	Student	20,0%	27,3%	22,5%	24,1%	22,9%	26,9%	25,6%	32,9%	**25,3%**
	Student-Worker	5,9%	19,7%	12,7%	12,0%	13,3%	6,4%	20,5%	11,8%	**12,6%**
	Employed	69,4%	47,0%	62,0%	61,4%	59,0%	62,8%	48,7%	51,8%	**58,0%**
	Unemployed	1,2%	6,1%	2,8%	2,4%	4,8%	2,6%	2,6%	2,4%	**3,0%**
	Retired	3,5%	-	-	-	-	1,3%	2,6%	1,2%	**1,1%**
Income	Less than 500€	18,8%	28,8%	28,2%	18,1%	25,3%	23,1%	23,1%	25,9%	**23,7%**
	500€ – 999€	24,7%	30,3%	23,9%	33,7%	32,5%	21,8%	24,4%	28,2%	**27,5%**
	1000€ – 1499€	17,6%	18,2%	29,6%	22,9%	21,7%	28,2%	29,5%	20,0%	**23,4%**
	1500€ – 1999€	11,8%	13,6%	7,0%	13,3%	4,8%	11,5%	11,5%	10,6%	**10,5%**
	2000€ - 2499€	5,9%	6,1%	2,8%	2,4%	6,0%	7,7%	6,4%	3,5%	**5,1%**
	2500€ – 2999€	10,6%	-	-	4,8%	2,4%	1,3%	-	4,7%	**3,2%**
	3000€ – 3499€	2,4%	-	2,8%	2,4%	1,2%	1,3%	-	2,4%	**1,6%**
	3500€ – 4000€	1,2%	1,5%	4,2%	-	2,4%	1,3%	1,3%	1,2%	**1,6%**
	More than 4000€	7,1%	1,5%	1,4%	2,4%	3,6%	3,8%	3,8%	3,5%	**3,5%**
HABITS – FREQUENCY STATISTICS										
Consumption Habits	Never	-	1,5%	-	-	1,2%	-	-	-	**0,3%**
	Rarely	32,9%	15,2%	26,8%	32,5%	31,3%	28,2%	26,9%	25,9%	**27,8%**
	Occasionally	36,5%	43,9%	47,9%	33,7%	21,7%	38,5%	32,1%	31,8%	**35,3%**
	Frequently	22,4%	30,3%	22,5%	22,9%	32,5%	25,6%	29,5%	29,4%	**26,9%**
	Very Frequently	8,2%	9,1%	2,8%	10,8%	13,3%	7,7%	11,5%	12,9%	**9,7%**
Buying Habits	Never	12,9%	1,5%	9,9%	12,0%	6,0%	6,4%	11,5%	8,2%	**8,7%**
	Rarely	35,3%	31,8%	33,8%	38,6%	38,6%	39,7%	35,9%	34,1%	**36,1%**
	Occasionally	37,6%	43,9%	46,5%	33,7%	32,5%	35,9%	30,8%	31,8%	**36,2%**
	Frequently	10,6%	16,7%	8,5%	10,8%	15,7%	16,7%	16,7%	20,0%	**14,5%**
	Very Frequently	3,5%	6,1%	1,4%	4,8%	7,2%	1,3%	5,1%	5,9%	**4,5%**

Appendix 12: Main Study – Chocolate Type Preferences: Descriptive Statistics

	N	MINIMUM	MAXIMUM	MEAN	STD. DEVIATION
Dark Chocolate	629	1	7	4,98	2,040
Milk Chocolate	629	1	7	5,78	1,510
White Chocolate	629	1	7	4,59	2,046
Ruby Chocolate	629	1	7	4,00	1,606

Appendix 13: Main Study – Chocolate Type Preferences: Frequency Statistics

	1	2	3	4	5	6	7
Dark Chocolate	11,4%	6,7%	7,2%	3,7%	18,4%	23,5%	29,1%
Milk Chocolate	3,3%	1,7%	4,9%	4,5%	16,7%	26,7%	42,1%
White Chocolate	14,3%	7,0%	8,1%	8,3%	21,5%	20,3%	20,5%
Ruby Chocolate	13,4%	4,3%	7,3%	40,9%	18,3%	9,7%	6,2%

