UNIVERSITAT DE BARCELONA

Communicating healthy nutrition among young people: Innovative techniques to measure the efficacy of alternative media and messages

María Eugenia Laureckis Mollà

PhD in Business

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Thesis title:

Communicating healthy nutrition among young people: Innovative techniques to measure the efficacy of alternative media and messages

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A mi padre, Dr. Antonio Gaspar Laureckis Mosainer,
en honor a su memoria, pero, sobre todo, a su legado.

Es para ti papá.
No he sido capaz de terminarla para que la veas,
pero desde dónde estés, es para ti.

Acknowledgments / Agradecimientos

Escribir esta parte es tal vez, lo más esperado. Durante mucho tiempo, uno sueña con esta página que ahora está en blanco y poder llenarla. A lo largo de los años son tantas las personas y las enseñanzas que uno teme olvidarse y hasta parecer injusto.

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A mi querida "maestra", Silvia López Martínez porque tengo la suerte de contar con sus sabios consejos día tras día.

Y habiendo llegado hasta aquí, no puedo menos que agradecer profundamente a mis dos Directoras de Tesis todo el trabajo que han hecho. Seguramente la dirección de esta tesis ha sido todo un desafío desde sus inicios. Por eso, quiero agradecer a la Doctora Küster por confiar en mí a ciegas y desde el primer día. A la Doctora Vila por sumarse sin pensarlo. A ambas, por haber sido mis mentoras y mis guías en todo este proceso. Me han premiado con una generosidad fuera de lo común y se han involucrado personalmente como creo que no han hecho con ningún otro alumno que han tenido. Han sido capaces de mantener la motivación para dar siempre un paso más hacia la meta, a pesar de que a veces, -creo- que ninguna de las tres pensaba que sería posible.

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Introduction

Imagination is the beginning of creation.

You imagine what you desire, you will what you imagine and

at last, you create what you will.

George Bernard Shaw

Presentation

The present thesis chapter presents the study of Millennials´ attitudinal and emotional effects on the perceptions towards advertising in social media and the consequent impact on the effectiveness of the message in that context of communication.
In this sense, in the present thesis, the role of the subject´s attitudes toward advertising in social networks is determinant to measure the effectiveness of the message in social networks and then, their purchase intention or their recommendation among peers, so common for young consumers, the so-called Millennials. The term Millennials is used to define a segment of the society born between 1980 and 2000 and the world´s first generational cohort raised with the Internet (Howe & Strauss, 2009).

The main contribution of the present thesis is to approach a new market segment that is globally recognized as the new young consumers. A new generation that has influenced and is being influenced by technological advances. Millennials are, with their particular perception of their own reality, game-changers in the marketing field.

Millennials are special for marketers because of their economic power, specifically, because they are early adopters of technology, they influence other cohort´s consumption, they are used to share brand preferences over the social media, they want to participate and co-create advertising content and they do not rely on conventional mass communication (Laurie, et al., 2019). Millennials are unique, they are an influential consumer group as they represent a large affluent market segment (Küster et al., 2019) and whose behaviour is often discussed but not fully understood (Valentine & Powers, 2013) and research on them is still scarce (Tarabashkina et al., 2016; Küster et al., 2019).

In recent years, technology has changed consumers´ lives and, also, it has changed the way companies do business and approach their marketing activities. As a matter of fact, marketers have now access to huge amount of data that might be useful for decision-making (Arenas-Gaitán et al., 2019). Technology provides a platform for personalization and immediate gratification. Millennials are more active in integrating technologies into their daily lives using mobile devices and traditional Internet. For Millennials the buying process is a time for joy and loyalty to brands, is relative for them, as they are very sensitive to electronic word-of-mouth (eWOM) advertising because it is considered more credible than traditional advertising (Moreno et al., 2017).

Advertising avoidance has been one of the strongest obstacles for advertisers and marketers. Ducoffe Web Advertising Model (Ducoffe, 1996) is a well-defined theoretical framework to predict attitudes toward advertising and evaluate consumer options (Nyheim et al., 2015). The present thesis focuses, mainly, on the foundations of this model and creates a new one based on it to be tested and adjusted.

The approach integrates traditional research techniques (in this case, a questionnaire) with innovative techniques (such as ones usually performed in neuromarketing studies) that could bring added value to the present work. Traditional research methods for testing and predicting advertising effectiveness depend on consumers´ willingness to describe how they feel when exposed to an advertising piece (Morin, 2011).

On the other hand, advertising and marketing professionals are more and more showing their interest in new innovative techniques that help them to create effective marketing campaigns. In this sense, Neuromarketing techniques offer cutting-edge methods without requiring demanding cognitive or conscious participation, to counter the limitations of the traditional approaches (Hsu, 2017). Furthermore, neuromarketing methods are becoming more and more common not only at the academic level but also at the company level, too.

Regarding the objectives pursued, there are two broad ones:

I. Create a model to test advertising effectiveness on social networks oriented to highlight attitudinal and emotional variables on Millennials’ perceptions.

II. The use of innovative techniques to test the proposed model

And those broad objectives can be divided into two groups of objectives – general and specific ones – as follows:

Regarding the *general objectives*, from a marketing perspective the present thesis tries:

(1) to get closer to the new generations of young people (called Millennials) (Kraft &Weber, 2012);

(2) to understand how companies must shape their messages to reach these new generations (Sweeney, 2006) amid the digital environment; and

(3) to make an alert on the risks for the future of (somehow) unhealthy food (Rubio, 2002).

Related to the *specific objectives*, this research tries:

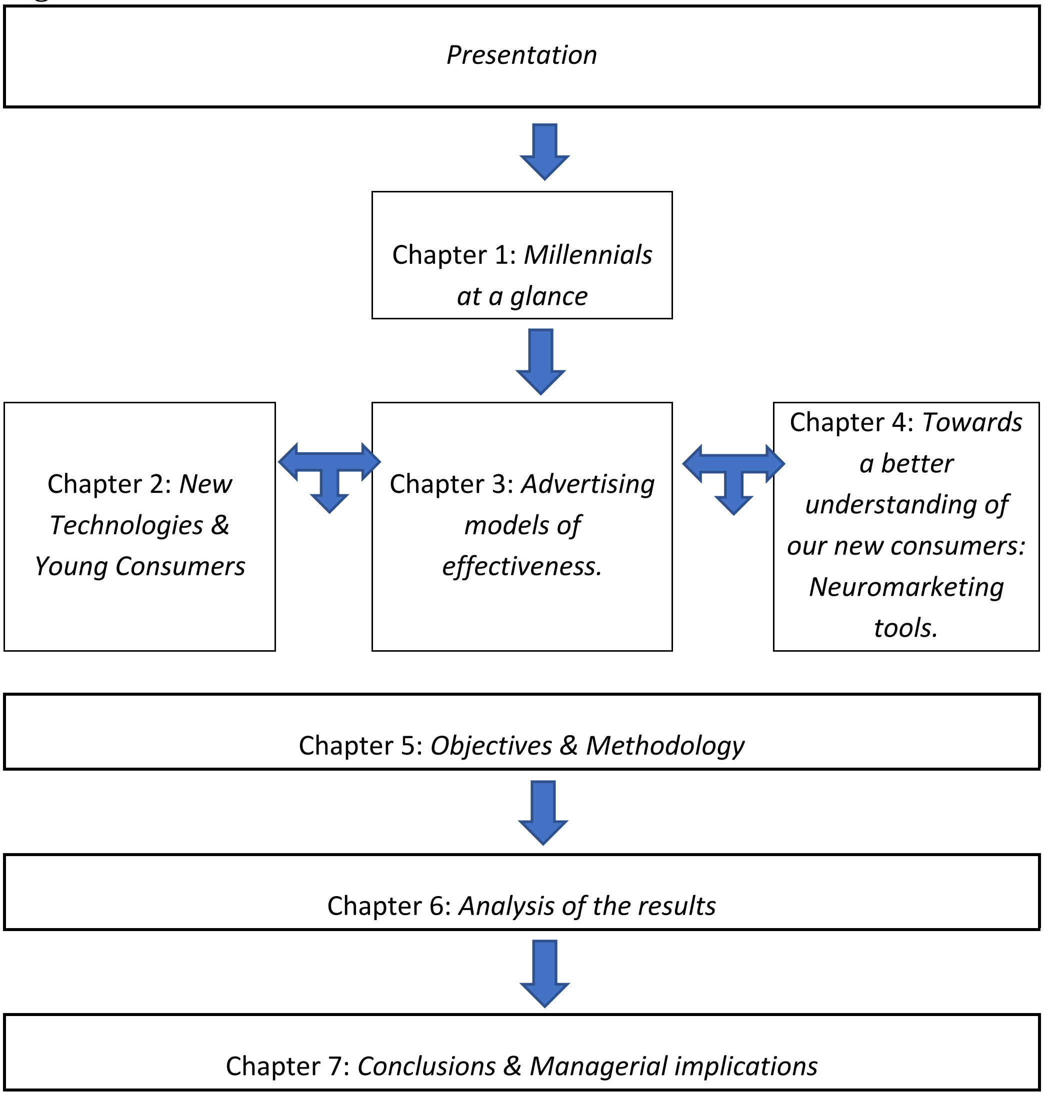
(1) to analyses the use of innovative techniques to know in deep how this young generation respond food messages (Küster & Vila, 2013);

(2) to find the critical factors on the election and or preference of healthy food (Story et. Al., 2008); and

(3) to promote the use of innovative marketing techniques to properly design food communication (Küster & Vila, 2013; Story et al., 2018);

In relation to the structure of the thesis, Figure 0.1 explains it.

Figure 0.1. Structure of the thesis



Source: own elaboration

The present thesis begins with a brief presentation of the work being done and it is divided into three main parts: the first is the theoretical part that includes chapters 1 to 4 in which revision of literature is being done. The second part includes the empirical research and comprises chapter 5 where the methodology is detailed, and the third part includes the analysis of results and managerial implications in chapters 6 & 7.

In relation with each chapter, it is organized as follows:

Chapter 1 is an introduction to the topic where the Millennials cohort is introduced: who they are, how they behave in general terms, the economic importance they represent and the opportunities and potential threats from a marketing perspective.

Chapter 2 is related to the digital environment where Millennials get used to feeling comfortable with. Furthermore, a revision of literature highlighting the strengths and challenges of targeting communication to this market segment and how the digital environment creates a new structure for marketing communication.

Chapter 3 revises some of the main theories related to advertising effectiveness. This chapter implies the revision of the most relevant communication models to create one based on the previous revised.

Chapter 4 revises the literature on the most commonly used neuromarketing techniques and their application to advertising to shape effective messages.

Chapter 5 describes the objectives and methodology employed in the empirical part.

Chapter 6 describes in detail the analysis and the results obtained in the empirical part.

Chapter 7 is dedicated to the conclusions, the managerial implications and the limitations found after data analysis.

Chapter 1

Millennials at a glance

Markets always change faster than marketing

Philip Kotler

1.1. Introduction

To a better understanding of the present thesis, this chapter describes Generation Y, more commonly found in literature as “Millennials”. The main objective of this chapter is to present a big picture of how this generation is, how they are adapting to advances in technology and shaping new forms of relationship among the environment surrounding them. Furthermore, the evolutionary terms of this cohort, their importance and finally, a balance between the opportunities they can open to marketers and organizations and the criticism of certain common attitudes among this group of young people. In this sense, the main body of this chapter is centred on understanding how this generation is, and how they react with a major aim to understand them and to be able to predict their attitudes for better communication purposes and for their own benefit as young consumers.

To begin with, demographers declare that generational cohorts share cultural, political and economic experiences, and similar outlooks and values (Kotler & Keller, 2006; Reisenwitz & Iyer 2009). As Market (2014) states, there is a wide variety of demographics to detail a group´s size and to classify their behaviour, being age the most frequently utilized. To determine their size and way of living, it is common to mark off a generation, often with a range that goes from seven to ten years upward to twenty years. And, as it can be seen, the limits are approximate. The problem is how to define exactly what is limit for a generation instead of categorizing them as sharing historical orientation that affects their behaviour (Market, 2014).

The term, Generation Y, was first coined in 1991 by William Strauss and Neil Howe (Strauss & Howe, 1991). Some other names for this generation are Echo Boomers, the Millennium Generation, Generation Next (Durkin 2008), the Net Generation (Tyler, 2008) and Generation Why? (Reed, 2007; Reisenwitz & Iyer, 2009). Given their characteristics and what they lived, such as technological advances and globalization, some other authors defined them as Generation Y, Millennials, Millennials Generation, Nexters, and The Nexus Generation (Barnard et al., 1998; Zemke et al., 2000; Burke & Ng, 2006; Ng et al., 2010; Taylor & Keeter, 2010). However, the term Millennial has become very popular in literature (Ng et al., 2010). The Millennials, or the Millennial Generation, are also known as Peter Pan or Boomerang Generation due to their propensity to move back with their parents perhaps due to their economic situation, but also to their trend to delay adulthood (Main, 2013).

The term Millennial generally refers to the generation of people born between the 1980s and 2000s (Main, 2013). To determine their size and way of living, it is common to mark off a generation, often with a range that goes from seven to ten years upward to twenty years. And, as it can be seen, the limits are approximate. The problem is how to define exactly what is limited for a generation instead of categorizing them as sharing historical orientation that affects their behaviour (Market, 2014).

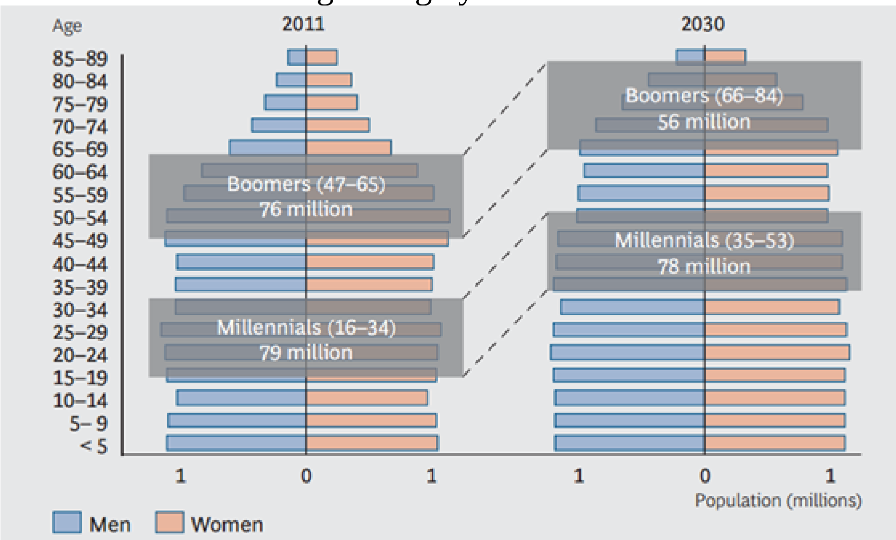
There is not a definitive beginning date nor a specific ending date for this demographic group, however, most scholars refer to a period ranging from the 1980s to the early 2000s (Gözükara & Çolakoğlu, 2016). As an example, Sullivan & Heitmeyer (2008) defined this demographic cohort as born between 1977 and 1994, while Zemke et al., (2000) as 1980 and 2000, and Strauss & Howe (2000) as 1982 and 2004 (Gözükara & Çolakoğlu, 2016).

The most known and probably precise academic research might be the one by Strauss and Howe, (2000) that situates this cohort between 1982 to roughly 2005 (Howe & Strauss, 2007).

According to the literature, the number of persons included in each of the generational cohorts varies widely. Baby boomers' number 72 million, members of Generation X number 17 million, and Generation Y –Millennials- is over three times that number, at 60 million. (Taylor & Keeter, 2010). In contrast, Levine (2008) states that baby boomers' number 77.5 million, Generation X number 48 million, and Generation Y –Millennials- number 30 million (Reisenwitz & Iyer 2009). Part of the discrepancy may be due to the way cohorts are defined by academia. Although there is much consensus on the birth dates for Matures (prior to 1946) and baby boomers (1946-64), there are variations for Generation X and Generation Y –Millennials- (Macky et al., 2008; Market, 2014). Some authors define those born during 1965-1976 as Generation X and from 1977 to 1988 for Generation Y or Millennials (Chowdhury & Coulter, 2006; Lescohier, 2006; Reisenwitz & Iyer, 2009). Some others are putting the boundaries of ach generation as Generation X, those born from 1965 to 1980 and Generation Y –Millennials- for those born from 1980 to 2000 (Taylor & Keeter, 2010).

As we can see in Figure 1.1. the number of Millennials grew from 2011 to 2030 in the United States.

Figure 1.1. U.S. Millennials growing by 2030



Source: Barton et al., (2012)

Going along in the literature, we found out that Millennials have been characterized in different ways (Main, 2013). On the negative side, being described as lazy, narcissistic and with a lack of commitment to their jobs (Main, 2013; Stein, 2013). However, on the positive side and changing the perspective, they are the most connected generation ever, so their commitment to their job is not necessarily linked to the place of work but more to the technological devices they use to work (Stein, 2013). Other authors, describe them as confident, connected and open to change (Taylor & Keeter, 2010).

And, what if the answer lies between both positions? Then, in the following epigraphs, we will deepen on how Millennials are defined by different angles of academic literature with the aim to enrich our vision of how this cohort is perceived by the ones that surround them and also by themselves.

1.2. Millennials in the marketing literature: Millennials at a glance

In this section, we are going to review academic literature to take a panoramic picture of how this generation can be defined by the different approaches between marketing academics, about how they are and how this generation perceives themselves.

As Strauss & Howe (1991) states in their famous book "Generations: The history of America's future, 1584 to 2069" referring to this new cohort: even the timing of this new generation is historic (Strauss & Howe, 1991).

To define a generation, some authors theorized generational cohorts are shaped by events that occur during their formative years of childhood, adolescence and young adulthood (Twenge et al., 2012). Adding that, cultures shape individuals and individuals shape cultures (Morling & Lemereaux, 2008). Cultural changes happen gradually, and so do generational changes (Twenge et al., 2012). And a cohort is defined as a "groups of individuals who are born during the same time period, travel life together and experience similar external events during their late adolescent/early adulthood years" (Schewe & Meredith, 2004, p. 51). Although there is a nuance in both definitions, past research shows that both terms are used indistinctly.

Table 1.1. shows the name of the generations and the boundaries in time from each of them, in other words, generations born between certain decades.

Table 1.1. Names of the generations and years comprising each generation

Name Generation	Born from and until
Millennials	Born after 1980; the first generation to come of age in the new Millennium.
Generation X	Born from 1965 through 1980.
Baby Boomers	Born from 1946, right after World War II and ended in 1964 abruptly.
Silent Generation	From 1928 through 1945.
The Greatest Generation	Those born before 1928.

Source: Taylor & Keeter (2010).

Birth numbers are only one factor (and not always a critical one) in locating a generation along the time. When drawn correctly, generational birth years should indicate the boundaries for each generational characteristic. In fact, it is a distinctly human, and variable, creation embodying attitudes about family life, gender roles, institutions, politics, religion, culture, lifestyle, and the future. A generation can think, feel or do anything a person might think, feel or do (Strauss & Howe, 2009). Strauss & Howe (1991) introduced the idea of generations and defined a generation as “a cohort group whose length approximates the span of a phase of life and whose boundaries are fixed by peer personality” (p. 60). According to them, a generation is defined as a group moving through time that is shaped by events of their lifetime (Strauss & Howe, 1991). These defining events affect the behaviours, attitudes, and beliefs of the members of a generation (Keeling, 2003).

In a context of change, it has born and bred a new generation surrounded by computers, mobile phones, game consoles, MP3... and the Internet: their essential vehicle of information, but above all of entertainment. They are the digital natives, a name that brings to those whom Internet exists since they can remember. To make it more tangible, they are those young people who has not known a world without the Internet, neither without computers or laptops, and of course, nor a world without a mobile phone (Blanco et al., 2016). These digital natives or so-called "Millennials" by Strauss & Howe (1991) are followed by the next generation: young men born between 1985 and 2000 for which the technology has formed and is part of their everyday life (Aldea et al; 2011). The nuance is important: they do not know how life is without the Internet.

In February of 2010, the Pew Research Center (Taylor & Keeter, 2010) released a report on the “Generation Y” or the “Millennials”. The Pew Research Center, as stated in their web site is “a nonpartisan fact tank that informs the public about the issues, attitudes and trends shaping America and the world”. They “conduct public opinion polling, demographic research, content analysis and other data-driven social science research”, not taking “policy positions”. The report provides an optimistic look at the Millennial generation or Millennials, and describes these young adults as “confident, connected, and open to change.”

On the other, Table 1.2. shows a summary of the main characteristics and what makes unique each of the analysed generations such as Millennials, Generation X, Baby boomers and Silent Generation.

Table 1.2. What Makes this Generation Unique?

	Millennial	**Generation X**	**Baby boomers**	**Silent**
1	Tech Use (24%)	Tech use (12%)	Work Ethic (17%)	World War II (14%)
2	Pop Culture (11%)	Work Ethic (11%)	Respectful (14%)	Smarter (13%)
3	Tolerant (7%)	Traditional (7%)	Morals (8%)	Honest (12%)
4	Smarter (6%)	Smarter (6%)	Baby Bommer (6%)	Work Ethic (10%)
5	Clothes (5%)	Respectful (5%)	Smarter (5%)	Morals (10%)

Source: Based on Pew Reserch Center. Taylor & Keeter (2010); own elaboration.

Note: "Based on respondents who said their generation was unique/distinct. Items represent individual, open ended responses. Top five responses are shown for each age group. Sample sizes for sub-groups are as follows: Millennials, n=527; Gen X, n=173; Boomers, n=283; Silent, n=205" (Pew Research Center, Taylor & Keeter, 2010).

According to Pew Research (Taylor & Keeter, 2010), there are five distinctive features that made them different from other generations. In concrete, they are the following: Tech Use (24%); Pop Culture (11%); Tolerant (7%); Smarter (6%); Clothes (5%). Probably the most prominent is the use of tech. Millennials' technological exposure made them fuse their social lives with it. Furthermore, there are big generation gaps in the use of wireless technology, playing video games and posting self-created videos online (Taylor & Keeter, 2010). For Millennials technology makes life easier and brings family and friends closer. (Taylor & Keeter, 2010).

From another point of view, literature has added three main peculiarities of this generation that have been explained by Howe & Strauss (2009 p. 41-46):

1. *"Perceived membership*: generational self-perception begins to dawn during adolescence and typically takes full shape during and immediately after collegiate, military, marriage, or initial work experience.
2. *Common beliefs and behaviors*: Millennials will be a generation of trends in which all of their traits will grow more obvious with each passing birth cohort.
3. *Common location in history*: At any given age, a rising generation defines itself against a backdrop of contemporary trends and events. For Millennials, technology rules, markets are global, government is impotent, and the gap between rich and poor is always widening".

The experiences that Millennials have not personally known, also define them. On one hand, they´ve never know what it was like to eat food without vitamin additives, entertain themselves without electronic games of immense complexity or write without the Internet or word processor for example (Howe & Strauss, 2009). Furthermore, and according to other authors, the Millennial generation has seven distinguishing traits: “special, sheltered, confident, team-oriented, achieving, pressured, and conventional” (Keeling, 2003; p. 31). This generation is particularly different from previous ones, which makes them unique. The Millennial generation is characterized as being protected, by both their parents and society, and they are driven to improve the world around them by their virtue. This generation is “possessed of rational minds, a positive attitude, and selfless team virtue” (Keeling, 2003, p. 31).

On the other hand, they have been described also as a generation of “self-interested, narcissistic, locked into youth concerns, demanding, impatient, rude, and possessing short attention spans" (Hoover, 2009; Lane & Lewis, 2010).

Millennials want to live lives that are less structured and allow more time for themselves. They have the view that there is more to life than to work. This generation is very connected to their friends and other relations; they can communicate at any time, from anywhere, and in various forms (Smith, 2011). They are hyper-connected and used to sharing more personal information than ever on social media. And with the increase of Smartphones, they can access any type of social network at any site and any time (Wickel, 2015).

The prestigious magazine *Time* published an article called “Millennials: The Me Me Me Generation” authored by Stein, (2013) where the data is clear enough and explains it by itself, that 58% of college students scored higher on a narcissism scale in 2009 than in 1982. According to the article, the incidence of narcissistic personality disorder is nearly three times higher among people in their 20s than the ones of the generation that are now 65 or older, according to the National Institute of Health. The article also states some shocking facts, such as the one that Millennials are fame-obsessed (Stein, 2013). Furthermore, and following this line, Millennials are convinced of their own greatness and 40% believe they should be promoted every two years, regardless of their performance (Stein, 2013). The article also sheds light on the issue of globalization of this generation. Although Millennials are different, because of globalization, social media, the exporting of Western culture and the speed of change, Millennials worldwide are more like one another than older generations in their nations (Stein, 2013)

Furthermore, the article also mentions that Millennials are lacking of empathy to understand others but it also states that, Millennials have trouble even intellectually understanding others' points of view (Stein, 2013). As a matter of fact, the article also states that Millennials are not only the biggest generation ever known but maybe the last large birth grouping that will be easy to generalize about (Stein, 2013). To conclude with, the author states that there are already microgenerations within the Millennial group, and the group after millennials is likely to be even more empowered (Stein, 2013).

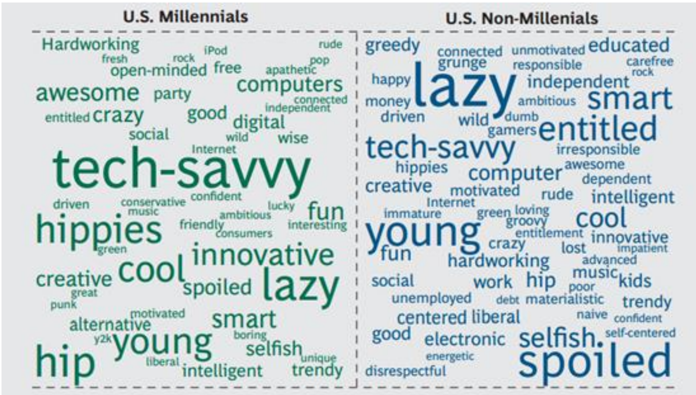
However, there are also some differences and criticism towards Millennials from elder people. They perceive younger people as having poor communication skills (Deal et al., 2010). Beyond the use of language, older people (mostly Boomers) complaint that younger people (mostly Millennials) are difficult to interact with (Hira, 2007; Myers & Sadaghiani, 2010; Deal et al., 2010)

Some authors believe that younger generations are more likely to think highly of themselves and have high expectations (Tweenge et al., 2012). In relation to narcissism, some authors (Twenge et al., 2008; Twenge & Foster, 2010; Twenge et al., 2012) considered that younger generations –especially Millennials- score higher on narcissism often characterized by overconfidence and a high sense of self.

Although, there is a lot being said about their self-centeredness, narcissism, immaturity, deferred adulthood, and laziness (Kuhl, 2014) and without changing their point of view, it is easy to assume they are not committed to working hard as they do not follow the traditional 9 to 5 working day schedule. However, it is fair also to understand that this generation is the first to be immersed in the 24/7 world of business through their smart devices and wireless Internet (Kuhl, 2014). Not being physically in the office might not be a synonym for laziness.

Nevertheless, the members of this generation generally use negative terms such as wasteful, impatient or egotistical to define themselves (Gözükara & Çolakoğlu, 2016). As shown in the report by Pew Research Center in 2015 “Most Millennials Resist the ‘Millennial’ Label” (Doherty et al., 2015), this generation is “far more likely than older generations” to use terms such as “self-absorbed,” “wasteful,” and “greedy” to define their own generation. This might show how significantly more critical they are of their own generation than older ones are with theirs (Doherty et al., 2015). In Figure 1.2., we can see a how Millennials view themselves more positively than Non-Millennials do. However, they are more likely to characterize their generation as “idealistic” (Doherty et al., 2015). At the end of the day, and unfortunately much of what is known about Millennials is based on different stereotypes (Waldrop & Grawich, 2011).

Figure 1.2. U.S. Millennials view themselves more positively than Non-Millennials do.



Source: BBC Analysis, Barton et al., (2012).
Note: the size of words indicates frequency of response.

As shown in the literature review, Millennials are recognized as tech-savvy. However, the Boston Consulting Group Report "The Millennial consumer: debunking stereotypes” (Barton et al., 2012b), found a variety of unique behaviours and attitudes from this generation:

a. They want instant gratification. They put a premium on speed, ease, efficiency and convenience in all their transactions. To meet their needs, companies need to rethink their existing customer-service models. Millennials are always in a hurry so, it´s critical to determine how companies can get them to spend time developing a relationship with brands.

b. For Millennials, an expert is a person with credibility to recommend brands, products and services not someone with professional or academic credentials, ideally a peer or close friend. Millennials tend to see multiple sources of information, especially from friends before making purchases using social media to amplify the voice of individual consumers. Messages are quickly spread and reinforced. Companies should consider credible brand endorsement as advocates can be beneficial to strengthen the brand image, but the wrong ones can be detrimental.
c. Millennials use technology to connect with other people in real time. They want to be up-to-date, and they feel validated when the community reacts to their posts. The desire to share experiences is not only for online but also extends to the offline environment.

To continue with and to highlight the main characteristics of this generation through the revision of academic literature and past research, and to categorize them in some way, the next three, summarize the main points. These three main blocks are not independent of one of the others, it is exactly the other way round. They are all interrelated one from each other, taking a whole picture of this cohort from different angles.

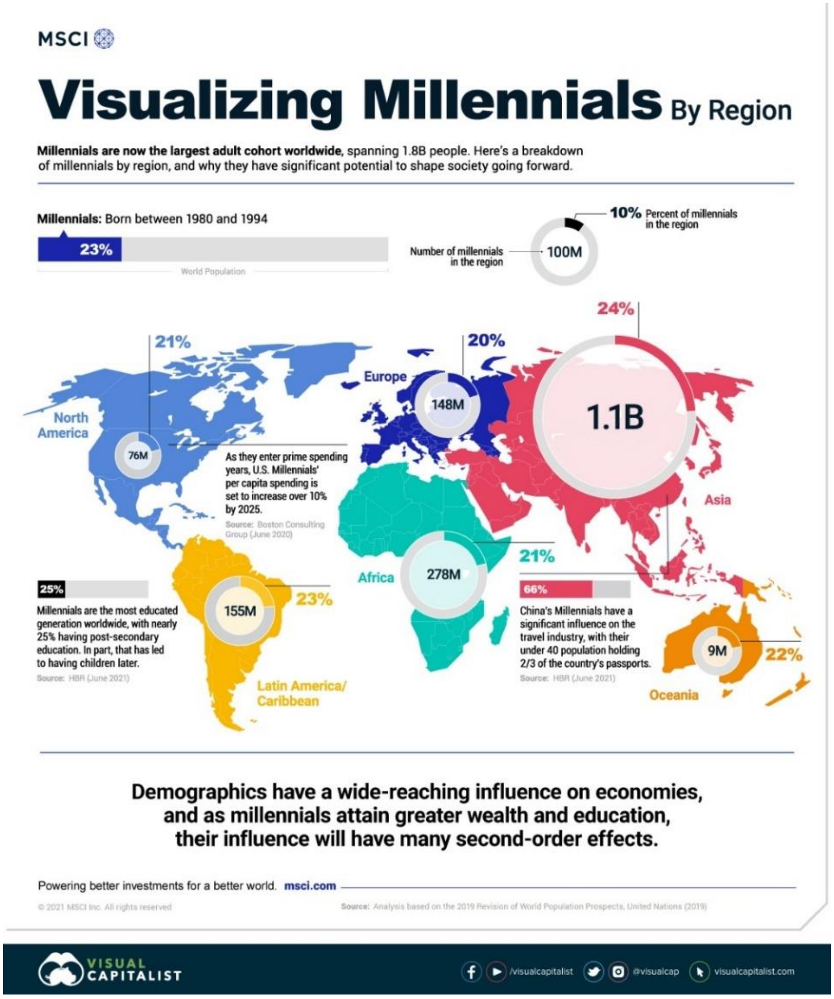
i. The ***economic importance or impact*** of this cohort: their growing purchasing power, how big the cohort is in relation to the previous generation and how the use of technology has an economic impact (Moreno et al., 2017).
ii. Their ***particular behaviour*** and, in other words, the main characteristics on how they perceive the world they live in. Some of them, but not all, include their expectation of immediacy as they are seeking for instant gratification (Anderson & Ranie, 2012), their learning attitude to take less time to reach conclusions and to get easily bored and their desire to share their experiences through technology (Thompson, 2013). To fuel the debate on how Millennials perceive themselves and how they are perceived by others.
iii. From a **marketing perspective**, what we know about them and how to address them. This highly educated cohort is more aware of marketing tactics, they are more skeptical about advertising and more impulsive in their purchases (Lissitsa & Kol, 2016). But, still, due to their purchasing power, they are very attractive to companies, and they

represent portions of markets, that companies do not want to let go easily.

i. Economic importance or impact of this cohort

Regarding the economic impact, and to give an idea of the magnitude of this generation, according to the World Economic Forum, there are 1.8 billion around the world, equal to 23% of the global population. (Neufeld, 2021) and there were roughly 80 million Millennials only in the United States (Donnelly & Scaff, 2013). Figure 1.3. shows a big picture of Millennials around the world as detailed above.

Figure 1.3. Millennials around the world.



Source: Neufeld (2021)

The importance of Millennials might lay in the fact that they are the biggest generational group since the Baby boomers. Some researchers suggest that Millennials are more than three times Generation X and they represent the larger consumer market in America since Baby Boomers (Moreno et al., 2017). They spend, each year, approximately $600 billion each (Donnelly & Scaff, 2013). And their projected spending by 2020 will grow to $1.4 trillion annually and represent 30 per cent of total retail sales (Donnelly & Scaff, 2013).

According to Pew Research, the Millennial population is projected to peak in 2036 at 81.1 million (Fyr, 2016) being bigger than Baby Boomers. Millennials purchasing power is increasing and it is estimated that Millennials represent US$ 1.3 trillion dollars of spending influence in the US marketplace (Peregrin, 2015). From a consumer perspective, Millennial shoppers currently spend $600 billion a year (Donnelly & Scaff, 2013).

This generation was born into a period of general economic growth and expanding prosperity and the importance of this generation lies in the different evolution from previous ones. Millennials are a unique and influential consumer group whose behaviour is not fully understood (Noble et al., 2009; Drake-Bridges & Burgess, 2010; Racolta-Paina & Luca, 2010; Smith, 2012).

ii. Millennial's behaviour

Regarding their behaviour and particular relation with technology, one way to describe this trend is the emergence of attitudes and aptitudes of students who have grown up with technology or have spent significant amounts of time with it, from the ones who rarely use it (Oblinger, 2003). In this sense, computers are not only technology for the ones that have never known life without computers or the Internet. For them, they are part of their life. They use the latest technology to be constantly entertained and connected and to do "multi-tasking" (Dickey & Lewis, 2010). Multitasking is, on one hand, a way of life for them but also, on the other, it may be a response to information overload. They feel comfortable when engaged in multiple activities, simultaneously (Oblinger, 2003).

Likewise, some experts on technology and academics have cited that, "Millennials will benefit and suffer due to their hyperconnected lives" (Anderson & Rainie, 2012 p.1.) showed concern for some negative effects this hyperconnnection can have. Some of them are for example, "in need for instant gratification, loss of patience" among others (Anderson & Rainie, 2012 p.1) or they prefer to move quickly from a task to another and to get such instant gratification (Barnes, 2009). Some authors like Dickey & Lewis (2010) argue that most part of their parents have given them much of what they want along their life and –consequently- Millennials might became easily bored or frustrated with outdated technologies (Dickey & Lewis, 2010). Furthermore, they share concerns about changes in human attention among those who are spending most of their day with the influence of hyperconnectivity. According to Anderson & Ranie, "the impact of a future 're-wiring' due to the multitasking and short-term mindset will be mostly negative not because it will reflect changes in the physical nature of thinking, but because the social incentives for deep engagement will erode" (Anderson & Rainie, 2012 p. 1). The expectation of immediacy, quick access to media or to answers in emails or even answers to their questions, might take less time to get to conclusions and to do deep research on any topic (Anderson & Rainie, 2012 p. 1).

In fact, this cohort has not experienced the world without digital interactive technology. Moreover, technology diversification drives universal homogeneity among Millennials, although they are different from other generations (Smith, 2011). This results in a hypothetical global cohort that supposedly displays analogous attitudes and behaviour (Duffett, 2015). "But, as a group, Millennials are, unlike any other youth generation in living memory. They are numerous, more affluent, better educated and more ethnically diverse" (Howe & Strauss, 2009, p. 298) and they are more racially diverse (Smith, 2011).

Technological innovation has grown at an unprecedented rate over the past couple of decades, especially in terms of online social media platforms (Duffet, 2015). Accordingly, Millennials have been exposed to an explosion of online technological applications that have been incorporated into nearly every facet of their daily existence (Duffet, 2015); and they have been labelled by some authors as "digital natives" (DeVaney, 2015) because the

Internet was available since they were children or adolescents (Twenge et al., 2012).

For some authors, the Internet has affected the Millennial generation in various ways. Millennials are investigative, and freely expressive and they need to control their environment. Again, the Internet had a part in promoting this sense of control (Smith, 2011). They manage their own reputation (Wickel, 2015) and they manage technology at a level of expertise even though they can be simply users.

iii. Millennials from a Marketing perspective

Their size and buying power are making them attractive targets for many consumer industries. Millennials, especially those who are studying at higher education, represent a particularly lucrative target market because it might be correlated with the increased earning potential (Duffet, 2015). As a matter of fact, Millennials are the youngest generation in today´s workforce (Twenge et al., 2012).

From a marketing perspective, and because they are wealthier and different from previous generations, marketers need to understand how to market to them (Lodes & Buff, 2009). Moreover, they have a buying power that makes them attractive to many companies (Smith, 2012). This group represents a challenge for marketers and due to their purchasing power and growing influence, they represent a lot of opportunities for brands (Browm, 2016). Furthermore, technology has radically changed the way that brands interact with consumers (Brown, 2016); somehow as an advice, marketers need to keep up with technological advances to effectively communicate and connect with this generation (Barnes, 2009). As the influence of the millennial population continues to grow, there is an increased demand for effective marketing techniques and methods for reaching them in an effective way (Brown, 2016).

On one side, this generation trusts certain authority, but on the other, they are sceptical of advertising (Lodes & Buff, 2009). In fact, they question advertising as they perceive it as misleading (Lodes & Buff, 2009).

Millennials live in permanent connection to the Internet and most of them have mobiles. According to Aldea et al., (2011), in 2008; 95% of this generation in Spain had mobile and in 2020; 94% of US Millennial population had smartphones. They control which television channels and Internet pages they navigate on. Their media consumption does not respond to the traditional formulas. They are active audiences, and they want –not only- to choose but also to participate and to be part of them (Aldea et al., 2011).

Millennials are a difficult group that represents a multitude of demographic, and they generate multitude of challenges for marketers and promising opportunities for brands. Going through the academic literature, we find some proven strategies that might change the way Millennials are addressed by companies or brands.

Millennials will directly impact society and the economy through their work habits, purchase decisions, investment strategies, and general ways of life. This generation represents a market segment that is too large to be ignored (Dickey & Lewis, 2010). Millennials´ expectations are different from the previous generations and companies will need to rethink their brands, business models, products and services and marketing accordingly to address them (Barton et al., 2012).

Although Millennials are very savvy online customers and they feel very comfortable with technology, they still prefer to visit stores (Donnelly & Scaff, 2013). However, it is not that only Millennials are changing their own shopping behaviours. Their parents are increasingly imitating the demands of their children as long as they are climbing in the digital learning curve (Donnelly & Scaff, 2013). Furthermore, Millennials demand a customer-centric experience, tailored to what they want or need. In other words, they want to feel they are treated as valued customers (Donnelly & Scaff, 2013). And, this evolution, might probably change the retail environment, and big changes across entire organizations that are still either unprepared or unwilling to make (Donnelly & Scaff, 2013).

Millennials have grown up in an age of instant communications and media saturation (Valentine & Powers, 2016). They are not as influenced by traditional media as previous generations (Valentine & Powers, 2016). Millennials are labelled as multitasking people and their Internet consumption is exceeding television consumption (Reisenwitz, & Yer, 2009). Due to their ability to easily access information, Millennials are highly educated and they usually made prior research on the topic and they are also aware of the marketing tactics (Lissitsa & Kol, 2016). According to previous research, Millennials are making faster decisions with less deliberation, which makes them more impulsive while purchasing (Lissitsa & Kol, 2016).

As Hamid et al., (2022) state, the information quality in social media has been found as a key factor affecting trust on political topics in social media. In addition, Millennials are more committed with the planet. They consider that working for causes is a part of their life. They are more receptive to purchasing items associated with particular causes and they are likely to volunteer (Barton et al., 2012). On the other hand, and even though, they are egocentric with a global viewpoint and overall tech-savvies, they show two attitudes that seem to be more life-stage specific: they live the moment and make decisions in the last minute and the desire of getting help for doing big changes –like changing the world- rather than to act alone (Barton et al., 2012).

The constant interaction with the digital environment makes them wait for immediate responses or instant gratification as they have high standards for speed of access to information or even feedback and making them impatient and intolerant to any delay (Veiga, et al., 2017).

Millennials are the first digital native generation that are comfortable with technology and concerned about healthy food choices (Mendini et al., 2021). Millennials use their social media to share their experiences with friends, family and to discuss their opinions with other people or sharing their views with other Millennials (Shipman, 2020). These activities not only shape their values and beliefs but also affect their food choices and purchase decisions (Shipman, 2020). They are always looking for new things and eating means for them a way to express themselves and to acquire new experiences. Food for them is a reason for socializing in a highly digitalized era (Shipman, 2020). This generation is very fond of social networks, as they not only set new trends but also follow other social media users´ opinions (Shipman, 2020). The technological revolution had a powerful impact in terms of food values and consumption of this generation, in fact, they are confronted with digital experiences facilitated by social media (Mendini et al., 2021).

Food and beverage marketing practices influence Millennials dietary behaviours, that can lead to an increase of the risks of overweight, obesity and diet-related noncommunicable diseases (Zhou & Kraak, 2022). Research done on neuroscience suggests that celebrity endorsement activates a brain region that associates consumers´ positive impressions on celebrities with the food and beverages brands they endorse (Hoffman & Tan, 2015). Public health experts suggests that this type of integrated marketing communication used by the food industry among others, through different media channels, are influencing young people´s diet-related cognitive, behavioural and health outcomes (Kraak et al., 2019). In fact, according to Droesch (2020) Millennials purchase decisions are influenced by the brand presences on social media platforms.

Applying an integrative understanding of Millennials´ views about celebrities and their endorsements related to food products is important to understand the influences on this population´s dietary behaviours (Zhou & Kraak, 2022). However, celebrities who endorse many different brands considered healthy and unhealthy may confuse consumers (Zhou et al., 2019)

In sum, and from different perspectives, the academic literature gives us a wide view to begin to know this cohort, at least in terms of their essential characteristics. In any case, as we move forward in the present academic work, we will discover many more, which interrelated among them, will give us greater value when it comes to formulating effective communication strategies, through the means that Millennials usually use.

To summarize, Table 1.3. offers the main characteristics based in the academic literature review:

Table 1.3. Brief of research based on Millennials literature

Brief of research based on Millennials literature				
Author	**Year**	**Main characteristics highlighted**	**Main features of the research**	**Objective**
Veiga et al.,	2017	The constant interaction with the digital environment makes them wait for immediate responses or instant gratification. Impatient and intolerant to any delay.	Overview of the millennials profile and the related developments causing disruptive changes	The purpose of this study is to identify the characteristics of the millennials segment that is most likely to cause a significant disruption from a marketing perspective focusing in tourism.
Anderson & Rainie	2012	Expectation of immediacy. Take less time to reach conclusions	Pros & contra of being a hyperconnected generation	Make predictions on how the future will be for the Millennials.
Boston Consulting Group	2010	They want instant gratification. Desire to share their experiences through technology.	Comparing Millennials and non-Millennials. Examine the purchase behaviour of Millennials	Determine differences between Millennials and non-Millennials.
Dickey & Lewis	2010	Multitasking. They become easily bored	Examine the purchase behaviour of Millennials	Help better understand the perceptions, awareness and use of social media by members of the Generation Y - The Millennials.
Donnelly & Scaff	2013	Very savvy as online consumers but they usually go to physical stores. They seek to be treated like valued customers	Millennials and retail shopping	To bring the needs of Millennial consumers and their potential impact on retailing into sharper focus

Gözükara et al.,	2016	Millennials define themselves using negative terms such as wasteful, impatient or egotistical	Brand innovation, brand trust and brand loyalty among Generation Y	Establish the relationships between brand innovation, brand trust and brand loyalty among Generation Y students.
Lissitsa et al.,	2016	Highly educated. More awareness of marketing tactics. More impulsive in purchases	Comparison between Generation X and Y. (Millennials and non-Millennials)	Online shopping behaviour; identify socio-demographic characteristics that facilitate Internet access and online shopping.
Lodes & Buff	2009	Trust certain authority. Sceptical about advertising	Millennial generation and brand loyalty	Evaluation of brand loyalty, customer satisfaction, and the effects of an economic recession on buying behaviour.
Pew Research Center (Doherty et al.)	2015	Heavy users of technology	How Millennials see themselves	Differences among cohorts in how they see themselves and each other generation.
Reisenwitz & Yer	2009	Comfortable with technology. Multitasking	Comparing Millennials and Non-Millennials	Examine variables such as Internet satisfaction, volunteerism, brand loyalty, work orientation and risk aversion.
Valentine & Powers	2016	More concern than other generations about quality work life they have grown up in an age of instant global communication, media saturation and material excess.	Characterization of Generation Y Consumers.	Provide marketers with insights on values, attitudes and media habits.
Smith	2012	Due to purchasing power, they are very attractive to companies.	Online and digital marketing strategies considered	Find and identify digital marketing strategies to attract and engage Millennials.

Source: own elaboration

1.3. From classical communication to the era of the Internet of things

This section reviews the new ways of communication the Millennials are using and some differences comparing with the traditional ones.

History shows how the capacity to communicate in humans is inherent in its gender. Since men began to offer their goods, announcing products or services has become an essential part of their lives (Del Pino Romero, 2010). We have been witnesses of an evolution ranging from the most primitive forms of communication until nowadays. We have gone through communicating products to the era of the products of communication (Del Pino Romero, 2010).

Communication is a process that serves as a base to all social organizations. The technological revolution that took shape in the 70´s and spread to all over the world (Cardoso, 2010). This technological revolution can be characterized by the transformation of the communicative process since the digital networks was supported by the microelectronic (Cardoso, 2010). Internet and the wireless communication are changing the foundations of the way we communicate and –furthermore- on our behaviour at a local and global level (Cardoso, 2010). In contrast to the content of traditional media, social media content is peer-generated and facilitates communication among users (Holland & Tiggemann, 2016).

Over one hundred years ago, John Wanamaker proclaimed or at least it is attributed to him, the phrase that says: “we know that half of our advertising is wasted but we don´t know if it´s the “affective” half or the “rational” half” (Bartra & Ray, 1982). One important research issue at that time, was how to identify and develop a theoretical understanding of situations where the use of affective executions, help advertising to be more effective from those that were only entertainment.

Traditionally, literature considers the proposals such as the ones of Petty & Cacioppo, (1979), Chaiken, (1980) or Bartra & Ray, (1986) among others, as the classical models of advertising. Those classical models of advertising cited above, indicate that attitude towards advertising leads to changes in brand attitudes (Bartra & Ray, 1986). As Bartra & Ray (1986) point out, social and cognitive psychologists have produced two models of attitude-change processes: heuristic and peripheral (Pretty & Cacioppo, 1979; Chaiken, 1980; Bartra & Ray, 1986). They both show that "less involving processing typically involves a limited elaboration of message arguments".

Researchers have formulated different models of the stages of hierarchy, called hierarchy-of- effects, to explain how consumers ultimately purchase a particular product or brand (Cho, 1999). The hierarchy-of-effect model proposed by Lavidge & Steiner´s (1961) work (Lavidge & Steiner, 1961; Cho, 1999) comprises 6 steps that consumers follow before purchasing: 1) awareness, 2) knowledge, 3) liking, 4) preference, 5) conviction, 6) purchase. Following this approach, Petty & Cacioppo´s (1983) Elaboration Likelihood Model (ELM) presents two different persuasion routes that consumers follow: 1) central route and 2) peripheral route (Cho, 1999). These models were conceptually useful and accepted by practitioners (Cho, 1999) but with the advent of the new interactive communication media, such as the Internet, those theories are being revised to be adapted to the characteristics of Internet "two-way interaction" (Cho, 1999). In this context, advertising traditional models must add this reality. For the Millennial generation, information and technology made a world without limits and by using social media, communication is easily accessed (Kurniawan, 2018). Boundaries are disappearing with the Internet. Moreover, in the era of the digital consumer, there are a lot of new possibilities for obtaining information, something quite unthinkable a few years ago. Additionally, consumers facilitate other assessments or opinions on the net (Pérez et al., 2015).

In the last decades, technological advances have been extremely significant with the spread of World Wide Web (1991), the emergence of Yahoo (1995), Google (1998), Wikipedia (2001) and social networks like LinkedIn (2003), Facebook (2004), YouTube (2005), Twitter (2006); (Aldea et al; 2011), Instagram (2010); (Balan, 2017) or Tik Tok (2017); (Kurniawan, 2018).

The Internet has changed marketing forever and the increased of connectivity and access to information has become influential in almost all of types of business, has achieved an easier and more powerful making Internet than before (Dash et al., 2021). Interactivity is considered a key advantage of the medium (Rafaeli & Sudweeks, 1997; Cho, 1999). From this approach, Internet is believed to facilitate more interactions than traditional media (Cho, 1999). In this sense, in traditional media, advertising exposure is involuntary as individuals just came across an ad. In contrast, advertising exposure on the Internet can be either voluntary or not depending on the types of web advertising (Cho, 1999). Communication in traditional media does not require voluntary action for active information processing. On the other way round, consumers on the Internet must voluntarily perform an extra action for an active, conscious, and cognitive information process (Cho, 1999).

Although marketing is increasingly necessary, and advertising is now more than ever, there is a need to create emotional intangibles that give value to brands (Solana, 2005) in a competitive environment (Martins, 2018). The excessive advertising noise in which we are involved and repeated formulas of advertising, are becoming ever more innocuous (Solana, 2005). And ad avoidance is one of the biggest obstacles of advertisement (Taglione Giannattasio, 2017). It is estimated that in cities each person receives daily, on average, more than 3.000 advertising impacts reaching, for example, in big ones such as New York, more than 5.000 (Rodriguez, 2013), many more than what can be assimilated and somehow, it might be understood that this pressure produces in all of us a gradual immunity.

People have unconsciously learned to turn the pages of a newspaper without seeing the ads, to drive without realizing what it says in outdoor advertising or navigate a website regardless of the banners (Solana, 2005). Advertising today is part of a graphic or audiovisual daily landscape, that some perceive as an annoying noise that we no longer hear or at least avoid hearing (Solana, 2005). Consumers are bombarded by thousands of commercial messages (Pieters et al., 2010). As Morin states "Millions of dollars are poured each year into developing products that will never see the light of day. Countless campaigns fail to attract consumer attention and successfully impact our memory banks" (Morin, 2011). Marketers need to know which factors influence their advertising and how to improve effectiveness. Advertising needs to reach consumers and take their attention in pleasant ways (Pieters et al., 2010). And Millennials are supposed to be the demographic sector that prefers less disruptive forms of advertising (Taglione Giannattasio, 2017) rather than traditional formulas.

In the digital world, technology has a permanent role, changes and innovations are constant and there is a risk of focusing too much attention on upgrading infrastructure and not so much on adapting messages to the new demands of consumers (Perez et al., 2015). In addition, the technological possibilities of the digital age are making a huge contrast with the analogue stage: the immediate and global significance of the messages and the control of the information and opinions that are made on a product once it is introduced into the network (Perez et al., 2015).

The evolution of the consumer is always hand in hand with changes in the conventional marketing or analogic marketing to meet the needs and demands of the new situations. The purchase decision process in the digital environment is different because people have more information and no longer maintain that classic loyalty to certain products, sustained earlier by the lack of alternatives. The globalization of the market opens new possibilities to analyse and compare multiple products at any time (Perez et al., 2015). In the growing digital economy, it is not just simply interacting with the target audience but rather to be flexible and adaptive to those technological changes (Kartajaya, 2019).

There is a general agreement that digital media, referred to electronic media to disseminate information in digital formats, has greatly impacted the way a marketer reaches today's consumer. Digital or online advertising has undergone phenomenal growth since the beginning of the Internet. And the Internet has become the fastest growing advertising medium in this decade (Smith, 2011). With the increasing usage of digital media by consumers, more companies are using digital marketing to reach their target markets (Smith, 2012). The revenue of digital content since 2010 exceeds the analogic and this is revealing a significant change in consumer habits of consumers. And the advertising industry is not immune to this fact. It is true that not all sectors experienced the same transformation, but the statistics prove a trend that consolidates clearly: there is a progressive growth of digital contents consumption compared to a steady decline of the analogic. And evolution in consumption patterns always brings changes in behaviour and consumer habits (Perez et al., 2015). Computers and mobile phones are a commonplace tool for Millennials; that might even be called essentials

(Smith, 2011). Past research has shown some forms of online advertising to be effective in influencing consumer behaviour.

The traditional advertising approach might not be highly effective with digital media. The transition from analogic to digital consumption is not accidental. The modernization of the society requires some services according to consumers´ needs and expectations. And, in this process, it affects the purchasing power, information and technological advances that facilitate new forms of access to products, fast and universal (Pérez et al., 2015). This is where advertising finds a qualitative novelty compared to the classic ads, which did not allow other users to contrast with the characteristics of the product, or exchange views on the results or experience of purchase (Pérez et al., 2015).

Although the use of Internet as an advertising medium has opened huge possibilities for marketers of reaching customers (Winer, 2009), some experts claim that "traditional media is not disappearing" (Winer, 2009). Marketers are shifting their marketing budgets into new media categories and the reason might lay -broadly- in factors such as the improvement of new technologies to create experiences for customers and to differentiate their products and services from their competitors. The difference is that new ways of communication make them interact with their audiences not just in the traditional one way: from seller to buyer, where only the brands had the privilege and the ability to spread messages publicly (Solana, 2005). Furthermore, marketers are more interested in personalized messages to reach their audiences (Winer, 2009).

In this scene, marketers are rethinking their strategies targeted at Millennials. The brands that were popular with their parents are being rejected by this generation. Having grown up in an even more media-saturated, brand-conscious world than their parents, they respond to ads differently (Smith, 2011). As Winner (2009) states, in the mid-1990s, with the introduction of advertising on the Internet, a lot of varieties of new advertising forms appear. And all of them, with the same concept: to try to own a "piece of *real estate"* in the web site in the form of banners, pop-ups among others to grab consumer´s attention trying to take the consumer to the advertiser´s web site (Winer, 2009).

Millennial consumers enjoy communication, since they are self-expressive and support freedom of speech, as well as accept change. Millennials are always connected and also connect with others via the latest technologies (Duffett, 2015). In this new scenario, consumers are not merely receiving advertising stimuli. They tend to control media and what they consume. Consumers, advertisers, agencies and the media are immersed in a revolution that requires a rethinking of their communication channels and the codes they used for it (Del Pino Romero et al., 2010). As Internet is affecting our social structure, the way we work, how we learn and how we communicate, and certainly it affects the communication environment of the brands, to the foundations of the relationship of these with their target audience and the essence of the persuasion industry (Solana, 2005). Millennials expect a two-way and mutual relationship with companies and brands. They call this the reciprocity principle (Barton et al., 2012). They express their opinions online and offline and they influence others with them defining or -somehow- help companies define their own brands. All this is accelerated using Internet, social media and mobile devices (Barton et al., 2012). Hence, this might be very good if the customer experience is favourable, or it can turn into a critical voice spreading negative comments if it is the other way round.

The Internet allows Millennials to exert control over the free market by expressing their opinions through a multitude of websites that potentially influence consumers and marketers. Millennials are an essential ingredient in the development of e-commerce and any marketing strategy driven to them (Smith, 2011). The high-tech environment has shaped their values (Durkin, 2008) and has made them very comfortable having instant access to information, social networks and communication (Taylor & Keeter, 2010). The Internet, social networking, and interactive technologies are empowering Millennials to be more active in the creation and development of products and brands. Word-of-mouth goes around the world these days. This generation wants to have input regarding all aspects of a product, even its promotion. Successful marketers should realign their techniques to positively engage these new consumers (Smith, 2011).

In terms of brand and product preferences and according to Naumovska (2017), Millennials are attracted by authentic and active socially responsible brands as they demand personal connections with brands that appeal to their emotions, principles and feelings They also look for brands that are related to their lifestyle and promote themself. And, as Millennials are very fond of the Internet, they use it for price comparison and buying as they consider the Internet their credible source of information (Naumovska, 2017).

Profound changes both in the field of communication and in advertising due to the digitization of the sector, along with the birth and rapid growth of social media and high rates of penetration of smartphones that are causing a real revolution in the way people interact with the media and forms of consumption (Pérez et al., 2015). Social networks have led to the empowerment of users, who have gone from being mere consumers of information and content recipients to becoming managers and producers thereof. Today, anyone with basic knowledge of how communication in the digital era works, can produce and disseminate content globally due to the high viral social media capabilities (Pérez et al., 2015).

Social media has become an imperative conduit for global marketing communications and is commanding a larger share of advertising budgets, especially to reach the younger generation. Millennials' social media usage are of particular interest to organizations and managers since it may provide an indication of how these consumers will behave in the future, as well as what their perceptions are towards their brands (Duffett, 2015). Therefore, the value of advertising on social media such is of great interest to organizations, managers and academics (Duffett, 2015).

This topic will continue to be developed in chapter 3, revising different communication models that will be the basis of the present academic work, and to adapt traditional models to include innovative techniques to make them suitable to address the Millennials as target audience.

1.4. New strategies for new consumers

Following the path to reach Millennials, this section reviews -according to literature- some communication strategies based on new technologies. The main aim of all of them is to generate a successful marketing strategy to address young public.
As stated in the Report of Boston Consulting Group, (Barton et al., 2014), Millennials represents the consumer market of the future, estimated in $ 1.3 trillion in direct annual spending. However, and more important, they are

changing and transforming consumer marketing itself. They are distinguished in their spending habits, brand preferences, values, personalities and particular vision of life (Barton et al., 2014). The companies that truly engage them have an opportunity to forge long-term relationship (Barton et al., 2012).

According to literature, there are some aspects where marketers must focus on to target Millennials, such as (1) quality of message to grab the attention, (2) the adaptation of contents to multiple platforms and devices, (3) hyperconnectivity, (4) emotional connection with Millennials, (5) personalized advertising, (6) online recommendations and word of mouth, (7) strategies based on new technologies and 8) intensive mobile usage. Below, Table 1.4. summaries the literature review on the strategies selected.

Table 1.4. Some Marketing Strategies to Target Millennials

Strategy revised	Author/s
Focus on quality of the message to grab the attention	Pérez et al., 2015; Adams, 2015; Duffet, 2015
Adaptation of contents to multiple platforms and devices	Brown, 2016; Kassaye & Hutto, 2016
Hyperconnection: ability to connect every time, everywhere and possibility to choose own contents	Del Pino Romero et al., 2010; Smith, 2011; Smith 2012; Duffet, 2015; Munsch, 2021
Emotional connection with Millennials	Ciminillo, 2005; Smith, 2011; Valentine & Powers, 2013; Van den Bergh & Behrer, 2016
Personalized advertising. Targeting messages; tailors-made advertising	Smith, 2011; Smith, 2012; Brown, De Keyzer et al., 2015; Brown, 2016; Nawaz, 2020; Kutty et al., 2021
Online recommendations & Word of mouth	Smith, 2011; Smith, 2012; Valentine & Powers, 2013; Perez et al., 2015; Chong et al., 2017; Zhang et al., 2020; Hendrayati & Pamungkas, 2020
Strategies based in new technologies	Norum, 2003; Solana, 2005; Del Pino Romero et al., 2010; Hsu & Tsou, 2011; Mangold & Smith, 2012; Duffet, 2015; Astuti et al., 2015; Lissitsa & Kol, 2016; Batra & Keller, 2016; Hooda, 2018; Au-Yong-Oliveira et al., 2018; Doughty et al., 2020
Intensive Mobile usage	Shamala, 2013; Duffett, 2015; Murillo, 2017; Nielsen, 2017; Ehlers, 2017; Sullivan & Heitmeyer, 2018; Gokhale, 2019

Source: own elaboration

In first place, some authors suggest focusing on the *quality of message to grab the attention* (Pérez et al., 2015). The argumentation is clear. In the digital age, the changes are constant and formulas to satisfy consumers are demanding continuous renewal because the behaviour of individuals also varies very quickly. Consumption patterns evolve, as well as the needs and preferences of consumers. Habits are very different in an analogue context in contrast with the digital environment because they change not only the established relationships but also the communication management on products and services. And this factor is crucial to designing new advertising strategies (Perez et al., 2015). The flow of information should avoid this risk, that´s why it is necessary to focus on quality (Pérez et al., 2015).

Furthermore, a strategic content marketing approach delivers authenticity in a way that promotes natural conversation and focuses on building the relationship with the consumer, in the case of Millennials, this applies to the digital world (Adams, 2015). In addition, quality might be an issue of perception which is even more difficult to control. The speed of online communication and numerous information sources make advertising on traditional sources less relevant. Furthermore, marketers quickly realized the influence of the social community in terms of interactivity that comprises personalized sections, shopping experiences, greater convenience and widespread information search (Duffett, 2015).

Secondly, other authors suggest the idea of *adapting content to multiple platform devices* (Brown, 2016). As Millennials are –somehow- fond of using tablets of smartphones in their purchasing process to engage them, companies need to adapt their contents to multiple platforms and devices (Brown, 2016). In terms of Millennials´ usage, 60% of them considers it convenient to have a tablet or smartphone to do research on the purchase of a product or service (Brown, 2016). No doubt, any modern marketing strategy should include content adapted to different platforms to reach consumers anytime, anywhere. Millennials have a general concern about availability and connectivity, responsiveness and reliability of the Internet access and also, and convergence across platforms as they want to control the devices and platforms they use (Kassaye & Hutto, 2016).

The third point, related to the previous one, is *hyperconnectivity*, which is key for any communication strategy. As an important and distinguished characteristic of this generation is that they are hyperconnected, this should be considered to allow them the ability to connect every time, everywhere and to choose their own contents (Duffett, 2015). Most Millennial members would have first encountered computers as toddlers and embraced the interconnectedness of the Internet, mobile devices and social media social network sites as part of their interactive world. The duo of interconnectivity and being tech savvy reveals the huge influence of Millennials' predisposition to connect continuously and easily to multiple social network channels (Duffett, 2015). This new consumer chooses the way they consume information and leisure. This new and emerging era is creating new products where the common denominator is to build communication products to generate an active response of the consumer. In this sense, the consumer demands those contents, which means advertising is no longer a nuisance (Del Pino Romero et al., 2010). Messages that interrupt a consumer's online activity create bad feelings towards the brand. Past research confirms that consumers have developed negative attitudes toward digital marketing that they consider intrusive (Smith, 2012). In this sense, these cohort has become expert in avoiding digital advertising designed to influence their consumer behaviour and marketers are challenged to catch their attention (Munsch, 2021).

Fourth, brands should create an *emotional connection with Millennials*. Creating brands that touch Millennials´ heart can only be achieved with a long-term commitment to listen to them (Van den Bergh & Behrer, 2016). As stated before, for some authors, the traditional one-way communication process is no longer valid to address this generation. Emotional engagement might be achieved by a commitment to listen to them and make them be part of the communication strategy.

In this sense, online brand communities are a popular venue for connecting with consumers who favour a certain brand and develop an image based on it. Marketers are joining consumers online, on their social networks, search engines, and favourite sites (Smith, 2011). This young generation has been bombarded by commercial messages throughout their lives. They have learned how to filter them, they have been empowered by their parents and teachers to have their own opinion and not to believe everything said (Van den Bergh & Behrer, 2016). They represent a new generation with specific patterns of responding to traditional media. This generation grew up in a more saturated media and brand conscious environment, which is different from their parents and hence, they respond differently to ads (Valentine & Powers, 2013). Due to this, more companies are relying less in traditional media advertising and more on other strategies like event marketing, product placement and digital media (Ciminillo, 2005; Valentine & Powers, 2013). New strategies like event marketing, product placement, digital media are more suitable than the traditional ones. Millennials watch less TV, are less influenced by mainstream media and they are more resistant to traditional advertising (Ciminilo, 2005; Valentine & Powers, 2013).

Fifth, and in a strong relation with the previous point, *personalized advertising* might be useful to engage this generation. In this sense, the extensive use of multiple devices is not the only aspect that technology influenced in advertising. Nowadays, targeting messages to consumers based on location, interests, browsing history and the demographic group has changed the way marketers approach their target markets. The advertising industry is being transformed by taylor-made advertisement or at least, personalization (De Keyzer et al., 2015; Brown, 2016). For a business, one of the most valuable benefits of using digital media is its capacity to offer consumers a personalized relationship as Millennials respond to personalized messages (Smith, 2012). Advertisements should concentrate on a major factor influencing this age group, the fact that "they are special" (Smith, 2012). Personalization has also been shown to increase the level of loyalty a consumer holds toward a retailer (Smith, 2012; Nawaz, 2020). Millennials have a high or very high preference to seeing personalized content recommendations while visiting digital content (Kutty et al., 2021)

Changes in communications allowed a new type of relationship with users. The Internet can be referred to as a pull medium because consumers choose the content they view. In effect, the consumer is pulling from a lot and free flow of information. Channels such as social networks and blogs have enabled consumers to access a large audience with whom to share their opinions and product reviews. Through these channels, consumers can have a strong impact on the sale and positioning of products. There is a growing tendency for consumers to put more trust in the opinions of other consumers rather than company generated information (Smith, 2011). Concern is escalating over consumers developing negative perceptions of digital advertising, mainly due to intrusive messages being delivered to their devices (mobiles, computers among others). Consumers do not like messages that are distracting, disturbing, forced, or interfere with their work. While some research suggests that pop-up ads can create high levels of ad perception, recall, and intent to purchase other research has shown consumers to become irritated by pop-up ads and thus avoid online advertising all together. This negative perception of online advertising can carry over to the brand being advertised and have a negative impact upon brand equity (Smith, 2012). The increase in online advertising is in response to the increase in consumers who use the Internet to buy and sell goods and services.

Sixth, Millennials are very influenced *by online recommendations and by the word of mouth*. It is as simple as that Millennials often look to peers to determine how good or not a website or a product can be (Smith, 2012; Zhang et al., 2020). Word of mouth is seen as more credible than advertising, as it is perceived as having passed through the evaluation of "people like me". This generation likes the "word of mouth" when making purchasing decisions (Valentine & Powers, 2013; Hendrayati & Pamungkas, 2020) than being an advertising target. Furthermore, word of mouth has become the most influential communication channel. The quantity of online reviews is often used to determine the product popularity because it is considered to represent the market performance of the product itself (Smith, 2012; Chong et al., 2017).

Since online peer reviews can be very beneficial to a company, marketers should determine what motivates consumers to write these reviews. Today's digital generation -the Millennials- are more than willing to write reviews and provide consumer-generated product information (Smith, 2011). One of the main features of the consumers is that they are highly influenced by their contacts on social media because they see them as reliable prescribers without vested interests in the goods in which they are interested (Perez et al., 2015). Online peer reviews are especially beneficial since Millennials were more prone to read an actual review rather than just reading summary statistics and, as a matter of fact, extremely negative reviews had a greater impact than extremely positive reviews (Smith, 2012). And online recommendations range from personal reviews from other customers to personalized recommendations provided by recommender engines or systems. Recommender systems are information sources that provide personalized information to consumers. Consumers focus more on the recommendation source itself than on the type of website on which the recommendation appears (Smith, 2012).

Seventh, *strategies based on new technologies* can be done in different ways. In fact, the range of options is wide: integrating the brand in the content, sponsorship, youth-oriented marketing, fashion (Solana, 2005) or even music (Astuti et al., 2018). With independence of the kind of message or the medium to launch a message, no doubt Internet is the cornerstone of all this process. It is a kind of lab for advertisers and users where they interact. Internet is drawing a new scenario-based in sharing, conversation, communication and cooperation (Del Pino Romero et al., 2010; Doughty et al., 2020).

Changes have transformed the commercial stage, introducing other codes and other forms of relationship with the product users, and with each other. The purchase process is already more than the simple acquisition of something. What was once just a trade, now, in many cases, it becomes a communicative act or an interactive activity (Au-Yong-Oliveira et al., 2018). The rapid growth of social media platforms has permanently altered the way that numerous consumers interact with each other and organizations (Duffett, 2015). Hence, this has changed the way that organizations attract and retain prospective consumers. Previously, marketers would create captivating advertising messages and purchase space in the mass media in the hope that consumers would become aware of and develop a preference to and purchase the brand. Social media has irrevocably altered marketing communications by shifting the ways in which consumers select, share and appraise information (Duffett, 2015; Batra & Keller, 2016). The speed of online communication and numerous information sources make advertising on traditional sources less relevant. Furthermore, marketers quickly realized the influence of the social community in terms of interactivity that comprises personalized sections, shopping experiences, greater convenience and widespread information search (Duffett, 2015; Hooda, 2018).

On the Internet, online shopping is one of the most popular. Adoption of technology is a necessary condition for online shopping. For Millennials, shopping is not a simple act of purchasing but rather a new entertainment or experiential dimension (Hsu & Tsou, 2011; Lissitsa & Kol, 2016). Brands need to become part of Millennials´ lives, giving value to their experiences and putting emphasis on socialization agents (family and peers) through social media sites (Mangold & Smith, 2012; Lissista & Kol, 2016).

Thus, seems to be a wise set-piece to address Millennials with an integrated marketing strategy. Brands must adapt their messages to this format to reach the millennial audience. Clearly, modern marketing has become much more targeted and segmentation by interests, behavioural and lifestyle information are more important than segmentation by age. Brands should use niche marketing to reach specific audiences. And lastly, since Millennials have very short attention spans, more than ever, advertising needs to serve a unique purpose, delivering millennial consumers access to valuable information, which means the right information at the right place and at the right time. (Brown, 2016).

Lastly, previous research has endorsed the idea that *intensive mobile usage* can be very successful among this type of consumer. As a group of consumers, Millennials are mobile-dependent with an increasing use of social networking and entertainment (Duffett 2015). As empowered, tech-savvy trendsetters with strong purchasing power, they are a very valuable segment for marketers. Marketers need to understand their behaviour and capture them on the move. Mobile advertising for Millennials needs to be intuitive, personal, contextual and visually appealing. Millennials want to feel like content is exclusive and as if it has been tailored to their needs, without invading their own privacy (Duffett 2015; Murillo, 2017). Mobile phones are the most personal communication medium that marketers and advertisers can use to create relationships with consumers. Brands should consider how to promote their presence in the right context (Duffett, 2015).

According to Nielsen (2017), in their report of "Millennials on Millennials Digital Music and Digital Communication", any conversation about Millennials and digital engagement should include mobile usage and communication. Furthermore, Millennials are very fond of using apps, and in fact, using two or more apps for messaging (Nielsen, 2017). According to Gokhale (2019), the average daily Internet consumption was of 3.7 hours per day and 3 out of 4 used their smartphones to make online purchases. For Millennials, multitasking is the new relaxing. Millennials are plugged-in and synchronize across their devices (Ehlers, 2017; Nielsen, 2017). This division of attention can prove a benefit for ad campaigns by diving the brand´s investment into multiple platforms where there can be reached across channels (Ehlers, 2017; Nielsen, 2017).

Trying to draw general conclusions about a population as large as the Millennials is difficult for marketers (Sullivan & Heitmeyer, 2008; Valentine & Powers, 2013). Companies can benefit from segmenting into meaningful groups to direct a specific and targeted marketing message (Valentine & Powers, 2013).

This new scenario is allowing new experiences in the communication landscape. The most relevant change is that the message can be precise and attractive and not a nuisance (Del Pino Romero et al., 2010). In any case, adapting to this new environment is demanding advertisers to dare to innovate having in mind a consumer-centred strategy. But, nowadays, considering this new consumer is totally different from the one before. Internet is offering a lot of possibilities for both parties –advertisers and users-where advertising and communication are moving between revolution and opportunity (Del Pino Romero et al., 2010).

Past strategies cannot be given for granted, mainly to other generations. Probably, due to their early adoption of technology and their faster climbing in the learning technology curve, they demand new strategies centred on their value as consumers. Even more, all the strategies revised are related among them and should be put into an integrated planned strategy with the main aim to reach those young consumers. Probably, nowadays, marketing is wrapped in a mix of technical terms to define something as simple as putting our target consumer band at the centre of all our efforts. And, if it makes sense, its recommended using all our marketing tools to generate sincere communication. The sender is responsible to make the message reach the receiver. Companies need to think and do strong efforts in this type of marketing to be more personalized, dynamic and flexible. And, most of all, two-way marketing where Millennials need to express themselves. At the end of the day, we are in front of a new and powerful generation that demands new strategies for new consumers.

1.5. Final Thoughts

The world is changing and marketing is not the exception. In the age of the knowledge and information society, marketing is becoming more complex and is facing new challenges with the introduction of new forms to approach consumer behaviour. Nowadays, consumers have more information than ever before. So, the question is: where do we go from here?

In recent years, companies increased their interest in the approaches to better understand their consumers. And, in this sense, Generation Y, The Millennials or Millennials –according to the different names shown by the academics- represent an important challenge for companies and brands. In fact, we are in front of a unique an influential consumer group and –at least in US- the larger consumer market with more than 83 million members (Valentine & Powers, 2013). This market is too large to be ignored. But, to address this market, companies should revise and rethink their brand communication strategy, their business models and their products and services to fit these new types of consumers. In other words, Millennials are offering companies and brands opportunities to increase their target audience but on the other hand, this market segment brings added threats, companies shall know in advance. Table 1.5. summarizes the opportunities and threatens offered by the Millennials market segment.

Table 1.5. Opportunities and threatens of the Millennials market segment

Opportunities offered by the Millennials market segment
Unique and influential consumer group (Noble et al., 2009; Drake-Bridges & Burgess, 2010; Racolta-Paina & Luca, 2010; Smith, 2012).
Most connected generation ever; their commitment to their job is not necessarily linked to a place of work but the devices they use (Taylor & Keeter, 2010; Stein, 2013).
Experts in Internet usage, social media usage and mobile devices (Lodes & Buff, 2009; Lissitsa & Kol, 2016).
Technology is part of their lives, they use the latest technology (Dickey et al., 2010).
The Internet is their essential vehicle of information and entertainment (Aldea et al., 2011)
Technology diversification drives universal homogeneity among Millennials. This results in a hypothetical global cohort that supposedly displays analogous attitudes and behaviour (Smith, 2011; Duffett, 2015).

Millennials are more than three times Generation X and they represent the larger consumer market in America since Baby Boomers (Moreno et al., 2017) with approximately more than 83 million members in USA. The wealthiest generation up to now (Valentine & Powers, 2013).
This generation represents a market segment that is too large to be ignored (Dickey et al., 2010).
Millennials´ expectations are different from the previous generations. Companies will need to rethink their brands, business models, products and services and marketing accordingly to address them (Barton et al., 2012).
They are active audiences and they want –not only- to choose but also to participate and to be part of them (Aldea et al., 2011).
Threatens to be known about Millennials market segment
Lazy, narcissistic and with lack of commitment for their jobs (Main, 2013; Stein, 2013)
They need to get instant gratification (Barnes, 2009; Anderson & Lee, 2012).
Unique and influential consumer group whose behaviour is not fully understood Noble et al., 2009; Drake-Bridges & Burgess, 2010; Racolta-Paina & Luca, 2010; Smith, 2012).
Millennials´ expectations are different from the previous generations and companies will need to rethink their brands, business models, products and services and marketing accordingly to address them (Barton et al., 2012).
They are skeptical of advertising (Lodes & Buff, 2009). They perceive advertising as misleading (Lodes & Buff, 2009).
Brands should be part of Millennials´ life (Lissitsa and Kol, 2016)
Easily bored (Dickey et al., 2010)
Marketeers need to keep up with technological advances to effectively communicate and connect with this generation (Barnes, 2009).
Narcistic, lack of empathy (Main, 2013; Stein, 2013; Twenge et al., 2008; Twenge & Foster, 2010 and Twenge et al., 2012)

Source: own elaboration

The old paradigm of one-way communication is set aside to allow a new form of communication where consumers choose what they want to see, where and when they want to see it. This phenomenon witnessed the spread of the Internet and the arrival and rise of smartphones. For the Millennials, technology is not the technology itself, but an important part of their life. This generation doesn´t know what is to live without the last advances in the digital world. For them, the Internet is essential for getting information, entertainment, and to build their own communities and as part of their purchase process.

Moreover, being a tech-savvy generation and being aware of technological advances, drives them to have certain homogeneity, displaying analogous attitudes and behaviours globally. They are different from previous generations and they are similar among them in their spending habits, preferences, causes to be involved in and in their particular vison of life as a cohort. Companies that understand their deep needs and truly engage them, have an opportunity to forge long-term relationships. But, on the other hand, and consequently, Millennials are sceptical of traditional advertising as they perceive it as misleading.

Millennials want to be part of the development of products and services, and they want to be heard. Communicating to them includes two-way communication in different channels, mainly digital ones. Their influence on social networks is very powerful and so it is its feedback among them. Social networks have empowered consumers to select, share and appraise information. They are used to sharing their experiences. Word-of-mouth is spreading the good ones and it is putting pressure to companies to correct the bad ones. They are "voices that want to be heard" as unique ones. In contrast to their elders, they do not have the same perception either of the traditional advertising environment nor of the products, services or brands.

On the other hand, this generation has been *"labelled"* as lazy, narcissistic and with a lack of commitment. But, as some authors stated, it is not exactly a lack of commitment but they don´t fit on the traditional paradigm of working from 9 to 5. Or, as some others demonstrated, they are a generation of young people that the elders still fail to understand (Kowske et al., 2020). Furthermore, their hyperconnectivity makes them easily bored and want to get instant gratification which might lead to a lack of attention.

To address them, it is essential to speak the same language and understand them. To summarize, we state the following conclusions to get Millennials engaged:

1. *Build and strengthen a multichannel –but mainly- digital strategy*. Social media is a vital piece of a marketing strategy and an excellent opportunity to get information about their behaviour through multiple devices. In this sense, mobile advertising –through smartphones- might be the future to reach the Millennial audience.

2. *Engage them by involving them in the creation of products, services, brands, company´s reputation*. This will reinforce both parties' image. They believe in the principle of reciprocity.

3. *Delivering valuable and useful content addressed to a generation with short attention spans*. Intensifying it with personalization. Taylor-made segmentation by interests, behavioural and lifestyle information is more important than segmentation by age.

What seems to be the reality, is that they are challenging marketers to keep up with technological advances to communicate with them effectively. And Millennials are here to stay.

A new model of communication is needed. One that will adapt the classical ones to the new marketing environment where Millennials play a key role to leverage marketing strategies. In fact, this academic work wants to analyse the outcomes of several marketing strategies to try to find the key factors of success to generate value both for companies and target audiences.

The world is changing, marketing is not the exception and Millennials want to be and –in fact they are- part of this change.

Chapter 2

New Technologies & Young Consumers

It has become appallingly obvious that our technology has exceeded our humanity.

Albert Einstein

2.1. Introduction

This chapter deepens the changes presented in marketing activities related to technological changes and how they shape our lives today. Not only from a technological perspective but to dive into how those technological changes affect business and marketing activities. More specifically, the aim of this chapter is to analyse how new technologies affect young consumers' patterns of behaviour.

The exponential advances in technology have changed the way companies and consumers interact (Steinhoff et al., 2021). In fact, the 21st century has brought opportunities and challenges to a world without boundaries and managers had to deal with interconnection and international environments (Berthon, et al., 2012). In this sense, the Internet has changed the world of marketing forever by increasing connectivity and access to information (Dash et al., 2021). Clearly, this fact has forced the evolution of many marketing models making the Internet extremely powerful (Dash et al., 2021). marketing evolves in parallel with technology and the application of technologies to commercial activities in the network based on the use of information and communication technology, has made a complete revolution in the way we obtain information during the business decision-making process (Jiménez-Zarco et al., 2019).

Besides, globalization is another element that drives the new social and economic age (Jiménez-Zarco et al., 2019). Globalization, on the one side, the development of information technology and the Internet made marketing highly responsive and scalable (Erragcha & Romdhane, 2014). And, as technology evolves, consumers and companies adopt technology to enhance their operations (Jiménez-Zarco et al., 2019.

On one hand, globalization adds complexity as consumers worldwide become more similar as, in fact, behaviours of different individuals are becoming more homogeneous, making differences in culture less evident (Dunn, 2015).

On the other hand, the high degree of interactivity, which is possible due to the means of communication, allows different actors to be involved in the value creation process (Mahr & Huh, 2022). Technology enables connectivity and interactivity of people around the world, facilitating the spread of information. In this context, consumers interact and share information on the Internet, they are well-informed (Erragcha & Romdhane, 2014), and more inter-connected than ever (Jiménez-Zarco et al., 2019). They share knowledge or any other product, thus overcoming time and space barriers (Turban et al., 2015). Even more, people create new ideas, entertain themselves and consume (Jiménez-Zarco et al., 2019).

In fact, marketing has evolved from a more push-oriented to a more collaborative-oriented one (Dash et al., 2021). This is complex and challenging changes create new ways to better meet consumer demands, and suggest leverage towards a more inclusive and social approach to marketing, changing the marketing mix (Dash et al., 2021). With the Internet clearly leads to new ways of reaching new consumers that expect to participate by sharing their experiences (Jara et al., 2012). Companies engage with their customers in co-creation -involving customers in creating new products or services- to learn from customer experiences and to benefit from their ideas and innovation to improve their offerings with new ones (Nohutlu et al., 2021).

In the next pages, the structure to be followed will allow an understanding of the evolution of marketing and technology and how those changes are shaping the new marketing environment and how relationships between companies and young consumers are evolving. Although digital media might seem to be winning the battle against traditional media, melting both means of communication might leverage the effectiveness to target market communications in a complex and very competitive global marketplace.

2.2. Evolution of Marketing and Technology

The main aim of this section is to revise the evolution of marketing during the last years through the vision of academics. As stated before, the evolution of marketing comes along with the evolution of technology and vice versa. Therefore, both are continuously generating feedback for each other. Traditional marketing is embedded in new trends and in particular, marketers will need some time to digest this evolution of marketing activities that leads to a new vision from another angle of how consumers perceive marketing communication.

On one side, marketing as a discipline has experienced a fast evolution with focus coming into the popular view we have today (Kumar, 2015). The marketing discipline focused between 1996 and 2004 on customer profitability and marketing effectiveness (Kumar, 2015) mainly for tasks such as identifying the customer value potential for companies and aligning marketing resources; maximizing the value of the customer; optimizing marketing resources for customers and developing and implementing resources focusing on customer profitability (Kumar, 2015).

On the other, marketing has gained a more relevant place to generate value added for companies. In a society involved by media, strongly digitalized and global, being different from the rest is a competitive advantage (Kotler at al., 2012).

Marketing as a discipline has become a discipline grounded in analytics and the importance of measuring marketing activities is paralleled to the increase of digital marketing itself (Zahay, 2021).

Kartajaya et al., (2016), in their book *Marketing 4.0: Moving from Traditional to Digital*, describe different stages in the evolution of marketing. They state that marketing, considering its dynamics, went through different stages: from marketing 1.0 to marketing 4.0. Those stages are such as marketing 1.0 as product-driven marketing; marketing 2.0 as customer-centric marketing and marketing 3.0 as human-centric marketing. Furthermore, they believe that technology convergence will lead to a junction between traditional and digital marketing. Driven by analytical data, products and services are more personalized. The more social people are, the more they ask for customization (Kartajaya, et al., 2016)

In relation to marketing 4.0; it is focused on digitalization and convergence of technologies, and it requires online and offline integration (Akbar et al., 2020; Sima, 2021). With the development of the digital economy, consumers are looking to technology that makes their life easier (Sima, 2021) and by using multiple channels, consumers can easily recognize and access product information while from the marketing perspective, it is focused on forming digital branding with contents that attract consumers in the digital environment (Akbar, et al., 2020). Consumers are not only looking for products but also looking for satisfaction and values, sharing their experiences and participating by giving their reviews (Akbar et al., 2020).

In sum, Table 2.1 shows the evolution of marketing from marketing 1.0 to marketing 4.0.

Table 2.1. Evolution of marketing from marketing 1.0 to marketing 4.0

	Marketing 1.0	**Marketing 2.0**	**Marketing 3.0**	**Marketing 4.0**
	Product-centric	**Consumer-centric**	**Value-centric**	**Digitalization**
Objective	Sell products to the masses	Satisfy customers & brand loyalty	Meet emotional and rational needs of consumers	Digitalization and convergence of technologies
Enabling forces	Industrial revolution	Information technology	Connectedness of consumers (new wave technology)	Online-offline integration.
How marketers see the market	Product driven market	Smarter consumers & mass market	People instead of segments	Detailed observation, analytics
Key marketing concept	Product development	Differentiation	Values	Anticipate innovations
Value propositions	Functional	Functional & emotional	Functional, emotional & rational	Functional, emotional, rational, digital
Company marketing guidelines	Product specification	Corporate and product positioning	Corporate mission, vision, and values	Personalization
Interaction with consumers	Mass communication (one-to-many transactions)	Micro segmentation	Consumers collaborate with each other	Co creation
Power of branding	Marketers/ companies	Marketers/ companies	Consumers	Consumers digital environment

Source: own elaboration based on Kartajaya, et al., (2016); Akbar et al., (2020); Sima, (2021).