Note: 1= Dislike a Great Deal; 7= Like a Great Deal

Appendix 14: Main Study – Cronbach's Alphas

CONSTRUCT	CRONBACH'S ALPHA	QUALITY*	N OF ITEMS
Taste Perception General	**0,908**	**Excellent**	**3**
Taste Perception in G1	0,912	Excellent	3
Taste Perception in G2	0,899	Excellent	3
Taste Perception in G3	0,840	Good	3
Taste Perception in G4	0,924	Excellent	3
Taste Perception in G5	0,887	Good	3
Taste Perception in G6	0,909	Excellent	3
Taste Perception in G7	0,903	Excellent	3
Purchase Intention General	**0,886**	**Good**	**3**
Purchase Intention in G1	0,848	Good	3
Purchase Intention in G2	0,908	Excellent	3
Purchase Intention in G3	0,845	Good	3
Purchase Intention in G4	0,870	Good	3
Purchase Intention in G5	0,925	Excellent	3
Purchase Intention in G6	0,899	Excellent	3
Purchase Intention in G7	0,883	Good	3

*The quality of Cronbach's alpha was ranked based on the guidelines proposed by George and Mallery (2003) where the reliability for values: above 0,90 was excellent; between 0,80 and 0,89 was good; between 0,70 and 0,79 was acceptable; from 0,6 to 0,69 was questionable; between 0,5 and 0,59 was poor and finally below 0,5 was unacceptable.

Appendix 15: Test of Normality – Kolmogorov-Smirnov

GROUP	TEST OF NORMALITY: KOLMOGOROV-SMIRNOV					
	TASTE PERCEPTION (TP)			PURCHASE INTENTION (PI)		
	Statistic	df	Sig.	Statistic	df	Sig.
Celebrity Expert (G1)	0,184	66	0,000	0,168	66	0,000
Celebrity Non-Expert (G2)	0,204	71	0,000	0,190	71	0,000
Non-Celebrity Expert (G3)	0,163	83	0,000	0,215	83	0,000
Non-Celebrity Non-Expert (G4)	0,234	83	0,000	0,222	83	0,000
No Endorsement (Control) (G5)	0,213	78	0,000	0,234	78	0,000
Smell Stimulation (G6)	0,196	78	0,000	0,230	78	0,000
No Smell Stimulation (Control) (G7)	0,234	85	0,000	0,131	85	0,001

Appendix 16: Main Study – Endorsement H1.a: Kruskal-Wallis H Test

NULL HYPOTHESIS	TEST	SIG.	DECISION
The distribution of TP is the same across categories of Group	Independent-Samples Kruskal-Wallis Test	0,000	Reject the Null Hypothesis

Appendix 17: Main Study – Endorsement H1.a: Pairwise Comparisons

SAMPLE 1 – SAMPLE 2	TEST STATISTIC	STD. ERROR	STD. TEST STATISTIC	SIG.	ADJ. SIG.
Non-Celebrity Non-Expert (G4) No Endorsement (Control) (G5)	-210,929	17,306	-12,188	0,000	0,000
Celebrity Non-Expert (G2) No Endorsement (Control) (G5)	-132,721	18,001	-7,373	0,000	0,000
Non-Celebrity Expert (G3) No Endorsement (Control) (G5)	-128,652	17,306	-7,434	0,000	0,000
Celebrity Expert (G1) No Endorsement (Control) (G5)	-52,630	18,354	-2,867	0,004	0,062

Note: Only comparisons of interest are presented

Appendix 18: Main Study – Endorsement H1.a: Descriptive Statistic

	N	MEAN	STD. DEVIATION
Celebrity Expert (G1)	66	4,8687	0,90370
Celebrity Non-Expert (G2)	71	3,9671	0,94307
Non-Celebrity Expert (G3)	83	4,0161	0,93835
Non-Celebrity Non-Expert (G4)	83	2,7912	1,36120
No Endorsement (Control) (G5)	78	5,4444	0,92374