As Kartajaya, et al., (2016) define**, marketing 1.0** refers to the first marketing approach that appeared as an outcome of the development produced during a new industrial revolution (Kotler, 2012; Erragcha & Romdhane, 2014). In the early 1950s, manufacturing was the centre of developed economies and marketing was an important function supporting production (Jiménez-Zarco et al., 2019) and it was focused on selling products (Akbar, et al., 2020). By that time, companies were offering a small number of products designed for a big number of clients (Fuciu & Dumitrescu, 2018). The marketing function was to guide the company to customer satisfaction through actions contained in the marketing mix program (Jiménez-Zarco et al., 2019). For other authors, marketing 1.0 adapts a commercial approach of unidirectional communication through traditional channels (mail, TV and radio ads (Erragcha & Romdhane, 2014).

The 1970s and 1980s were turbulent times and for companies, it was harder to generate demand. This new economic environment needed a different approach. Some additional factors such as the increased offer, the maturity and fragmentation of the markets, globalization and the speed of technological development made deep changes in the business landscape (Jiménez-Zarco et al., 2019).

These changes forced companies to change not only their strategies but also their view of the environment, understanding that a new marketing approach was mandatory. As with any new step ahead, it implies challenges and threats but also it might provide solutions to create better marketing concepts and to give responses to new consumer behaviours (Vassileva, 2017).

In relation to marketing 2.0 and to stimulate product demand, marketing needed to shift from tactical – marketing 1.0- to a more strategic level – marketing *2.0*-, which is also called relational marketing (Jiménez-Zarco et al., 2019). With marketing 2.0, marketing begins to move through the next stage. marketing 2.0 with their new approach, a more customer-centric one, pays more attention to satisfying and retaining customers and, consequently, loyalty becomes a priority (Cousillas, 2018). With marketing 2.0 a new era began: the consumer era. marketing 2.0 initiates the consumer-oriented era. Companies decide to get to know their consumers better and offer them products that are totally adapted to their requirements. Although, in this approach consumers are passive targets of the marketing campaigns (Jiménez-Zarco et al., 2019). The characteristics of this new era are the use of information technology to search for positioning and for differentiation (Cousillas, 2018) and to communicate with customers efficiently and make products available to them (Alin, 2019).

Since the origin of the Internet, marketers have seen a new medium to establish a new relationship with consumers. Traditional marketing needed to be adapted and that was possible through the development of websites, banners and online promotions or participation in web communities or massive promotion through emails. For this, marketing has experienced rapid development, both in the way it communicates, in the communication support and in its effort to change the marketing approach to provide interactivity among users in real-time (Erragcha & Romdhane, 2014). In this sense, marketing communication became a dialogue, and Internet users became "prosumers" (Kotler et al., 2012).

According to Küster et al., (2008) the differences between traditional marketing and relational marketing can be described in Table 2.2.

Table 2.2. Differences between relationship marketing and transactional marketing

Relationship marketing vs. Transactional marketing
Transactional marketing
Individual sales.
Highlighting products not benefits.
Short term.
Little emphasis on customer service and satisfaction.
Low level of commitment with customers.
Moderate level of contact with customer.
Focused on the quality of the products.
Relational marketing
Customers are the most important assets for the company.
Focused on retain and satisfy customers.
Highlighting benefits of the products.
Vision & long-term plan.
High level of commitment & contact with customers.
Quality as a concern for the whole organization.

Source: Küster et al., (2008)

The next step in the evolution is **marketing 3.0**, also called the values-driven era and marketing is placed around human aspirations and values (Jiménez-Zarco et al., 2019). According to Kotler et al., (2012), it is defined as marketing "centered on values and the search for meaning".

This approach defends that, consumers are not treated just as consumers but, in a deeper way, as human beings. In this phase, clients evaluate other things offered by the brands such as social responsibility. Customers are looking for satisfying their needs, but they also seek to satisfy their values and feelings (Cousillas, 2018). This new marketing view is very influenced by changes in consumer behaviour and attitudes and consumers are complete human beings whose other needs and hopes should never be neglected (Kotler et al., 2019). This type of marketing is more sophisticated and puts consumers at the centre of the marketing strategy. Kotler et al., (2019) state that this new marketing must be holistic, should build strong brands and should be based on information and communication that will enhance brand-building performance through marketing actions. This type of marketing should be collaborative marketing as it is its cornerstone. In this context, companies are forced to collaborate with their customers, partners, employees and investors, each of them playing a specific role (Erragcha & Romdhane, 2014) and also, companies must understand what their corporate mission, their objectives and their vision are, and they should invite consumers to participate in the development of products and in the communication of the company (Jiménez-Zarco et al., 2019). The new technology is the source of globalization and consumers are local and global at the same time (Erragcha & Romdhane, 2014). But the lifestyles and attitudes of these people affect the way humans perceive their needs and wants (Kotler, 2012).

There is another step ahead in marketing, the so-called **marketing 4.0.** This stage of marketing shows the value-driven approach implies a strong consumer-brand integration due to the intensive use of technologies (Jiménez-Zarco et al., 2019). This stage of marketing appears because of aggressive global competition, demanding customers and the rapid growth of new technologies and customers are at the centre of the digital-based marketing strategy (Vassileva, 2017). Nevertheless, this movement forward has transformed business rules by changing the interaction with customers (Jiménez-Zarco et al., 2019) as digital technologies represent a disruption that requires significant changes in the organizations to compete in this new environment (Dash et al., 2021). In fact, this new approach combines, online and offline interaction between companies and consumers and above all, the introduction of peer-to-peer connectivity, has added more power to consumers to become more informed than ever in the past (Kartajaya et al., 2016; García-Haro et al., 2021).

Some authors have considered that marketing goals can be described in terms of brand engagement, loyalty and recommendation (Sashi, 2012) with companies that can access a large amount of information about their consumers and their relationship with the brands and multiple channels to influence the decision process and starting with big data in the centre of the marketing strategy (Jiménez-Zarco et al., 2019). The role of data in marketing has been revolutionized by technology. Nowadays, customer relationship management is very powerful to get customers´ insights in real-time which is facilitated by technology that allows to access data in an easy way (Hulbert & Harrigan, 2015).

Some characteristic of this marketing 4.0 is that it is focused on “social relationships”, for example, consumers rely in other´s opinions or decisions made up at anytime from anywhere, searching for reviews on their mobiles, getting information about products on the Internet (García-Haro et al., 2021).

As Kartajaya et al., (2016) state, this type of marketing is based on connectivity, a major game changer, by reducing the cost of interaction among companies, customers and agents of interest among them (Kartajaya et al., 2016) transforming the customer´s decision journey in a digital path (García-Haro et al., 2021). Even more distinctive, it is the fact that customers are not looking only for products to satisfy their needs, they also want to express their creativity and values and be part of the production process (Vassileva, 2017). Previous literature emphasizes the importance of communication with customers and the role of value in marketing, where customers become coproducers of mutual value (Hulbert & Harrigan, 2015).

In sum, there is strong evidence that the evolution of marketing comes together with the evolution and technology and there seems the relationship should be this way soon. But still, marketing needs not only technology but market intelligence, landscape orientation and consumer deep knowledge.

After the evolutionary terms of marketing, following, this section continues with the landscape that surrounds marketing and communication tasks in the digital age.

2.3. The Digital Environment

In relation to the previous point, technology and marketing developed together changing traditional rules. In this sense, this section reviews the opportunities that the Internet first and then social media, provides as a new means of communication and, also, the challenges that companies must focus on, bearing in mind, that sometimes users are the first to get adapted to new technological ways of doing and pushing companies to adopt them after.

Moreover, and as a matter of fact, the Internet was adopted by marketers as a medium to establish a new form of relationship with their audiences and the role of the Internet has changed with those interactions and it has opened plenty of possibilities for marketers and companies. Furthermore, this section deepens on how social media has revolutionized our lives and how we perceive the world we live in. It analyses how social media is shaping new forms of interactions and how to blend social media with other communication tools.

During the last few years, the world has experienced tremendous development in the world global markets and one of the consequences is that Internet has affected marketing and related activities. Due to the impact of the Internet on business and the creation of the digital economy, Internet marketing is considered essential to achieve modern goals and leverage competitiveness in international markets. Advanced information and communication technology have a tremendous effect on the economy and one profound change that has arisen is a transformation in the relationship between companies and individuals (Rezaeinejad, 2021). The development of new communication channels was an important driving force for providing information, marketing activities and innovations. (Szopik-Depczyńska & Cheba, 2021).

In this new environment, customers should become the centre of the business model and business activities. Due to the progress of technology, the change speed of customer demand is accelerated, and the overall demand for products is gradually increasing. Enterprises need to develop new business models to gradually reach a balance with customer demand and it is clearly seen the important role of customers in Internet economy marketing. Especially, the choice of customers will significantly affect the judgment of enterprises (Wang, 2021).

Marketing communication or promotional campaigns can play an important role in developing a positive attitude towards food products or to create awareness on them, to contribute to good health. The challenge is also to make sure that produced food and food products have nutrients that support good health (Patel et al., 2021).

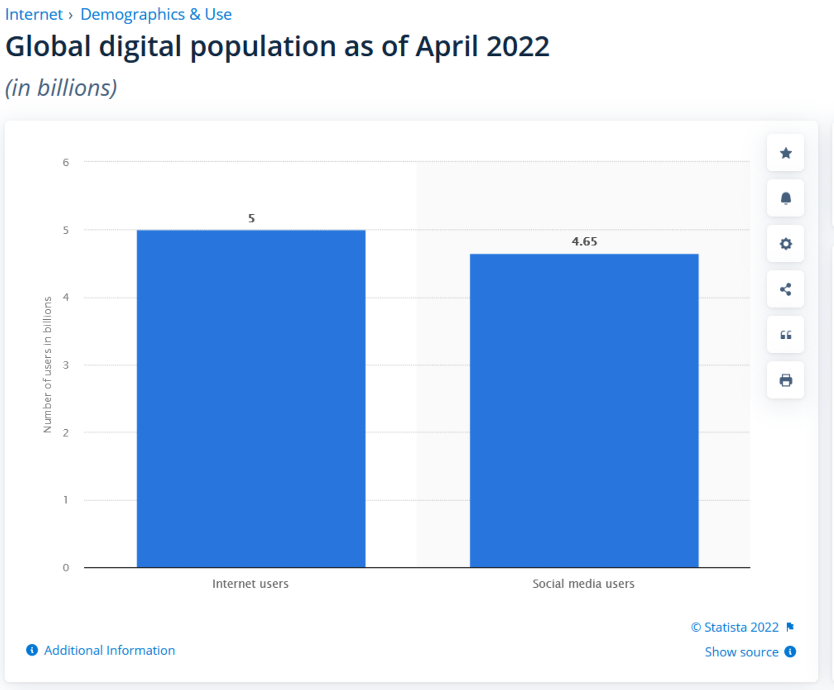
In the modern era, the development of technology and information has changed the habits of many people around the world, as the number of

Internet users increases every year and that has affected various sectors such as social, cultural, educational or economic (Adiyono et al., 2021).

The Internet has made possible to disseminate information with transmission at a fast and at a lower cost. Information while available in the network made communication easy and effective with a wide range of territoriality markets (Szopik-Depczyńska & Cheba, 2021). Previous research has shown that companies use the Internet mainly because it is an additional channel of providing information about the company, for interactive communication to increase the effectiveness of their promotional activities and last, but not least, for commercial purposes. The Internet, then, is an example of a many-to-many communication model in which the consumer is an active participant in an interactive exercise of multiple feedback loops and highly immediate communication (Szopik-Depczyńska & Cheba, 2021).

Nowadays, it seems impossible to imagine a world without the Internet as it is a core pillar of the modern information society. As can be seen in Figure 2.1, as of April 2022, there were five billion Internet users worldwide, approximately 63% of the global population, being 4.65 billon social media users what means that approximately 93% (Statista, 2022).

Figure 2.1. Global digital population as of April 2022 in billions



Source: Statista (2022)

The countries with the higher penetration of the Internet are the United States, Denmark and Ireland. On the other hand, North Korea has very limited online usage penetration although in 2021, Asia has the largest number of online users, with approximately 2.8 billion while Europe was second in the ranking with almost 744 million Internet users (Statista, 2022).

As stated before, the "digital transformation of marketing" over the past years is reflected in the ways companies and customers have embraced new technologies and how they are facilitating market behaviours, interactions and experiences (Yadav & Rahman, 2017).

Technology and online communication are all over the youth environment as tools for socialization (Lenhart et al., 2010; Wood et al., 2016). Constant communication is maintained via the Internet and via modern mobile phones. Those many different forms of communication are considered under the umbrella of the term "Social Media" (Wood et al., 2016).

2.4. Research in Social Media

2.4.1. Facts & Figures on Social Media usage

Social Media is perhaps the fastest growing media in history, growing in investment in marketing communication in digital media and in time spent in social marketing websites (Richardson et al., 2016). Due to this, social media does not seem to be a summer fashion and it is one of the most popular online activities (Statista, 2022). In 2021, over 4.26 billion people were using social media worldwide, while it is projected to increase to almost 6 billion by 2027 (Statista, 2022) helped by the development of infrastructure and the availability of cheap mobile devices, whose usage is an important driven force of growth (Statista, 2022).

Social media becomes part of people´s lives as social media platforms have revolutionized communication, mostly among young users as they find them accessible and stimulating. Moreover, mobile devices or smartphones have facilitated access to applications (Abolfathi et al., 2022).

According to Kaplan & Haenlein (2010), social media can be defined as a group of Internet-based applications that allow the creation and exchange of content. Furthermore, they allow users to create a network with a public or private profile and interact with other people in the forms of blogs, media such as audio, photo, video or text, and sharing tools among others (Knight-McCord et al., 2016). Moreover, it can be referred to as any digital platform, website or app that enables people to create or share content or to connect with each other. These involve the platforms such as Facebook, YouTube, Twitter, Instagram, gaming sites and other similar interactive websites (Abolfathi et al., 2022).

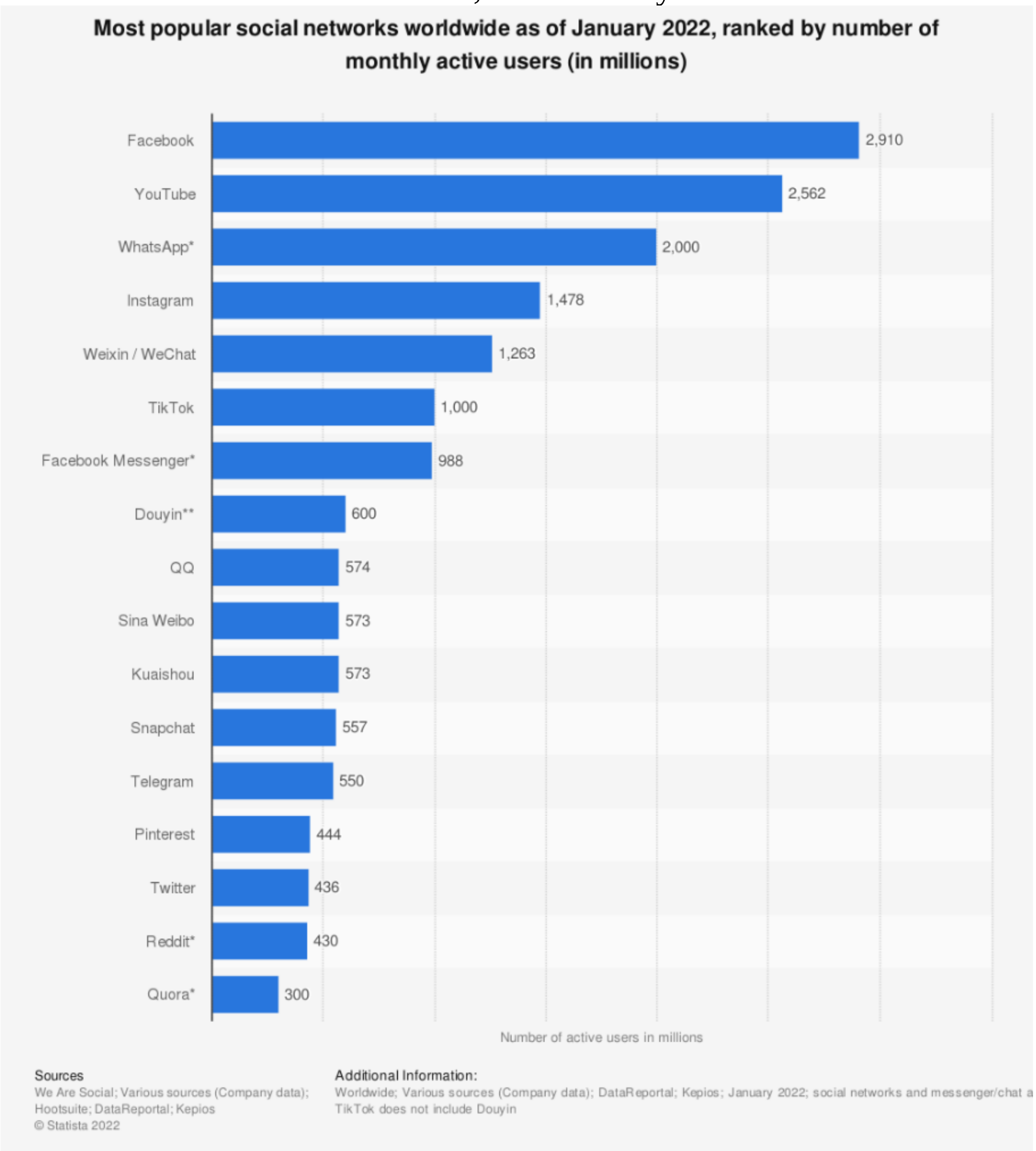
In particular, social networks and user collaboration platforms are gaining more and more importance, and enterprises use social media as a useful tool for acquiring new customers and retaining existing ones, while encouraging them to share information and engage them in the creation and development of products and services, generating an atmosphere of co-creation (Szopik-Depczyńska & Cheba, 2021).

Therefore, social media can be seen as an online medium (facilitator) to strengthen the relationship between users and be a convergence between personal communication and public media as content is shared with anyone (Akrim, 2022). Some of their characteristics are that social media has a character of social networking, built from social structure formed in networks between users and technologically mediated by devices such as computers, mobile phones or tablets (Akrim, 2022).

For other authors, social media can be thought of in different ways. From a practical point of view, it is a collection of software-based digital technologies (such as apps and websites). This digital environment provides users with a place to send and receive digital content or information. And it can be thought of social media as another type of digital marketing channel. Although this, from a broader perspective, it seems that social media has more to do with what people do in this digital environment and how they change their lives than a technological platform service itself (Appel et al., 2020).

In Figure 2.2., the most popular networks worldwide are shown, ranked by the number of active users.

Figure 2.2. Most popular social media networks worldwide, ranked by the number of active users, as of January 2022



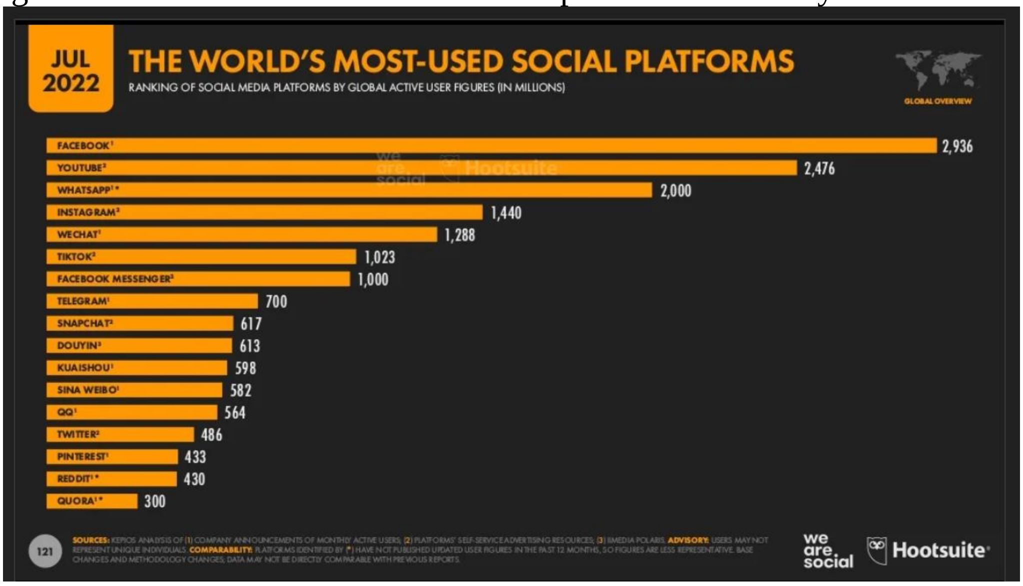
Source: Statista (2022)

"We Are Social and Hootsuite", the first well-known creative agency specialized in social media and the second worldwide leader in social media management, has launched "Digital 2022" the last annual report on social networks and digital trends. They partnered with worldwide data providers (such as Statista) to measure social media usage (among other topics related to the digital world) across the globe.

Figure 2.3 shows the world´s most used social platforms as of July 2022. Data shows a certain evolution between January and July but still, Facebook, YouTube and WhatsApp are the main ones by the number of users.

As can be seen above, Figure 2.3. summarizes the main findings up to July 2022 as follows.

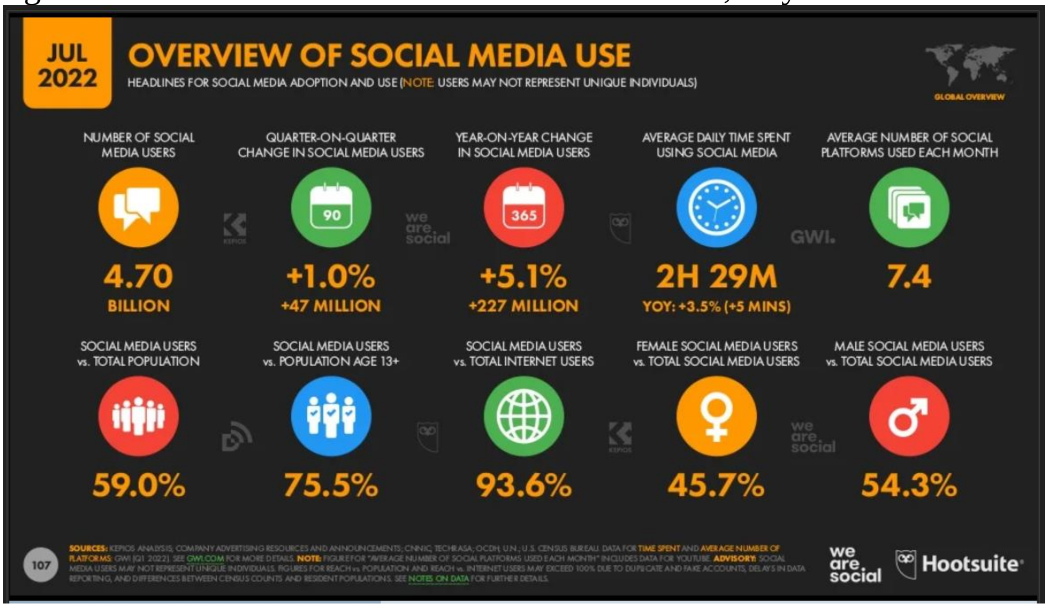
Figure 2.3. The world´s most-used social platforms as of July 2022



Source: Kemp, 2022(a)

The overview of July 2022 seen below in Figure 2.4, shows a significant increase in the number of users registered on social networks across the globe for July 2022, in comparison with the previous quarter of 2022. The increase is of, which means additional 47 million users. The report points out that there are 4.7 billion social media users worldwide. Compared with 2021, the increase in social media users is 1%, which means an increase of 227 million users. Users dedicate an average of 2 hours and 29 minutes a day to these platforms.

Figure 2.4. Overview of social media use worldwide, July 2022



Source: Kemp, 2022(b)

Following this line and, according to Pew Research, and related to a survey conducted on adults in the US in January 2021 and as they state representative of the US population, they found out that social media usage remains relatively s Table over the past five years (Auxier & Anderson, 2021).

There are several interesting findings. The first is most of the platforms show little growth since 2019. Although Facebook remains steady in terms of growth, it is still the most widely used social media site among adults in the US (Auxier & Anderson, 2021).

Patterns reveal consistency with past studies on social media usage as 84% of adults ages 18 to 29, use some social media, similar to 81% of those from 30 to 49. (Auxier & Anderson, 2021).

Below, Figure 2.5 shows the use of online platforms and apps because of the survey conducted in the US, in January 2021.

Figure 2.5. Use of online platforms and apps, survey conducted in January, 2021

Use of online platforms, apps varies – sometimes widely – by demographic group

% of U.S. adults in each demographic group who say they ever use ...

0% 20 40 60 80 100

	YouTube	Facebook	Instagram	Pinterest	LinkedIn	Snapchat	Twitter	WhatsApp	TikTok	Reddit	Nextdoor
Total	81	69	40	31	28	25	23	23	21	18	13
Men	82	61	36	16	31	22	25	26	17	23	10
Women	80	77	44	46	26	28	22	21	24	12	16
White	79	67	35	34	29	23	22	16	18	17	15
Black	84	74	49	35	27	26	29	23	30	17	10
Hispanic	85	72	52	18	19	31	23	46	31	14	8
Ages 18-29	95	70	71	32	30	65	42	24	48	36	5
30-49	91	77	48	34	36	24	27	30	22	22	17
50-64	83	73	29	38	33	12	18	23	14	10	16
65+	49	50	13	18	11	2	7	10	4	3	8
<$30K	75	70	35	21	12	25	12	23	22	10	6
$30K-$49,999	83	76	45	33	21	27	29	20	29	17	11
$50K-$74,999	79	61	39	29	21	29	22	19	20	20	12
$75K+	90	70	47	40	50	28	34	29	20	26	20
HS or less	70	64	30	22	10	21	14	20	21	9	4
Some college	86	71	44	36	28	32	26	16	24	20	12
College+	89	73	49	37	51	23	33	33	19	26	24
Urban	84	70	45	30	30	28	27	28	24	18	17
Suburban	81	70	41	32	33	25	23	23	20	21	14
Rural	74	67	25	34	15	18	18	9	16	10	2

Note: White and Black adults include those who report being only one race and are not Hispanic. Hispanics are of any race. Not all numerical differences between groups shown are statistically significant (e.g., there are no statistically significant differences between the shares of White, Black or Hispanic Americans who say the use Facebook). Respondents who did not give an answer are not shown.
Source: Survey of U.S. adults conducted Jan. 25-Feb. 8, 2021.
"Social Media Use in 2021"

PEW RESEARCH CENTER

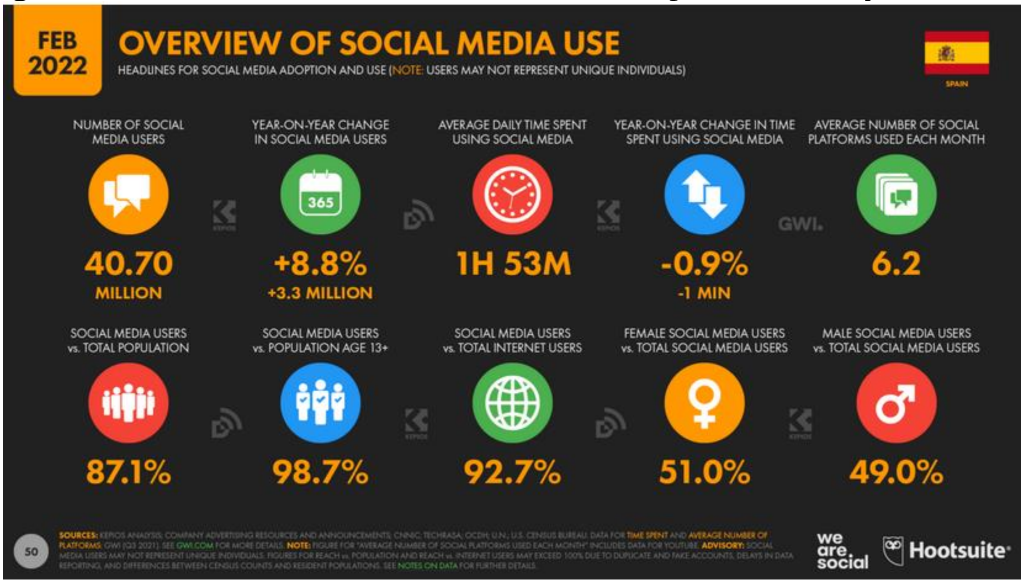
Source: Auxier & Anderson (2021)

In relation to Spain, Figure 2.6 shows an overview of social media use in the Spanish territory. In this sense, data show a significant increase in the number of users registered on social networks in Spain in comparison with 2021. The report points out that there are 40.7 million social media users, an increase of 3.3 million from 2021 to 2022.

In addition, Spanish users dedicate an average of 1 hour and 53 minutes a day to these platforms, being the most used WhatsApp and Facebook, with 91% and 73.3% respectively, followed by Instagram with 71.7%. Related to gender, women users are 51%; men 49%. Related to the device users access the Internet, 90.4% of users access the Internet through a smartphone, while

83.5% do so through computers, as reported by “We are social” in the presentation of the report “Digital Report España 2022”.

Figure 2.6. Overview of social media use in the Spanish territory



Source: wearesocial.com

As can be seen in the Figure 2.7., with data from the second “Observatorio sobre el uso de las Redes sociales en las Pymes Españolas, 2013”, the percentage of small and medium sizes companies any social media in Spain and the evolution over the year before.

Figure 2.7. Observatorio sobre el uso de las Redes Sociales en las Pymes Españolas, 2013

Source: Banesto, (2013)

Undoubtedly, the percentage is growing along the years but still there is room for improvement in this sense soon. Although as seen, almost all sectors and companies of all sizes are using these new communication channels. Social media seems to be not optional as a means of communication. The communication between companies and users has changed and it is essential that the marketing tasks are updated. It is not that the traditional media must be abandoned but, to have them complemented with the entry of new technologies. In fact, several times, the users are the ones to pressure companies to update their marketing actions. Users are the ones that often push companies to innovate. New consumers ask for innovation and companies have, through these low-cost tools, the possibility of innovating, and of improving in their search for customer satisfaction and achieving loyalty of their customers to their products and services.

2.4.2. Opportunities & Challenges of Social Media

This section deepens in the advantages and challenges of using social media. And to summarize them, it addresses how companies interact in social media and how consumers perceive them and what they are using them for.

On one side, the *opportunities* that arise while using social media from the company´s and users´ perspectives, are the ones as follows, not extensively but covering a wide range of literature review. It is shown in Table 2.3.

Table 2.3. Opportunities social media generates for companies and users

Opportunities social media generates for companies and users
Organizations can benefit from social media marketing due to the decrease of traditional media (Dwivedi et al., 2021).
Create brand awareness, finding new customers and conduct market research (Behera & Balaji, 2019).
Communication in social networks leads potential customers to listen to others, review and rate products and services and provide product knowledge and becomes a key element for marketing success (Behera & Balaji, 2019).
Corporate social media accounts with a large number of subscribers are a valuable asset for a company as it can lead to higher perceived brand popularity, awareness and higher attractiveness (Kuzmin, et al., 2022).

Band experience is an essential originator of customers´ brand perceptions formed (Khan et al., 2020).
Brands create a fan page on online platforms to develop business opportunities to aim for entertainment, interaction, customization and word-of-mouth to transform one-way communication into two-way increasing the exposure of companies on the Internet and getting profit out of it (Chen & Lin, 2019).
Electronic word of mouth -so-called eWOM- has higher credibility than traditional media as Internet users are engaged and share information and experiences (Czarnecka et al., 2022).
All these platforms allow organizations to share content and interact with each other and to promote their online presence and also, allow to improve their communication competency by driving engagement through these innovative technologies (Catwright et al., 2021).
Using social media affects branding, with a significant and positive impact on brand loyalty as they build a strong relationship between the customer and the brand. Moreover, social word of mouth and personalization have a significant positive influence on branding. (Khan et al., 2022).
People spend plenty of time online searching for information and organizations have responded to this by making digital and social media an essential and integral component of their marketing strategy (Dwivedi et al., (2021).
Referrals from consumers in social networks significantly improves sales in social commerce as users easily spread their messages to others (Czarnecka et al., 2022).
The social impact of social media has attracted global attention as it is a powerful tool for customers, and businesses, whose relationship has changed significantly, mainly in terms of communication and sharing knowledge (Baima et al., 2022).
Companies should focus in using social media to identify customers and listen to customers, receive their feedback and to improve and innovate from what they learn from customers (Gensler et al., 2015).

Marketers should align their marketing efforts with the changing behaviours and preferences of their customers (Husain et al., 2016).
From the user´s perspective, social media has radically changed how people interact, how they share knowledge and how they communicate providing them with control over what, when, where and how they will interact with specific companies (Baima et al., 2022).
Social media tools not only allow users to generate, publish, and share content but also enable them to criticize and rank online content (Dickey & Lewis, 2011).
Social media is ubiquitous in nature and allows interaction based on shared experiences and common interests (Edwards, 2011).

Source: own elaboration

Organizations can benefit from social media marketing mainly due to the decrease of traditional communication channels. However, significant challenges arise while developing their social media marketing strategy (Dwivedi et al., 2021).

As stated before, the rapid growth, use and popularity of social media can be advantageous for any business organization when done correctly. It can help build brand awareness, find new customers and conduct market research (Behera & Balaji, 2019). Communication in social networks leads potential customers to listen to others, review and rate products and services and provide product knowledge and become a key element for marketing success (Behera & Balaji, 2019).

Corporate social media accounts with many subscribers are a valuable asset for a company as they can lead to higher perceived brand popularity, awareness and higher attractiveness. Using social media for corporate purposes can contribute to better results in financial terms if it impacts sales efficiency (Kuzmin, et al., 2022). Moreover, brand experience is an essential originator of customers´ brand perceptions formed (Khan et al., 2020).

Brands create fan pages on online platforms to develop business opportunities to aim for entertainment, interaction, customization and word-of-mouth (Chen & Lin, 2019) to transform one-way communication into two-ways increasing the exposure of companies on the Internet and to get profit out of it, several strategies for social media marketing have been developed (Chen & Lin, 2019). Moreover, electronic word of mouth -so-called eWOM- has higher credibility than traditional media as Internet users are engaged and share information and experiences (Czarnecka et al., 2022).

Even more, all these platforms allow organizations to share content and interact with each other and to promote their online presence and also, they allow to improve their communication competency by driving engagement through these innovative technologies (Catwright et al., 2021). In other words, social media makes companies rethink their traditional one-way communication and make them incorporate a new and more interactive way of communication into their marketing strategy.

Previous research has shown that using social media affects branding, with a significant and positive impact not only in branding itself but also in brand loyalty as they build a strong relationship between the customer and the brand. Moreover, social word of mouth and personalization have a significant positive influence on branding. (Khan et al., 2022).

Following this line, Kaplan & Haenlein (2010) state that social media allows firms to engage with direct end consumers at lower costs with higher levels of efficiency than traditional communication tools. Social media is now relevant for large companies as well as small and medium-sized ones and even for other sectors such as governmental agencies and even non-profit organizations (Kaplan & Haenlein, 2010; Karimi & Naghibi, 2015). People spend plenty of time online searching for information and organizations have responded to this by making digital and social media an essential and integral component of their marketing strategy (Dwivedi et al., 2021).

As Vinerean & Opreana, (2021) state, social media provides an important part of the marketing strategy for creating valuable relationships. Dwivedi et al., (2021) highlight that not only social and digital marketing offers significant opportunities to organizations through lower costs, improved brand awareness and increased sales. Past research has shown that referrals from consumers in social networks significantly improve sales in social commerce as users easily spread their messages to others (Czarnecka et al., 2022).

In this data-driven era, social media facilitates continuous knowledge within the virtual world. The social impact of social media has attracted global attention as it is a powerful tool for customers, and businesses, whose relationship has changed significantly, mainly in terms of communication and sharing knowledge (Baima et al., 2022). For this reason, companies should focus on using social media to identify customers and listen to customers, receive their feedback and to improve and innovate from what they learn from customers (Gensler et al., 2015) and marketers should align their marketing efforts with the changing behaviours and preferences of their customers (Husain et al., 2016).

From the user´s perspective, social media has radically changed how people interact, how they share knowledge and how they communicate providing them with control over what, when, where and how they will interact with specific companies (Baima et al., 2022).

Social media tools not only allow users to generate, publish, and share content but also enable them to criticize and rank online content (Dickey & Lewis, 2011). In addition, social media is ubiquitous in nature. It provides opportunities to many people across the world and across cultures to interact with each other and form a global community based on shared experiences and common interests (Edwards, 2011).

To conclude with, and from the vision of companies, Kaplan & Haenlein (2010) stated that using social media is not an easy task that may require a new approach in the way of thinking, especially for the potential and huge gains. Despite the growing importance of social media, little is known about how social media operates (Richardson et al., 2016). A key goal of social media is to increase visibility and reach it, it is important that companies dedicate time and resources to social media marketing activities in a systematic manner (Ricardson et al., 2016).

Table 2.4. Challenges facing companies and users while using social media

Challenges facing companies and users while using social media
Significant challenges arise while developing their social media marketing strategy (Dwivedi et al., 2021).
The amplification of negative reviews: consumer complaints can be instantly communicated to millions of people (negative electronic word-of-mouth) all of which can have negative consequences for the business concerned (Dwivedi et al., (2021).
Consumers pay significant attention to this type of content as they perceived them as highly credible (Javornik, et al., 2020) as information spreads quickly and efficiently: good news travel fast on social media and bad ones even faster (JiLong et al., 2021).
It was estimated that 60% of brand exposure is achieved through content that the own users are generating and which is not under the brands' control (Bennet & Kunze, 2016).
Influencers are creating high engagement with the audience. They became somehow ambassadors of companies and brands; hence sales efficiency may depend on their opinions and recommendations (Czarnecka et al., 2022).
Companies are trying hard to stimulate consumers to exchange content on social media to strengthen their value proposition and nurture innovation (Baima et al., 2022).
Users have their traditional relationships with friends and colleagues and they not only increase their time spent on social media but also go from one platform to others, and they swap not only channels but also devices (Bennett & Kunze, 2016).
Privacy issues might stop users to interact and force companies to reinforce privacy controls and transparency (JiLong et al., 2021).
How to treat violent or offensive content (Maitanmi et al., 2021) or even "hate speech" in the form of aggression towards individuals (de Felice et al., 2022).
Usage media patterns becoming more fragmented: different devices and different platforms draw and consume users´ attention (JiLong et al., 2021).

Source: own elaboration

Moreover, from the consumer´s perspective, it also implies as stated before, several advantages that are translated into alternative consumer preferences.

However, on the other side, some challenges arise while using social media marketing from users´ and companies´ perspectives, as follows. As stated before, not extensively but covers a wide range of literature reviews. It is shown in Table 2.4.

On one side, and from a company´s perspective, probably one of the most feared might be the amplification of negative reviews. In this sense, significant challenges exist from negative electronic word-of-mouth as well as intrusive and irritating online brand presence. Nowadays, consumer complaints can be instantly communicated to millions of people (negative electronic word-of-mouth) all of which can have negative consequences for the business concerned (Dwivedi et al., (2021). Companies struggle to solve complaints posted in their social media, and those complaints become relevant as many people might see those complaints on their feed. Consumers pay significant attention to this type of content as they perceived them as highly credible (Javornik, et al., 2020). Based on the inherent characteristics of social media, information spreads quickly and efficiently: good news travel fast on social media and bad ones even faster (JiLong et al., 2021).

Although marketers are tempted by the social media potential of reaching broad audiences, it was estimated that 60% of brand exposure is achieved through content that their own users are generating and which is not under the brands' control (Bennet & Kunze, 2016).

Furthermore, people highly involved in creating media content such as sharing information, recommending products or services or even trying to win the audience, tend to influence other users, being not only opinion leaders but also when creating high engagement influencers. They became somehow ambassadors of companies and brands; hence sales efficiency may depend on their opinions and recommendations (Czarnecka et al., 2022). Following this line, Czarnecka et al., (2022) also state that people involved in creating social media content, are doing it for a specific purpose—to share information, opinions, recommend products or services- but also to share their thoughts or win the audience's favour. High social media activity indicates the need for content creators to influence other users. Thus, they transform themselves into opinion leaders and high-engagement influencers.

This form of activity usually is associated with a significant commitment of time and the possession of specific skills in the use of communication technologies. From the perspective of enterprises, such people are in demand because they can be ambassadors of energy companies and brands, and sales efficiency may depend on their opinions and recommendations.

The big challenge companies are facing is how to stimulate consumers to exchange content within social media to strengthen their value proposition and nurture innovation (Baima et al., 2022). Users have their traditional relationships with friends and colleagues and they not only increase their time spent on social media but also go from one platform to others, and they swap not only channels but also devices (Bennett & Kunze, 2016).

Another challenge inherent to the characteristics of social media is privacy. Many companies collect personal data for their marketing campaigns. However, with any improper handling of data, leakage of information may occur and, so, many people began to worry about their privacy in social networks as long as they also do not trust companies will be able to secure their personal data. This fact might be translated into users stopping their interactions and forcing companies to reinforce their privacy controls and transparency. In fact, social media is based on trust (JiLong et al., 2021).

Along with the previous topic, and for both users and companies, while using social media, one challenge is how to treat violent or offensive content (Maitanmi et al., 2021) or even “hate speech” in the form of aggression towards individuals based on race, gender, nationality, sexual orientation, ethnicity or religion among many others (de Felice et al., 2022).

Furthermore, consumers are using social media in an active way that has changed their usage media patterns becoming more fragmented: different devices and different platforms that draw and consume their attention (JiLong et al., 2021).

2.4.3. Social Media Strategies targeting Millennials

As stated before, technology and marketing go hand in hand. A technological aspect that has contributed to accelerating the advances in both fields has been the introduction and rapid penetration of smartphones. Mobile social media is likely to evolve even more strongly in the years to come because of technological progress and the penetration of mobile devices (Kaplan, 2012; Wickramasurendra, 2021).

Further on, we are going to deepen some social media strategies for targeting Millennials based on the literature, that is a complement to the marketing strategies developed in chapter 1 and the ones that are revised and discussed in chapter 3. Although this list is not exhaustive, we believe that the tactics to be dealt with are of vital importance in the digital environment.

2.4.3.1. The importance of mobile devices

Social media becomes part of people´s lives as social media platforms have revolutionized communication, mostly among young users as they find them accessible and stimulating. Moreover, mobile devices or smartphones have facilitated access to applications (Abolfathi et al., 2022).

Furthermore, the penetration of smartphone devices impacts on how users of social media access media applications anywhere, anytime making social media a persistent presence in people´s life (Janavi et al., 2021). As stated before, one of the main advantages for users is that they are a good source of information, enables product comparison and generate fluid communication with retailers (Janavi et al., 2021). On the other hand, for organizations, such access to social media gives them the opportunity to increase the time spent on such platforms for promoting their products and to improve communication with customers to better understand their needs (Janavi et al., 2021).

The continuous growth of mobile devices, -smartphone- usage and mobile applications has forced companies to realize the potential of its growing usage, being mobile usage an antecedent of customer satisfaction among Millennials consumers (Ngubelanga & Duffett, 2021). On the other hand, from the Millennials' perspective, their purchase behaviour has been heavily influenced by the use and availability of technology that provides the advantages of ubiquity, interactivity, the flexibility of mobile commerce and the accessibility of customized products and personalized services (Liang et al., 2022). As a matter of fact, the popularity of multimedia mobile phones, has generated a major upliftment in the digital market with the consequence of shifting customer requirements (Singh & Sharma, 2022). Although the cost of mobiles is falling (Kimutai et al., 2022), it has been a technological barrier in many countries (Baipai & Sharma, 2022).

Parallel to the increase in the use of mobile phones, social media usage has also increased contributions to the growth of mobile transactions. Previous research has shown that approximately 95 % of social media users are accessing their profiles through their mobiles (Liang et al., 2022). Considering Millennials as young adults addicted to their smartphones, it has represented an opportunity for marketers to use such platforms to encourage consumer engagement (Liang et al., 2022).

Following this line, Han & Chen, (2021) state that previous research has shown that the impact of social media is particularly strong among Millennials as they are the first generation who grew up with and exposed to this type of technology because they especially use social media on their mobile devices.

As stated in the previous chapter and considering past research, Millennials are a generational cohort with a high purchasing power along with the highest use of social media because they are digital natives. In response, the effectiveness of digital marketing to target this market segment is increasingly becoming a priority for corporations (Pornsrimate & Khamwon, 2021).

Marketers must consider how their mobile strategies interact with other advertising and marketing strategies. In fact, mobile devices are an important person communication tool and, they are highly individualized (Grewal, 2016). Likewise, the possibility that content is available immediately, transforms mobiles into essential devices for a hyperconnected generation. To succeed in targeting Millennials, it all should be mobile.

2.4.3.2. Influencer marketing

Influencer marketing became popular in 2015 approximately. Since early 2000, several research shown the growing popularity of word of mouth and the importance of building a brand image through the right influencers as they can impact consumer perspective and buying behaviour (Thakker, 2021).

As Millennials rely on peer-to-peer communications more than traditional media (Smith, 2012; Pornsrimate & Khamwon, 2021), this is crucial for marketers to build and strengthen consumer-brand relationships. Nearly 93% of marketers use influencers to reach online consumers (Fertik, 2020; Pornsrimate & Khamwon, 2021). Influencers play a crucial role in inducing consumers´ purchasing behaviour as people believe they generate trustworthiness and perceived expertise that defines the credibility of traditional influencers (Masuda et al., 2022). Furthermore, and although limited, social media influencers use two-way communication with their followers and their roles are becoming increasingly diverse because digital technologies have increased the complexity of the customer environment (Masuda et al., 2022).

Once paradoxical, but still effective, it is the fact that influencers win consumer trust and influencer marketing is perceived as non-intrusive and they generate more engagement than a traditional online advertisement for a smaller segment and hence, the communication is sharper. As a matter of fact, influencers are a reliable and trusted source that generates engagement with a segment that normally skip advertisement (Chopra et al., 2021).

2.4.3.3. Improving Brand experience

Brand experience can be defined as the personal subjective sensations, feelings, and cognitions evoked by external stimuli of the brand such as design, identity, packaging, communications, and environment (Kim & Chao, 2019). Those stimuli create an attachment to the brand (Granitz & Forman, 2015) to create a relationship between brands and consumers or even to create a deeper emotional connection to a brand leveraging brand image (Kim & Chao, 2019).

Past research has shown that social media has not only been crucial for information exchange but to delivering a unique and valuable brand experience (Khan, 2022). Consumers are attracted to social media and this experience affects the way, users act towards the brand and media. This can improve customer trust, brand preference, willingness to pay a premium price, loyalty or brand awareness, among others (Khan, 2022). Moreover, brand evangelists actively encourage word of mouth and engage others to admire those brands (Pornsrimate & Khamwon, 2021).

Past research shows that the most powerful brand communication is achieved when the organization gets Millennials to use brands to express themselves, by identifying themselves with the brand values. For Millennials, it is especially relevant that the brand's values are transcendental. Moreover, brands contribute to changing the world and, in this context, brands with superior values, contributing to build a better society or better environment are more likely to engage Millennials (Cartagena, 2017).

As an example, the luxury fashion industry uses social media marketing (1) to entertain and stimulate brand association, (2) to increase brand loyalty, and (3) to improve consumer-to-consumer interactions (Zollo et al., 2020).

2.4.3.4. Engagement motivation

Previous research shows that consumers will not engage with a particular platform if they do not have the motivation for content consumption (Verma, 2021). Some researchers identify certain motivations such as the search for information, interaction, entertainment, self-expression, professional development and passing time (Verma, 2021).

Moreover, and related to the intensive use of mobiles, consumers using social media on mobile devices have access without being limited by time or space. In fact, interaction with their social networks is done with minimal effort and the result is an increase in usage of social media, information consumption and social media sharing (Verma, 2021).

The term engagement has to do with consumers´ level of emotional presence, physical presence and cognitive presence in a relationship with a business or service provider. Moreover, engagement is sometimes defined in terms of the outcomes of engagement and not about engagement itself. (Bailey et al., 2021).

Some researchers think that motivations are the drivers that lead people to select and use social media content (Muntinga et al., 2011; Bailey et al., 2021) and they are integration and social interaction motivation, such as belongingness; social connections; support and information motivations, such as the need for opinions, advice and information exchange (Bailey et al., 2021). Other researchers add that social media users tend to vent negative feelings, they seek cognitive stimulation, hedonistic enjoyment and affection (Zollo et al., 2020).

Considering the objectives of a brand awareness strategy from the beginning, then actions are oriented to create interaction and engagement with customers. Some useful tactics can be to give variable rewards, give them loyalty programs or do customer retention to maintain the customers keep buying products (Silvia, 2019).

Moving on forward, the last part of this chapter wraps up the literature review in relation to the evolution of marketing and technological advances, the evolution of the Internet and how it has changed communication and how social networks became a ubiquitous means not only of communication but also of persuasion.

2.5. Technology as the Driving Force of Modern Marketing. A Reflection

No doubt that technology has changed lives and the way of doing marketing. Going further, social media has changed the way of communicating and the relationship among people. New consumers, especially Millennials, are claiming a new way of understanding communication. The influence of consumers´ perceptions and the way they share information about products, services and brands, has created communication that is no longer what companies want to communicate but rather what consumers are communicating about them among their peers. For those consumers, the effect is exponential as they are hyperconnected.

As seen in this chapter, the main advantages of the digital environment and the use of social media are huge and the growth is exponential, and so are their possibilities such as low cost and the chances of reaching many potential consumers at first sight. In addition, nowadays and almost most important social networks, are offering segmentation opportunities that give marketers a lot of information about consumers visiting their company, brand or product profile.

Marketers are in front of several possibilities to measure consumer behaviour from different angles. A large amount of information needs to be processed every day to track consumers´ steps everywhere they go, and to predict their purchase decisions. For some people, this might mean the end of creativity in marketing activities but for some others, it is exactly the opposite. This advantage or challenge (depending on the angle) should help marketing executives to be near users and to understand their deeper needs. Among the marketing technical language, technology should help to get better insights to be redirected and translated into products and services demanded by a target audience. Otherwise, technology will only be an instrument to get data and nothing more than that.

Social media might be helpful also to create awareness and reinforce the perception of value for companies and brands. It is difficult to think about a company targeting Millennials without a clear strategy to –in other words- speak their same language. To a certain extent, this is still a big challenge to marketing departments today. Although it might be fair to think that marketing has changed its creativity for the ability to measure almost everything around consumers, the idea might be exactly the opposite. The value added of social media is not to restrict marketing activities but to amplify them through the great dispersion effect. Social media marketing is a long-term strategy, and it should be used in combination with other conventional marketing strategies. Not to mention, and in this sense, coherence among digital and analogic marketing strategies is fundamental.

Millennials employ technology and social media for developing daily tasks in the digital environment and tend to be both producers and consumers of content in social media (Suárez-Gómez & Costa, 2021). Sharing information or personal opinions in posts in social media has become a very powerful communication method when consumers decide to make purchases and mobile apps are helping them to have anytime and anywhere an easy tool to find relevant information such as food vlogger reviews or recommendations, makes them easily accessible. A tendency is emerging for consumers to be more dependent on and pay greater respect to the opinions expressed in online product reviews, in comparison to other sources of information (Briliana et al., 2020). Millennials use food to express themselves and as a way of sharing their ideas and opinions, and diet tells a lot about their lifestyles and personality (Campos Nogueira, 2019).

Millennials prefer products that provide health benefits and they are also demanding more healthful and fresh ingredients. Healthy food is in vogue, and several trends have been created regarding healthy eating among Millennails (Suárez-Gómez & Costa, 2021). A healthy diet is a concern in the Millennial´s life (Ram, 2017). For this generation food is a complex topic due to the wide range of products available in the market and the possibility to access them. This allows them to buy food which brings them new experiences and sensations. Their behaviour is highly influenced by social aspects as well as by the internet, especially social media (Campo Nogueira, 2019).

Social media has exponential potential. Users are discussing, commenting, participating, sharing and creating as individuals, startups, and small or big businesses. Companies must rethink their traditional marketing strategies as social media is leveraging marketing activities.

On the contrary, there are -still- some threats to marketing professionals today. The first to mention is to deeply understand how to reach their target audiences, choosing among different types of tactics. In addition, which strategies or combination of them, to use according to each of them to perform successfully.

To a certain extent, mobile technology has become essential for billions of global users changing their lives and generating changes in economic life. In this sense, and clearly, social media has gone mobile. Hence, the perspectives of evolving into technological progress and a huge penetration of mobile devices plus, the creation and exchange of content by users, leverage the clear advantage of giving and getting information about users´ location in time and space. As a result, mobiles are reinforcing the use of social media and social media needs mobile devices to spread content and exchanges among users anywhere at any time.

The digital context is totally uncontrollable in contrast to the past communication environment. This lack of control pressures marketing executives as well as consumers that are claiming to be content creators although privacy controls are still fragile, and it is easy to violate our privacy without us realizing it.

Past research has shown that the contemporary communication environment is not a summer fashion. It is here to stay. In this context, marketing activities and marketing professionals are in front of a fantastic opportunity to leverage their knowledge of consumers and potential targets. And therefore, mastering those activities can give companies and brands a competitive advantage in front of their competitors. As we state in the first chapter of this thesis, the Millennial consumer has special characteristics that make them unique and such uniqueness must be addressed through a personalization strategy to reach them. On the other side, the amplification of content sharing and spreading of comments, make social media a dual role, an allied partner for the good news and an enemy when things go wrong. In other words, a marketing strategy should be carefully designed. The importance of the Millennial market is so huge that makes it worth doing special efforts to shape extraordinary marketing actions. The new communication environment is not a summer fashion. It is here to stay.

The next chapter analysis the evolution of the models of advertising and how to measure the effectiveness in social media and there will be an explanation of the methodology to be used in a proposed model.

Chapter 3

Advertising models of effectiveness

Tell me and I forget.
Teach me and I remember.
Involve me and I learn.

Benjamin Franklin

3.1. Introduction

In this chapter, we are going to suggest a radical shift from the classical advertising models to a new paradigm based on the advances in marketing communication. This shift can only be understood, considering that our target audience is young consumers, including the advances in digital scenarios that are embedded, in a new way of communication.
As we saw in the previous chapter, social media has changed dramatically the way people communicate. Over the last decades, researchers have tried to understand how advertising works and how it becomes a persuasion tool among the rest of a marketing strategy. In this context, all persuasive communication can be analysed following Lasswell´s famous statement that points out what, in which channel, to whom, with what effect (Lasswell, 1948). It remains, however, that the field of communication has evolved considerably since then and it may be appropriate to update the models to consider that evolution.

The remarkable development of social media has helped people to get connected with others, via different social media platforms and in consequence, various kinds of businesses are challenging traditional business processes and operations (Ngai et al., 2015).

Getting to know if communication has been effective is one of the goals of any marketing strategy and to measure advertising effectiveness several indicators have been considered along the different literature approaches. One of the most difficult problems that advertising agencies and advertisers are facing is how to measure the effectiveness of an advertising campaign (Hall, 2002). As Hall states (2002), consumers can change their minds about a product, then they change their attitude, and then they act. In other words, the process begins with cognition, it is translated into affection and then it is interested in new innovative techniques that help them of advertising and marketing is to shape and deliver consistent messages to the target audience in an effective way. The best way to deliver them will depend on the situation, the audience, and the type of business among other variables. Advertising models are very helpful to craft a marketing communication plan. In this sense, models provide a theoretical framework on how advertising operates on the consumer and they contribute to understanding what to expect from advertising. Those models will help us understand the value of offline communication and the parameters for advertisement effectiveness.

In the next section, we are going to analyse 3 classical communication models such as the Elaboration Likelihood Model (ELM) from Petty & Cacioppo, (1986); the Model of Hierarchy of Affects from Bartra & Ray, (1986); and the Advertising Model from Ducoffe, (1985) to finish this chapter by presenting the model that will be the backbone of the present thesis.

3.2. From Classical Advertising Models to nowadays

There are diverse models that can explain the effects of communication, advertising and persuasion but we had chosen just three ones that are considered the most suitable according to our thesis purpose. As Table 3.1 shows, and as stated before, they are: Elaboration Likelihood Model from Pretty & Cacioppo, (1986) and Cacioppo & Petty (1984), Hierarchy of affects model from Batra & Ray (1986), and Advertising Value Model from Ducoffe (1995). Following what we have seen in the previous chapter, we must keep in mind that, advances in technology and in different disciplines generate advances in the way we communicate. Those models are the basis of the proposed model to be tested.

Table 3.1. Summary of communication models revised

Name of the Model		Formulated by	Year
3.2.1.	Elaboration Likelihood Model (ELM)	Petty & Cacioppo	Circa 1980s
3.2.2.	Batra & Ray Model of Hierarchy of Affects	Batra & Ray	1986
3.2.3.	Web Advertising Model	Ducoffe	1995

Source: own elaboration

Although there might seem perceived, there is an imbalance in the importance of the models revised, this thesis focuses more in the last one from Ducoffe (1995). The decision was made to agglutinate the main framework of the previous ones, with a proven successful track (as it has been widely researched) and it will be the basis of the model that will enable the achievement of this doctoral thesis.

All the models reviewed will help us to understand the communication process from the very intrinsic essence of communication. The transmission of a message is surrounded by factors that make the process a complex one that cannot be interpreted as a straight line that goes from the transmitter to the receiver.

3.2.1. Elaboration Likelihood Model (ELM)

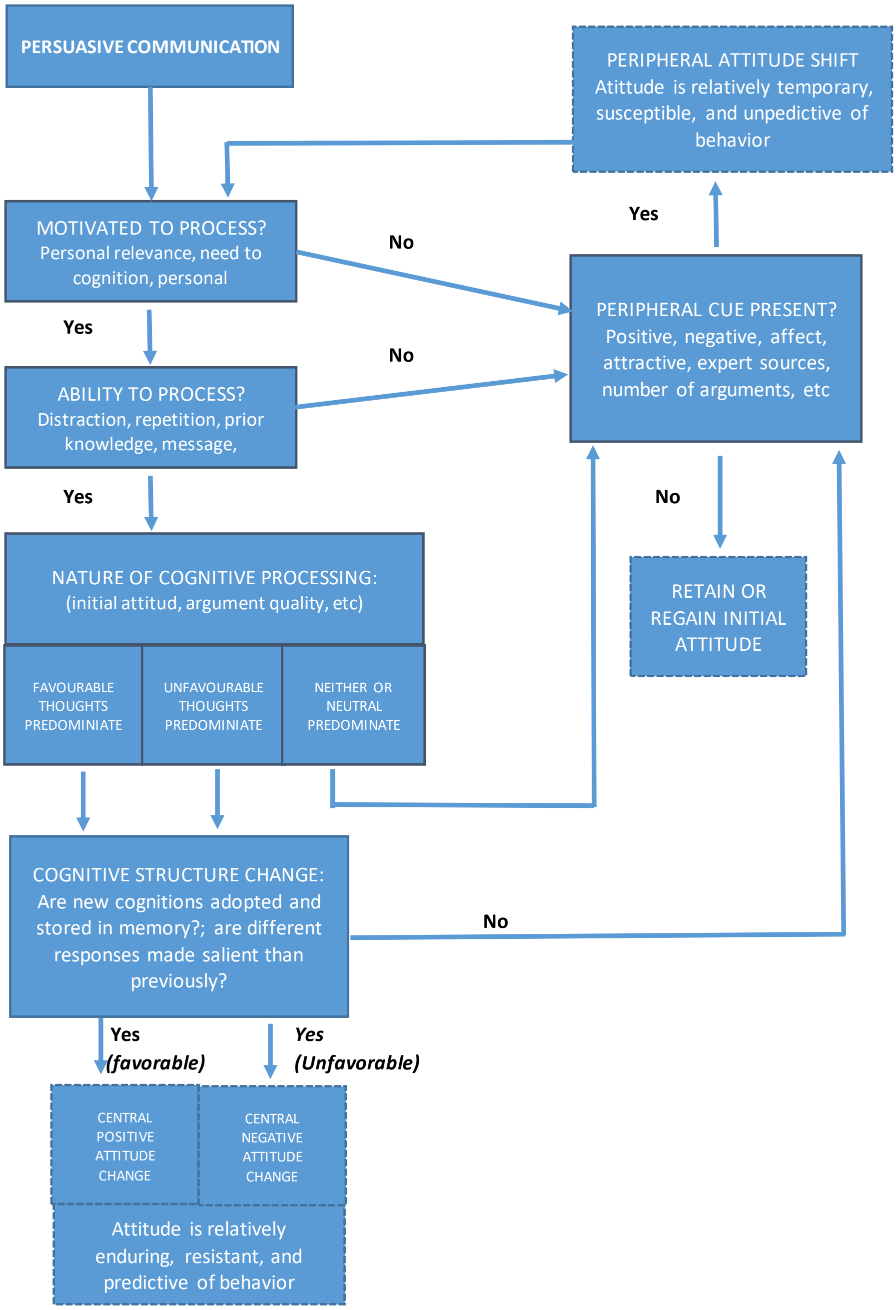
Based on the degree of implication of the consumer, the most used model is the Elaboration Likehoold Model (ELM) from Petty & Cacioppo (1986) and it is also, the most persuasive model used (Küster et al., 2016). This model was developed to give new directions in the persuasive communication theory (Petty & Cacioppo, 1986). Implication and attitude towards the ads are two backgrounds to persuasion that were analysed in deep in literature (Küster et al., 2016).

The ELM model distinguishes the evaluation of mainly cognitive processed and not processed information (Küster et al., 2016). The ELM assumed that the variations of persuasive messages produce the likelihood that message receivers will engage in the elaboration of the communication. The model applies two routes –a central and a peripheral- to illustrate the individuals´ change of attitudes (Teng et al., 2015; Kim et al., 2016; Han et al., 2018).

- Within the central route, individuals make cognitive efforts. Then, they evaluate the arguments and judge the persuasive messages (Petty & Cacioppo, 1984; Teng et al., 2015).
- Within the peripheral route, individuals tend to use positive or negative cues to infer the advocated messages in the persuasion context (Petty & Cacioppo, 1984; Teng, et al., 2015).

Figure 3.1. shows the Central and Peripheral routes to persuasion (Petty, 1997; Petty & Cacioppo, 1979; 1983). This figure despicts the two anchoring endpoints on the elaboration of likelihood continuum.

Figure 3.1. Central and peripheral routes to persuasion.



Source: Adapted form Petty (1997) and Petty & Cacioppo (1979; 1983)

The ELM states that humans tend to maintain valid attitudes that are consistent with reality. The amount of mental processing, which poses as the continuum when people process persuasive messages, is called elaboration. The elaboration of identical messages may differ in the amount of cognitive processing and in the different outcomes, depending on the subjects (Kitchen et al., 2014; Teng et al., 2015).

Elaboration likelihood is an important aspect of the model, where individuals look for information and pay attention to relevant arguments taking time to read and process the information presented. On the other hand, those who are less interested will make judgments based on less elaboration and will seek cues to guide attitude formation. If elaboration is high, individuals move towards the central route of persuasion through arguments. If elaboration is low, a peripheral route is preferred (Petty & Cacioppo; 1994; Teng et al., 2015; Cyr et al., 2018). The model suggests that if the message has logical arguments, the persuasive impact will be higher when the receiver has a high probability of elaboration. On the other hand, if the message is weak and irrelevant, persuasion will be reduced if the receivers are about to elaborate on the information they get (Moya, 1999).

This theory states that motivation and ability are key determinants of the elaboration process (Petty et al., 1983; Teng et al., 2015). Petty & Cacioppo (1983, 1986) identified several variables that mediate elaboration likelihood, that influence which route will be taken and it includes variables such as attractiveness, involvement, and the degree of need for cognition. Certain variables may play an important role in determining cognitive processing. As an example, a positive mood may motivate people to elaborate persuasive messages if they think processing the message will make them feel happy. This positive mood may decrease elaboration if people believe cognitive processing is likely to make them feel unhappy (Teng et al., 2015). There is a trade-off between the impact of elaboration and the peripheral route process on attitudes.

Previous research shows that attitude change via the central route tends to be more stable and predictable as the change is based on evaluative and factual judgments (Teng et al., 2015). On the other side, perception changed via the peripheral route is weaker and they tend to change in the long term (Teng et al., 2015).

Morin & Renvoise (2018) state that "according to this model, a good message is only elaborated if it appeals at the deep and personal level to targets" (Morin & Renvoise, 2018; p. 43). Morin & Renvoise (2018) also state that "an effective campaign must include strong proofs to establish the credibility used in a persuasive message" (Morin & Renvoise, 2018; p. 43).

The ELM model creates a framework to map out possible variables to measure the impact on the attitude change. This model has been changed throughout decades and being adapted to the new times with continuous research in the field of marketing (Teng et al., 2015).

Despite its popularity, some authors are critics of its effectiveness. In this sense, Morin (2008; p. 43) states that "persuasion is only possible if recipients engage cognitively with the content of the message, a fact that is not supported by most Neuromarketing research studies of the last decade".

Other issues concerning the model, have also criticism in four major research areas:

1.- The descriptive nature of the model: the result is inherently descriptive (Bitner & Obermiller, 1985; Eagly & Chaiken, 1993; Stiff & Mongeau, 1994; Stephenson et al., 2001; Cook et al., 2004; Kitchen et al., 2014).

2.- Continuum questions: since its initial mention in 1983, the elaboration likelihood continuum has not undergone comprehensive empirical testing (Kitchen et al., 2014). The ELM is still unable to account for, or explain movement along the continuum, and between the central and peripheral routes to persuasion (Choi & Salmon, 2003; Kitchen et al., 2014). And, it is generally accepted that attitude change generally results from both central and peripheral processes (Petty, 1997; Kitchen et al., 2014).

3.- The issue of multi-channel processing: dual paths and their interactivity has been questioned since its introduction (Bitner & Obermiller, 1985; Kitchen et al., 2014). Stiff (1986) argues that the ELM has been based on many assumptions that the receivers were unable to process message arguments and peripheral cues simultaneously. Stiff (1986) also questions whether the ELM framework was valid.

4.- The analysis of the different variables which mediate elaboration likelihood: despite the clear presentations of affection as a mediating variable in both central and peripheral routes, some authors still view affection as being associated only with the peripheral route (Miller et al., 2009; Kitchen et al., 2014). Other authors argue that attitude change is mostly reached through cognition and not through emotion (Morris et al., 2005; Kitchen et al., 2014).

In sum, Table 3.2. summs the strenghts and weakness of the the ELM Model.

Table 3.2. Strengths and weakness of the Elaboration Likelihood Model, Pretty & Cacioppo, 1986

Elaboration Likelihood Model, Pretty & Cacioppo, circa 1980
Strengths
The ELM model creates a framework to map out possible variables in order to measure the impact on attitude change. This model has been changed throughout decades and being adapted to the new times with continuous research in the field of marketing (Teng et al., 2015).
The ELM distinguished the evaluation of mainly cognitive processed and not processed information (Küster et al., 2016).
According to this model, a good message is only elaborated if it appeals at the deep and personal level to targets. An effective campaign must include strong proofs to establish the credibility used in a persuasive message (Morin, 2008).
Weakness
Persuasion is only possible if recipients engage cognitively with the content of the message (Morin, 2008).
The model is inherently descriptive (Bitner & Obermiller, 1985; Eagly & Chaiken, 1993; Stiff & Mongeau, 1994; Stephenson et al., 2001; Cook et al., 2004; Kitchen et al., 2014).
The ELM is still unable to account for, or explain movement along the continuum, and between the central and peripheral routes to persuasion (Choi & Salmon, 2003; Kitchen et al., 2014). And, it is generally accepted that attitude change generally results from both central and peripheral processes (Petty et al., 1997; Kitchen et al., 2014).
According to Stiff (1996), the ELM has been based in many assumptions that the receivers were unable to process message arguments and peripheral cues simultaneously. Stiff (1986) also questioned whether the ELM framework was valid.

Some authors still view affection as being associated only with the peripheral route (Miller et al., 2009; Kitchen et al., 2014). Other authors argued that attitude change is mostly reached through cognition and not through emotion (Morris et al., 2005; Kitchen et al., 2014).

Source: Own elaboration

Examples of the use of this model in the academic literature are shown in Table 3.3.

Table 3.3. Examples of the use of the Elaboration Likelihood Model, Pretty & Cacioppo, 1986

Examples of the use of the Elaboration Likelihood Model, Pretty & Cacioppo, 1986				
Authors	**Year**	**Thematic Area**	**Main Purpose**	**Main findings**
Yang	2015	E-Commerce	This study uses eye-tracking to explore the Elaboration Likelihood Model (ELM) in online shopping.	Practical findings might be useful to e-sellers in order to use different cues to increase attention. Customers in the high elaboration group have higher knowledge of the products. E-sellers should employ positive cue messages to reduce consumers' cognitive efforts and to improve the prediction of eye movement for purchase intention.
Chiang et al.	2015	Social Networks	The study shows how a job seeker self-presentation affects recruiter's hiring recommendations in online communities.	By applying the ELM to recruitment in an online community context, persuasive messages coming from a credible source, affective response can be evoked. Recruiters do not always have the ability to motivate job seekers. But, they may be persuaded by the identification with the source.

Chang et al.	2015	Social Media Marketing	This research investigates how persuasive messages, can lead Internet users to click like and share messages in social media marketing activities based on the ELM.	The findings of this research show that on social network sites, argument quality, post popularity, and attractiveness reinforce usefulness and preference. Usefulness affection fan behaviours and that like intention of page fans is the essential factor in their sharing intention. And finally, different levels of relative significance and user expertise affection the willingness to like and share.
Malthouse, et al.,	2016	User Generated Content-UGC	The use of social media is increasing the interest to marketers and particularly the ones where consumers create user-generated content (UGC) that offer the potential of engaging consumers and affecting consumer purchases.	This study demonstrates that inducing consumers to create UGC engages them actively which is relevant for brands but not necessarily affection buying decisions. The research adds this study to the growing literature on the importance of consumer engagement and validates the link between engagement and actual purchase behaviours.

Chun & Lee	2016	Social Networking Sites (SNs)	This research investigates the effects of content type (utilitarian vs. hedonic) on individuals' involvement and intention to subscribe/promote a company's Social Networking Sites (SNs)	This study provides helpful insights for companies in managing their Social Networking Sites. It also suggests using different strategies based on individuals' level of involvement with their company as it found that perceived usefulness and perceived enjoyment are significant predictors of individuals' use of a company' social network page.
Yoo et al.,	2017	Tourism & Technology	This study investigates the impact of the important smart tourism technology (STT) characteristics on travel decision support satisfaction and the moderating effects of self-efficacy on the main relationships.	The major findings of the study are based on the development of four important variables that influence and show important impact in travel decision satisfaction.
Cyr et al.,	2018	Online persuasion through website design	The research focus in determining the effects of argument quality as a central route to influence attitude change	The major findings are based on the relevant variety of online settings to alter user attitudes. It provides a wider scope for designers to determine which elements are most appropriate for the goal of persuasion.

Source: own elaboration

The next model will be focusing more on determining the attitude toward advertising by analysing the affective reactions.

3.2.2. Batra & Ray Hierarchy of Affects Model, 1986

This model from Batra & Ray (1986) is based on the fact that the receptor will accept the message not based on the message but on the cognitive response that the receptor will develop before the message. On the contrary to what Petty & Cacioppo (1979) and Chaiken (1980) stated about the impact of the persuasiveness, Batra & Ray (1986) state that what determines the attitude toward a piece of advertising is not only the cognitive responses but also, the affective reactions which are inner to the receptor and not qualities of the advertisement itself.

Attitude towards an object can be defined as the internal evaluation of an individual over an object, based on their beliefs (Fishbein & Ajzen, 1977; Ruiz et al., 2013). Attitude towards individual ads is conformed not merely for the information provided in relation to the attributes of the brand doing advertising, but also for those tactics elements and the execution elements such as music, affective tone or humour and characters among others (Ruiz et al., 2013).

All these elements can evoke in the receiver a certain affective response by the time exposed to the ad. Such affective response can be more or less positive, and it will influence the attitude towards the ad (Batra & Ray, 1986). The attitude towards advertising is a combination of cognitive, emotional and behavioural processes (Quester et al., 2007; Ruiz et al., 2013).

Batra & Ray (1986) state that attitudes towards the brand are based on beliefs over the product´s attributes. These authors also suggest that consumers can develop hedonic effects based on their likelihood without an evaluation of the product´s attributes (Batra, 1987; Ruiz et al., 2013).

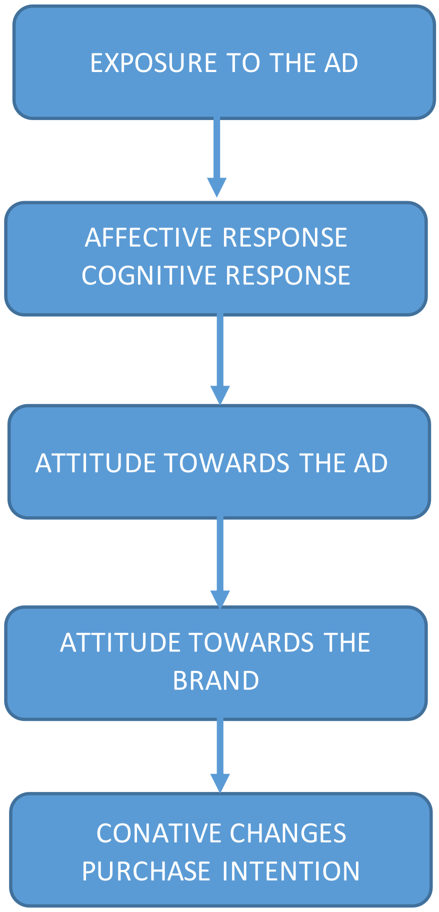
According to the Batra & Ray model, consumers´ response is the result of different forms in which they develop attitudes, such as functional on one side and hedonic on the other, more than the degree of implication or elaboration consumer shows. In this sense, measures should include both hedonic and functional components (Ruiz et al., 2013).

Subsequent research has shown that consumers´ attitudes towards ads are affecting their attitude toward the brand and the purchase intention (Ruiz et al., 2013). This association with the brand can lead to changes in the conative component, such as purchase intention or purchase itself (Ruiz et al., 2013). Research has shown that the attitude towards advertising is influenced by cognition –thoughts- that the receiver generates by visualizing it. This attitude towards the ad affects the attitude towards the brand and subsequent purchase intention of the brand (Ruiz et al., 2013).

According to Batra & Ray (1986), exposure to an ad first affects the own attitude towards the ad and then, at the same time, the attitude towards the brand. Afterwards, the behaviour intention is shaped because of the processed attitude (Mackenzie & Lutz, 1989; Küster et al., 2016). The sequence is the following: exposure to the ad generates two kinds of responses: affective and cognitive. While affective response may evoke in consumers certain emotions that are going to build the affective response to such ad. On the other hand, cognitive responses are the ones that the viewer generates after watching the ad with the information contained in it. Such cognitive responses are classified in mainly two big categories: supporting arguments that are in favour of the message content and counterarguments when the audience disagrees with such arguments.

Below, Figure 3.2. summarizes the process of the hierarchy of affects model (Batra & Ray, 1986)

Figure 3.2. Hierarchy of affects from Batra & Ray (1986)



Source: Batra & Ray (1986)

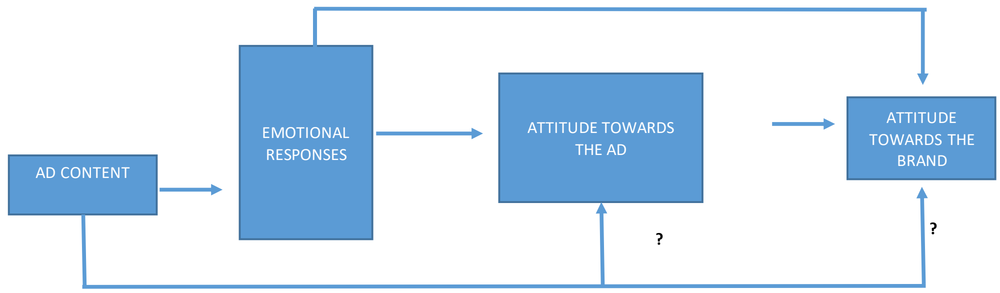
Both attitudes, affective and cognitive, contribute to conforming the attitude toward the ad, which can be associated with the attitude towards the brand.

In this sense, the Batra & Ray model (1986) might imply that advertising messages generate a certain attitude towards the messages themselves. This might also influence the attitude towards the brand and in an indirect way, the purchase intention (Küster et al., 2016).

This communication model draws on the results of several studies that documented the mediating role of attitude towards the ad and then, the attitude towards the brand (Holbrook, 1978, Batra, 1984; Gardner, 1985; Batra & Ray, 1986; MacKenzie et al., 1986; Holbook & Batra, 1987). Figure

3.3. offers the role of emotions in determining advertising effectiveness (Holbrook & Batra; 1987)

Figure 3.3. The role of emotions in determining advertising effectiveness.



Source: Holbrook & Batra (1987)

The first thing to consider is the role of affection in advertising as a factor in advertising success (Ray & Batra, 1983). As Ray & Batra (1983) state, there are at least four reasons why affective advertising may prove to be more effective advertising:

1. **People may pay greater attention to affective advertising.** Affection tends to play an important role in models of attention and perception. People must pay attention to advertising for it to have any affection (Ray & Batra, 1983). To do so, "affective advertising should prove to be more effective in getting such attention" (Ray & Batra, 1983).
2. **Affection may enhance the degree of processing.** Additionally, the degree of information processing for a message, is a function of the degree to which the message evokes arousal, or phasic activation (Ray & Batra, 1983).
3. **Affective executions may lead to more positive judgments of the advertised message.** Affective executions may lead to more positive judgments of the advertised message. People´s judgments are automatically and without awareness, influenced by how people are feeling at a determinant moment (Ray & Batra, 1983).
4. **Affective executions may be remembered better.** Affective material, regardless of valence, seems to be remembered better (Ray & Batra, 1983).

The main criticism of this model is that it does not provide an accurate description of how advertising works and its effects (Weilbacher, 2001; Sinh, 2013). Hence, it is unlikely to be used as a framework for measuring the true effects of advertising. According to Weilbacher, (2001), the success or failure of advertising depends on the results in the sales of the product or service that has been exposed to advertising. Preston & Thorson (1983; 1984) admit that this model is more a marketing model than an advertising model. On the other hand, Barry (2002) considers that the hierarchy model is an appropriate framework for any form of marketing. Despite its drawbacks, as Sinh (2013) states, the marketing literature continues to embrace this model as a major guideline for measuring the effects of advertising.

Table 3.4. includes a summary of the strengths and weaknesses of the Bartra & Ray Hierarchy of affects model.

Table 3.4. Strengths and weaknesses of the Bartra & Ray Hierarchy of Affects Model, 1986

Batra & Ray Hierarchy of affects model, 1986
Strengths
Research has shown that consumers´ attitudes towards ads are affecting their attitude towards the brand and their purchase intention (Ruiz et al., 2013). This association with the brand can lead to changes in the conative component, such as purchase intention or purchase itself (Ruiz et al., 2013).
According to Batra & Ray (1986), exposure to an ad first affects the own attitude towards the ad and then, at the same time, the attitude towards the brand. Afterwards, the behaviour intention is shaped because of the processed attitude (Mackenzie & Lutz, 1989; Küster et al., 2016).
Batra & Ray model (1986) might imply that advertising messages generate a certain attitude towards the messages themselves. This might also influence the attitude towards the brand and in an indirect way, the purchase intention (Küster et al., 2016).
The first thing to consider is the role of affection in advertising as a factor in advertising success (Ray & Batra, 1983).
Barry (2002) considers that the hierarchy model is an appropriate framework for any form of marketing. And Sinh (2013) considers that marketing literature continues to embrace this model as a major guideline for measuring the effects of advertising.

Weaknesses
The model does not provide an accurate description of how advertising work and its effects (Weilbacher, 2001; Sinh, 2013). Hence, it is unlikely to be used as a framework for measuring the true effects of advertising.
According to Weilbacher, (2001), the success or failure of advertising depends on the results in the sales of the product or service that has been exposed to advertising. Preston & Thorson (1983; 1984), admit that this model is more a marketing model than an advertising model.

Source: own elaboration

Examples of the use of this model in the academic literature are shown in Table 3.5.

Table 3.5. Examples of the use of Batra & Ray Hierarchy of Affets Model, 1986

Examples of the use of Batra & Ray Hierarchy of Affects Model, 1986				
Authors	**Year**	**Thematic Area**	**Main Purpose**	**Main findings**
Dubé et al.,	2003	Food attitudes French vs. Chinese	The study shows how a hierarchical model demonstrates a superior ability to predict behaviours for two types of food through two items with an affective and cognitive base having a different influence on consumption.	The study demonstrated that a hierarchical model performed better than others in capturing consumers´ attitudes that preserves, at the first level, attribute-specific information nested, at a higher level, within affective and cognitive bases. Nowadays, it is crucial to design transcultural measurement tools that capture the similarities as well as the culture-specific aspects of the attitudinal constructs and of the relationships between them that can also predict their impact on consumption behaviour. This would be critical for communication strategies in multinational and global markets.
Yoo et al.,	2004	Animated Banner Advertising	The aim of the study is to show different processing mechanisms under different animation levels and provide marketers with recommendations when using animation in their ads.	Results showed a positive relationship between the level of animation and the attention towards the ad. Furthermore, there is also a positive relationship between the amount of attention and the cognitive intensity. These facts indicate that fast-moving ads are more attractive than slower animation ads.

Laros et al.,	2005	Food consumption	The study shows an integrated hierarchical consumer emotion model evoked by marketing stimuli.	This study proposes a hierarchical model of consumer emotions to integrate in different researches concerning emotion content and structure. The proposed model suggests that the basic emotions allow for a better understanding of the consumer's feelings concerning certain food products compared to only positive and negative affection.
Koshkaki & Solhi	2016	Factors affecting the selection of smartphones	This study investigates the role of negative emotion as a facilitator in the consumer decision making process based on the hierarchy of effects model.	The study shows that the main functions of emotion are action. The effect of arousal might depend on the stage of hierarchy of effects model and related negative emotion. Marketing communications should communicate with consumers through emotions and emotional messages. Marketing practitioners should formulate their marketing communications based on the relevant emotions to motivate the desired behaviour or decision in consumers. The study shows the valuable relationships between the emotional response of consumers and decision-making process.
Busen et al.,	2016	Online Advertising	The study is focused on the importance and impact of attitude towards online banner advertisement to explain the impact of awareness on brand performance using the model of persuasive hierarchy framework.	The results showed the theoretical propositions of the persuasive hierarchy model regarding the potential of online banner advertisement. Online banner advertisement is essential for brand awareness. The study focused on the role of credibility in determining web advertising effectiveness.

Curtis et al.,	2017	Evaluation of emotions through printed ads and Internet advertising videos.	Traditional advertising is characterized by delivering a persuasive message that highlights the key benefits of a product or service to appeal to consumer needs and desires and it is frequently intensified with emotions and judgements and some of them appeal to controversial and provocative communication to get strong emotional responses.	The role of advertising is to create awareness and influence the decision-making process. The choice is related to the emotional appeal of the message and how it will influence the consumer´s judgement by triggering positive or negative emotions that might create different effects in decision making. And the study states that purchase intention might be influenced by many factors in addition to the individual´s emotional state.
Lou & Koh	2018	Brand content influences social media advertising effectiveness	This research investigates how features of brand content influence social media advertising effectiveness by integrating two effectiveness models and the effects on consumers´ affective and cognitive involvement that affect their attitude towards brand content.	Consumer´s attitudes toward the brand, their brand purchase intention and their brand content sharing intention are positively affected by attitudes toward brand content. When brand content is ignored or dismissed, it can be viewed as a failed or ineffective communication. The more superior the characteristics of brand content, the more consumers' attention it can attract.

Source: own elaboration

The following model will deepen in the estimation of the advertising value as predictor or effectiveness.

3.2.3. Advertising Value Model, Ducoffe (1995)

The Advertising Value Model was developed by Ducoffe (1995) and it has been used to investigate the mediating role of advertising value between predictors (informative, entertainment, irritation) and the criterion (attitude towards advertising) (Malik & Dubey, 2016).
The value of advertising is supposed to be related to its specific functionalities. In other words, consumers get what they want from advertising which will help them to explain how and why they respond the way they do (Ducoffe, 1995). Among the revision of the literature, there is a strong consensus that consumer needs to be informed of product alternatives to make purchases, and that is of great value (Ducoffe, 1995). According to Rotzoll et al., (1989) the advertising informational role represents its main function.

It is widely accepted that an attitude is a person´s favourable or unfavourable feelings towards an object (Fishbein & Azjen, 1977). A person´s evaluation is the product of integrated knowledge, beliefs and/or meaning regarding a concept (Malik & Dubey, 2016). And, during the integration process, a person decides on the personal relevance and if it is favourable or unfavourable (Peter et al., 1999).

The notion is that consumers value advertising information as one of the functions derived from media communication to satisfy their needs (McQuail, 1987; Ducoffe, 1995). Individuals give greater value to other sources of information when making purchases implies that deceptiveness has a negative influence on advertising value (Ducoffe, 1995).

On the other hand, Bauer & Geyser (1968) found that the main reasons why people criticize advertising are related to irritation causes. And, such irritation reduces advertising effectiveness (Aaker & Bruzzone, 1985; Ducoffe, 1995). If consumers believe that they are perceiving advertising as unwanted or as an irritating influence, it is expected they will reduce the value of advertising (Ducoffe, 1995).

Another dimension of the model contrasts the notion that pleasant or likeable advertising is supposed to have a positive impact on brand attitudes (MacKenzie & Lutz, 1989). McQuail (1987) states that the value of entertainment lies in its ability to fulfil the audience's needs for escapism, diversion, aesthetic enjoyment or emotional release. Since advertising is a significant portion of media content, it is expected that entertainment would be an important source of the positive value of advertising for consumers (Ducoffe, 1995).

In sum, informativeness, deception, irritation and entertainment are the starting point to understand how consumers assess the value of advertising (Ducoffe, 1995).