Appendix 19: Main Study – Endorsement H1.b: Kruskal-Wallis H Test

NULL HYPOTHESIS	TEST	SIG.	DECISION
The distribution of PI is the same across categories of Group	Independent-Samples Kruskal-Wallis Test	0,000	Reject the Null Hypothesis

Appendix 20: Main Study – Endorsement H1.b: Pairwise Comparisons

SAMPLE 1 – SAMPLE 2	TEST STATISTIC	STD. ERROR	STD. TEST STATISTIC	SIG.	ADJ. SIG.
Non-Celebrity Non-Expert (G4) No Endorsement (Control) (G5)	-214,040	17,306	-12,368	0,000	0,000
Celebrity Non-Expert (G2) No Endorsement (Control) (G5)	-132,337	18,001	-7,352	0,000	0,000
Non-Celebrity Expert (G3) No Endorsement (Control) (G5)	-126,022	17,306	-7,282	0,000	0,000
Celebrity Expert (G1) No Endorsement (Control) (G5)	-49,811	18,354	-2,714	0,007	0,100

Note: Only comparisons of interest are presented

Appendix 21: Main Study – Endorsement H1.b: Descriptive Statistics

	N	MEAN	STD. DEVIATION
Celebrity Expert (G1)	66	5,4596	0,82641
Celebrity Non-Expert (G2)	71	4,4883	1,09084
Non-Celebrity Expert (G3)	83	4,5582	0,88362
Non-Celebrity Non-Expert (G4)	83	3,0843	1,45933
No Endorsement (Control) (G5)	78	6,0385	0,69003

Appendix 22: Main Study – Endorsement H2.a: Descriptive Statistics

	N	MEAN	STD. DEVIATION
Celebrity Expert (G1)	66	4,8687	0,90370
Celebrity Non-Expert (G2)	71	3,9671	0,94307

Appendix 23: Main Study – Endorsement H2.a: Ranks

	N	MEAN RANK	SUM OF RANKS
Celebrity Expert (G1)	66	87,99	5807,50
Celebrity Non-Expert (G2)	71	51,35	3645,50

Appendix 24: Main Study – Endorsement H2.a: Test Statistics

	TASTE PERCEPTION (TP)
Mann-Whitney U	1089,500
Wilcoxon W	3645,500
Z	-5,453
Asymp. Sig. (2-tailed)	0,000

Appendix 25: Main Study – Endorsement H2.b: Descriptive Statistics

	N	MEAN	STD. DEVIATION
Celebrity Expert (G1)	66	5,4596	0,82641
Celebrity Non-Expert (G2)	71	4,4883	1,09084

Appendix 26: Main Study – Endorsement H2.b: Ranks

	N	MEAN RANK	SUM OF RANKS
Celebrity Expert (G1)	66	87,86	5799,00
Celebrity Non-Expert (G2)	71	51,46	3654,00

Appendix 27: Main Study – Endorsement H2.b: Test Statistics

	PURCHASE INTENTION (PI)
Mann-Whitney U	1098,000
Wilcoxon W	3654,000
Z	-5,393
Asymp. Sig. (2-tailed)	,000

Appendix 28: Main Study – Endorsement H3.a: Descriptive Statistics

	N	MEAN	STD. DEVIATION
Celebrity Non-Expert (G2)	71	3,9671	0,94307
Non-Celebrity Expert (G3)	83	4,0161	0,93835

Appendix 29: Main Study – Endorsement H3.a: Ranks

	N	MEAN RANK	SUM OF RANKS
Celebrity Non-Expert (G2)	71	74,19	5267,50
Non-Celebrity Expert (G3)	83	80,33	6667,50

Appendix 30: Main Study – Endorsement H3.a: Test Statistics

	TASTE PERCEPTION (TP)
Mann-Whitney U	2711,500
Wilcoxon W	5267,500
Z	-0,863
Asymp. Sig. (2-tailed)	0,388

Appendix 31: Main Study – Endorsement H3.b: Descriptive Statistics

	N	MEAN	STD. DEVIATION
Celebrity Non-Expert (G2)	71	4,4883	1,09084
Non-Celebrity Expert (G3)	83	4,5582	0,88362

Appendix 32: Main Study – Endorsement H3.b: Ranks

	N	MEAN RANK	SUM OF RANKS
Celebrity Non-Expert (G2)	71	73,20	5197,50
Non-Celebrity Expert (G3)	83	81,17	6737,50

Appendix 33: Main Study – Endorsement H3.b: Test Statistics

	PURCHASE INTENTION (PI)
Mann-Whitney U	2641,500
Wilcoxon W	5197,500
Z	-1,119
Asymp. Sig. (2-tailed)	0,263

Appendix 34: Main Study – Endorsement H4.a: Kruskal-Wallis H Test

NULL HYPOTHESIS	TEST	SIG.	DECISION
The distribution of TP is the same across categories of Group	Independent-Samples Kruskal-Wallis Test	0,000	Reject the Null Hypothesis

XXX

Appendix 35: Main Study – Endorsement H4.a: Pairwise Comparisons

SAMPLE 1 – SAMPLE 2	TEST STATISTIC	STD. ERROR	STD. TEST STATISTIC	SIG.	ADJ. SIG.
Celebrity Expert (G1) Non-Celebrity Non-Expert (G4)	144,079	14,386	10,015	0,000	0,000
Celebrity Non-Expert (G2) Non-Celebrity Non-Expert (G4)	74,910	14,101	5,313	0,000	0,000
Non-Celebrity Expert (G3) Non-Celebrity Non-Expert (G4)	79,753	13,540	5,890	0,000	0,000

Note: Only comparisons of interest are presented

Appendix 36: Main Study – Endorsement H4.a: Descriptive Statistics

	N	MEAN	STD. DEVIATION
Celebrity Expert (G1)	66	4,8687	0,90370
Celebrity Non-Expert (G2)	71	3,9671	0,94307
Non-Celebrity Expert (G3)	83	4,0161	0,93835
Non-Celebrity Non-Expert (G4)	83	2,7912	1,36120

Appendix 37: Main Study – Endorsement H4.b: Kruskal-Wallis H Test

NULL HYPOTHESIS	TEST	SIG.	DECISION
The distribution of PI is the same across categories of Group	Independent-Samples Kruskal-Wallis Test	0,000	Reject the Null Hypothesis

Appendix 38: Main Study – Endorsement H4.b: Pairwise Comparisons

SAMPLE 1 – SAMPLE 2	TEST STATISTIC	STD. ERROR	STD. TEST STATISTIC	SIG.	ADJ. SIG.
Celebrity Expert (G1) Non-Celebrity Non-Expert (G4)	147,465	14,396	10,243	0,000	0,000
Celebrity Non-Expert (G2) Non-Celebrity Non-Expert (G4)	75,063	14,111	5,320	0,000	0,000
Non-Celebrity Expert (G3) Non-Celebrity Non-Expert (G4)	83,042	13,550	6,129	0,000	0,000

Note: Only comparisons of interest are presented

Appendix 39: Main Study – Endorsement H4.b: Descriptive Statistics

	N	MEAN	STD. DEVIATION
Celebrity Expert (G1)	66	5,4596	0,82641
Celebrity Non-Expert (G2)	71	4,4883	1,09084
Non-Celebrity Expert (G3)	83	4,5582	0,88362
Non-Celebrity Non-Expert (G4)	83	3,0843	1,45933

Appendix 40: Main Study – Sensory Marketing H5.a: Descriptive Statistics

	N	MEAN	STD. DEVIATION
Smell Stimulation (G6)	78	6,0171	0,75190
No Smell Stimulation (Control) (G7)	85	5,3765	0,93122