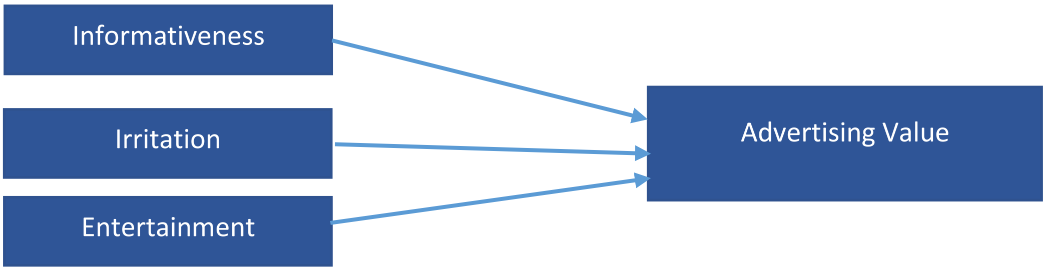
Advertising value relates to what the receiver will get from the advertisement. And this value concerns the communication exchanges between the advertiser as the sender, and the consumer as the receiver (Ducoffe & Curlo, 2000). The sender wants to get some attention from the receiver and to get, at least, some appreciation of the message and the receiver wants to get something positive out of the ad (Ducoffe & Curlo, 2000). If an ad is ignored or dismissed, it can be viewed as ineffective and of low advertising value, basically suggesting a failure in the communication exchange (Ducoffe & Curlo, 2000).

As Ducoffe (1995) originally states, the value generally unrecognized that a theory of advertising persuasion will remain incomplete if it is restricted to the study of how advertising accomplishes business goals. There is strong evidence that both the content as informativeness and the form as entertainment of advertisement, are key to its effectiveness (Aaker, 1992; Ducoffe, 1996).

Among the limitations, Ducoffe (1996) states the need to examine other factors that can add explanatory power to the model and it implies that advertising value depends on the context in which advertising processing occurs.

Figure 3.4. illustrates the graphical description of the Ducoffe Advertising Value Model, 1995

Figure 3.4. Ducoffe Advertising Value Model, 1995

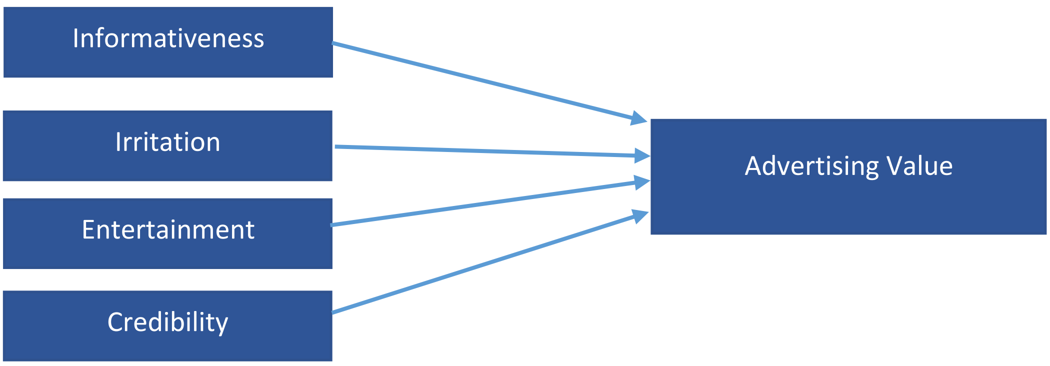


Source: Ducoffe (1995)

Although the original model indicates that informativeness, entertainment and irritation are the three beliefs associated with the value of an attitude towards advertising (Zha et al., 2015), in addition, the role of credibility is determining in web advertising effectiveness and predicting attitude toward web advertising (Zha et al., 2015). Credibility is crucial for the formation of the attitude toward web advertising and has a huge impact on online buying patterns (Goldfarb & Tucker, 2011). Given the advertising shift from offline to online, recent studies treat credibility issues comparing the Internet with traditional sources (Johnson & Kaye, 2004; Zha et al., 2015).

Figure 3.5 shows the adaptation to the original Ducoffe Advertising Value Model (1995) on web.

Figure 3.5. Adaptation of Ducoffe Advertising Value Model (1995)



Source: own elaboration

Among the criticism of this model, it has been found that Ducoffe´s Model did not provide a good fit for assessing advertising value in social media or television as Logan et al., (2012) reported. According to Logan et al., (2012), respondents assessed ad value on the basis of entertainment and informativeness. Table 3.6. sums up the strengths and weaknesses of the Ducoffe Advertising Value Model, (1995).

Table 3.6. Strengths and weaknesses of the Ducoffe Advertising Value Model, 1995

Ducoffe Advertising Value Model, 1995
Strengths
There is strong evidence that both the content as informativeness and the form as entertainment of advertisement, are key to its effectiveness (Aaker, Batra, and Myers, 1992; Ducoffe, 1996).
Advertising value relates to what the receiver will get from the advertisement. And this value concerns the communication exchanges between the advertiser as the sender and consumer as the receiver (Ducoffe & Curlo, 2000).
The low value of advertising can be viewed as ineffective communication and a failure in their exchange (Duccoffe & Curlo, 2000).
Weaknesses
As Ducoffe (1995) originally state, the value generally unrecognized that a theory of advertising persuasion will remain incomplete if it is restricted to the study of how advertising accomplishes business goals.
Among the limitations, Ducoffe (1996) states the need to examine other factors that can add explanatory power to the model and more generally, it implies that advertising value depends on the context in which advertising processing occurs.
Ducoffe´s Model did not provide a good fit for assessing advertising value in social media or television as Logan et al., (2012) reported. According to Logan et al., respondents assessed ad value based on entertainment and informativeness (Logan et al., 2012).

Source: own elaboration

Examples of the use of this model in the academic literature are shown in Table 3.7.

Table 3.7. Examples of the use of Ducoffe Advertising Value Model, (1985)

Examples of the use of Ducoffe Advertising Value Model, (1985)				
Authors	**Year**	**Thematic Area**	**Main Purpose**	**Main findings**
Teo et al.	2003	Interactivity on web users	This research investigates the effects of interactivity level on web users´ attitudes towards commercial websites	The study suggests the positive impact of interactivity level on websites usability. It found that interactivity is a process-dependent concept rather than a static attribute-based concept, and designers should be aware of these highly dynamic interactions.
Logan et al.,	2012	Advertising on social networks	The purpose of the study is to examine the perception of the value of adverting on Facebook and television on female audience through Ducoffe´s ad value model.	The conclusion of this study shows that the aspects such as entertainment and irritation play a key role in the value of advertising. On the contrary, informativeness did not play a significant role in value assessment and attitude towards advertising.
Kim & Han	2014	Web advertisement	The study suggests a comprehensive advertising model to try to understand the antecedents of purchase intention and influence processes in the context of smartphones advertising.	The study relates how customers respond to smartphone advertising contributing to describe a theoretical frame. Furthermore, the study confirms the relationship between personalization to cognitive, affective and economic factors and their relationship to advertising value and flow experience and the purchase intention chain.

Hossain et al.,	2018	WOM in mobile advertising	The study is focused on the potential impact of perceived value of mobile advertising in WOM as a powerful marketing tool that has aroused interest among scholars.	WOM has a strong impact on consumer intentions towards products or services. WOM is generated by perceived value. informativeness, non-informativeness and entertainment have a direct or indirect influence on WOM intention when talking about mobile advertising contexts.
Lin & Bautista,	2018	Location-based mobile advertising (LBA)	The study is focused on how identifying content factors and their effects on users´ perceived value of Location-based mobile advertising (LBA).	The study provides insights to practitioners to improve their Location-based mobile advertising (LBA) content and perceived value that will benefit in boosting the adoption of LBA.
Shareef et al.,	2019	Advertising on social networks	The study was developed to reveal the effect of the source of advertisements on credibility perception taking into account Duccoffe´s advertising model.	The study provides extensive knowledge to learn and implement their social networks promotional activities. By testing three sources to generate and introduce product promotional messages, the study showed significant differences in developing advertising value and having a favourable attitude towards advertisements.
Martins et al.,	2019	Smartphone advertising	This research is focus on understanding the factors that motivate consumers to interact with smartphone advertising and what stimulates their decision to purchase based on Ducoffe´s web advertising model.	The study concludes that if consumers engage with smartphone advertisements, valuable information should be delivered. Furthermore, irritation is recognized by consumers as intrusive advertisements and regarding the importance of emotional value on brand awareness. Consumers become more engaged with brands that are familiar to them.

Source: own elaboration

As it can be seen in further sections, an adaptation of this model will be used as an important part of the methodological body and the proposed model will be based mainly in this last.

Moreover, in evolutionary terms, the three selected models are connected.

3.2.4. Conclusions of the models revised. A proposed model

To conclude this section, Table 3.8. summarizes the different models revised and the main authors that have contributed to the present work. The third one is the most current one and has become the basis of the model to be presented and tested.

Table 3.8. Classical communication models revised and main authors

Classical Communication Models				
Nbr.	**Name of the Model**	**Formulated by**	**Year**	**Authors revised**
3.2.1.	Elaboration Likelihood Model (ELM)	Petty & Cacioppo	Circa 1980s	Eagly & Chaiken, 1993 Stiff & Mongeau, 1994 Bitner & Obermiller, 1985 Pretty & Cacioppo, 1984; 1986; 1994 Stiff, 1986 Petty, 1997 Moya, 1999 Stephenson et al., 2001 Choi & Salmon, 2003 Cook et al., 2004 Morris et al., 2005 Miller et al., 2009 Kitchen et al., 2014 Teng et al., 2015 Küster et al., 2016 Kim et al., 2016 Han et al., 2018 Morin, 2018 Yang, 2015 Chiang et al., 2015 Chang, et al., 2015 Malthouse, et al., 2016 Chun & Lee, 2016 Yoo et al., 2016 Cyr et al., 2018 Petty et al., 1983

3.2.2.	Batra & Ray Model of Affects	Batra & Ray	1986	Fishbein & Ajzen, 1977 Pretty & Cacioppo, 1979 Holbrook, 1978 Chaiken, 1980 Batra & Ray, 1983; 1986 Preston & Thorson, 1983; 1984 Batra, 1984 Gardner, 1985 Lutz et al., 1986 Holbrook & Batra; 1987 Mackenzie Lutz, 1989 MacKenzie et al., 1986 Ray & Batra, 1983 Weilbacher, 2001; Barry 2002 Sinh, 2013 Ruiz et al., 2013 Küster et al., 2016 Dubé et al., 2003 Yoo et al., 2004 Yoo et al., 2004 Laros et al., 2005 Koshkaki & Solhi, 2016 Busen et al., 2016 Curtis et al., 2017 Lou & Koh, 2018
3.2.3.	Ducoffe Advertising Value Model	Ducoffe	1995-1996	Aaker, 1992 Fishbein & Azjen, 1975 Rotzoll et al., 1989 Aaker & Bruzzone, 1985 McQuail, 1987 Ducoffe, 1995; 1996 MacKenzie & Lutz, 1989 Peter et al., 1999 Bauer & Geyser, 1968 Logan et al., 2012 Ducoffe & Curlo, 2000. Goldfarb & Tucker, 2011 Zha et al., 2015. Malik & Dubey, 2016 Johnson & Kaye, 2004 Teo et al., 2003 Kim & Han, 2014 Hossain et al., 2018 Lin & Bautista, 2018 Shareef et al., 2019 Martins et al., 2019

Source: own elaboration

Going deep into those models and their variants can help us understand the current complex ecosystem of both analogic and digital communication. Furthermore, the next step will go through the literature related to the main variables of the proposed model and the hypothesis related to the revision being done.

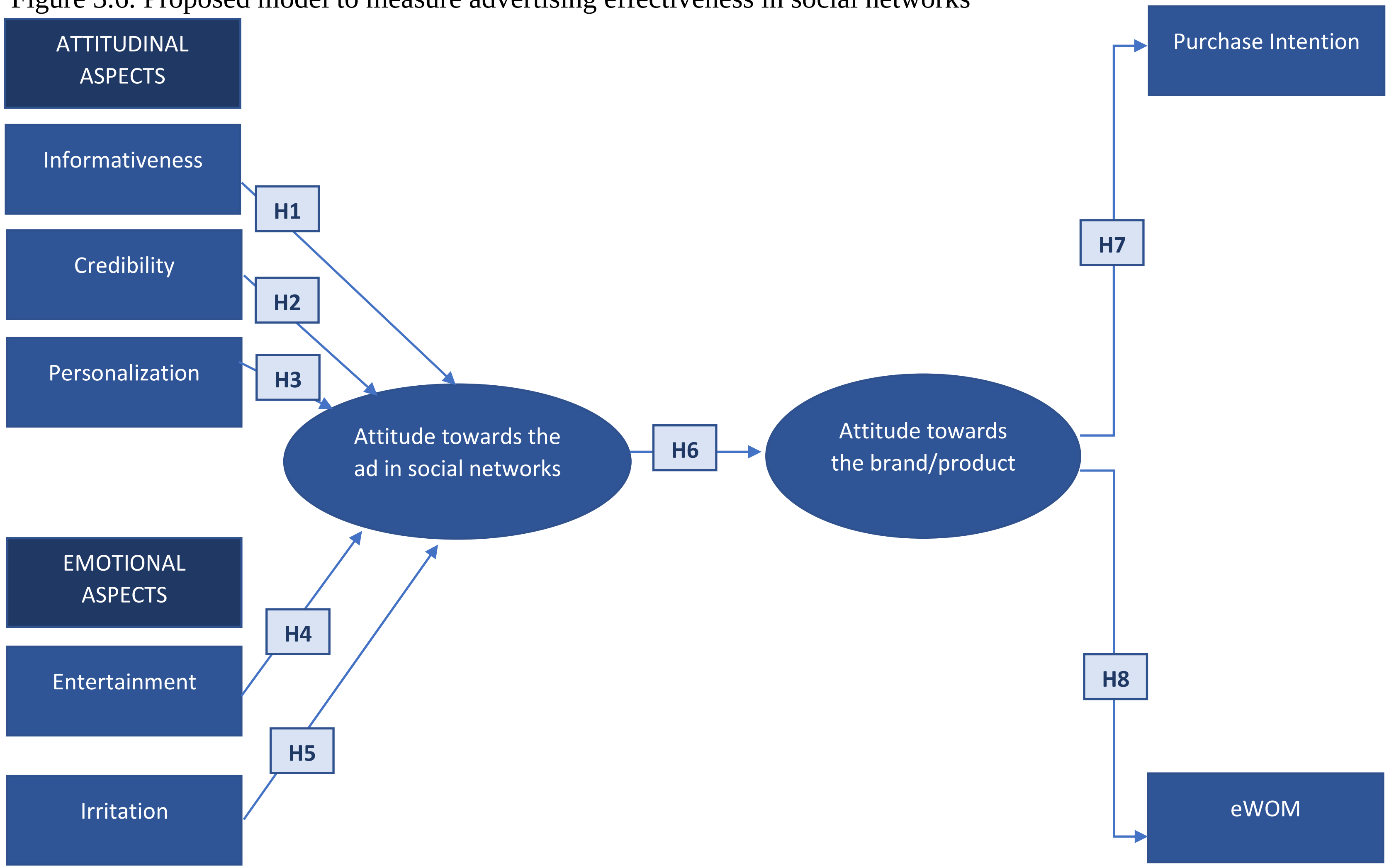
3.3. A Proposal for a model to measure advertising effectiveness in Social Networks

As stated before, this section proposes a model to measure advertising effectiveness in social networks based on the main communications models explained in previous lines.

This model is based on the Advertising Value Model (Ducoffe, 1995) and as stated before. It has been used to investigate the mediating role of advertising value. This model inherits from Ducoffe (1995) the predictors (informativeness, entertainment, irritation) and the criterion (attitude towards advertising) (Malik & Dubey, 2016). In addition, two new predictors have been incorporated due to their strong relevance in the social network sphere: credibility and personalization. This model considers, by extension, the attitude towards the ad in social networks with the aim of explaining purchase intention and eWOM.

The proposed model to measure advertising effectiveness in social networks is shown in Figure 3.6. as follows:

Figure 3.6. Proposed model to measure advertising effectiveness in social networks



Source: own elaboration

The starting point is that five properties of the message (informativeness, credibility, personalization, entertainment and irritation) when they are inserted into social networks are affecting the message receptor´s attitude towards the ad and, as matter of fact and by extension, the attitude towards the advertiser´s brand. These five main antecedents of the attitude towards the ad in social media can be split into two big blocks of aspects related to the message: the attitudinal aspects (informativeness, credibility, personalization) and the emotional aspects (entertainment and irritation).

According to Fishbein & Ajzen (1977), attitudes impact conducts through expectation (Najiba et al., 2016). The intention is defined as "the strength of a person's conscious plan to perform the target behaviour" (Fishbein & Ajzen, 1977). Positive attitudes refer to customers' favourable evaluation while negative attitude refers to unfavourable evaluation, both towards advertising (Najiba et al., 2016). The major aim of any advertiser is to positively influence consumers' attitudes and buying behaviour (Ducoffe, 1996; Najiba et al., 2016).

Past theories have shown that cognition precedes emotions. Once the consumers have paid attention to the product, a cognitive processing starts which leads to affection (attention, cognition, emotions) and behaviour. But, over the last decades, the power of emotions has increased considerably thanks to previous neuroscientific research that has shown that emotions dominate cognition. In the new advertising models that means that conscious responses will depend on previous conscious ones (Vila-López & Küster-Boluda, 2019).

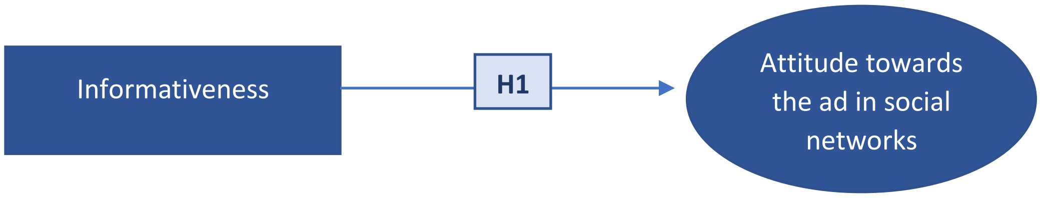
The next lines justify the hypotheses of the theoretical model proposed.

Attitudinal aspects

Informativeness of the message will improve attitude towards the ad in social networks: H1

The representation of hypothesis 1 is represented in Figure 3.7. as shown below:

Figure 3.7. Representation of hypothesis 1



Source: own elaboration

According to Ducoffe (1996), an informative message refers to the ability of advertising to convey and pass information to the targeted consumers. Advertising creates awareness among consumers about products and services (Aktan et al., 2016).

From a consumer point of view, advertising presents the ability to inform customers and help them satisfy their purchasing needs (Ducoffe, 1996). Information in advertising might contribute to two things: on one side consumer welfare and on the other, efficient market functioning. In this sense, deceptiveness undermines them (Bloom & Krips, 1982; Ducoffe, 1995).

Previous research has shown that advertising placed in more credible mediums such as a newspaper is perceived as more informative, reliable, and believable while advertising placed in a less credible medium like TV is less informative (Bauer & Greyser, 1968; Becker et al., 1976; Larkin, 1979). For this young adults, social media news has become more attractive than mainstream media in terms of news habits (Newman et al., 2019). Furthermore, The Pew Research Center have quoted that social media platforms have surpassed print newspaper as news source (Shearer, 2018). This might be an indicator of the array of technologies are changing news habits (Barthel et al., 2020; Alsulaiman, 2022).

In any case, in all of them, there is a relationship between informativeness and attitude to the ad. Not in vain, recent studies have shown that consumers found that informativeness is probably the main reason for their acceptance of advertising (Lee & Hong, 2016) and one of the main factors that fluences consumer´s attitudes toward social media (Arli, 2017).

Haghirian et al., (2005) consider that the quality of the information placed on a company's website has a direct influence on the customers' perceptions of the company and the company's products and that the user needs quick access to the information. In the same line, other researchers argue that the value of any advertisement depends on the argument and counterargument in the advertising statement (Lu et al., 2005; Chu, 2011, Kim & Ko, 2012, Logan et al., 2012; Shareef et al., 2017). Also, the informativeness of the context, makes it persuasive and it is important to create consumer exposure, attention and a positive perception of the advertisement (Logan et al., 2012; Hayes & King, 2014; Shareef et al., 2017).

In sum, several authors have demonstrated that the informative character of a message will influence the attitude towards advertising (Ducoffe, 1995; 1996; Haghirian et al., 2005). In fact, Ducoffe (1996) has demonstrated that informativeness influences the attitude of the consumer towards advertising on the Internet. In a more specific sense, informative advertising messages on social networking sites will draw users´ attention and motivate them to associate the ad with a positive image that leads to the formation of a positive attitude towards the ad (Lee & Hong, 2016).

H1: The higher the informativeness of the message, the better attitude toward advertising on social networks.

Table 3.9. summarizes the literature revised that supports the hypothesis established.

Table 3.9. Literature revised on informativeness

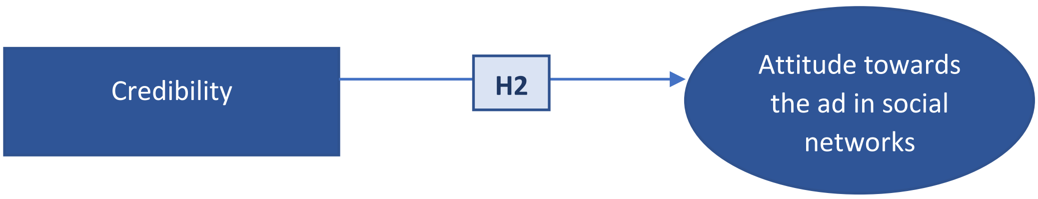
Aspect	Variable	Literature reviewed
Attitudinal	Informativeness	Ducoffe, 1995; 1996 Aktan et al., 2016 Bloom & Krips, 1982 Bauer & Greyser, 1968 Becker et al., 1976 Larkin, 1979 Shearer, 2018 Barthel et al., 2020 Alsulaiman, 2022 Lee & Hong, 2016 Haghirian et al., 2005 Arli, 2017 Lu et al., 2005 Chu, 2011 Kim & Ko, 2012 Logan et al., 2012 Shareef et al., 2017 Hayes & King, 2014 Lee & Hong, 2016 Ducoffe, 1995, 1996 Aktan et al., 2016 Bloom & Krips, 1982

Source: own elaboration

Credibility of the message will improve attitude towards the ad in social networks: H2

Figure 3.8. shows a representation of hypothesis 2:

Figure 3.8. Representation of hypothesis 2



Source: own elaboration

Credibility is referred to the extent to which consumers perceive claims made about the brand in the ad, are believable (MacKenzie & Lutz, 1989).

Credibility is defined as “the quality of being trustworthy” (Abbasi & Liu, 2013). Ad credibility consists of three constructs: perceived ad claim discrepancy, advertiser credibility and advertising credibility. This last one represents the consumer´s perception of the believability of advertising in general and not in a particular ad (MacKenzie & Lutz, 1989). Using credible information is indispensable for accurate analysis of the data shown by social media to get accurate analysis for decision-making and predictions (Abbasi & Liu, 2013).

From another point of view, in communication research, information credibility is composed of three parts: message credibility, source credibility and media credibility (Metzger et al., 2003). Assessing information credibility in social media is more challenging than in conventional media (Abbasi & Lui, 2013). In addition, in social media, the source can be unknown, and no one takes responsibility for the content (i.e. fake profiles or lack of information about it) (Abbasi & Lui, 2013).

The ELM model of Petty & Cacioppo (1986) has been widely used to study how individuals evaluate credibility (Xiao et al., 2018) and it suggests two factors that can be significant moderators to shifting the people´s perception of information credibility: information consumer´s motivation and ability (Li & Suh, 2015). When people have a high level of ability to evaluate information credibility, they will take the central route and consider information content carefully. On the other hand, when people have a minor level of ability to evaluate information credibility, they will take the peripheral route to put the efforts into evaluating the medium that provides information (Li & Suh, 2015).

As some researchers state, credibility is perceived as one of the most critical components of a persuasive message that changes the outcomes of the message (Perloff, 1993, Choi & Rifon, 2002; Tran, 2017), and this lastly determines the final attitude towards the advertising among the audience. If an ad is not credible, it is avoided or ignored by the audience (the attitude towards the add will be negative) and on the other hand, if an ad is credible, readers are more likely to be convinced that the ad is truthful (the attitude towards the add will be positive) (Tran, 2017). So, the attitude towards the add will be improved if the message is credible.

In sum, Choi & Rifon (2002) well documented the effects of ad credibility and online ad outcomes, hence they conclude that credibility enhances a positive ad attitude.

H2: The more credibility perceived of the message; the better the attitude towards the advertising in social networks.

Table 3.10. summarizes the literature revised that support hypothesis H2.

Table 3.10. Literature revised on Credibility

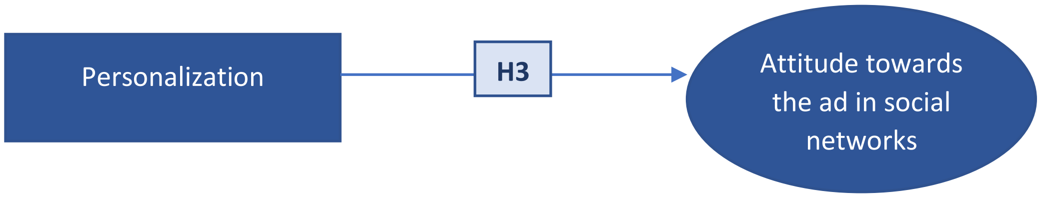
Aspect	Variable	Literature reviewed
Attitudinal	Credibility	MacKenzie & Lutz, 1989 Abbasi & Liu, 2013 Metzger et al., 2003 Li & Suh, 2015 Perloff, 1993, Choi & Rifon, 2002 Tran, 2017 Xiao et al., 2018

Source: own elaboration

Personalization of the message will improve attitude towards the ad in social networks: H3

Figure 3.9. shows a representation of hypothesis 3:

Figure 3.9. Representation of hypothesis 3



Source: own elaboration

The level of personalization describes the level of customization to satisfy the individual´s preference (Schmenner, 1986; Godey et al., 2016). Brands can personalize and express individuality to build strong brand affinity and loyalty (Godey et al., 2016). As Kowang et al., (2018) states, personalization is the nature of the social network, and allows consumers to choose the advertising information they want (Rao & Minakakis 2003; Kowang et al., 2018). Personalization allows, in other words, viewers pay attention to the ads that are suitable for them, avoiding the ones that are not (Liu et al., 2013; Kowang, et al., 2018).

Regarding social media, those strategies that allow consumers to use multiple technologies (mobiles, tablets) and a personalized approach to different social media platforms facilitate deeper connections with customers at different points of the purchasing decision journey (Killian & McManus, 2015). These deeper connections augment attitudes towards the ad.

That is, personalization strengthens advertising efficiency (Leppaniemi & Karjaluoto, 2005) and following this line, some authors state that people are more receptive to advertising when it is personalized (DeZoysa, 2002; Peters et al., 2007; Hobbs, 2020), developing better attitudes towards a personalized ad than towards more generic ones.

In sum, personalized advertising makes ads more self-relevant for consumers (Walrave et al., 2018). Some researchers have found that there is a linear relationship between personalization and social networking sites ad responses (Kalyanaraman & Sundar, 2006), increasing the personalization in social networking sites advertising –and increasing self-relevance- evokes more favorable responses and a more positive attitude towards the ad and brands (Walrave et al., 2018).

H3: The more personalization perceived of the message; the better the attitude towards the ad in social networks.

Table 3.11. summarizes the literature revised on personalization:

Table 3.11. Literature revised on Personalization

Aspect	Variable	Literature reviewed
Attitudinal	Personalization	Schmenner, 1986 Godey et al., 2016 Kowang et al., 2018 Rao & Minakakis, 2003 Liu et al., 2013 Killian & McManus, 2015 Leppaniemi & Karjaluoto, 2005 DeZoysa, 2002 Peters et al., 2007; Hobbs, 2020 Walrave et al., 2018 Kalyanaraman & Sundar, 2006

Source: own elaboration

Emotional aspects

According to Yang et al., (2013), affective attributes are considered those feelings and emotions that relate to hedonic aspects while cognitive attributes are associated to the quality of usefulness that corresponds to utilitarian considerations of consumption. An attitude can be defined as the tendency or predisposition learned, more or less generalized and of affective tone, usually positively or negatively, referred to different types of situations, ideas, values among others (Young et al., 1967). Ajzen & Fishbein (2005) argue that, after extensive research and making a generalization, implicit attitudes -the ones that are activated automatically- are the ones that guide behaviour by default unless they are. That is, implicit attitudes—being automatically activated—are assumed to guide the behavior by default unless they are controlled by other processes.

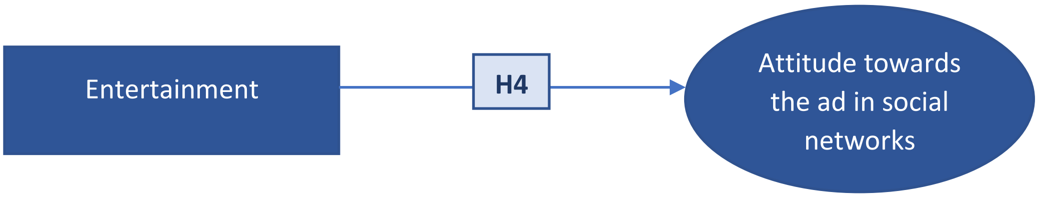
In relation to the emotional aspects, the role of emotions in marketing is extremely important. Experiencing emotions can be gratifying on different levels: from hedonistic to more complex ones such as social and cognitive needs. The experience of emotions in media is described as a motivationally complex situation characterized of convergent or conflicting needs (Bartsch & Viehoff, 2010). As Weismayer & Önder, (2021) state. Numerous researchers across different disciplines have been doing research on how positive and negative emotions can influence situations, in terms of perception and decision making.

Together with attitudinal aspects, emotional aspects include entertainment and irritation. Both will be detailed below.

Entertainment of the message will improve attitude towards the ad in social networks: H4

Figure 3.10. shows a representation of hypothesis 4.

Figure 3.10. Representation of hypothesis 4



Source: own elaboration

Entertainment implies the capacity to satisfy consumer needs of "escapism, fun, aesthetic enjoyment or emotional release" (McQuail, 1987) and entertainment increases the value of advertising (Wang, et al., 2002).

Based on recent research, the impact of entertainment in the digital environment, advertising is enriched by entertaining content has more positive evaluation and web pages with such content are more feasible to be visited again (Raney et al., 2003). On the other hand, other researchers indicate that the attempts to introduce interactive elements into traditional media contents, in fact, may decrease enjoyment of the traditional ones (Vorderer, 2000; Vorderer et al., 2001; Raney et al., 2003). Following this line, Barry & Graça (2018), according to their research on humour effectiveness for social media engagement, found a positive relationship especially with messages classified as low involvement and emotionally motivated.

According to Shavitt et al., (1998), people enjoy advertising and people´s feeling of enjoyment associated with advertising plays a strong role in accounting for their overall attitudes towards advertising. Haghirian et al.,

(2005) goes further stating that entertainment services can increase customer loyalty and add value for the customer because attitudes improve when entertainment occurs. However, Barry & Graça (2018) suggest that humour may dissuade social media participants from imparting comments.

Following this line, Agichetein et al., (2008) states that entertainment is the pleasure that comes from the social media experience and that it provides fun to users and generates loyalty and purchase intention. Moreover, Kim & Ko, (2012) think that entertainment affects in a positive way consumer attitudes leading to a better interaction between brands and consumers.

In the field of communication, several researchers have found that the hedonic benefit (entertainment) is an important predictor of a consumer´s being persuaded by advertising (better attitudes) (Hughes & Palen, 2009; Logan et al., 2012; Shareef et al., 2017). This is particularly effective and appropriate for social networks where different members generate, receive and pass messages (Hayes & King, 2014; Shareef et al., 2017). Previous research shows that network members search for pleasure while communicating with others and generating, receiving and disseminating messages, whether personal or commercial messages (Logan et al., 2012; Hayes & King, 2014; Shareef et al., 2017).

In sum, as the seminal work of Ducoffe (1995) showed, entertainment is significantly related to the advertising value of traditional advertising. Therefore, we can conclude that an entertaining advertising message can be perceived as more positive by the recipient. In addition, previous research has shown that people's feelings of enjoyment associated with advertisements play the strongest role in shaping their overall attitudes towards advertising (Shavitt et al., 1998). So, we can conclude that:

H4: The more entertainment perceived in the message, the better the attitude towards the ad in social networks.

Table 3.12 summarizes the literature revised:

Table 3.12. Literature revised on Entertainment

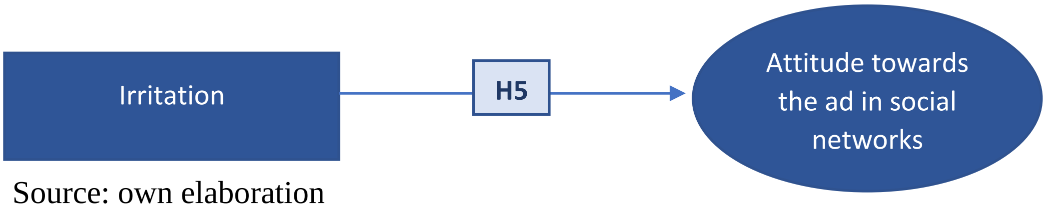
Aspect	Variable	Literature reviwed
Emotional	Entertainment	McQuail, 1987 Wang et al., 2002 Raney et al., 2003 Vorderer, 2000; Vorderer et al., 2001 Shavitt et al., 1998 Haghirian et al., 2005 Hughes & Palen, 2009 Logan et al., 2012 Shareef et al., 2017 Ducoffe, 1995 Barry & Graça, 2018 Agichtein et al., 2008 Kim & Ko, 2012

Source: own elaboration

Less irritation of the message will improve attitude towards the ad in social networks: H5

Figure 3.11. shows a representation of hypothesis 5:

Figure 3.11. Representation of hypothesis 5



Source: own elaboration

According to classical literature, consumers may learn from any advertisement (Greenwald et al., 1968; Nicosia, 1976); however, whether they will be persuaded or not, depends not only on the cognitive function but also on the affective function. In this sense, if anything about the advertisement is irritating, consumers will presumably feel disturbed and will not be persuaded (Zuwerink Jacks & Cameron, 2003). Many researchers (Chu, 2011; Hayes & King, 2014; Kim & Ko, 2012; Logan et al., 2012; Pelling & White, 2009; Shareef et al., 2017) have argued that if consumers feel irritated about the message for any reason, they are unwilling to be exposed to be attentive to or receive a positive impression from the advertisement. Taylor et al., (2011) asserted that irritation due to any advertisement can distract consumers from receiving the intended meaning of the statement, and thus, it can have a negative effect on the value of the advertising. Based on Ducoffe's model (1995), irritation causes a negative response to the advertising (Tsang et al., 2004).

Although Haghirian et al., (2005) write about indignity; probably the most suitable word might be the bad feelings or irritation. In any case, when people feel so -when being addressed by advertisements- it has a great influence on people´s attitudes towards advertising. Ducoffe (1996) states that “when advertising employs techniques that annoy, offend, insult, or are overly manipulative, consumers are likely to perceive it as unwanted and irritating influence” (p. 23). Consumers may feel confused, and they might react negatively. In sum, when users feel that advertisers are trying to manipulate their personal information for their own gain, they feel irritated and the ad value decreases (Hassan et al., 2013; Martins et al., 2019). In the same line, Cheng et al., (2009), states that consumers may be frustrated by annoying advertisement that will be translated into negative attitudes towards advertising.

So, we can have concluded that if the consumer feels irritated with a communication message, they might develop worse attitudes towards the ad.

H5: The less the irritation perceived of the message, the better the attitude towards the ad in social networks.

Table 3.13. summarizes the literature revised to justify the hypothesis.

Table 3.13. Literature revised on Irritation

Aspect	Variable	Literature reivewed
Emotional	Irritation	Greenwald, 1868 Nicosia, 1976 Zuwerink Jacks & Cameron, 2003 Chu, 2011 Hayes & King, 2014 Kim & Ko, 2012 Logan et al., 2012 Pelling & White, 2009 Shareef et al., 2017 Taylor et al., 2011 Tsang et al., 2014 Ducoffe, 1995; 1996 Haghirian et al., 2005 Hassan, et al., 2013; Cheng et al., 2009 Martins et al., 2019

Source: own elaboration

Effects of the attitude towards ad in social media: attitudes toward the brand, purchase intention and eWOM

Attitudes towards the ad in social media

Research done by Choi & Rifon (2002) found a positive relationship between attitude towards online advertising and attitude towards online brands. Furthermore, Shim et al., (2013) showed that attitude towards Internet television positively influences attitude towards brands. Following the same path, Huang et al., (2013), found that attitude towards viral video advertising is positively related to brand attitudes. Alalwan, (2018) suggests that companies have the challenge to design successful social media advertising to attract customers and motivate them to purchase their brands. This is due to the nature of social media ads that empowers the customers to have more engagement through targeted ads and by actions like liking, re-sharing, commenting, posting or learning (Alalwan, 2018).

Valaei et al., (2016), mentioned that few researchers have examined the relationship between attitude toward online advertising and attitude towards online brands, reason enough to continue investigating the positive relationship between them.

Table 3.14. summarizes the literature that supports the statements highlighted in the previous lines.

Table 3.14. Literature revised on attitude towards the ads in social media

Variable	Literature reviewed
Attitude towards ad in social media	Choi & Rifon, 2002 Shim et al., 2013 Huang et al., 2013 Valaei et al., 2016 Alalwan, 2018

Source: own elaboration

The following lines try to deepen into three effects: attitude towards the brand, buying intention and eWOM.

i. Attitude towards brand: H6

Lee et al., (2017) state that one of the main purposes of advertising is the branding of products/services. Hence, consumers need to recognize, identified, categorized and eventually purchased them (Martins et al., 2019) as brands can enhance their relationship with customers (Tsimonis & Dimitriadis, 2014).

Nowadays, new media not only amplify the existing customer-to-firm and firm-to-customer relationships but also it is boosting the ability to interact with consumers and make communication stronger (Tsimonis & Dimitriadis, 2014). With the rise of social media, brand attitude rises, too (Stephen & Toubia, 2010; Dehghani et al., 2016) since a huge number of people frequently visit social media and the brand name is spread all over, creating brand attitude (Dehghani et al., 2016).

Consumers may rely on existing attitudes towards the brand when forming such attitudes that can be thought as of liking or lack of it. Advertising helps companies differentiate themselves and attract consumers´ attention. Such brands represent the company´s brand reputation created by customers that choose them. Hence, companies maintain the promises to customers through their brands, and the expectations that are formed and that should be kept (Foroudi, 2019).

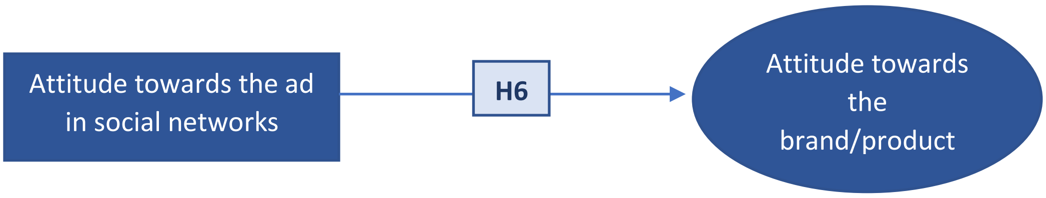
The role of advertisements is to transmit messages to effect cognitive changes in consumers, make them recognize enjoyment, and induce temporary emotional changes in them (Mackenzie & Lutz, 1989). Through those cognitive changes, advertising value has an influence on advertising attitude (Haghirian & Inoue, 2007; Xu et al., 2009; Lee et al., 2017) Hence, if advertising value is high, it has a positive impact on consumers' attitudes toward the brand (Lee et al., 2017).

Therefore, and following Lee et al., (2017), we propose the following hypothesis to identify the impact of advertisement attitudes on brand attitude:

H6: The better the attitude towards the advertising, the better the attitude towards the product/brand announced.

Figure 3.12. shows a representation of hypothesis 6 and Table 3.15 the literature that justifies it.

Figure 3.12. Representation of hypothesis 6



Source: own elaboration

Table 3.15. Literature revised on Attitude towards the brand/product

Variable	Literature reivewed
Attitude towards brand	Lee et al., 2017
	Martins et al., 2019
	Tsimonis & Dimitriadis, 2014
	Stephen & Toubia, 2010
	Dehghani et al., 2016
	Foroundi, 2019
	Mackenzie & Lutz, 1989
	Haghirian & Inoue, 2007
	Xu et al., 2009

Source: own elaboration

ii. Purchase intention: H7

Purchase intention is a combination of a consumer´s interest in a certain product and the possibility of buying it (Kim & Ko, 2012). Some researchers go even further by stating that purchase intention can be defined as a consumer´s intention to make an initial online purchase from a company not considering previous purchases with other firms (Van-Tien Dao et al., 2014; Schlosser et al., 2006).

Previous research shows, and strongly relates, attitudes and preferences towards a brand or a product and purchase intention (Kim & Lee, 2009; Lloyd & Luk, 2010; Kim & Ko, 2012). In this sense, awareness increases the probability of that brand being selected for purchase (Washburn & Plank, 2002). Purchase intention is usually higher when the consumer is more familiar with the brand (Hoyer & Brown, 1990; Martins et al., 2019) and it is due that brand awareness enables consumers to include them in their decision to evaluate the product and their decision to, eventually, purchase them.

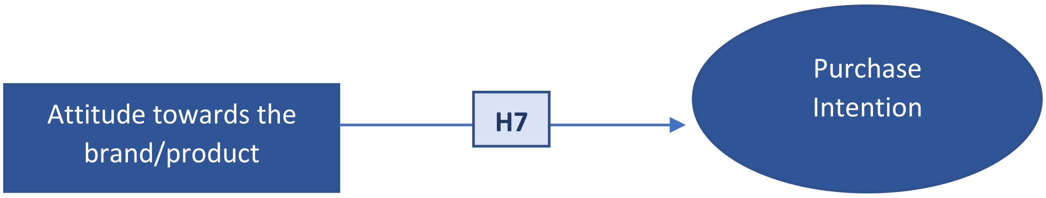
Social media is considered a main source of information that customers could return when considering making a purchase decision (Zhu & Chen, 2015; Hamilton et al., 2016; Erkan & Evans, 2016; Alalwan et al., 2017). Customers use social media during the purchasing process such as collecting information, evaluating alternatives, selecting opinions, or even over post purchasing processing, posting their own experiences (Alalwan et al., 2017). Van-Tien Dao et al., (2014) state that since social media advertising is possibly useful for consumers and they are likely to respond positively to the advertised brand, and the attitudes towards it may arouse or strengthen their intention to make online purchases.

Previous research showed that a high degree of interactivity and personalization have contributed to both customers' experience as well as the information resources needed by customers in their purchasing decisions (Chandra & Sihna, 2013; Duffett, 2015; Alalwan, et al., 2017) and furthermore, customers' intention to purchase is significantly predicted by the role of involvement. (Wang et al., 2015). Ducoffe, (1996) states and reinforces the idea that the value of advertising plays a key role in the formation of positive consumer attitudes towards the advertisement and, that positive attitude towards the advertisement, thus leads to a positive attitude towards the advertised brand (Goldsmiths et al., 2000). And, subsequently, it generates consumers' purchase intention towards the brand's products online (Choice & Rifon, 2002).

H7: The better attitude towards product/brand; better purchase intention

Figure 3.13. shows a representation of hypothesis 7, and Table 3.16 its theoretical support.