Appendix 41: Main Study – Sensory Marketing H5.a: Ranks

	N	MEAN RANK	SUM OF RANKS
Smell Stimulation (G6)	78	101,99	7955,50
No Smell Stimulation (Control) (G7)	85	63,65	5410,50

Appendix 42: Main Study – Sensory Marketing H5.a: Test Statistics

	TASTE PERCEPTION (TP)
Mann-Whitney U	1755,500
Wilcoxon W	5410,500
Z	-5,232
Asymp. Sig. (2-tailed)	0,000

Appendix 43: Main Study – Sensory Marketing H5.b: Descriptive Statistics

	N	MEAN	STD. DEVIATION
Smell Stimulation (G6)	78	6,4530	0,63103
No Smell Stimulation (Control) (G7)	85	5,7098	0,66426

Appendix 44: Main Study – Sensory Marketing H5.b: Ranks

	N	MEAN RANK	SUM OF RANKS
Smell Stimulation (G6)	78	106,65	8319,00
No Smell Stimulation (Control) (G7)	85	59,38	5047,00

Appendix 45: Main Study – Sensory Marketing H5.b: Test Statistics

	PURCHASE INTENTION (PI)
Mann-Whitney U	1392,000
Wilcoxon W	5047,000
Z	-6,469
Asymp. Sig. (2-tailed)	0,000

Appendix 46: Main Study – Mediation: Matrix Procedure

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 3.4 ****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
     Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : 4
    Y  : PI
    X  : Conditio
    M  : TP

Sample
Size:  544

Coding of categorical X variable for analysis:
 Conditio       X1        X2
    1,000     ,000      ,000
    2,000    1,000      ,000
    3,000     ,000     1,000

**************************************************************************
OUTCOME VARIABLE:
 TP

Model Summary
         R        R-sq        MSE          F        df1        df2          p
     ,6211       ,3857     1,2690   169,8463     2,0000   541,0000      ,0000

Model
             coeff         se          t          p       LLCI       ULCI
constant    3,8548      ,0647    59,5643      ,0000     3,7277     3,9819
X1          1,5542      ,1094    14,2036      ,0000     1,3393     1,7692
X2          2,1623      ,1430    15,1178      ,0000     1,8813     2,4433

**************************************************************************
OUTCOME VARIABLE:
 PI
```

```
Model Summary
          R       R-sq      MSE        F       df1       df2         p
       ,8645     ,7473     ,5197   532,2573   3,0000   540,0000     ,0000

Model
              coeff        se         t         p        LLCI      ULCI
constant    1,3425      ,1139    11,7913     ,0000     1,1189    1,5662
X1           ,3263      ,0821     3,9773     ,0001      ,1652     ,4875
X2           ,4403      ,1092     4,0331     ,0001      ,2258     ,6547

************************** TOTAL EFFECT MODEL **************************
OUTCOME VARIABLE:
 PI

Model Summary
          R       R-sq      MSE        F       df1       df2         p
       ,6123     ,3749    1,2832   162,2001   2,0000   541,0000     ,0000

Model
              coeff        se         t         p        LLCI      ULCI
constant    4,3344      ,0651    66,6043     ,0000     4,2066    4,4623
X1          1,5326      ,1100    13,9287     ,0000     1,3165    1,7488
X2          2,1186      ,1438    14,7297     ,0000     1,8360    2,4011

************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Relative total effects of X on Y:
          Effect        se         t         p        LLCI      ULCI
X1        1,5326      ,1100    13,9287     ,0000     1,3165    1,7488
X2        2,1186      ,1438    14,7297     ,0000     1,8360    2,4011

Omnibus test of total effect of X on Y:
    R2-chng         F        df1       df2         p
      ,3749   162,2001    2,0000   541,0000     ,0000
----------

Relative direct effects of X on Y
          Effect        se         t         p        LLCI      ULCI
X1         ,3263      ,0821     3,9773     ,0001      ,1652     ,4875
X2         ,4403      ,1092     4,0331     ,0001      ,2258     ,6547

Omnibus test of direct effect of X on Y:
    R2-chng         F        df1       df2         p
      ,0102    10,8734    2,0000   540,0000     ,0000
----------

Relative indirect effects of X on Y

 Conditio    ->    TP         ->    PI

        Effect     BootSE   BootLLCI  BootULCI
X1      1,2063      ,1108      ,9988    1,4308
X2      1,6783      ,1236     1,4387    1,9268

********************** ANALYSIS NOTES AND ERRORS **********************

Level of confidence for all confidence intervals in output:
  95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

NOTE: Variables names longer than eight characters can produce incorrect output.
      Shorter variable names are recommended.

------ END MATRIX -----
```

Appendix 47: Main Study – Mediation: Indicator Coding of Categorical X

	ENDORSEMENT (1)	CONTROL (2)	SENSORY MARKETING (3)
X_1	0	1	0
X_2	0	0	1

Appendix 48: Main Study – Mediation: Estimated Coefficients

OUTCOME:		M - TASTE PERCEPTION		Y - PURCHASE INTENTION		
		COEFFICIENT (p-value)		COEFFICIENT (p-value)		COEFFICIENT (p-value)
CONSTANT	i_1	3,8548*** (0,0000)	i_3	4,3344*** (0,0000)	i_2	1,3425*** (0,000)
X_1	a_1	1,5542*** (0,0000)	c_1	1,5326*** (0,0000)	c'_1	0,3263 *** (0,0001)
X_2	a_2	2,1623*** (0,0000)	c_2	2,1186*** (0,0000)	c'_2	0,4403*** (0,0001)
M	NA	NA	NA	NA	b	0,7762*** (0,000)

Note: p<0,05*; p<0,01**, p<0,001***

Appendix 49: Main Study – Further Results: Crosstabs (Gender*Milk Chocolate)

			1	2	3	4	5	6	7
GENDER	Male	Count	9	4	9	11	50	56	78
		Expected Count	7,2	3,8	10,7	9,7	36,2	58,0	91,4
		Adjusted Residual	0,8	0,1	-0,7	0,5	3,1	-0,4	-2,3
	Female	Count	12	7	22	17	55	112	187
		Expected Count	13,8	7,2	20,3	18,3	68,8	110,0	173,6
		Adjusted Residual	-0,8	-0,1	0,7	-0,5	-3,1	0,4	2,3
	Total	Count	21	11	31	28	105	168	265
		Expected Count	21,0	11,0	31,0	28,0	105,0	168,0	265,0

Note: 1= Dislike a Great Deal; 7= Like a Great Deal

Appendix 50: Main Study – Further Results: Chi-Square Tests (Gender*Milk Chocolate)

	VALUE	DF	ASYMPTOTIC SIGNIFICANCE (2-SIDED)
Pearson Chi-Square	12,468	6	0,048
Likelihood Ratio	12,177	6	0,054
Linear-by-Linear Association	3,650	1	0,052
N of Valid Cases	629	-	-

Appendix 51: Main Study – Further Results: Symmetric Measures (Gender*Milk Chocolate)

	VALUE	APPROXIMATE SIGNIFICANCE
Phi	0,141	0,048
Cramer's V	0,141	0,048
N of Valid Cases	629	-

Appendix 52: Main Study – Further Results: Crosstabs (Age*Milk Chocolate)

			1	2	3	4	5	6	7
AGE	*Under 18*	Count	0	0	0	0	6	5	8
		Expected Count	0,6	0,3	0,9	0,8	3,2	5,1	8,0
		Adjusted Residual	-0,8	-0,6	-1,0	-1,0	1,8	0,0	0,0