Figure 3.13. Representation of hypothesis 7



Source: own elaboration

Table 3.16. Literature revised on Purchase intention

Variable	Literature reviewed
Purchase Intention	Kim & Ko, 2012
	Van-Tien Dao et al., 2014
	Schlosser et al., 2006
	Kim & Lee, 2009
	Lloyd & Luk, 2010
	Washburn & Plank, 2002
	Hoyer & Brown, 1990
	Martins et al., 2019
	Hamilton et al., 2016
	Zhu & Chen, 2015
	Erkan & Evans, 2016
	Alawan et al., 2017
	Chandra & Sihna, 2013
	Duffet, 2015
	Wang et al., 2015
	Ducoffe, 1996
	Goldsmiths et al., 2000
	Choice & Rifon, 2002

Source: own elaboration

iii. Word of mouth (WOM): H8

Previous research has shown that eWOM has high credibility, empathy and relevance for consumers (Muntinga et al., 2011; Godey et al., 2016) and social media is the ideal tool to generate, spread and share information (Gruen, et al., 2006; Godey et al., 2016). Ismail, (2011) states that word of mouth is viewed as more reliable and trustworthy by customers as they exchange information. Furthermore, previous research has examined word of mouth as both an input to the consumer in decisions making (Feick & Price, 1987; Ismail, 2011) and an outcome of the purchase process (Ismail, 2011). According to Alalwan et al., (2017) by using social media, customers are more able to evangelize their own experience with many more customers and eWOM has more reach and influence than human interaction (Hudson et al., 2016; Alalwan et al., 2017).
In this context, brand attitude can be defined as the consumer's overall evaluation of a brand (Mitchell & Olson, 1981) that implies a favourable or unfavourable assessment of brands (Murphy & Zajonc, 1993), what is known as eWOM in the social media context. That is, eWOM is a popular and useful influence on consumer´s evaluation of products and the most popular way of knowing more about those brands (Chevalier & Mayzlin, 2006). Social networking sites are effective vehicles for eWOM as they spread important information about product information and opinions (Kudeshia & Kumar, 2017). Based on the popularity of these sites, eWOM has become an important part of brand communication strategies.

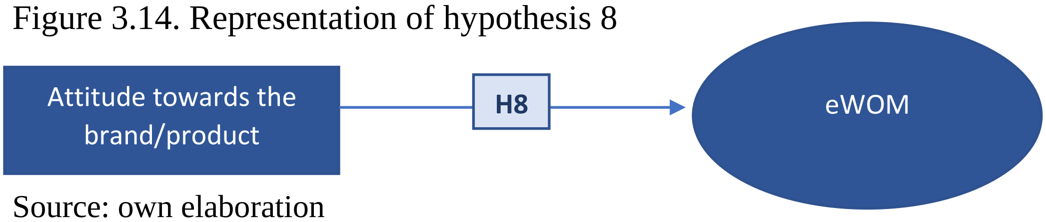
In this scenario, a positive attitude toward the brand results in a continuous preference of the consumer toward those brands (Wu & Wang, 2011); encouraging the consumer to share positive comments about these brands.

In sum, what we can state is that word of mouth is a powerful source of influence that help us predict customer experience.

H8: The better the attitude towards the product/brand; the more eWOM

Figure 3.14. shows a representation of hypothesis 8, and Table 3.17 shows the literature reviewed that supports it.

Figure 3.14. Representation of hypothesis 8



Source: own elaboration

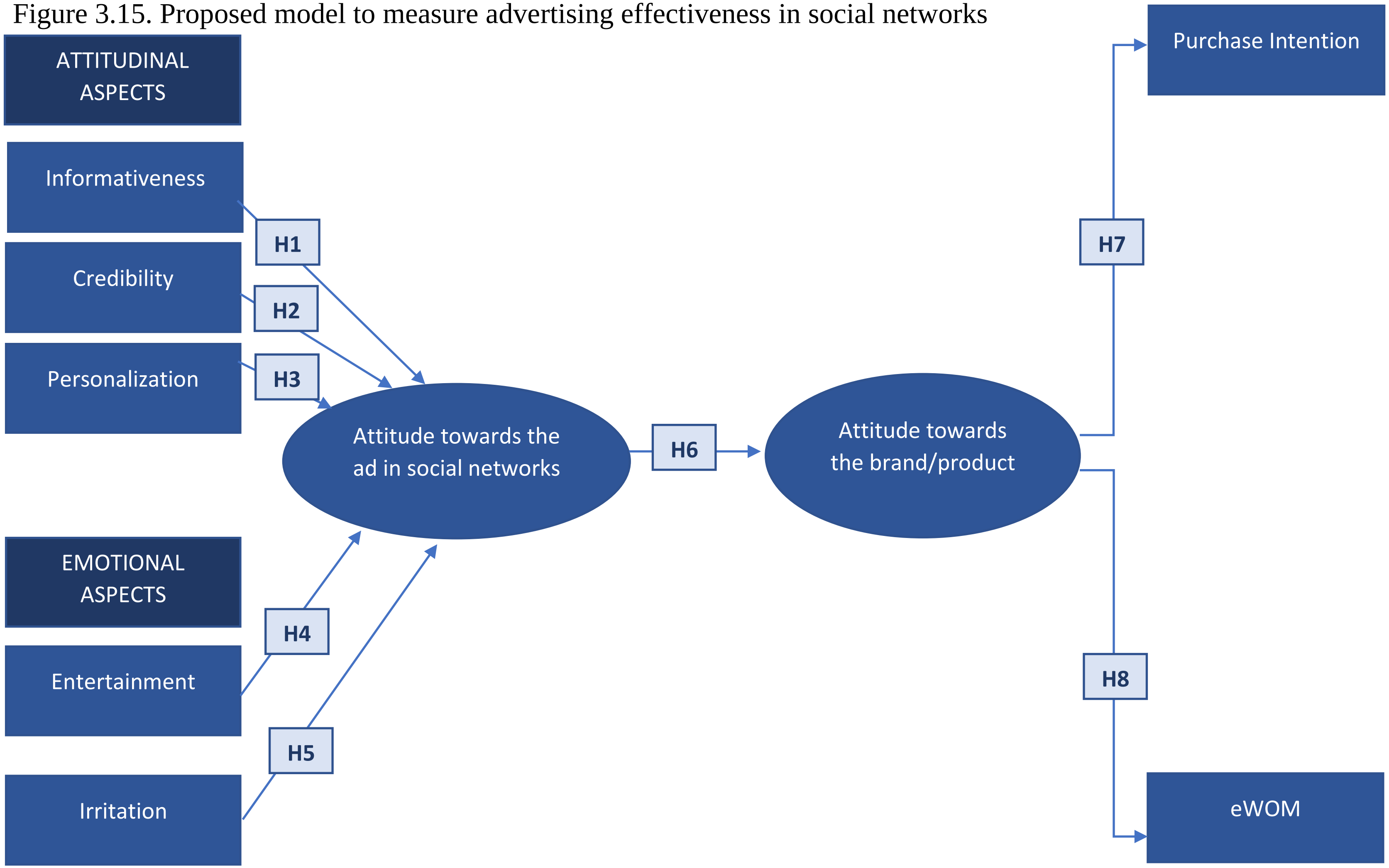
Table 3.17. Literature revised on word of mouth

Variable	Literature reviewed
Word of Mouth	Muntinga et al., 2011 Godey et al., 2016 Gruen et al., 2006 Ismail, 2011 Feick & Price, 1987 Alalwan et al., 2017 Hudson et al., 2016 Mitchel & Olson, 1981 Murphy & Zajonc, 1993 Chevalier & Mayzlin, 2006 Kudeshia & Kumar, 2017 Lee & Youn, 2009 Cheung et al., 2009 Wu & Wang, 2011

Source: own elaboration

In figure 3.15 there is the complete proposed model to be tested.

Figure 3.15. Proposed model to measure advertising effectiveness in social networks



Source: own elaboration

3.4. Moderation role of type of product and type of message

Previous research has showed that social media provides better opportunities to offer tailor-made and interactive messages. However, academia has questioned how advertising is used to attract and retain users. But, still, the impact of new media is not well-understood and although a lot of work has been done on advertising effectiveness, the impact and significance of social media across a marketing strategy are still under research (Hassan et al., 2013). As Barger et al., (2016) state, the question of whether or how social media can be used to leverage consumer engagement to become a highly profitable relationship for both parties; has not been answered yet. In addition, still more research should be done to understand how outcome metrics impact consumer behaviour and the media efforts, companies do in their marketing strategies. According to Luzon et al., (2022), online social networking platforms offer unique opportunities to advertisers as they provide detailed data on consumer interactions while, at the same time, they influence users´ exposure to content.

Social networking sites (SNS) platforms allow users to exchange different types of information in the form of texts, images and/or videos to enrich their content (Kaplan & Haenlein, 2010; Gvili & Levy, 2016). Indeed, SNS is perceived as a high-value channel with differences across channels due to the nature of the communication and messages they support (Gvili & Levy, 2016).

Considering these arguments, the proposed model is based on the premise that perceived informativeness, credibility, personalization, entertainment and irritation of the advertising in social networks, all influence the way consumers evaluate the product or brand and the attitude towards advertising, and it is modelled as a consequence of advertising value (Hassan et al., 2013). But, in the next lines, we raise two main research questions related to the type of product (hedonic versus functional) and the type of message (rational versus emotional) used.

Related to the **type of products**, products used for consumption can be split into two main categories: hedonic and functional.

Hedonic products are consumed for sensory gratification and effective purposes (Woods, 1960; Ling & Am, 2008) or for fun and enjoyment

(Holbrook, 1986; Ling & Am, 2008) and generate emotional arousal with benefits that are evaluated on aesthetics such as taste, symbolic meaning and sensory experience (Ling & Am; 2008). Functional products are those that are designed for functionality needs

On one hand, for functional products, informative content in a message shows a higher impact on attitudes (Moore, 2015). On the other hand, emotional content has a higher influence on attitudes towards hedonic products that are evaluated at an emotional level (Konrod & Danziger, 2013). As some previous research showed, when consumers search for hedonic products, they look for positive information while, on the opposite, consumers look for functional products, their attention is driven toward the negative information they can find (Sen & Lerman, 2007). In sum, the type of product and type of message can influence advertising effectiveness.

In sum, in the frame of declarative studies (based on questionnaires) we can conclude two main points. The first suggests that consumers respond differently to the products that provide a hedonic experience or the ones that provide functional value (Im et al., 2015; Moore, 2015; Lin et al., 2018), a distinction that can be critical for message effectiveness of certain products. Th second states that regardless of the product type, when it comes to attitude formulation, consumers evaluate any given product based on both its functional and hedonic dimensions (Batra & Ahtola, 1990; Dhar & Wertenbroch, 2000; Voss et al., 2003; Chitturi et al., 2008; Zablocki et al., 2019). Hence, negative or positive emotions perceived might have varying impacts on attitude dimensions (Zablocki et al., 2019). In this sense, we propose to analyse the following research question:

RQ1a: Is the message effectiveness independent of the ***type of product*** *advertised (**hedonic versus functional**) in social networks, using declarative instruments?*

Related to the **type of message** that is delivered on social media, we can differentiate between rational and emotional messages (Ashley & Tuten, 2015); leading to different consumer perceptions/values (Lin et al., 2018).

Previous research has identified conscious and unconscious motivations behind consumers´ participation in online activities and, in the case of the hedonic experience of products through scents, tactile and images that new media is trying to compensate (Martín-Consuegra, et al., 2019). Emotional claims describe benefits that satisfy hedonic needs. On the contrary, utilitarian products possess a rational appeal, arousal is less and they generally provide cognitively oriented benefits (Woods, 1960; Ling & Am, 2008). In addition, rational claims are those that involve practical benefits (Ling & Am, 2008). The two types of messages (emotional and rational) are very important when it comes to social media environments.

The results reveal that emotional content of brand posts leads to consumer sociability behaviour, while utilitarian/rational content leads to consumer liking and commenting behaviour (Vaiciukynaite et al., 2018). Emotions have the ability to motivate, persuade (Andrade & Cohen, 2007) and influence consumer´s attitudes (Bagozzi et al., 1999). Rational/informational posts contain information about the functional aspects of products/services and utilitarian content involves informational and promotional content (Vaiciukynaite et al., 2018). While transformational posts emphasize the hedonic aspects of products and services (Tafesse & Wein, 2018), the hedonic/emotional content includes entertainment and social types of brand content (Vaiciukynaite et al., 2018).

In sum, in the sphere of declarative studies (based on questionnaires) we can conclude that the content of brand posts can be differentiated between the emotional and rational values which are delivered (Holbrook & Hirschman, 1982; Jahn & Kunz, 2012; Vaiciukynaite et al., 2018); and depending on the content, the advertising effectiveness could be modified. Hence, we propose the following research question:

> *RQ2a: Is the message effectiveness independent of the* ***type of message*** *used (**emotional versus rational**) in social networks, using declarative instruments?*

3.5. Final Reflections

To finish the chapter, we have included a few reflections about the type of communications and how brands try to capture potential consumers´ attention to engage them.

Brands communicate with consumers through social media and the type of communication may include different types of media such as video, images and different content types in order to stimulate consumers´ attention. Participation might be classified into two forms based on consumer roles. The first, active participation, when they comment or share information and this active role, includes active consumer participation, a two-way communication, with consumers contributing and creating activities. On the other hand, we refer to passive when they consume, and see those posts but communication is one-way only (Kruikemeier et al., 2014). Consequently, active consumer participation in social media can be defined as customer engagement or consumer engagement behaviour. Although it has been largely analysed by academics and practitioners, there is no common agreement on its definition not in its conceptualization. Although this, some academics define it as psychological state of behavioural manifestation beyond purchase, resulting from consumer motivational drivers (Hollebeek et al., 2016; Harmeling et al., 2017).

Consumer engagement is a motivational state that leads consumers to interact with brands in relation to activities and experiences, which are not exclusively in online environments (Harmeling et al., 2017; Tafesse & Wien, 2018). Such consumer behavioural engagement on social media, is very important and it is influenced by various factors. Consumer engagement recognizes consumers as co-creators of value through those interactions (Bijmolt et al., 2010) social media makes them to engage with companies according to the company´s level of relationship they managed.

Past research has shown different types of messages distinguishing between emotional, informational and brand-related messages (Tafesse & Wien, 2018) and that in advertising, messages can be organized as either rational (also referred to as informational or utilitarian) or emotional (also known as transformational) (Dolan et al., 2019). Rational messages are the ones to be processed intellectually and while emotional messages appeal to the psychological characteristics of the potential audience (Laskey et al., 1989).

Several factors that have not been considered in this thesis can also moderate the effectiveness of messages in the social media environment: the customer´s motivation to engage, the type of business (B2B vs B2C) (Dolan et al., 2019) and the effect of message sequencing impacts on consumer attitude toward brands. Regarding to this last point, previous literature concludes that emotional message first and then the rational part, might produce more favourable attitudes toward the product or brand among consumers than the ones that communicate the rational part first (Lim et al., 2018).

In sum, the proposed model in this chapter wants to investigate the factors that influence advertising value on social networks with a clear aim to understand favourable and unfavourable attitudes towards advertising in social media based on the revised literature and taking into account the moderating role of the type of product and the type of message.

In the following chapter, we are going to deepen in the different Neuromarketing modalities with their advantages and disadvantages and their fit to test the proposed model.

Chapter 4

Towards a better understanding of our new consumers:

Neuromarketing tools

If you're walking down the right path and you're willing to keep walking, eventually, you'll make progress.

Barack Obama

4.1. Introduction

This section presents different modalities of neuromarketing and their application to different marketing strategies. Knowing how to employ the knowledge that comes from neuroscience is one of the challenges for advertising in the near future, as over the past decade, cognitive neuroscience has provided radical changes in our understanding of perception, attention, consciousness, memory, emotions, preference, decision marking and social behaviour (Ramsøy, 2013).

Many techniques have been used in the field of neuromarketing to investigate the effectiveness of advertising in traditional media and media based on new technologies. In general, they could be synthesized in Table 4.1. Some examples of these main applications in the field of communication could be:

I. **Electroencephalography,** is used in media to investigate consumer responses to narrative videos in energy efficiency social marketing (Gordon et al., 2018).

II. **Eye-tracking,** is used to examine the effects of visual themes and view perspectives on users' visual attention to brand posts on Instagram (Zhou & Xue 2021).

III. **Facial Coding,** is used in advertising to predict advertising effectiveness by facial expressions in response to persuasive stimuli (Lewinski et al., 2014).

IV. **Functional Magnetic Resonance Imaging**, is used in the mass market soft drinks to predict how cultural messages combined with content shape our perceptions. This experiment is colloquially known among practitioners as "the Pepsi Challenge" (McClure et al., 2004).

V. **Implicit Association Test**, use an adapted semantic priming paradigm to measure the strength of implicit consumer associations between a range of psychological attributes and competitor brands within this media category (Calvert et al., 2014).

VI. **Skin conductance response/Galvanic/Heart Rate**, is used to discover the relationship between the emotions induced in audio-visual advertising messages and their impact on the memory of the subjects (Baraybar-Fernández et al., 2017).

VII. **Voice Pitch Analysis,** is used in politics to study the relationships between candidate voice pitch, candidate age, and electoral success (Klofstad et al., 2016).

VIII. **Magnetoencephalography,** is used in advertising to establish the main neural mechanisms associated with affective advertisement (Ambler et al., 2000).

IX. **Electromyogram,** is used in the detection of interest in a video advertisement (Ang et al., 2016).

The next lines briefly analyse the most relevant ones in order to familiarize the reader with how they work and the possibilities they offer us.

In Table 4.1. there is a List of Neuromarketing Techniques/Modalities being analysed according to literature.

Table 4.1. List of Neuromarketing Techniques/Modalities

List of Neuromarketing Techniques/Modalities							
Technique	**Acronym**	**Authors**	**Year**	**Industry**	**Main Purpose**	**Country**	**Strengths**
Electroencephalography	**EEG/SST**	Gordon et al.,	2018	Media	To investigate consumer responses to narrative videos in energy efficiency social marketing	Australia	The study considers the role of attention, emotion, working memory and imagination during the reception of stories with different objects, and how these may relate to consumers' imagination.
Eye-tracking	**ET**	Zhou & Xue	2021	Social Media	The study examines the effects of visual themes and view perspectives on users' visual attention to brand posts on Instagram. The impact of visual attention on brand attitude and recognition is also explored.	United States	This study deepens the use of effective visual strategies that could lead to more positive responses toward the brand. Understanding how optical elements stimulate visual branding Processing might improve information in visual-based social media platforms.

Facial Coding	**FACS**	Lewinski et al.,	2014	**Advertising**	Predicting Advertising effectiveness by Facial Expressions in Response to Amusing Persuasive Stimuli	United States	Research has demonstrated that the advertisement effectiveness of amusing video ads relates to the theoretically most obvious candidate emotion – happiness, and not with any other basic emotion.
Functional Magnetic Resonance Imaging	***f*MRI**	McClure et al.,	2004	Mass market soft drinks	Predicting how cultural messages combined with content shape our perceptions; even modifying behavioural preferences for a primary reward like a sugared drink. By delivering Coke and Pepsi to human subjects in behavioural taste tests and also in passive experiments carried out during functional magnetic resonance imaging (fMRI).	United States	For the anonymous task, the study reports a consistent neural response in the ventromedial prefrontal cortex that correlated with subjects' behavioural preferences for specific beverages. In the brand-cued experiment, brand knowledge for one of the drinks had a dramatic influence on expressed behavioural preferences and on the measured brain responses.

Implicit Association Test	**IAT**	Calvert et al.,	2014	Media	The study describes the use of an adapted semantic priming paradigm to measure the strength of implicit consumer associations between a range of psychological attributes and competitor brands within this media category.	Across 10 countries	The study clearly demonstrates the power and usefulness of combining implicit and explicit online research data to gain maximum understanding of consumers' true feelings about brands.
Skin Conductance Response/Galvanic/Heart Rate	**EDA-SCR/HR**	Baraybar-Fernández et al.,	2017	Audiovisual advertising	The study aims to discover the relationship between the emotions induced in audio-visual advertising messages and their impact on the memory of the subjects.	Spain	The study showed that advertising research is more efficient when integrates neuromarketing and conventional research techniques. And, furthermore, the study concludes that using emotions in advertising messages influences the recall both brand and the message.

Voice Pitch Analysis	**VPA**	Klofstad et al.,	2016	Politics	This study examines the relationships between candidate voice pitch, candidate age, and electoral success.	United States	The study shows the preference for leaders with pitched voices that correlates with the perception of the voters.
Magnetoencephalography	**MEG**	Ambler et al.,	2000	Advertising	Establish the main neural mechanisms associated with the affective advertisement.	United Kingdom	Affective ads induce increased neural activity changes in the anterior and posterior cingulate, the visual cortex, and in the centre-media prefrontal cortex.
Electromyogram	**EMG**	Ang et al.,	2016	Video Advertising	The aim of this research was to build a model that predicts levels of viewer interest in advertisements using EEG, EOG and EMG	Philippines	The study found that there is a relationship between EEG and EMG data and interest on the advertising.

Source: own elaboration

I. Electroencephalography

The first technique in which we are going to deepen is Electroencephalography (EEG) through the revision of the academic literature.

In the first place, we can find Ohme et al., (2010) using Electroencephalography in media to identify frontal cortex activation in reaction to TV advertisements. This research revealed that the ads tested produce different approach-withdrawal reactions. Furthermore, it also revealed that the frontal asymmetry measure might be a diagnostic tool for examining the potential of advertisements to generate approach-withdrawal reactions. Later, Yilmaz et al., (2014) analysed with electroencephalography which frequencies and EEG channels could be relatively better indicators of preference (like or dislike decisions) of consumer products. In neuromarketing, this kind of analysis can be useful to evaluate whether the consumer likes a certain design of a product or not.

Regarding web pages, Slanzi et al., (2017) analyse web user behaviour and preferences on a website for the assessment of a web user's click intention, by merging pupil dilation and electroencephalogram (EEG) responses. The main contribution is to explore the behaviour of web users from a physiological perspective, trying to assess choice represented as a click-intention using pupil dilation responses and electroencephalogram waves.

Other authors such as Gordon et al., (2016) used electroencephalography in the field of media to investigate consumer responses to narrative videos. The study identifies some important conceptual implications, such as the alternative approach that cognitive neuroscience can offer, which demonstrate its usefulness for pre-testing social marketing materials.

In other contexts, Hodas & Butner (2016) used social media to explore social media usage during disaster scenarios, combining electroencephalogram, personality surveys and prompts to share on social media. The results of the study reveal that the personality of social media users impacts their preferences or willingness to share certain types of content and they established certain similarities in certain subject´s cohorts. Another example is the work of Alonso Dos Santos et al., (2017), that applied electroencephalography to a pilot study for a Non-Governmental Organization (NGOs). The study explored the influence of image valence in advertising on attention and intention to donate. The research revealed that more attention was paid to images than other areas of interest, in particular, negative images and, furthermore, no differences were found in relation to gender and in the intention to donate. In retailing, Dulabh et al., (2018) study consumer engagement in online interactive shopping in the fashion online retailer industry. The study reveals that, from a neuroscience perspective, engagement can be measured using EEG as a suitable technique for online retailers.

As we can see, electroencephalography has many applications in marketing activities and industries.

In Table 4.2., we can see some applications and it summarizes the findings of each of the studies where this technique/modality has been used.

Table 4.2. Applications and Strengths of EEG

Applications and Strengths of EEG				
Authors	**Year**	**Thematic Area**	**Main Purpose**	**Strengths**
Ohme et al.,	2010	Media	The aim of the study was to identify frontal cortex activation in reaction to TV advertisements.	The tested ads seek improvements for some of its imperfections and these findings would be very hard (if ever) to obtain via traditional consumer research methods, which are based on conscious declarations and consumers or advertisers´ introspection.
Yılmaz et al.,	2014	Consumer products	In this study, it has been analysed with electroencephalography (EEG) signals which frequencies and EEG channels could be relatively better indicators of preference (like or dislike decisions) of consumer products and the timing characteristic of "like" decisions during such mental processes.	The results of like timings suggest that male and female behaviour for this set of stimulant images were similar
Hodas & Butner	2015	Social Media	Experiment exploring social media usage during disaster scenarios, combining electroencephalogram (EEG), personality surveys, and prompts to share social media	The study show how personality not only drives willingness to engage with social media, but also helps to determine what type of content users find compelling.
Slanzi et al.,	2017	Web pages	The study analyses web user behaviour and preferences on a web site for the assessment of a web users’ click intention, by merging pupil dilation and electroencephalogram (EEG) responses	It is possible to create a classifier for web user click intention behaviour based on merging features extracted from pupil dilation and EEG responses.

Alonso Dos Santos et al.,	2017	NGOs	This paper reports a pilot study to explore the influence of image valence in advertising on one's attention and intention to donate.	The results show that negative images get more attention than text and logos. No differences were found with regard to gender and intention to donate in terms of attention paid to the advertising images. However, women do show greater willingness to make a donation.
Gordon et al.,	2018	Media	To investigate consumer responses to narrative videos in energy efficiency social marketing	The study considers the role of attention, emotion, working memory and imagination during reception of stories with different objects, and how these may relate to consumers' imagination.
Dulabh et al.,	2018	Fashion online retailer	A reviewed approach of consumer engagement to online interactive shopping	Originality of this research stems from the novel way to look at engagement and the ability to combine traditional and non-traditional marketing methods thus addressing emerging fields of the future such as virtual shopping.

Source: own elaboration

II. Eye-tracking

The second technique in which we are going to deepen is Eye-tracking. a commonly used technique among neuromarketing studies.

There are numerous studies in diverse industries and with diverse objectives. For example, Menon et al., (2016), in their study on e-commerce, used eye-tracking to examine observational behaviour as fixation time on price and the total fixation time for clothing products. The study provides a useful theoretical contribution in relation to consumers´ attention to price by manipulation of price points and price position. In the advertising field, Kruikemeier et al., (2018) examined with eye-tracking different modalities of presenting news and how visual attention is affected. The results of this study have shown that reading print news leads to more news learning than reading them on a news website as people read fewer articles overall. Simmonds et al., (2020) applied this technique to testing video marketing to create consumers´ brand memories and increasing purchase intention.

Regarding social media, we can also find several studies. Vraga et al., (2016) applied corneal eye-tracking for gauging attention to content on social media. And after, track their gaze as research subjects browse through posts. The results of this study showed that researchers should be cautious about their reliance on self-reports, particularly in relation to the exposure and attention to social media content. Furthermore, they demonstrated that posts that contain pictures or external links receive more attention. Bode et al., (2017), focused on political content in social media, reinforced the idea that people spend more time on post-attack political posts than praise posts. Furthermore, Muñoz-Leiva et al., (2018) analysed advertising effectiveness in social media in terms of customers´ visual attention and self-reported memory (recall), and conclude that online advertising cannot annoy users and recommends including celebrities to capture users´ attention immediately. In addition, Piotrkowicz et al., (2017) focused on how social media have become an entry point to news for readers, highlighting the importance of the headlines. The study has shown that news headlines play a crucial role in social media and social media popularity of news, which can be predicted by improving their headlines. Table 4.3. summarizes some of the applications and findings of this technique:

Table 4.3. Applications and Strengths of Eye-tracking

Applications and Strengths of Eye-tracking				
Authors	**Year**	**Thematic Area**	**Main Purpose**	**Strengths**
Menon et al.,	2016	e-commerce	Use of eye-tracking to examine observational behaviour as fixation time on price and the total fixation time on a Facebook page that displays clothing products.	The research investigates the attention of consumers to the price of retail clothing in an e-commerce setting, incorporating various interventions such as different price points, price visibility, and the presence of a model vs. mannequin, to assess their impact on the attention to price using an eye-tracking device.
Vraga et al.,	2016	Social Media	This study applies corneal eye-tracking for gauging attention to content in social media and tracking their gaze as they browse through posts.	The results showed that news and social content garner equal attention, with politics trailing behind both. Also, the style of the post matters for attention patterns, with richer content (e.g., pictures, links) enhancing attention especially for social and news posts.
Bode et al.,	2017	Social Media	The study focuses on the exposure to political content to determine if individuals choose to ignore it through employing corneal eye-tracking software.	The study shows that the earlier users know about a political post, the faster a user skips over it. This trend is concentrated among those least interested in politics.
Muñoz-Leiva et al.,	2018	Social Media	The present study analyses advertising effectiveness in social media in terms of customers' visual attention and self-reported memory (recall).	The results revealed greater advertising effectiveness in the case of the hotel social network, and visual attention measures based on eye-tracking data differed from measures of self-reported recall.

Kruikemeier et al.,	2018	Media	The study examines with eye-tracking different modalities of presenting news and how visual attention is affected.	The results of this study have shown that reading print news leads to more news learning than reading them on a news website as people read fewer articles overall.
Simmonds et al.	2020	Video Marketing	Testing video marketing to create consumers´ brand memories and increase purchase intention.	This study has contributed as the first to test whether visual attention varies across levels of prior brand usage and not rather than comparing only usage versus not usage. It found out that prior brand usage does indeed act as a moderator for the effect of visual attention on recall.
Piotrkowicz et al	2017	Social Media	The study focuses on how social media like Facebook or Twitter have become an entry point to news for many readers and due to this, the headline is the most prominent and often the only visible part of the news article.	News headlines play a crucial role on social media and extracted from headline text, have an impact on the prediction performance when considered on their own.

Source: own elaboration

III. Electrodermal Activity (EDA), Galvanic Skin Response (GSR) or Skin Conductance Response (SCR)

Another commonly used technique is Electrodermal Activity (EDA) or Galvanic Skin Response (GSR) or Skin Conductance Response (SCR), often used for neuromarketing purposes and very well established in the academic literature.

Dawson et al., (2011) applied skin conductance response to studying the decision-making process. The study helped to identify cortical and subcortical mechanisms involved in the expression of the skin conductance response and their relation to the process of decision making. The role of conscious and non-conscious cognitive process and how anticipatory skin conductance response is, in relation to decision making.

This technique has been used in diverse industries. For example, in the cosmetic industry, Ohira & Naoyasu, (2015) applied skin conductance response (SCR) to create a psychophysiological index to evaluate affective aspects of consumer preferences for cosmetic products. Although consumers might estimate the value of a cosmetic based on logical considerations such as price, affective or emotional responses affect their behaviour (Guthrie & Kim, 2009). In tourism, Li et al., (2016) used skin conductance in combination with facial electromyography to track emotional responses to destination advertisements. The results of this study demonstrate that, compared with self-report measures, psychophysiological measures can better distinguish between different destination advertisements, and between different dimensions of emotion. The results validate that these psychophysiological methods are useful in measuring emotional responses to tourism advertising. In the food industry, Kuoppa et al., (2016) examined the associations between psychophysiological responses and emotionally arousing visual food and non-food stimuli. They include facial electromyography, heart rate variability (HRV) and galvanic skin response (GSR). The study provides new information about the nature of the relationship between psychophysiological measures and stimulus valence related to food versus non-food stimuli and it provides a demonstration and means of detecting the connection between liking and pleasantness through several physiological responses.

Regarding the advertising field, Cartocci et al., (2017) tended to discover the relationship between emotions induced in audiovisual advertising messages and their impact on the memory of the research subjects. Their main objective was to create a protocol to evaluate the public service announcements (PSAs) to study the responses to a selection of antismoking PSAs. By creating a protocol that can be modified for the different experimental situations, it is possible to test images and videos. In website contexts, Jung et al., (2017) applied galvanic skin conductance, electromyogram and heart rate measurements followed by a self-reported survey about behavioural responses for the fashion industry. The study focused on apparel websites tend to investigate the effect of branded content on consumers´ response behaviours. The results of this study are consistent with past ones that found that a more complex external environment increases consumers' arousing reaction.

In sum, this technique has been useful in different contexts and objectives. As Koc & Boz, (2018) state, in their research on the wine industry, data collected through these techniques may arouse the hidden motivations of consumers´ food-related decision making as consumers are exposed to a big variety of stimuli.

Table 4.4. summarizes some of the applications and findings of this technique:

Table 4.4. Applications and Strengths of EDA

Applications and Strengths of EDA				
Authors	**Year**	**Thematic Area**	**Main Purpose**	**Strengths**
Dawson et al.,	2011	Decision making	The study is addressing the effective use of the skin conductance response (SCR) in studies involving decision-making. General guidelines for the measurement and quantification of the SCR are briefly described.	The study determines how the anticipatory SCR relates to the process of decision-making. SCR is an easily recordable, nonverbal, nonvoluntary, unobtrusive measure of anticipation of significant outcomes, particularly aversive ones, that is related to decision-making.
Ohira & Naoyasu	2015	Cosmetic industry	The study analyses skin conductance response (SCR) as a psychophysiological index to evaluate affective aspects of consumer preferences for cosmetic products.	The results supported that SCR is a useful index of consumer preferences that has future potential, both in laboratory and marketing settings.
Li et al.,	2016	Tourism advertising	The study examines the use of psychophysiological measures in tourism and in particular explores the usefulness of skin conductance (SC) and facial electromyography (EMG) methods in tracking emotional responses to destination advertisements.	The results demonstrate that, compared with self-report measures, psychophysiological measures can better distinguish between different destination advertisements, and between different dimensions of emotion. The results validate that the psychophysiological methods are useful in measuring emotional responses to tourism advertising.

Kuoppa et al.,	2016	Food industry	The aim of the study was to examine associations between psychophysiological responses and emotionally arousing visual food and non-food stimuli.	The study shows that relatively simple physiological measurements are sensitive to stimulus valence and category, and thus can be useful measures in the objective assessment of emotionally arousing stimuli.
Cartocci et al.,	2017	Advertising	The present work aims to discover the relationship between the emotions induced in audio-visual advertising messages and their impact on the memory of the subjects.	The results of the study showed variations in the measures performed in the commercials corresponding to joy, surprise and anger, while for both, remembrance of the message transmitted and activity of the advertiser, the commercial with the best results has been the one regarding sadness.
Jung et al.,	2017	Fashion retailers	This study is focusing on apparel websites to investigate the effect of branded content on consumers' pleasure and arousal that in turn may influence consumers' response behaviours.	This study found that the effect of e-commerce's branded content video on consumer's responses is indirect, and change in arousal is an indicator of hedonic shopping behaviour.
Koc & Boz	2018	Wine industry	To investigate the need for the new psychophysiological/neuromarketing research tools compared with traditional methods to be applied to the traditional food and wine market.	Explanation of a case as an example showing the application of psychophysiological/ neuromarketing research tools.

Source: own elaboration

IV. Facial Coding

Facial coding (FACS) is another useful technique that has been used in communication and advertising studies. For example, Biel et al., (2012) applied this technique to online social videos. The study deepens in the state-of-the-art of the facial expression recognition technology to characterize users of a popular type of online social video. The results of the study showed that some facial expressions of emotions are indeed related to personality judgements and that they are better to predict extraversion than other methods. In addition, Hamelin et al., (2017) studied the effects of high emotional and low emotional advertising on safe driving video advertisements research concludes that emotional advertising can create a strong and enduring attitude and behavioural change in the audience and also marketers can benefit from using facial detection with a lower number of subjects to predict the efficiency of advertising before launching a specific campaign.

From the advertising field, we can cite several studies using facial coding. For example, Lewinski et al., (2014) tried to predict advertising effectiveness by automated expressions in response to amusing persuasive stimuli. Their results showed that the chosen platform (FaceReader) was a reliable indicator of facial expressions of basic emotions, and their categorization of basic emotions is reliable and does not need human correction. Also related to advertising, Saraswat et al., (2015) proposed an automated method for classifying the impact of various emotional spots on advertisement success. Each emotion has its own impact on consumers and every emotional spot can help to increase sales. The study provides a relevant framework to recognize the basic emotional responses of users to a brand´s advertisement on social networks. By this means, brands will be able to estimate which emotional spots are more suitable for their products. Additionally, Lewinski et al., (2016) addressed the role of facial expression during the resistance to persuasion. This research concludes that integrated marketing communication could deliver customized experiences based on consumers' embodied response profiles, which means considering individual differences among them through their non-verbal expressions of emotions.

Furthermore, Ausin et al., (2017) explored the influence of emotions in the attitude towards the brand and towards the ad, on the increase the attention towards advertisement and brand recall. Results showed that the intensity of emotions measured through a facial reader technique is highly dependent on the context of measurement and emotion intensity differs in the context used

As McDuff & El Kaliouby (2017) concluded with their study of online facial coding studies in diverse contexts (for video ads, movie trailers, political content, and long-form TV shows), facial coding is commonly used for commercial media measurement but it can be suitable for other applications, as to test media via mobile devices, opening new research opportunities combining different methods

Table 4.5. summarizes some of the applications and findings of this technique.

Table 4.5. Applications and Strengths of FACS

Applications and Strengths of FACS				
Authors	**Year**	**Thematic Area**	**Main Purpose**	**Strengths**
Biel et al.,	2012	Online social videos	This study deepens the state-of-the-art of facial expression recognition technology to characterize users of a popular type of online social video, conversational vlogs.	The study proposes the use of several activity cues to characterize vloggers based on frame-by-frame estimates of facial expressions of emotion and then the results of predicting vloggers' personality impressions using facial expressions.
Lewinski et al.,	2014	Advertising	Predicting Advertising Effectiveness by Facial Expressions in Response to Amusing Persuasive Stimuli	Research has demonstrated that the advertisement effectiveness of amusing video ads relates to the theoretically most obvious candidate emotion – happiness, and not with any other basic emotion.
Saraswat et al.,	2015	Advertising	This study proposes the foundation of an automated method for classifying the impact of various emotional spots on advertisement success. Each emotion has its own impact on consumers and every emotional spot can help to increase sales.	Certain types of emotion are better meet the goal of persuading targeted consumers for buying a product than others. This study tends to analyse which emotion creates consumer engagement and creating a brand image. The framework can be successfully implemented by impersonalizing online ads that are shown to viewers while watching media over the Internet or television.

Lewinski et al.,	2016	Advertising	The study presents a framework in which previous knowledge and theories on emotion regulation and embodiment are applied to the process of resistance to persuasion, addressing specifically the role of facial expression during resistance.	The study proposes that people can resist persuasion by controlling their facial expressions of emotion when exposed to an advertisement. Showing the viability of embodied resistance to persuasion is relevant in trying to persuade by addressing positive emotions, which are ubiquitous.
Ausin et al.,	2017	Advertising	The study shows the influence of emotions in the attitude towards the brand and towards the ad, on the increase the attention of the advertisement and brand recall. Creating an emotional impact on the consumer can alter the perception of the product. Emotion is the key to effectiveness and an influence on memory, likeability or persuasion.	This study shows that explicit evaluation of a set of ads through a conscious procedure does not always provide a clear solution to the selection of the most successful ads. The use of facial coding provides some clarification on the opinion of the participants. Facial coding shows significant differences between the different ads and the responses of the participants.
Hamelin et al.,	2017	Advertising	The study investigates the long-term effect of advertising on individual attitudes toward driving. The effects of high emotional and low emotional advertising were measured on 60 participants male/females. Each participant was subjected to either a high emotional or low emotional safe driving video advertisement. While watching the advertisement, a facial recognition software recorded the unconscious emotions.	Noticeable differences in the attitude score were recorded between participants having watched the high emotional advertisement against participants having watched the low emotional advertisement. The high emotional advertisement generated a higher and more durable safe driving attitude score in comparison to the low emotional advertisement.

McDuff & El Kaliouby	2017	Advertising	The study shows the results of online facial coding studies of video ads, movie trailers, political content, and long-form TV shows. We explain how these data can be used in market research.	The study explains how the data can be used in market research. And although the ability to measure facial behaviour in a scalable and quantifiable way, the interpretation of these data is still challenging without baselines and comparative measures. Facial coding is currently used for commercial media measurement applications there is a range of other measurement applications that are emerging.

Source: own elaboration

V. Functional Magnetic Resonance Imaging

The next technique, Functional Magnetic Resonance Imaging (fMRI), is more commonly used in the field of consumer neuroscience. In this sense, there is some diversity in the studies conducted in this field. For example, Rampl, et al., (2014) focused on employer brands to show decision-making for employer first-choice brands and their association with emotions, working memory and reasoning. The study showed the participants´ neural response to employer brands and discovered that applicants are willing to accept lower wages when working for a particularly attractive employer. Petit et al., (2015) explored multisensory information and the impact of taste expectations or flavours, revealing that fMRI is providing insights on how to create flavour expectations by simply looking at a picture of any food. Also related to food, Wolfe et al., (2016) proposed a pilot study to investigate whether or not there were differences in brain activity for familiar and unfamiliar foods which could lead to a better understanding of consumers' reactions to food. The implications of this study showed that brain activation is related to reward or inhibition.

In addition to those mentioned above, it is also possible to find studies that use this tool in the field of communication/advertising. Viswanathan et al., (2016) employed fMRI in an age-related experiment on loss aversion, a topic of interest in marketing and communication. The study aims to generate a deeper and more useful understanding of how and in what ways marketing concepts can be validated beyond identifying which portions of the brain 'lights up' based on external stimulation.

Additionally, the study of Chen et al., (2018) on e-cigarette advertising explored adolescents' behavioural and neural responses to e-cigarette advertising. This study seemed to be the first that validated e-cigarette advertising stimuli and explored adolescents' behavioural and neural responses to e-cigarette advertising. The results showed that young adult smokers responded highly to e-cigarette advertisements, wanting more to try advertised e-cigarette products than non-smokers. Vezich et al., (2017) focused on green products advertisement and showed that functional MRI data suggested that participants showed greater activation in regions associated with personal value and reward, in response to control ads relative to green ads. The study found that individuals reported liking green ads more than standard ads. This study has important implications for marketing, as it would help understand persuasion theory by understanding what kind of neural activation patterns support a strong versus a weak attitude-behaviour link.

And finally, Hsu, et al., (2018) focused on the word-of-mouth (WOM) effect to examine the impact of gender on the neural substrates of theories on consumer behaviour and whether gender influences brain activation associated with word-of-mouth (WOM) communications. The study lights up the concept of WOM effectiveness while filling the gap in the literature.

In Table 4.6. there is a summary of the applications and the findings of this technique.

Table 4.6. Applications and Strengths of fMRI

Applications and Strengths of fMRI				
Authors	**Year**	**Thematic Area**	**Main Purpose**	**Strengths**
Rampl, et al.,	2014	Employer Brands	This study uses functional magnetic resonance imaging (fMRI), to show decision-making for employer first-choice brands (as compared to less attractive employer brands) and its association with emotions and working memory and reasoning. Second, the analyses reveal that the neural processing of employer brands differs from the processing of consumer brands.	The results of the study support the theory of dual-processing regarding the role of emotions in decision-making on employer brands and, further, they indicate that decision processes differ between employer and consumer brands.
Petit et al.,	2015	Multisensory information	This study explores how multisensory information, as well as mental stimulation, impacts taste expectations and subsequently taste, or better-said, flavour, perception in the light of neuroimaging studies.	The study addresses the discussion on how neural analysis can help to understand the effect of marketing information on taste perception, the role of gustatory inference on food perception considering the latest fMRI findings and some directions to improve the understanding of crossmodal correspondences in the context of consumer sensory experiences.
Wiswanathna, et al.,	2016	Loss-aversion	The study employs fMRI in an age-related experiment on loss aversion, which has a long history in marketing and communication theory.	As loss aversion has a long history in marketing and communication theory and the ability to connect or refute that concept to aging in marketing theory would seem a major aid to marketers going forward.

Vezich et al.,	2017	Green Products advertising	This study shows that self-report evidence suggests that consumers prefer green products (i.e., pro-environmental) to standard products, but this is not reflected in purchase behaviours.	The study exposed participants in a magnetic resonance imaging (MRI) scanner to green and standard ads. Participants rated more favourable for green ads than for control ads, but the functional MRI data suggested that participants showed greater activation in regions associated with personal value and reward in response to control ads relative to green ads.
Wolfe et al.,	2016	Food Industry	The purpose of this pilot study was to investigate whether or not there were differences in brain activity for familiar and unfamiliar foods which could lead to a better understanding of consumers' reactions to food.	The study showed significant differences in the activation by the types of foods viewed. The unfamiliar foods showed significant activation in the parietal lobe areas and the insula, while the unfamiliar foods with labels had more activation in the prefrontal areas of the brain.
Hsu & Cheng	2018	WOM effect	This study examines the impact of gender on the neural substrates of theories on consumer behaviour and whether gender influences brain activation associated with word-of-mouth (WOM) communications after a product harm crisis and also discusses the WOM effects on product quality perception, negative emotion and purchase intentions by precise localizing brain activity.	The originality lies in the application of the consumer learning theory to males & females. Therefore, gender determines whether the original or the revised version of the consumer learning theory works in consumers' decision-making.

Chen et al.,	2018	e-cigarette advertising	This study examines adolescents' behavioural and neural responses to e-cigarette advertising.	The study showed significantly greater brain activation to e-cigarette advertisements in areas associated with cognitive control, reward, visual processing/attention and memory.

Source: own elaboration

VI. Implicit Association Test

The last technique is the Implicit Association Test, commonly used in neuromarketing and is considered one of the affordable cost techniques. It has been applied from different perspectives and in diverse sectors. In this sense, Greenwald et al., (2009), who review 122 research reports to evaluate and predict behavioural, judgment and physiological measures by Implicit Association Test (IAT) measures, recommend and justify the joint use of IAT and self-report measures as a predictor of behaviour as the predictive validity of IAT is higher than the self-report measures.

Furthermore, Calvert et al., (2014), in their study on the brand association, centred on capturing people's implicit responses using speeded reaction time paradigms to tap into these subconscious associations and to describe the use of an adapted semantic priming paradigm to measure the strength of implicit consumer associations between a range of psychological attributes and competitor brands within this media category. The study showed that subconscious and conscious brain responses occur in different timeframes and this type of study can capture the strength of the association of different concepts stored in the memory.

On the same category, Nibbe & Orth, (2015) showed that implicit measures can yield divergent results due to reducing individuals' capacity for mental control and thus a less prominent role of conscious interference and strategic response. Results of the study indicate that IAT is a powerful tool for the measurement of semantic congruence implicitly in multisensory research and a reliable method for measuring cross-modal concepts. The results also showed that visual stimuli are more important than a scent which supports the fact of vision dominance in the moment of purchase.

In addition, Gonsalkorale et al., (2014) demonstrated that implicit attitude measures are influenced both by the nature of activated evaluative associations and by people's ability to regulate those associations as they respond. The study proposed a model that provides a tool for identifying when standard measures of implicit attitudes conceal differences in underlying processes and suggesting strategies to reduce bias.

Furthermore, Gawronski et al., (2015), who applied this technique to politics, showed that implicit measures can be useful to identify sources of political preferences in domains where self-presentation may bias self-reports. Implicit measures of political attitudes can predict biases in the processing of relevant information and can contribute to predict future political decisions based on this information.

As well, Pokhrel et al., (2016) tested whether exposure to e-cigarette advertising affects the subliminal attitudes toward e-cigarettes as a more pleasant or safer alternative to cigarettes among non-smoking young adults. The study found that e-cigarette ads may promote them as reduced-harm cigarettes and may encourage non-smoking young adults to try them.

Finally, and related to media, Arendt et al., (2019) investigated whether attitudes toward news media brands predict news choice. The study has shown that implicit attitudes are automatically activated and the research is consistent with the previous research on how unconscious evaluations influence media choice.

Table 4.7. summarizes the applications and findings of this technique.

Table 4.7. Applications and Strengths of IAT

Applications and Strengths of IAT				
Authors	**Year**	**Thematic Area**	**Main Purpose**	**Strengths**
Greenwald et al.,	2009	Behaviour´s predictions	This study reviews 122 research reports to evaluate and prediction of behavioural, judgment, and physiological measures by Implicit Association Test (IAT) measures.	The study shows that the predictive validity of IAT measures significantly exceeded the ones of self-report measures. Both IAT and self-report measures displayed incremental validity, with each measure predicting criterion variance beyond that predicted by the other. The more highly IAT and self-report measures were intercorrelated, the greater the predictive validity of each.
Calvert et al.,	2014	Brand´s association	This study is focus in capture people's implicit responses using speeded reaction time paradigms to tap in to these subconscious associations and to describe the use of an adapted semantic priming paradigm to measure the strength of implicit consumer associations between a range of psychological attributes and competitor brands within this media category.	The study was conducted online across 10 countries among relevant competitive brands of the MTV channel. Analysis of the resulting implicit dataset revealed large statistical differences between brands in terms of consumers' subconscious feelings that were not captured by explicit research methodologies into consumer brand engagement. This study demonstrates the power and usefulness of combining implicit and explicit online research data to gain maximum understanding of consumers' true feelings about brands.

Gonsalkorale et al.,	2014	Antiaging bias	This study demonstrated that implicit attitude measures are influenced both by the nature of activated evaluative associations and by people's ability to regulate those associations as they respond.	The study shows the lack of age differences in IAT performance concealed differences in both underlying evaluative associations and the ability to control those associations.
Gawronski et al.,	2015	Politics	The study shows that implicit measures can be useful to identify distal sources of political preferences in domains where self-presentation may bias self-reports.	The research shows that implicit measures predict real-world political behaviour over and above explicit measures and implicit measures may serve as a useful supplement to improve the prediction of election outcomes.
Nibbe & Orth	2015	Brand´s association	This research shows that implicit measures can yield divergent results due to reducing individuals' capacity for mental control and thus a less prominent role of conscious interference and strategic response.	This study highlights the capability of implicit methods to provide valuable insights and the results confirm the primacy of vision over olfaction and the need to account for differences between categories.
Porkhel et al.,	2016	e-cigarette advertising	This study tested whether exposure to e-cigarette advertising affects the subliminal attitudes towards e-cigarettes as a more pleasant or safer alternative to cigarettes among non-smoking young adults.	The study shows that E-cigarette ads may implicitly promote e-cigarettes as a reduced-harm cigarette alternative and as a way to enhance social life or self-image may encourage non-smoking young adults to try e-cigarettes.
Arendt et al.,	2019	News Media	The present study investigated whether attitudes toward news media brands predict news choice.	The study found that implicit and explicit attitudes towards television brands predicted choice.

Source: own elaboration

4.2. Attention, Emotion and Memory

After revising the most popular techniques that have been used in the field of neuromarketing to investigate the effectiveness of advertising in traditional media and media based on new technologies, the next lines highlight the most common variables measured by neuromarketing: attention, emotion and memory (Genco et al., 2013; Gordon et al., 2018).

Neuromarketing has already demonstrated novel insights into consumers´ minds and actions (Ramsøy, 2015). Neuromarketing methods provide measures of mental processes that consumers are not privy to or willing to share (Ramsøy, 2015). In this sense, these measures have already demonstrated an added value to academics and market researchers in order to understand consumers (Ramsøy, 2015). Neuromarketing insights can help significantly how to communicate to specific groups of consumers to avoid bad designs or to determine exactly where the cognitive and emotional traps reside (Ramsøy, 2015). Attention, emotion and memory are the key elements of cognitive processes that neuromarketing is trying to understand in the context of consumer behaviour.

1.- **Attention** is extremely limited and attention needs a lot of cognitive effort (Genco et al., 2013). The amount of information that we are exposed to, exceeds our ability to process it (Nicks & Carriou, 2016). Attention can be understood as a set of processes that enhance our perceptions and processing of some information over others (Nicks & Carriou, 2016). We can refer to attention as a selective process. Attention can be selective, voluntary or involuntary and unpredictable. Recent studies have shown that attention is related to the performance of mental activities (Kahneman, 1973). Hence, good emotional connection first creates attention engagement at the automatic level and then, sustains engagement through relevance to an individual personal goal and motivation. As a matter of fact, the interaction between emotion and attention is dynamic and is developed over time (Nicks & Carriou, 2016).

2.- **Emotions** and feelings may seem the same but they are very different phenomena. Emotions are an organism´s expression of an inner state, a response from the body to an event with a mechanical, stimulus-response basis). Emotions are probably the most individual human phenomena as they express what Zurawicki, (2010, pg. 35) defines as "to consider them the bodily states elicited by rewards and punishments". Being a reward is a positive thing and represents anything that will make people willing to expand an effort. On the other side, punishment represents something worth avoiding (Zurawicki, 2010). As Damasio (2011) adds, “emotions are basic to survive. One stimulus trigger one emotion. We are still in the body. Then, through some complex reactions, a feeling will come up and that´s a brain “business”[1]. From a marketing perspective, emotional stimuli can capture attention with the novel, surprising and engaging ideas (Nicks & Carriou, 2016). Emotional messages can be processed automatically, which means with less cognitive load and emotional advertising creates emotional connections (Nicks & Carriou, 2016). In other words, those emotional connections are making brands easier to retrieve at the moment of choice (Nicks & Carriou. 2016).

3.- **Memory** is an individual´s ability to contain and make use of information. It is the notion of processing and using information that allows a subsequent use (Ramsøy, 2015). Memory is selective and people remember what is typically more interesting and important, discarding the rest over time (Zurawicki, 2010). As McGough, a research professor of neurobiology and behaviour and founder of UCI's Center for the Neurobiology of Learning and Memory, states (2012): “Your notion of your own past is nothing but a memory on your brain. Something changed in your brain. You and I live in a world which is one and a half seconds long. That is the immediate experience and what happens two minutes ago that you think it´s still here is gone… except in your brain[2]”.

In sum, through neuromarketing techniques, we can explore in-depth and obtain high-value insights. From the academic literature consulted, the evidence shows that the findings are not always related to what the research subjects self-reported.

The use of those neuromarketing techniques opens new possibilities to explore consumers´ minds and the data obtained through this type of research technique made it possible to improve advertising techniques and also, to influence consumers´ buying behaviour.

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[1] *Interview with Antonio Damasio. Available at* ***https://www.rtve.es/play/videos/redes/redes-educacion-emocional/2359167/***

[2] *Interview with McGaugh. Available at* ***http://www.youtube.com/watch?v=Wv4D8KwUANQ***

As can be seen, the variety of fields of application is really wide and it might be growing in the near future depending on different factors such as cost, complexity or even that such techniques might be considered invasive for research subjects.

4.3. Neuromarketing to Measure Advertisement Effectiveness: Product Type and Message Type

As stated before, neuromarketing is a new branch of marketing that makes use of technology to determine subconscious reactions derived from neuroscience to products and brand names to plan effective marketing strategies (Kumar, 2015). Neuromarketing suggests that both emotional thinking and rational thinking co-exist and are interdependent (Kumar, 2015). The potential of neuromarketing lays in reducing marketing failures and increasing marketing successes (Kumar, 2005).

This field, when applied in marketing, neuromarketing tools can help brand positioning, the hierarchy of effects, and brand loyalty (Perrachione & Perrachione, 2008). Also, using techniques and advancements in neuroscience, researchers can now obtain information about the human brain's response to marketing stimuli, and according to Renvoisé & Morin (Renvoisé & Morin, 2005), without simply relying on subjective reports given by the participant (Kenning & Plassmann, 2005).

As Morin states (2011a), conventional methods for testing and predicting the effectiveness of those investments have generally failed because they depend on consumers' willingness and competency to describe how they feel when they are exposed to an advertisement. Neuromarketing offers cutting edge methods for directly probing minds

During the past decade, the use of neuroscience and the use of multiple neurophysiological methods to study marketing, consumer behaviour, and advertising has grown considerably (Venkatraman et al., 2015). Both, researchers in academia and professionals in industry are using neurophysiological measures to better understand consumer responses to advertising. In previous lines, we have underlined diverse studies that use different neuromarketing techniques in different advertising contexts (for example, Ohme et al., 2009; Custdio, 2010; Hutton et al., 2011; Gidlöf et al., 2012; Mostafa, 2012; Falk et al., 2013; Balconi et al., 2014; Lewinski et al., 2016; Li et al., 2018). Each of the techniques have specific strengths and weakness. The combination of them may provide accurate marketing decisions to get valuable consumer insights that come out from the use of such methodologies (Gani et al., 2015).

Table 4.8 shows a brief sum of examples of these studies.

Table 4.8. Neuromarketing techniques applied to different marketing activities

Neuromarketing techniques applied to different marketing activities				
Authors & Year	**Type of Technique**	**Thematic Area**	**Sample**	**Main findings**
Ohme et al., (2009)	EEG, EMG & Skin Conductance	Advertising effectiveness for TV commercials	45 females; age 25-35; above-average income	The results of EEG showed differences in emotional reactions through the scenes of the second ad. The results of EMG reveal a significant difference in electrical facial activity while subjects watch alternative scenes of the ad. In the case of Skin Conductance, the study revealed differences in the average level of arousal of the second version of the ad. Thus, the results confirmed that the brain can register even small differences between ads and that they can be captured by the technique used and consumer´s brain can produce different reactions even though at a conscious level they cannot be recognized.
Custdio, (2010)	EEG & questionnaire	Advertising effectiveness Soft Alcoholic Drinks	20 male participants aged from 20 to 28 years (mean age = 23.05).	The study showed that the more emotional content in the ad creates greater activity in certain regions of the brain (midline and frontal cortical regions). Regarding the questionnaire, participants who liked the brand tend to give better scores to the ad of such brand.

Hutton et al., (2011)	Eye-tracking	The effect of gaze cues on attention to print advertisements	32 participants (16 males, 16 females; students) between the ages of 20 and 29 (mean 21.4). Sussex.	The study showed that participants were attracted by the product but more likely to view the brand information. Also, participants spent longer looking at all aspects to the advertisement when the model's gaze was directed towards the product and participants made significantly more fixations to the product region from the model's face region.
Mostafa, (2012)	fMRI	Brain processes vocal sounds in advertising.	15 monolingual English speakers; age: 21-45; average 31,27 years old.	This study isolates the sound presented in commercial ad to help explain how consumer´s brain process language in advertising. By focusing solely on advertising, the study enriches the knowledge base of this field.
Gidlöf et al., (2012)	Eye-tracking & retrospective interviews	Online advertising	39 students (ninthgraders); 20 girls and 19 boys. Sweden.	The results suggest that teenagers have developed strategies to avoid Internet advertising. The majority of online advertising was avoided probably because teenagers' subjects are highly skilled Internet users.
Falk et al., (2013)	fMRI	Measuring social interaction and the neural response to social influence.	Interns: 11 females; 8 men mean age 20,55. Producers: 57 females; 22 male mean age 20,54	The study shows that neural regions associated with successful message propagation overlap with the brain´s reward system. The findings may have implications for spreading ideas, norms, values and culture. The results of the study are consistent with the demonstration that the spread of preferences may depend more on the message communicator´s social-cognitive abilities and motivations and less on factors such as deliberative reasoning.

Balconi et al., (2014)	EEG	Advertising effectiveness in different sectors (alimentary, pharmaceutical, electronic, financial, clothing)	30 women, age range 20-40. Milan	The study shows how the consumer´s brain works when exposed to rewarding advertising that creates engagement and the importance of the reward system's role in reaction to different types of consumer goods. Particularly, two commercials were more appreciated (Samsung & Barilla), thus researchers hypothesize that those brands engage consumers through social rewards.
Lewinski et al., (2016)	Facial decoding & Self report	Advertising effectiveness (Consumer goods, E-Trade; Insurance, Flowers Delivery and Perfumes)	90 participants (51 men; 39 women; average 27, 14 years old). US residents.	Facial expressions of happiness analysed by specialized software can reliably distinguish between amusing and non-amusing video advertisements making it possible to establish advertising effectiveness using facial expressions of happiness and being highly correlated with participants´ self-reports. Facial expressions of happiness correlated with attitudes toward the advertisement and the brand.
Hamelin et al., (2017)	Facial decoding & survey	Investigating long-term effect of advertising on individual attitudes toward driving.	60 students (50% female/50% men). UK.	The study showed that both males and females had an identical emotional reaction to a given stimulus. The study also showed that the message conveyed within an emotional strategy appears to benefit from better storage and retrieval. Regarding memory effect, this study also showed that high emotional advertisements lead to a more stable attitude change than low emotional advertisements.

Li et al., (2018)	Skin Conductance, Facial Electromyography & Self report questionnaire	Advertising effectiveness for tourism	38 (16 females and 17 males. Most (76%) were aged 18-34, with only 2 participants aged over 45) university students and staff from an Australian university. Australia.	The study demonstrates that individuals' self-reported emotional responses to the destination advertisements of this study were consistent with their physiological responses. More specifically, significant differences in physiological responses were not only found between emotional advertisements and non-emotional advertisements. Hence, understanding consumers' emotional responses is key to the success of an advertising appeal. Using physiological measures helps to track participants' moment-to-moment responses so that we can understand viewers' watching experiences across time. Incorporating both SC and facial EMG methods to measure individuals' pleasure and arousal responses to tourism advertising stimuli helps understanding individuals' emotional responses.

Source: Own elaboration

As in the previous chapter, we want to analyse whether advertising effectiveness is affected by the type of product (hedonic *versus* functional) or by the type of message (emotional *versus* rational), but in this case using neuroscience as a measurement tool.

Over the years, researchers have shown that hedonic products generate deeper emotional reactions and feelings than functional ones. Hedonic products are more affect-rich only for specific segments and contexts (Bettiga et al., 2020). In this sense, and related to the ***type of product*** (hedonic versus functional), Hutton et al., (2011) explore the effect of gaze cues on attention to print advertisements, using eye-tracking. The study tested two versions of 16 different advertising of models wearing a watch (functional) or holding a bottle of perfume (hedonic). Their results showed that participants were attracted by the product but more likely to view the brand information. Also, participants spent longer looking at all aspects of the advertisement when the model's gaze was directed towards the product, and participants made significantly more fixations to the product region from the model's face region.

The literature review offers diverse studies where the type of product advertised can condition the results, that is, consumers' unconscious responses. For example, the study of Lewinski et al., (2016) combine facial coding methodology with self-reports to test advertising effectiveness for diverse types of consumer goods (for example, insurance, flowers delivery and perfumes). Their results showed that facial expressions of happiness analysed by specialized software, can reliably distinguish between amusing and non-amusing video advertisements. The type of product advertised lead to different results. As the authors conclude, advertising effectiveness can be determined by using facial expressions of happiness and these were highly correlated with participants´ self-reports. Facial expressions of happiness correlated with attitudes toward the advertisement and the brand, leading different brands of different type of products, to different results.

Daugherty (2014) measured the influence of product type on attention paid on Pinterest through eWOM. They compared luxury and non-luxury products. The study reveals that the level of luxury (usually higher in hedonic products) influences the length of time consumers spend evaluating consumer-generated eWOM. eWOM messages and brand classifications influence attention.

So, considering previous lines, we propose the following research question:

*RQ1b: Is the **message effectiveness** independent of the **type of product** advertised (hedonic versus functional) in social networks, using consumer **neuroscience measures**?*

Regarding the ***type of message*** in social media (emotional versus rational), different types of messages have been compared in the past, such as those using emotional cues, informational cues and brand-related cues (Tafesse & Wien, 2018). Based on the Elaboration Likelihood Model (ELM), Hsieh & Chen, (2011) suggested that viewing content with different information types requires different mental resources and cognitive abilities and influences the user to pay attention (Barreto, 2013). Previous research has shown that emotional and rational appeals are two basic strategies for humans to perceive information and decisions making. (Quin et al., 2011). Emotions tend to give subjective information and are open to each individual interpretation, while rational appeals to be objective information that can be verified (Zinn & Manfredo, 2000). Not in vain, Lafont et al., (2021) combined eye-tracking with EEG to investigate the impact of the emotional and informational components of road safety communication on the motorists' ability to detect cyclists in an urban environment. Their results tend to understand how emotions were subsequently able to modify their driving behaviour and affect their ability to detect cyclists; and this was dependent on the road safety messages (with different intensities of a same negative emotional state). That is, the type of message affects consumers' unconscious responses. In this sense, technologies such eye tracking gained importance because these tools provide accurate information on consumer´s visual attention as fixations and visualization patterns (Muñoz-Leiva et al., 2019; Espigares-Jurado et al., 2020).

In addition, other works, such as the one of Hamelin et al., (2017), investigated the long-term effect of advertising on individual attitudes towards driving. Conclusions showed that both male and female had an identical emotional reaction to a given stimulus. Another key finding of this study pertains to the impact of high emotional vs low emotional advertisements on attitude and attitude change over time. In this sense, the message conveyed within an emotional strategy appears to benefit from better storage and retrieval. Regarding memory effect, this study also showed that high emotional advertisements lead to a more stable attitude change than low emotional advertisements. Hence, the message conveyed within an emotional strategy appears to benefit from better storage and retrieval. In the same vein, Li et al., (2018) focused their study on advertising effectiveness in tourism. They found that there are significant differences in physiological responses between emotional and non-emotional advertisements, and concluded that incorporating both skin conductance and facial EMG methods to measure individuals' pleasure and arousal responses to tourism advertising stimuli helps understanding individuals' emotional responses.

Consequently, and in relation with the type of message, the proposed research question is:

> *RQ2b: Is the* ***message effectiveness*** *independent of the* ***type of the message*** *used (emotional versus rational) in social networks, using consumer* ***neuroscience measures****?*

Table 4.9. and Table 4.10 show some of the research revised.

Table 4.9. Neuromarketing techniques used in the environment of the Social Networks

Neuromarketing techniques used in the environment of the Social Network					
Authors & Year	**Type of Technique**	**Thematic Area**	**Measurements**	**Sample**	**Main findings**
Daugherty et al., 2014	Eye-tracking	Influence of message type and brand type on attention on Pinterest through eWOM	Attention	28 undergraduate students; age 15-24	The study reveals that the level of luxury influences the length of time consumers spend evaluating consumer-generated eWOM. The eWOM messages and brand classifications influence attention. Other findings suggest that an integrated marketing strategy should consider the eWOM effect. Those strategies cannot ignore consumer-generated eWOM in favour of another type of promotion.
Rauch et al., 2014	GSR	Measuring the effect of Facebook exposure on the physiological arousal level of participants who then encountered the stimulus person in a face-to-face situation.	Emotions	26 female undergraduate students, aged between 18 and 20 years.	The study showed that the act of viewing someone on Facebook appears to be more arousing than a face-to-face encounter, even when such an encounter does not involve any interaction on the part of the participant. Measuring with GSR, makes a valuable measure of activation. However, it is not an indicator of the valence as it has been demonstrated that similar arousal can be both for negative and positive emotional states.

Lewinski, 2015	Facial Coding	Measuring communication on corporate channels (banking sector) on YouTube	Emotions	10 out 28 videos analysed with specialized software.	The study found that lack of facial emotions and the presence of fewer affiliative emotions such as happiness or sadness and non-emotional expressions such as surprise were important indicators of the video´s popularity. By the time the study was published and as the author states, it was the first time a methodology such as facial coding has been applied to YouTube videos on corporate channels. The analysis of the emotional face behaviour could be used to build and measure brand value and to add these metrics to the ones on social media. The use of this methodology opens a new line of studying nonverbal communication in corporate communication and furthermore, shows how a neuromarketing approach might be integrated into research on corporate communication.
Wang et al., 2017	EEG	Measuring consumer´s attention in relation to changes in brain activity measured through EEG for advertising displayed in social media.	Attention	33 aged from 19 to 66	The study found that men and women reported different EEG brain activity toward humorous and non-humorous social media advertisements and provided evidence on how EEG might be used to predict consumers´ attention towards social media advertisements. Monitoring EEG brain activity while watching social media advertisements was a useful predictor of consumers' attention.

Sherman et al., 2018	fMRI & Instagram survey	Measuring brain activity when doing social interaction (giving "Likes" and receiving "Likes" on social networks such as Instagram).	Attention & Emotions	34 female and 24 male participants, ranging in age from 13 to 21 (Average = 18.2).	The study found that the experience of providing a “Like” to another person and receiving “Likes” from others, made the same brain regions to be activated. Most participants reported Liking images because they were visually appealing probably due to the quality of those images. Giving positive social feedback is associated with being provided social support to loved ones with special importance in adolescence or youth to strengthen social bonds. Although the fMRI research is done in a non-social environment (the participant is always alone), the physical isolation is no longer social isolation.
Harris et al., (2019)	EEG data and self-report measures (online survey data)	This research investigated the use of consumer neuroscience to improve and determine the effectiveness of action/emotion-based public health and social cause (HSC) advertisements.	Action/Emotions	EEG: 47 participants Survey: 256 participants	The research found that action/emotion-based marketing communications that ask individuals to ‘act’, ‘share’, ‘pledge’ or challenge’ are more effective than rational-based appeals. As a matter of fact, viewing action/emotion-based rather than rational-based advertisements resulted in a positive change in decision making with increased donation amounts and greater liking.

Source: own elaboration

Table 4.10. The use of Eye-tracking in different types of messages

The use of Eye-tracking in different types of messages					
Authors & Year	**Type of Technique**	**Thematic Area**	**Main Measurements**	**Sample**	**Main findings**
Guixeres et al., 2017	Eye-tracking, EEG and heart rate	The purpose of the study was to investigate whether the effectiveness of a new ad on digital channels (YouTube) can be predicted by using neural networks and neuroscience-based metrics (brain response, heart rate variability and eye-tracking).	Memory	35 Participants	The study has shown that aspects related to the impact of advertising, such as whether the ad is going to be remembered or whether it is going to be highly rated can be detected from an analysis of consumers' biometric responses during the viewing of these ads. The study showed differences in the impact of advertising by gender.
Huang et al., (2019)	Eye-tracking	The study tends to understand people's decision behind liking of photos, that fact involves an interplay among evaluation dimension (hedonic vs. utilitarian), social influence (pre-existing number of likes), user characteristics, and underlying cognitive activities (effort and attention).	Attention	99 participants	The study has shown that utilitarian evaluation negatively predicts people's liking decision of pictures, while hedonic evaluation positively predicts this decision. It has also shown that social influence (pre-existing number of likes) can increase hedonic rating, suggesting that the perception of social influence is affected by evaluative dimensions and user characteristics.

Piqueras-Fiszman et al., 2013	Eye-tracking and word association	This research aims to collect attentional information and freely-elicited associations from consumers in response to changing specific attributes of the product packaging.	Attention	50 participants	The results have shown cognitive and affective information and attentional measures in relation to specific attributes of product packaging. The main objective was to relate the attention that the package elements attracted to the immediate message they communicate, and which packaging formats would impact participants' willingness to try the product.
Lafont et al., 2021	Eye-tracking and ECG	The research aims to investigate the impact of the emotional and informational components of road safety communication on the motorists' ability to detect cyclists in an urban environment.	Emotions	54 participants	The results of the study tend to understand how emotions, experienced while people were exposed to road safety messages eliciting different intensities of the same negative emotional state, were subsequently able to modify their driving behaviour and affect their ability to detect cyclists.

Source: own elaboration

4.4. Final Reflections

Over the past two decades, some methodologies tried to go beyond verbal responses by measuring the nonverbal body responses, opening several possibilities for studying the attention consumers pay to online advertising in particular and marketing in general (Wedel & Pieters, 2017; Muñoz-Leiva et al., 2019). In the Internet context, companies want to achieve more effective online advertising strategies and they want to know how consumers process commercial messages (Muñoz-Leiva et al., 2019).

Consumers today go through complex and long interacting steps before purchasing with organic and paid search, retargeted display and banner ads, price comparison, and visiting websites and physical stores among other activities. During the consumer decision journey, each step puts the consumer in a particular information-processing state of mind and makes some media types appropriate to move to the next stage. It seems a well-recognized fact that advertisers have developed more and more creative ways to influence people to buy products and services they may not always want or need (Morin, 2011b).

For a long time, advertising effectiveness has gone from rational to emotional. Although the current advertising saturation forces, to a greater extent, deepen research on the keys of attention and emotional activation in consumers. And assuming that if neuromarketing can help unveil these keys, it can lead to light in order to simply point out patterns of common behaviour (Tapia-Frade & Martín-Guerra, 2017).

Neuromarketing is an emerging field claiming to provide advertisers with better ways to understand what triggers and stimulates consumers' brains (Morin, 2011a). Morin (2011a; p. 132) states that "for too long, both marketers and advertisers have relied on ancient ways to create and assess effective advertising campaigns. Millions of dollars are poured each year into developing products that will never see the light of day. Countless campaigns fail to attract consumer attention and successfully impact our memory banks". For decades, marketing research methods tried to explain and predict advertising effectiveness. But however, most of them have failed (Morin, 2011).

There are new and fascinating times for marketing communication. The proliferation of new media is opening new opportunities for marketers and companies to reinforce their communication and to make efforts to better understand their consumers. Furthermore, to detect new niche markets. Even though the opportunities are for real, there are also, big challenges to face. Among them, how to create an integrated marketing communication program is one of the most important for companies, marketers and brands. Marketers need to better integrate their marketing communications. For that, they need to understand as much as possible which is the consumer path to purchase and decision funnels for a different set of consumers and their likely attitudes at different stages of the way. It is critical for marketers to know the effect of the communication on consumers in terms of how they are affecting knowledge or behaviour, how they feel or do, how communications influence the consumer´s decision journey, how messages are received as well as their outcomes. Nowadays, the consumer "path to purchase" is shorter in length, less hierarchical and more complex (Cour et al., 2009; Batra & Keller, 2016), faster, less linear than before and they have a beginning and an end to them, with stages in between (Batra & Keller, 2016). To influence consumers over this path, multiple communications attempts are needed to inform, persuade, call for action or advocacy to make them move forward in the process. In this new context, each message is not an isolation; what is needed is an entire sequence of messages, interactions and cross-effects across new and old media options (Batra & Keller, 2016).

As seen in this and the previous chapter, marketing communication has passed from very simple models to what we now nowadays about the complexity of the communication environment we are immersed. It is more and more complex for companies to highlight their products and services. It is also more complex for brands to generate engagement among their consumers and even more to get advocacy. For all of this, being open to combinations of traditional and new media and being open to traditional and new ways of getting insights from consumers, might leverage communication among consumers and brands.

Chapter 5

Objectives & Methodology

Learning never exhausts the mind.

Leonardo da Vinci

5.1. Introduction

Once the revision of literature has been done, and the conceptual model (hypotheses and research questions) has been formulated in chapters 3 & 4, the present chapter exposes the objectives and methodology of this research. In this sense, the study carried on is divided into three phases: (1) design and testing of the proposed questionnaire, (2) empirical research of quantitative nature (a questionnaire), and (3) qualitative research (an experiment using online eye-tracking that includes a short questionnaire at the end of the tasks to be performed).

5.2. Nature of the Research

The research focus is addressed according to two criteria: the purpose of the research and the nature of the information. Regarding the purpose of the research, as can be seen from the hypotheses proposed in the third chapter, the approach is qualitative and quantitative; exploratory and explanatory.
The interest in applying this type of analysis in the present work is mainly due to the advantages that this approach brings to marketing research (Djamasbi et al., 2010). The need for formal development of the models proposed by the researchers serves as a support to the extension and modification of the phenomena under study and provides a solid basis for the application of the theory that seeks to respond to the research questions been exposed before.

The hypotheses relating to the relationships of the models will be tested through Structural Equation Modelling. This type of analysis will allow, on the one hand, to explicitly incorporate the measurement error in the proposed models and analyse their influence on the degree of adjustment thereof and, on the other, the evaluation of all the variables of each model simultaneously, providing more complete information regarding the dynamic interrelationships presented within the model (Steenkamp and Baumgartner, 2000; Hair et al., 2006).

Furthermore, to complement the qualitative approach, the type of analysis being done for the second part, would be ANOVA following authors that made similar research (i.e., Muñoz-Leiva, 2019).

5.3. Objectives

The generic and broad objective of this work is to test the effectiveness model proposed considering two different types of messages (informative versus emotional) and two different types of products (hedonic versus functional products). The selected brands were Activia from Danone (functional product) and Nespresso (hedonic product).

Millennials are the first generation whose lives are integrated with technology and they use their social media to post their food experiences and to generate discussions around the topic (Saulo, 2016). Healthy perceptions can affect what Millennials eat and that they are generally based on food choice, characteristics of food and healthy concepts held by the public (Chan et al., 2011; Küster et al., 2019). In this sense, healthy living is of particular importance to Millennials, as they prefer certain ingredients in the food they consume. They have developed values for or against certain foods or food ingredients (Saulo, 2016). As previous studies have shown, the motivator to use a specific diet patter to improve health depends mostly on the health benefits perceived by the consumers of the diets (Enriquez & Archila-Godinez, 2022).

Notice that the conceptual model focuses on the communication of healthy nutrition among young consumers, so-called Millennials. In this sense, and after the revision of the literature, the conceptual framework is justified in terms of the relations among key variables, with the formulation of the correspondent hypotheses and in this chapter, the design of the studies and the methodologies, are explained.

In this sense, the sub-objectives are divided considering the nature of the study: quantitative and qualitative.

5.3.1. Quantitative study

The main aim of the quantitative part is to propose a model to test the effectiveness of advertising messages in social networks. That is, (1) to analyse the influence of attitude and emotional aspects on the attitude towards the ad in social networks, (2) to study the effect of this attitude toward the ad on the attitude to the brand/product, and (3) to examine the consequences of this attitude to the product/brand.

Additionally, we propose two research questions to investigate if the message effectiveness is independent of the type of product or the type of message, using a declarative instrument as the questionnaire.

5.3.2. Qualitative study

As a complement to the previous objectives, the qualitative study tends to add value to the present thesis by applying traditional and innovative techniques while evaluating the attitudes towards a piece of advertising in social networks using neuroscience measures, more specifically those obtained through online eye-tracking. That is, this qualitative study tries to answer if the message effectiveness is independent of the type of product or the type of message, bug using a neuroscience tool: the online eye-tracking. Table 5.1. shows the objectives of each part of the research.

Table 5.1. Objectives of each part of the research

	Objectives	Measurement Instrument
Quantitative	1. To analyse the relevance of different predictors on improving attitudes towards an ad in social networks. 2. To study the effect of this attitude toward an ad on the attitude to the brand/product. 3. To examine the effects of this attitude to the product/brand (eWOM and buying intention). 4. To study if the message effectiveness is independent of: the type of product (RQ1a) and of the type of message (RQ2a).	Online questionnaire
Qualitative	1. To study if the message effectiveness is independent of: the type of product (RQ1b) and of the type of message (RQ2b).	Online eye-tracking

5.4. Population and Sample Selection

This section is divided into two. The first section focuses on the sample selection for the quantitative study and the second one for the qualitative study. In both cases, the Millennials are the population to be analysed based on previous research done, as chapter 1 explains extensively. Although the exact ages of the Millennials generation change from one author to others, there is some consensus in considering the segment born between the early 80s to mid or late 90s (Pérez, 2018). Other authors consider that Millennials are born between 1980 and 2000 (Bolton et al., 2013; Howe and Strauss, 2000) or even 2004 (Howe, 2014).

Based on previous research on Millennials, the sample is composed of Millennials, comprising two main blocks. The first will be the so-called early adults Millennials: the ones born between 1982 and 1996. The second, the so-called adolescents Millennials: the ones born between 1997 and 2004 (Kuster et al., 2019). According to the study design and considering the general rules affecting market research in relation to prior authorization on young people, the sample selection ranges from ages of 18 to 38 years old. As an example, the ICCESOMAR International Standards (ICC/ESOMAR, 2016) or even, the NMSBA Code of Ethics, (NMSBA available at https://www.nmsba.com/neuromarketing-companies/code-of-ethics) that establishes standards for neuromarketing research on young people and clearly states that "neuromarketing studies involving participants less than 18 years of age shall only take place with the informed consent of the participant's parents".

Regarding the sample characteristics, how Millennials are and how they behave in the digital environment, is widely discussed in chapter 1 and 2. But, to briefly summarize the sample composition, we can state that this cohort has not experienced life without new technologies (Duffet, 2015). Despite technological diversification, millennials constitute a global segment at an international level that develops similar intra-segment attitudes and behaviours (Moore, 2012). This cohort enjoys connecting through digital means, they are very receptive to changes and they are very fond of creating trends (Moore, 2012).

Nowadays, advertising is not just limited to print and broadcasting mediums but can be found across social media platforms (McCormick, 2016). Although Millennials are anxious to participate in the co-creation of advertising content (Gower, 2014), they respond poorly to conventional mass communications (Newman, 2015). They use multiple digital channels to make their purchase decisions or to make recommendations (word of mouth) (Noble et al., 2009). In fact, 67% of Millennials reported that they use smartphones to access the Internet, while 47% use their tablet (Barton et al., 2014). They like to engage with brands via social networks, "liking" products, posting product reviews or following brands on Twitter among other activities they do on social media (McCormick, 2016). For them, growing up in a digital environment led them to develop high skills in new technologies (Nyheim et al., 2015).

Millennials represent a valuable segment of consumers and their attitudes towards advertising should have vital implications. Millennials are of special interest to marketers as they are economically powerful and because they are early adopters of technology, they influence the consumption of other cohorts and they share their brand preferences and experiences with others via social media. They want to connect with marketers and share their personal information through social media but they expect to have something in return (Mortimer et al., 2018). Millennials are found to be critical of advertising to the extent of considering certain attitudes as "anti-advertising" (Smith, 2012). Past research has shown that Millennial´s attitudes towards advertising reveal that perceptions are not positive in either country (Tanyel et al., 213; Mortimer & Laurie, 2016; Mortimer et al., 2018). Similar results showed the study conducted by Beard (2003) that suggested that perceptions of advertising are negative and haven´t changed significantly over the last 15 years although changes in the media landscape (Mortimer et al., 2018).

Millennials have a huge influence due to interconnectivity and being tech-savvy (Duffet, 2015). Smartphones are their commonplace and represent –somehow- their individuality (Kumar & Lim, 2008) and they have access to digital media every day (Nyheim et al., 2015). For them, growing up in a digital environment led them to develop high skills in new technologies (Nyheim et al., 2015). Therefore, social media and interactive technologies are empowering Millennials to be more proactive in promoting brands and products (Nyheim et al., 2015). Future advertisement needs to focus on improving their knowledge about how they behave to positively engage them.

5.4.1. Quantitative study

In relation to the information collection method, an online questionnaire was sent to the sample, following a non-probability sampling by convenience This sampling method –non-probability sampling- makes it easy to access subjects for data collection. This type of sampling has been used in previous research (Henrie & Taylor, 2009; Amaro et al., 2016; Bigné et al., 2007; Oumlil & Balloun, 2019).

Although the questionnaire has been made in Spanish, it was later translated into English and Portuguese and verified by native speakers. The main objective of being translated was not to alter nor conditioned the original premises of the original one.

Sample collection was made in Spain, Portugal and other European Countries. Table 5.2. shows the datasheet of the study.

Table 5.2. Technical Data Sheet for Quantitative Study

Technical Data Sheet	**Sample**
Sample Unit	Millennials from 18 to 38 years old.
Scope of the Study	Worldwide; Spanish, English & Portuguese speaking countries.
Sample Collection Method	Visualizing 2 Facebook posts and 2 Instagram posts.
Sampling procedure	Non probability sampling by convenience
Sample Size	**1242** assessments (Nespresso = 624 assessments; Activia= 618 assessments).
Field Work	From September 2020 to January 2021.

5.4.2. Qualitative study

In relation to the information collection method, in this qualitative study, possible sample respondents were contacted via email with the instructions to be followed. Information was gathered via an online eye-tracking first and then with a short online questionnaire sent to the sample respondents, following a non-probability sampling by convenience.

Sample collection was made in Spain and Spanish speaking countries. Due that the ads (posts in social networks) were in Spanish, any Millennial able to understand Spanish was eligible to be a respondent.

Table 5.3. shows the datasheet of the Qualitative study.

Table 5.3. Technical Data Sheet for Qualitative study

Technical Data Sheet	Sample
Sample Unit	Millennials from 18 to 38 years old
Scope of the Study	Spanish speaking countries and respondents that were able to understand Spanish
Sample Collection Method	The tasks consisted in the visualization of 2 posts of hedonic products (informative and emotional) and 2 posts of functional products (informative and emotional) that appeared randomly. Data was collected by the online eye-tracking system
Sampling procedure	Non-probability sampling by convenience
Sample Size	Valid responses: • Hedonic Informative: total of 80 responses • Hedonic Emotional: total of 82 responses • Functional Informative: total of 81 responses • Functional Emotional: total of 82 responses
Field Work	March 2021

5.5. Measuring Instrument Design

5.5.1. Questionnaire

The information collection method was an online structured questionnaire. This type of technique is one of the most usually used in quantitative research for data collection (Martinez & García, 2014). To reach the selected sample, the online structured questionnaire was originally created in Spanish but translated into Portuguese and English. New social conditions and new modalities of collecting information such as technological advances during the last decades have produced a decrease in face-to-face surveys and an increase in the use of new technologies for data collection (Montoya et al., 2016). In addition, the use of surveys through the Internet has been generalized. This increase seems to be motivated by some of the characteristics of this data collection method, such as speed, low cost of administration and management (Kreuter et al., 2008) as well as, and the freedom that this implies, which means high interaction with the interviewee that generates an improvement in the answers to the questionnaire (Montoya et al., 2016). Nowadays, several researchers consider that the quality of the information collected through online surveys has made a significant improvement in the way research is being done and they have revolutionized the old ways of collecting data to the point that they are becoming obsolete (Alarco & Álvarez-Andrade, 2012). This method also allows making inferences about consumer behaviour for a given population based on a sample (Babbie, 1990). During the pandemic, a rising number of research being done with Internet-based data collection methods (Akintunde et al., 2021) could be due to the ease of getting data collected, travel restrictions and distancing guidelines, a cost-effective faster way to collect data (Hlatshwako et al., 2021), During the lockdown, the online survey was the most suitable method to carry out this research due to the impossibility of doing it in a face-to-face environment.

The pre-test has been done in two steps. The first, over a sample of 25 individuals all related to the sample chosen. The main aim of this pre-test was to introduce amendments to the original draft and to make improvements for your full understanding of it. In Annex 5.B., there is a sample of the complete and final version used as the final questionnaire (only English version). The first pre-test was made under the supervision of two professors from the Marketing & Market Research Department at Valencia University with a vast experience in this type of topic. Hence, from the initial draft of the questionnaire, modifications were introduced attending to the suggestions of the experts. In the second phase, the pre-test was done via an online platform from google drive docs with a pre-filled form to verify the correct understanding of the whole survey. This second pre-test was done on a sample similar to the one determined, which means, young consumers. Once more, modifications and improvements were introduced.