	18-24	Count	6	4	12	10	39	78	137
		Expected Count	9,5	5,0	14,1	12,7	47,7	76,4	120,5
		Adjusted Residual	-1,6	-0,6	-0,8	-1,1	-1,9	0,3	2,7
	25-34	Count	3	2	8	7	31	46	77
		Expected Count	5,8	3,0	8,6	7,7	29,0	46,5	73,3
		Adjusted Residual	-1,4	-0,7	-0,2	-0,3	0,5	-0,1	0,7
	35-44	Count	4	1	6	4	10	17	23
		Expected Count	2,2	1,1	3,2	2,9	10,9	17,4	27,4
		Adjusted Residual	1,3	-0,1	1,7	0,7	-0,3	-0,1	-1,2
	45-54	Count	4	3	4	5	14	15	14
		Expected Count	2,0	1,0	2,9	2,6	9,8	15,8	24,9
		Adjusted Residual	1,5	2,1	0,7	1,6	1,5	-0,2	-3,0
	55-64	Count	4	1	0	2	4	6	6
		Expected Count	0,8	0,4	1,1	1,0	3,8	6,1	9,7
		Adjusted Residual	3,8	1,0	-1,1	1,0	0,1	-0,1	-1,6
	65 or older	Count	0	0	1	0	1	1	0
		Expected Count	0,1	0,1	0,1	0,1	0,5	0,8	1,3
		Adjusted Residual	-0,3	-0,2	2,3	-0,4	0,8	0,3	-1,5
	Total	Count	21	11	31	28	105	168	265
		Expected Count	21,0	11,0	31,0	28,0	105,0	168,0	265,0

Note: 1= Dislike a Great Deal; 7= Like a Great Deal

Appendix 53: Main Study – Further Results: Chi-Square Tests (Age*Milk Chocolate)

	VALUE	DF	ASYMPTOTIC SIGNIFICANCE (2-SIDED)
Pearson Chi-Square	58,845	36	0,009
Likelihood Ratio	51,971	36	0,041
Linear-by-Linear Association	30,573	1	0,000
N of Valid Cases	629	-	-

Appendix 54: Main Study – Further Results: Symmetric Measures (Age*Milk Chocolate)

	VALUE	APPROXIMATE SIGNIFICANCE
Phi	0,306	0,009
Cramer's V	0,125	0,009
N of Valid Cases	629	-

Appendix 55: Main Study – Further Results: Chi-Square Tests (Education*Milk Chocolate)

	VALUE	DF	ASYMPTOTIC SIGNIFICANCE (2-SIDED)
Pearson Chi-Square	17,762	24	0,814
Likelihood Ratio	19,203	24	0,741
Linear-by-Linear Association	4,281	1	0,039
N of Valid Cases	629	-	-

Appendix 56: Main Study – Further Results: Chi-Square Tests (Income*Milk Chocolate)

	VALUE	DF	ASYMPTOTIC SIGNIFICANCE (2-SIDED)
Pearson Chi-Square	55,850	48	0,204
Likelihood Ratio	46,902	48	0,518
Linear-by-Linear Association	8,824	1	0,003
N of Valid Cases	629	-	-

Appendix 57: Main Study – Further Results: Spearman's Correlation

			DARK CHOCOLATE	MILK CHOCOLATE	WHITE CHOCOLATE	RUBY CHOCOLATE
SPEARMAN'S RHO	DARK CHOCOLAT	Correlation Coefficient	1,000	-0,196***	-0,239***	0,136**
		Sig.	-	0,000	0,000	0,001
		N	629	629	629	629
	MILK CHOCOLAT	Correlation Coefficient	-0,196**	1,000	0,329**	0,141**
		Sig.	0,000	-	0,000	0,000
		N	629	629	629	629
	WHITE CHOCOLAT	Correlation Coefficient	-0,239***	0,329***	1,000	0,214***
		Sig.	0,000	0,000	-	0,000
		N	629	629	629	629
	RUBY CHOCOLAT	Correlation Coefficient	0,136**	0,141***	0,214***	1,000
		Sig.	0,001	0,000	0,000	-
		N	629	629	629	629

Note: p<0,05*; p<0,01**, p<0,001***