The questionnaire is divided into three parts. The first is an introductory one, where questions related to the considerations of advertising in general and particularly about advertising in social networks were asked. The second part is related to the differences between the two types of products (Hedonic and Functional) and both types of communication were presented (Informative and Emotional). The central part of the questionnaire covers, all the questions related to the variables included in the model, with a focus on the attitude towards the ads on social networks. Later, the central part of the questionnaire is composed of scales referring to the different variables with the objective to evaluate the interviewee´s attitude towards the ad and to the brand, and purchase intention. The last part is related to the sociodemographic data of the individuals to make a clear description of the sample. Questions such as gender, age, occupation, cultural level and income level, are the ones that compose this part although the whole survey remains anonymous.

For the measurement of the variables included in the model, and based on the literature review, diverse Likert scales have been used. This type of measure allows to obtain psychological assessments that are not easily seen or that cannot be quantified directly (Churchill, 1979). Likert scales present different alternatives from the most favourable to the least one and the main aim is to specify the valence of attitude (Izquierdo et al., 1997). This type of scale offers several advantages such as ease to answer, quickness and needing fewer items to create them (Izquierdo et al., 1997). Furthermore, allows the use of items that are not directly related to the attitude to be measured (Alaminos & Castejón, 2006).

These scales were adapted in relation to the literature on attitudes towards advertising in social media. Specifically, and for the elaboration of the scales, the variables to be analysed were specified (such as irritation, personalization or information, among the rest) and then, over the revision of the literature, several items were generated for its evaluation, keeping in mind, that almost all items were contrasted in previous research to guarantee validity and reliability (Igartua & Humanes, 2004).

Following, the scales used for the estimation of the variables under study.

- The first block is about measuring the background of the attitudes towards advertising in social networks.
- The second block is about measuring the background of the attitude towards the ad and comprises Credibility, Entertainment, Informativeness, Personalization and Irritation.
- And, finally, the third one has to do with measuring the attitudinal and behavioural effectiveness and comprises attitude towards advertisement, attitude towards the brand, purchase intention and eWOM.

In Table 5.4. there is a detail of the concept to be measured, the scale/s proposed and the author/s revised.

Table 5.4. detail of scales used in the questionnaire

Concept to be measured	Scale/s to be used according to literature	Author/s who propose it/them
Credibility	CR1 I do trust in the content of this message in social media CR2 The content of this message in social media is credible	Xu, (2006)
Entertainment	EN1 This post in social media is enjoyable EN2 This post in social media is entertaining EN3 Receiving advertisement in social media is pleasant	Tsang et al., (2004)
Informativeness	VI1 This post in social media is a good source of information of products/services VI2 This post in social media offers me relevant information of products/services VI3 This post in social media is a good source of updated information of products/services VI4 This post in social media makes accessible products or services information VI5 This post in social media is a convenient source of product/services information	Tsang et al., (2004); Xu et al., (2006)
Personalization	PR1 This post in social media shows me personalized messages PR2 This post in social media is adjusted to my preferences and interests PR3 In general, social media posts are showing personalized messages	Xu, (2006)
Irritation	IR1 This post in social media is annoying IR2 This post in social media is irritating IR3 This post in social media is deceptive IR3 This post in social media is confusing	Ducoffe (1996)

Attitude towards the ad in social networks	AA1 It´s good AA2 I like it AA3 It´s interesting AA4 I´ve got a favourable opinion AA5 It´s pleasant	Gardner, (1985); Holbrook & Bartra, (1987); Bigné Alcañiz & Sánchez García, (2001)
Attitude towards the brand	AB1 It´s good AB2 I like it AB3 It´s nice AB4 It is prestigious AB5 I´ve got a favourable opinion	Bigné Alcañiz & Sánchez García, (2001)
Purchase Intention	PI1 I might buy this product PI2 It is worth buying this product	MacKenzie et al., (1986); Lee & Hong, (2016)
eWord of Mouth	WO1 I tell my friends about this vendor WO2 I want my friends to buy from this vendor WO3 I say positive things about this vendor to other people WO4 I recommend this vendor to someone who seeks advice	Zeithaml, et al., (1996); Palvia, (2009)

Source: own elaboration

5.5.2. Online Eye-tracking Experiment

In relation to the collection method for the second study, the qualitative study, an online eye-tracking experiment and a post-visualization short online questionnaire were performed.
In the Internet context, companies want to know how to achieve more effective online advertising strategies and how consumers process commercial messages (Muñoz-Leiva et al., (2019). And eye-tracking technology provides accurate information on consumers' visual attention as fixations and visualization patterns (Vila & Gomez, 2016). While scanning our environment, we perceive our surroundings and our eyes are in constant motion of two main types: one that directs to a stimulus (saccade) and another that maintains the eyes fixed on stationary stimuli (fixations) (Scott et al., 2019).

For this type of experiment, the inclusion and exclusion criteria are crucial. The inclusion criteria for participation in the study was since the volunteers did not present any type of blindness, strabismus or any other vision problem that could compromise the study, and the quality of the recording is good enough to reach acceptable results. In a range of 1 to 5, being 1 very poor quality recording up to 5 for high quality results, results of research subjects were recorded. Online participants with a quality of recording of 3 (average), 4 (good) and 5 (very good) were selected to participate. All participants with quality of recording as of 1 (very poor) or 2 (poor) were automatically discarded.

Regarding the recommended requirements for participants, the following are the ones that the manufacturer suggests. Information provided by Realeye.io (www.realeye.io):

- 1080p @ 30FPS or 720p @ 60 FPS webcam, with good quality image.
- Updated Google Chrome or Microsoft Edge browser. Firefox is highly not recommended.
- Updated Windows 10 or macOS X.
- 4-core Intel processor, 3 GHz or faster, 5th gen. or later.
- If using a laptop, then it MUST be plugged into the power cord.
- 8 GB of RAM with at least 4 GB of memory available (not used).
- DirectX 12 graphics card with updated drivers. Integrated Intel Graphics (gen. 5 or later) is fast enough.

Source: Realeye.io

All participants were asked to accept a protocol of consent. If research subjects were not willing to accept it, they will be automatically dismissed.

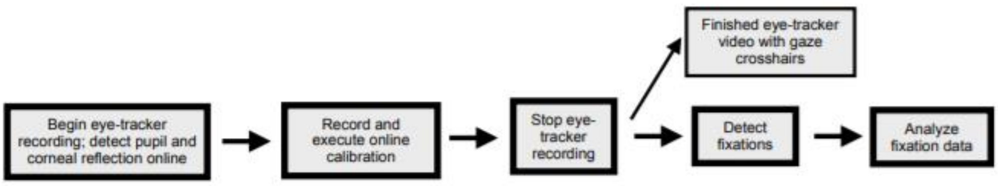
Participants were randomly selected up to a total of 95 research subjects. After a quality filter, the total of valid responses varies from 80 to 82 as shown below in Table 5.5.

Table 5.5. Number participants and number of valid responses after applying quality filter.

	Total Participants	Total valid Responses (after applying quality filter)
FUNCTIONAL (Activia)_EMOTIONAL	95	82
FUNCTIONAL (Activia)_INFORMATIVE	95	81
HEDONIC (Nespresso)_EMOTIONAL	95	82
HEDONIC (Nespresso)_INFORMATIVE	95	80

The following Figure 5.1. exemplifies the main tasks to be performed during the experiment.

Figure 5.1. Tasks to be done in an eye-tracking experiment



Source: Evans et al., (2012)

This type of experiment was carried out with an online eye-tracking. The study design has considered the option of using an online gaze tracker, which uses participant´s webcams for the acquisition of eye-tracking data online such as fixations, saccades and areas of interest (Semmelmann & Weigelt, 2018).

This type of research requires respondents to sit in front of a screen of a desktop computer being used. This type of devices tracks the eyes only within the limits of the tracker´s range, commonly called headbox. This kind of restriction might not interfere with the range in which respondent has still freedom to move without altering the result of the experiment.

The chosen platform was RealEye (https://www.realeye.io) due to three main reasons: the first one, an easy setup both for the researcher and for the participants. This platform does not require a huge knowledge to set up or even analyse data. Furthermore, they allowed a 30-days trial period to adjust the study design and set-up, mainly on visualization timing.

The second reason was due to their innovative concept in online eye-tracking. The platform is designed to conduct screen-based studies running Artificial Intelligence (AI), deep neural networks to analyse images coming from a webcam. The AI detects the research subject´s face and pupils and predicts the gaze points performed entirely by a web browser in real-time (Source: RealEye.io). And the last reason has to do with cost. Although it is not for free as other platforms, the value equation is worth it. Neither it needs a big investment such as others that are top ranked, without compromising the quality of the results.

As the type of research implies visualization of static posts, this type of online tool might be suitable. Studies that require a very detailed spatial resolution of fixations, such as reading, or very sensitive information are not suitable to be conducted online (Semmelmann & Weigelt, 2018). These online tools, where the approximate location of the gaze is sufficient, are suitable for this type of research (Papoutsaki et al., 2016).

Furthermore, two main things to be considered. The first is the innovative approach and filling the gap by collecting data online. And, the second, and not less important to mention, is that Millennials environment is mostly online.

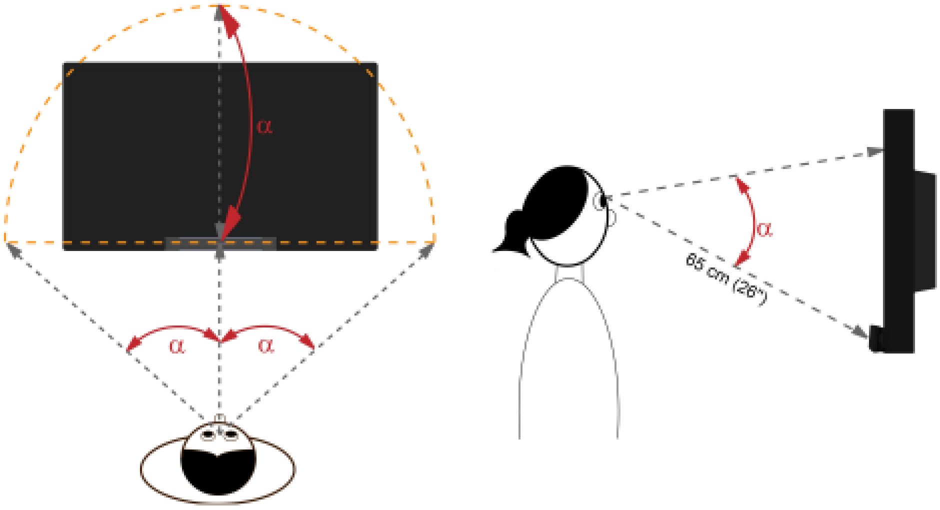
There are special conditions for the online eye-tracking experiment recommended by key players in the industry such as Tobii (www.tobiipro.com):

- ***Environment:*** The experiment done with screen-based eye-tracking requires a dedicated space to run it successfully. The room preferably should be an isolated one and used only for the experimental setup.

- ***Lighting:*** For the research purpose, lighting is essential. Direct sunlight should be avoided as it can affect the quality of the measurements. Lights should be ideally ambient light without excess. As a matter of fact, it is particularly important to keep the lighting level consistent while measuring levels of pupil dilatation, which is commonly called pupillometry.
- ***Eye-tracking distance:*** the optimal eye-tracking distance from the participant´s eyes to the eye-tracking is approximately 60-65 cm for screen- based eye trackers.
- ***Participant´s positioning:*** before calibration, the participant must be in a comfortable posture that can maintain during the test.

In Figure 5.2., we can see a description of the participants positioning.

Figure 5.2. Participant positioning



Source: Tobii.com

Method: Experiment Details

Participants were recruited among close contacts ranging from 18 to 38 years old that had access to a desktop computer and were able to understand Spanish. Unlike the quantitative study, this one was only made in Spanish. Both, the general instructions and posts were only in Spanish, the original language and without manipulation.

The total valid sample was up to 82 participants, although the total participants were 95, having viewed a total of 380 visualizations (95x4 different posts). The total of valid views is detailed in Table 5.5; the rest of them were discarded. Samples of this size are common in this type of research as the intention is not to be representative (Wedel, 2008; Muñoz-Leiva et al., 2019).

Participants received basic instructions related to calibration of the equipment and how to proceed to view the different posts. Participation in the study was voluntary and anonymous, although if the participant wanted, he/she can leave their basic profile with data such as name, sex and age. In most cases, they did it, and this helped a lot to include them among the sample range.

Each participant must access to a secure, specific link to perform the tasks. The first step is to make the calibration using the manufacturer's setting of calibration points to ensure the accuracy of visual attention metrics (Klein et al., 2010). This first part of the experiment, the calibration process, took a few minutes and for the rest of the time, participants were asked to view (view or read if they wanted) two posts on two hedonic products and two posts on functional products, with two different types of communication (one informative and the other emotional). In sum, 4 posts were visioned by the research subjects. Although some authors support the idea of a goal-oriented view in contrast to exploratory (Danaher & Mullarkey, 2003), focusing on a normal task such as viewing or reading should not compromise the performance of this experiment.

Figure 5.3. Post Functional Emotional (Activia)

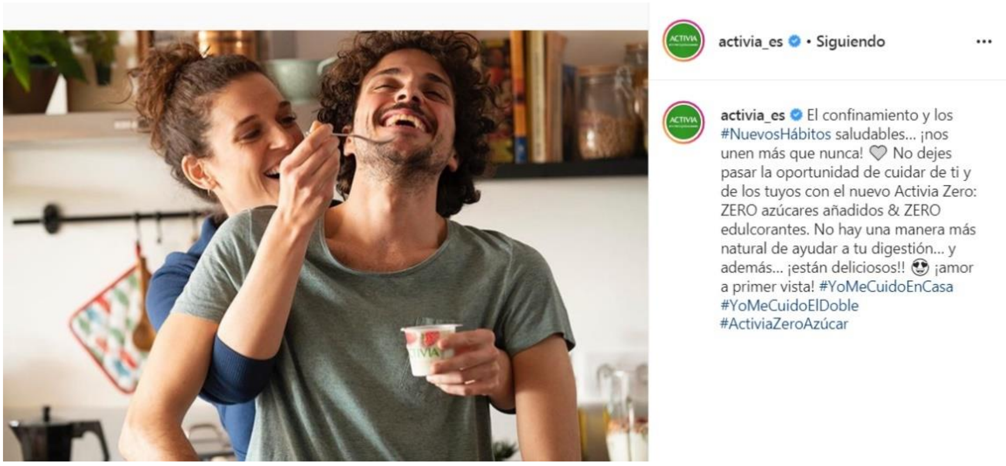


Figure 5.4. Post Functional Informative (Activia)

Figure 5.5. Post Hedonic Emotional (Nespresso)

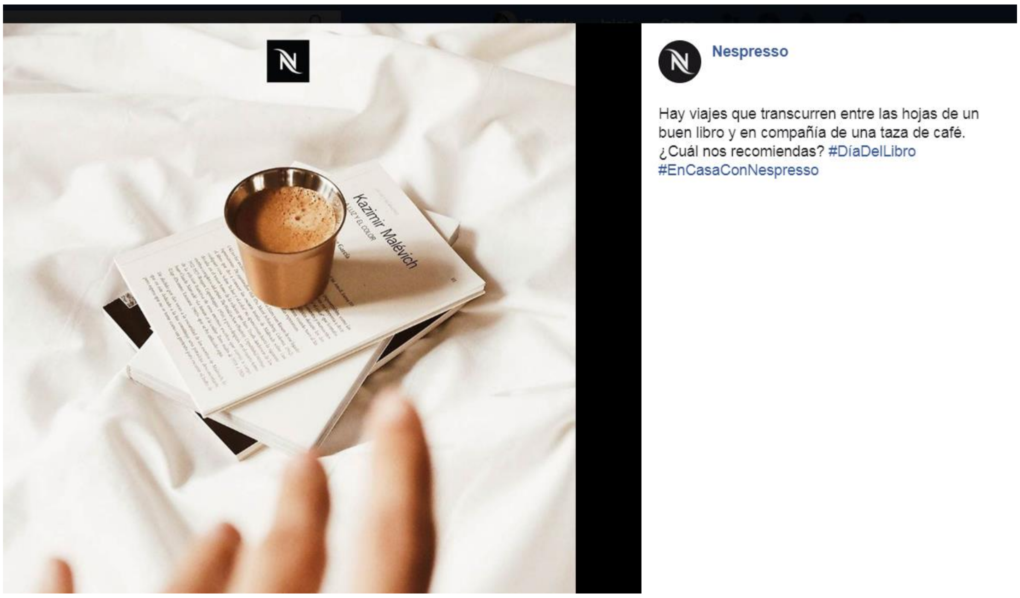
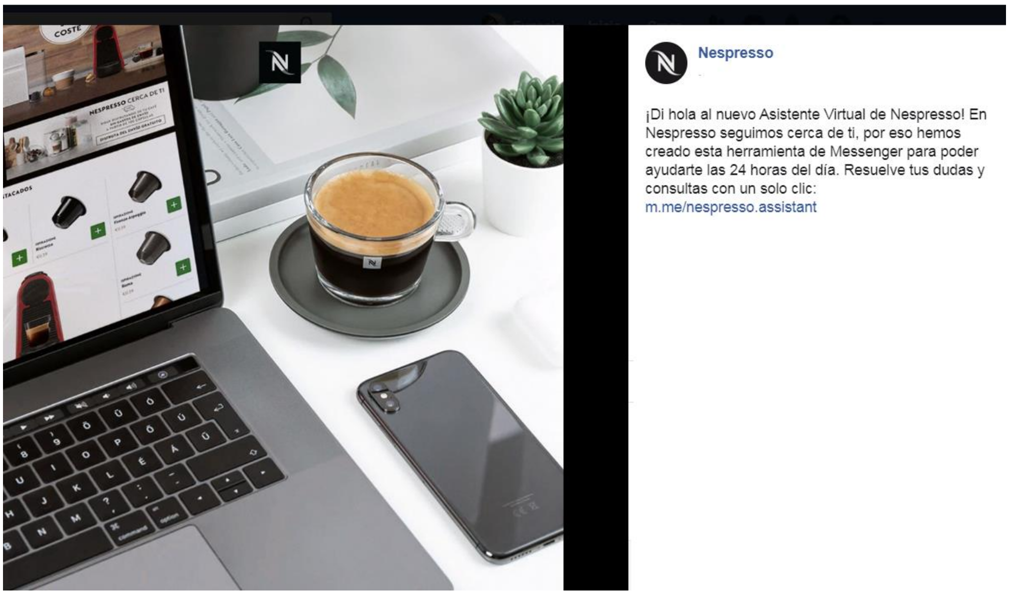


Figure 5.6. Post Hedonic Informative (Nespresso)



During this within-subject experiment, participants viewed original social media static posts, without alteration, for an *ad libitum* time period (Klein et al., 2020). The sequence of appearance was randomized and when the subject finished viewing (or reading) he/she had to click in one part of the post to continue viewing the next post. In case they do not click, the time frame to go from one post to another was set at 30 seconds, the time usually spent to read the longest of the posts. From one post to another, the platform sets a few seconds to pass from one image to the next one. Hence, the maximum time spent viewing the post was 30 seconds for each post plus the time frame between each post, which implies a few more seconds.

After performing the visualization tasks, participants were asked to complete a short online questionnaire comprising queries about the socio-demographic situation, behavioural variables as well, and a few other items to be filled in order to determine preferences among the viewed posts (Muñoz-Leiva et al., 2019).

Experimental Design

To determine attention towards an object, one of the most common approaches is assigning all fixations that fall within a certain distance of such object and it is called Area of Interest (AOIs) (Orquin et al., 2016). Hence, we decided to divide the different posts into several areas of interests (AOI), to test how attention was distributed across the stimuli (Muñoz-Leiva, et al., 2019) and, in order to extract metrics from those regions (Farnsworth, 2018). Following Muñoz-Leiva et al., (2019), all AOIs were delimited manually and can be seen in Annex 6.B).

The AOIs, selected and drawn manually, were the following:

1.- The complete post, called **"FULL"** (Shown in tables as *Full body*)

2.- The **"HEADER"** is the area that shows the name of the company posting the communication. (Shown in tables as *Header*)

3.- The AOI delimited by the photograph in the post, was called **"FOTOCUERPO"**. (Shown in tables as *Pic body*)

4.- The AOI delimited by the text in the post, was called **"TEXTOCUERPO"**. (Shown in tables as *Text Body*)

5.- And last, the AOI where the trademark is on the post, was called **"MARCACUERPO"** (Shown in tables as *Brand*)

Eye-tracking Metrics

1. **Fixations and gaze points.** Fixations and gaze points are the basic output measures of interest and most used terms when talking about eye-tracking (Farnsworth, 2018). Fixations are represented as discrete samples of almost stable points where the eye is looking and saccades are defined as eye movements between fixations. (Borys & Plechawska-Wójcik, 2017). Fixations are considered excellent measures of visual attention. Fixations begin when a participant orients their point of gaze in a particular area (Farnsworth, 2018). Gaze points show what you are looking at and the different eye trackers collet data at a different sampling rate, which is measured in Hz. The sampling frequency is measured using the unit Hertz (Hz), which refers to the number of samples per second. Most modern eye-trackers have sampling frequencies ranging from 25 - 2000 Hz. (Andersson et al., 2010). For example, a sampling rate of 30 will show that per each second, the eye tracker will record 30 individual gaze points per second. Then, the threshold of cognition occurs, as it is a point at which the eye orients and remains within 1-degree visual angle for at least 0.1 second or 100 milliseconds (Bansal-Travers et al., 2016).
2. **Dwell time.** It is called dwell time or time spent, to the time an individual spends looking in a particular AOI fixating within the area without leaving it, to better evaluate those areas (Bansal-Travers et al., 2016). In some cases, an increase in time spent can be associated with motivation or top-down attention, a high level of interest while a shorter duration can indicate that other areas of view are more interesting (Farnsworth, 2018). On the other hand, dwell time, sums up all fixations and then it might be a measure of overall attention from a specific AOI (Duchowski & Duchowski, 2017; Naderer et al., 2020). Some authors call dwell time or gaze time or even gaze duration, however, it is sometimes also called gaze time or gaze duration (Holmqvist et al., 2011) Nevertheless, suggest using the term dwell, since it is less ambiguous than gaze (Busjahn et al., 2014)

3. **Time to first fixation:** It is called time to first fixation (TTFF) to the time that passes until first fixation occurs. The shorter the time, the greater the capacity of the area to attract respondent´s visual attention (Barreto, 2012; Leon et al., 2020). Hence, this might indicate which object was the first to be of interest to the participants when the stimuli were initially presented (Banire et al., 2020). TTFF is a valuable indicator of how much attention has initially attract respondents. If it is short, it might very eye-catching and also, provides information that can be compared with other regions and can be useful to determine first impressions (Farnsworth, 2018).
4. **Fixation duration:** It is called fixation duration to the cumulative duration and average spatial location of a series of consecutive fixations within an area of interest. Hence, the fixation that occurs outside the area of interest will mark the end of the fixation (Barreto, 2012; Leon et al., 2020). This metrics measures the length of time the participant spends focusing on the object in the presented stimuli (Banire et al., 2020). The total fixation duration or fixation length (FD), denotes the sum of all fixations during a visit to an AOI and comprises the sum of dwell times on an element over the complete piece to be analysed (Busjahn et al., 2014).
5. **Fixation count within an AOI:** As Muñoz-Leiva et al., (2019) state, this metrics is very general measurement which needs to be completed with others. In any case, the greater number of fixations, the greater importance of the AOI for the respondent (Leon et al., 2020). This metrics relates to the fixation duration and serves as a basis for studying the number of fixations and duration of a task, which shows the importance of such AOI (Kytö et al., 2018, Murias et al., 2018; Leon et al., 2020).

5.6. DATA ANALYSIS TECHNIQUES

5.6.1. Data Analysis Techniques – Study 1. Quantitative

Further on, a description of the different phases of data analysis. This process follows the previous research of Churchill (1979); Jöreskog & Sörbom (1993); Diamantopoulos et al., (2000) and will continue in chapter 6.

The first phase of the following research is a descriptive analysis to classify the sample. After this, we proposed to analyse if our data follow a normal distribution, using the Kolmogorov-Smirnov Test.

The next stage, with PLS, analyses the psychometric characteristics of our measurement model, test the proposed hypotheses in the theoretical model and help us to answer RQ1a and RQ2a. Since the data does not have a normal distribution and that the structural model is complex (it contains constructs with few indicators, less than 4), the PLS algorithm was used for the structural equation model (Hair Jr. et al., 2017). In general, one of the advantages of the PLS algorithm is that it does not impose restrictions on the distribution of the data (Fornell & Bookstein, 1982). Therefore, it is an ideal analysis when the data is not normally distributed (Hair et al., 2011).

The PLS structural equation model is a non-parametric method, with explanatory and predictive power, that uses bootstrapping (generally with samples of 5.000) to estimate statistical significance (Hair Jr et al., 2017; Hair et al., 2017). According to Aldás Manzano & Uriel Jiménez (2017), its use has grown especially since the publications of leading researchers in marketing, who have established criteria for its interpretation (Hair et al., 2012).

Considering the characteristics of the sample distribution and that the sample size of the study is appropriate according to the criteria of Hoyle (1995), since it exceeds 100 subjects, the SEM-PLS analysis was carried out.

Furthermore, PLS-SEM differs from the traditional CB-SEM because it can test both reflective and formative models (Hair et al., 2017). In the present study, to assess whether the model was reflective or formative, the criteria of Wong (2019) were considered.

Since almost half of the latent variables in the model had less than 4 indicators, the theoretical foundations of the variables were considered to identify whether they were reflective or formative. Additionally, it was evaluated if the indicators of the constructs had high correlations with each other, which would suggest a reflective model (Wong, 2019). The tables that show the Spermman's Rho correlations between the indicators of each construct are shown in Annex 5.A.

As can be seen in those Tables (Annex 5.A) the indicators of each construct have high correlations with each other and are highly significant from a statistical point of view. As Garson (2016) explains, the construct indicators are expected to have high correlations with each other in the reflective models; while, in a training model, the indicators are not expected to have high correlations with each other since they represent different dimensions. These results, together with the theoretical foundations, led us to define the constructs of the model as reflective. In this way, the following model was proposed for testing.

5.6.2. Data Analysis Techniques – Study 2

Valid data from up to 82 research participants were used in the statistical analysis as can be seen and detailed in Table 5.6.

To answer the research questions mentioned in chapter 4, we tested whether the type of product (hedonic vs functional) or the type of message (informative vs emotional) has a significant impact on the participants´ attention through repeated measures ANOVA (Muñoz-Leiva et al., 2019).

Following Mehlhouse et al., (2021), univariate methods were used to show descriptive statistics about the participants and their gaze behaviours, which included mean gaze durations and proportions of participants gazing at the different AOI.

First, a series of ANOVAs were done to compare both types of products and both types of communication to demonstrate if there are significant differences among groups. Single-factor analysis of variance (ANOVA) was used to calculate differences between different groups of mean values (Mehlhouse et al., 2020), e.g., whether the mean values the different type of products or different types of communication in relation to TTFF, FD, TFD, FC. All these kinds of statistical analyses were performed with Excel 2016.

Chapter 6

Analysis of the results

Kites rise highest against the wind, not with it.

Winston S. Churchill

6.1. Introduction

This chapter presents the main results of the empirical research carried out. In this sense, the chapter has split into two main parts. The first part of the chapter shows the results of the quantitative study that help us to test the hypotheses and answer the research questions RQ1a and RQ2a. The second part illustrates the results reached through the qualitative study where the use of a neuroscience technique, eye-tracking, allows us to answer RQ1b and RQ2b.

6.2. Quantitative Analysis

6.2.1. Sample Characterization

6.2.1.1. Sociodemographic characteristics

Table 6.1 shows the sociodemographic characteristics of the sample, analysing aspects like gender, age, monthly income, level of education and occupation. This characterization has been done considering the two products studied: Nespresso and Activia.

A total of **1242 assessments** were analysed from 621 participants: 312 participants for NESPRESSO (*624 assessments)* and 309 participants for ACTIVIA (*618 assessments).* Each participant completed two questionnaires referring to an informative advertisement and another emotional one.

In this sense, as Table 6.1 shows, there are more women than men, with ages from an interval around 22 and up to 27. In relation to the monthly income, more than 60% is under 1000 euros while more than 40% work as an employee or on their own, with almost 50% of higher education profiles.

Table 6.1. Sample Characterization in terms of sex, age, monthly income, level of education and occupation.

		NESPRESSO (HEDONIC)		ACTIVIA (FUNCTIONAL)	
Sex		Frequency	Percentage	Frequency	Percentage
	Men	124	39.74%	99	32,04%
	Women	181	58.01%	199	64,40%
	Prefer not to tell	7	2.24%	11	3,56%
		312	100.00%	309	100,00%
		Media	SDT	Media	SDT
Age	Men	25,53	6.378	26.34	6,476
	Women	26,41	6.784	26.48	6,528
	Prefer not to tell	22,71	5.559	23.91	7,106

	NESPRESSO (HEDONIC)		ACTIVIA (FUNCTIONAL)	
	Frequency	Percentage	Frequency	Percentage
Monthly income up to 499 euros.	152	48.72%	126	40.78%
Monthly income from 500 to 999 euros.	48	15.38%	71	22.98%
Monthly income from 1000 to 1499 euros	60	19.23%	54	17.48%
Monthly income from 1500 to 1999 euros	28	8.97%	29	9.39%
Monthly income from 2000 to 2499 euros	12	3.85%	9	2.91%
Monthly income from 2500 to 2999 euros	1	0.32%	9	2.91%
Monthly income from 3000 euros and up.	11	3.53%	11	3.56%
	312	100.00%	309	100.00%

	NESPRESSO (HEDONIC)		ACTIVIA (FUNCTIONAL)	
	Frequency	Percentage	Frequency	Percentage
Primary school	13	4.17%	5	1.62%
High School	82	26.28%	103	33.33%
University	172	55.13%	151	48.87%
Master, PhD.	45	14.42%	50	16.18%
	312	100.00%	309	100.00%

	NESPRESSO (HEDONIC)		ACTIVIA (FUNCTIONAL)	
	Frequency	Percentage	Frequency	Percentage
Student	136	43.59%	125	40,45%
Work on my own	57	18,27%	53	17.15%
Employee	93	29.81%	78	25,24%
Unemployed	15	4.81%	5	1.62%
Retired	1	0.32%	0	0.00%
Others	10	3.21%	48	15.53%
	312	100.00%	309	100.00%

Note: please note that a total of 1242 assessments were analysed from 312 participants for NESPRESSO (624 assessments) and 309 participants for ACTIVIA (618 assessments).

6.2.1.2. Experience as social network users

Table 6.2 shows how many of the sample size participants are social network users and the types of social networks they usually use.

Almost all of the sample size are social media users, being by the time the survey was done, the most important ones stated by the respondents were, Facebook (74.43%; 66.03%), YouTube (93.20%; 94.87%), WhatsApp (98.38%; 97.75%) and Instagram (92.88%; 90.06%).

Table 6.2. Sample Characterization in terms of social network user experience, social media users and type of social networks

ACTIVIA (FUNCTIONAL)

Sample Size: n=309

Social network user?	Frequency	Percentage	[Facebook]	[YouTube]	[WhatsApp]	[Facebook Messenger]	[WeChat]	[Instagram]	[TikTok]	[Twitter]	[LinkedIn]	[Snapchat]	[Pinterest]	[Others]
Yes	306	99.03%	74.43%	93.20%	98.38%	64.40%	6.80%	92.88%	42.72%	45.63%	50.81%	27.83%	45.63%	21.68%
No	3	0.97%	25.57%	6.80%	1.62%	35.60%	93.20%	7.12%	57.28%	54.37%	49.19%	72.17%	54.37%	78.32%
	309	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

NESPRESSO (HEDONIC)

Sample Size: n=312

Social network user?	Frequency	Percentage	[Facebook]	[Youtube]	[Whatsapp]	[Facebook Messenger]	[WeChat]	[Instagram]	[TikTok]	[Twitter]	[LinkedIn]	[Snapchat]	[Pinterest]	[Others]
Yes	307	98.40%	66.03%	94.87%	97.75%	46.15%	5.45%	90.06%	38.46%	49.04%	39.10%	25.00%	39.42%	46.15%
No	5	1.60%	33.97%	5.13%	2.25%	53.85%	94.55%	9.94%	61.54%	50.96%	60.90%	75.00%	60.58%	53.85%
	312	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Note: please note that a total of 1242 assessments were analysed from 312/624 participants for NESPRESSO and 309/618 participants for ACTIVIA.

Table 6.3. shows the amount of time spent on social networks which ranks from 1 to 2 hours a day (32.36%; 28.21%); more than 2 hours and less than 5 hours a day (33.98%; 41,35%) and more than 5 hours (25.24%; 19,87%).

Table 6.3. Sample characterization in terms of social network user experience. Time spent on social networks.

ACTIVIA (FUNCTIONAL)	
Sample Size: n=618	
How many hours a day?	Percentage
None	0.32%
Less than 1 hour a day	8.09%
From 1 to 2 hours a day	32.36%
More than 2 hours but less than 5 hours a day	33.98%
5 or more hours a day	25.24%
	100.00%

NESPRESSO (HEDONIC)	
Sample Size: n=624	
How many hours a day?	Percentage
None	0.32%
Less than 1 hour a day	10.26%
From 1 to 2 hours a day	28.21%
More than 2 hours but less than 5 hours a day	41.35%
5 or more hours a day	19.87%
	100.00%

6.2.1.3. Other descriptive analysis

Tables 6.4. and 6.5. try to give a first information related to the concepts analysed in the theoretical model. In this sense, these Tables offer the initial composition of scales, media and standard deviation of each indicator.

Table 6.4. Initial composition of scales, mean and standard deviation of each indicator

Factor	Indicator	Description	NESPRESSO INFORMATIVE		NESPRESSO EMOTIONAL		ACTIVIA INFORMATIVE		ACTIVIA EMOTIONAL	
			MEAN	STD	MEAN	STD	MEAN	STD	MEAN	STD
Credibility	CR1	CR1 I do trust in the content of advertising in social media	4.285	1.856	4.526	1.926	3.929	1.868	4.197	1.891
	CR2	CR2 The content of advertising in social media is credible	4.494	1.784	4.625	1.871	3.987	1.890	4.340	1.884
Irritation	IR1	IR1 This post in social media is annoying	3.458	1.892	3.083	1.865	3.589	1.955	3.094	1.791
	IR2	IR2 This post in social media is irritating	3.016	1.815	2.814	1.851	3.291	1.980	3.006	1.787
	IR3	IR3 This post in social media is deceptive	2.917	1.632	2.571	1.681	3.372	1.862	2.838	1.649
	IR4	IR4 This post in social media advertisement is confusing	3.003	1.792	2.679	1.738	3.395	1.977	2.693	1.639
Entertainment	EN1	EN1 This post in social media is enjoyable	2.673	1.687	3.324	1.808	2.589	1.666	3.087	1.779
	EN2	EN2 his post in social media is entertaining	2.657	1.711	3.413	1.773	2.706	1.675	3.269	1.736
	EN3	EN3 Receiving advertisement in social media is pleasant	2.718	1.603	3.321	1.884	2.686	1.654	3.061	1.728
Informativeness	VI1	VI1 This post in social media is a good source of information of products and services	4.083	1.841	3.705	1.840	3.540	1.926	3.748	1.831
	VI2	VI2 This post in social media offers me relevant	3.712	1.811	3.516	1.850	3.168	1.913	3.340	1.863
	VI3	VI3 This post in social media is a good source of updated	4.128	1.796	3.702	1.849	3.608	1.915	3.667	1.808
	VI4	VI4 This post in social media makes accessible products or	4.394	1.895	3.782	1.831	3.906	1.948	3.858	1.843
	VI5	VI5 This post in social media is a convenient source of product/services information	4.170	1.844	3.740	1.809	3.683	1.908	3.738	1.872

Personalization	PR1	PR1 This post in social media shows me personalized messages	3.510	1.750	3.670	1.876	3.197	1.906	3.340	1.888
	PR2	PR2 This post in social media is adjusted to my preferences and interests	3.490	1.860	3.686	1.899	2.890	1.854	3.152	1.857
	PR3	PR3 In general, social media posts are showing personalized messages	4.003	1.909	3.901	1.894	3.926	1.980	3.864	1.981
Attitude towards the ad in social media	AA1	AA1 This post in social media is good	3.939	1.771	4.151	1.843	3.631	1.830	3.929	1.782
	AA2	AA2 I like this post in social media	3.538	1.846	3.907	1.846	3.217	1.897	3.563	1.866
	AA3	AA3 This post in social media is interesting	3.590	1.812	3.846	1.838	3.214	1.942	3.476	1.892
	AA4	AA4 I have a favourable opinion of this post in social media	3.744	1.872	4.010	1.892	3.362	1.844	3.699	1.837
	AA5	AA5 This post in social media is pleasant	3.740	1.853	4.038	1.901	3.294	1.822	3.660	1.889

Table 6.5. Initial composition of scales, mean and standard deviation of each indicator

			NESPRESSO		ACTIVIA	
Factor	**Indicator**	**Description**	**MEAN**	**STD**	**MEAN**	**STD**
Attitude towards the Brand	AM1	AM1 It´s good	5.365	1.588	4.495	1.711
	AM2	AM2 I like it	5.035	1.799	4.220	1.744
	AM3	AM3 It´s nice	5.167	1.666	4.330	1.753
	AM4	AM4 It´s prestigious	5.792	1.512	4.812	1.742
	AM5	AM5 I´ve got a favourable opinion	5.420	1.722	4.524	1.741
Purchase intention	IC1	IC1 I might buy this product	4.990	2.053	4.298	2.004
	IC2	IC2 This product is worth buying it	5.026	1.856	4.230	1.808
Word of mouth	WO1	WO1 I tell my friends about this vendor	3.577	2.126	2.854	1.850
	WO2	WO2 I want my friends to buy from this vendor	3.346	2.023	2.848	1.682
	WO3	WO3 I say positive things about this vendor to other people	3.958	2.087	3.117	1.857
	WO4	WO4 I recommend this vendor to someone that seeks for advice	4.099	2.126	3.450	1.986

6.2.2. Model validation

Exploratory analysis

As chapter 5 explains, to analyse the model, several stages were followed and the statistical programs SPSS v.19 and PLS Smart 3.3 were used.
In the first stage, the data was exploratorily analysed to identify if they had a normal distribution and if there were extreme cases. The following Tables –Tables 6.6 & 6.7- show the Kolmogorov-Smirnov univariate normality tests for each model construct.

Table 6.6. Kolmogorov-Smirnov Test

	NESPRESSO		ACTIVIA	
	Informative	Emotional	Informative	Emotional
Informativeness	**0.071****	**0.071****	**0.083****	**0.072****
Credibility	**0.116****	**0.116****	**0.103****	**0.116****
Personalization	**0.099****	**0.099****	**0.128****	**0.099****
Entertainment	**0.133****	**0.133****	**0.139****	**0.134****
Irritation	**0.095****	**0.095****	**0.092****	**0.096****
Attitude towards the ad	**0.078****	**0.078****	**0.104****	**0.077****
Attitude towards the brand	**0.141****	**0.141****	**0.067****	**0.143****
Purchase Intention	**0.178****	**0.178****	**0.100****	**0.179****
eWOM	**0.079****	**0.079****	**0.113****	**0.080****

*Note: Hedonic informative (df=312), Hedonic emotional (df=312), Functional informative (df=309), Functional emotional (df=309). *p<0,05; **p<0,01*

As can be seen in Tables 6.6 and 6.7, it was found that the data do not follow a univariate normal distribution ($p<0.01$) in any of the constructs (latent variables) or in each of the indicators (observable variables) of the model. It is important to note that if the data do not show univariate normality, they do not show multivariate normality either (Mangin & Mallou, 2006).

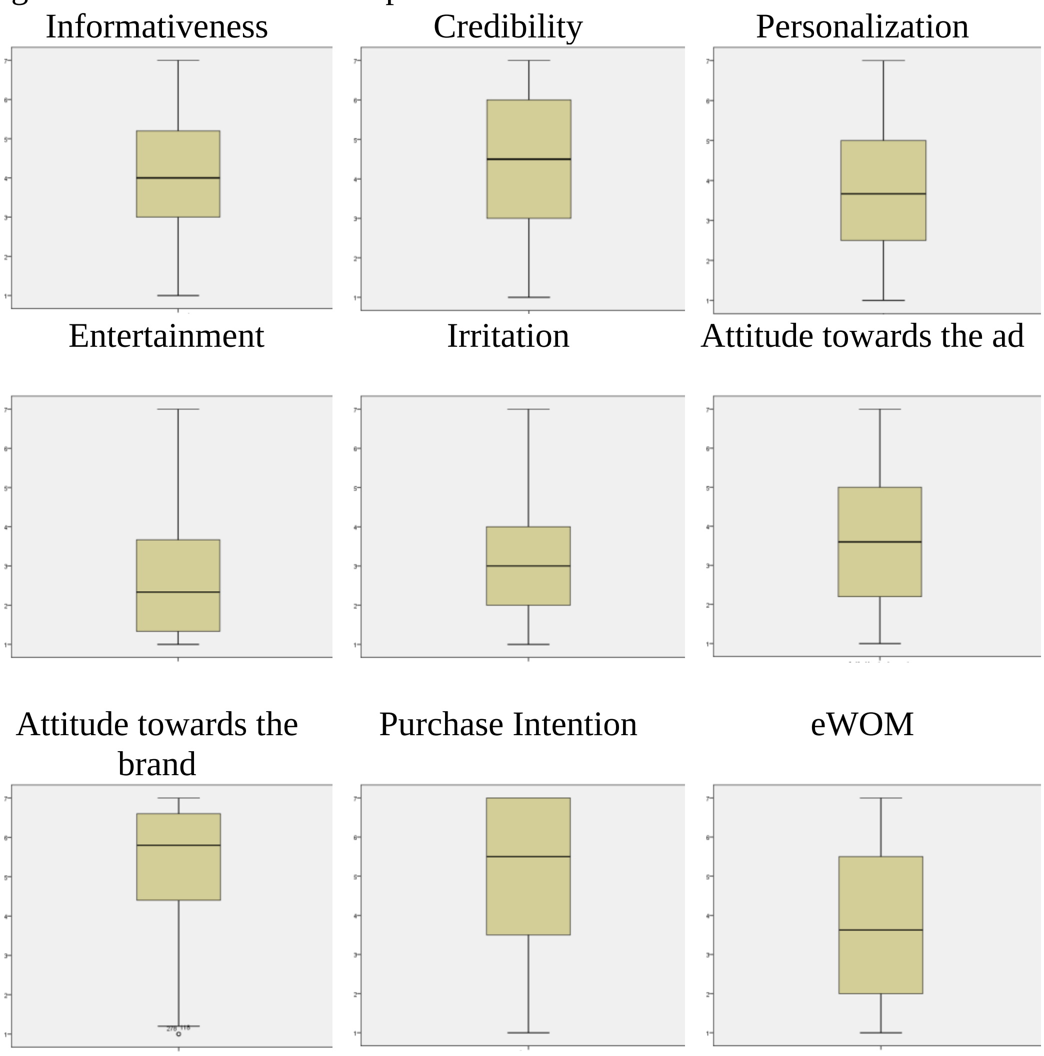
Table 6.7. Kolmogorov-Smirnov Test for the observed variables

	NESPRESSO		ACTIVIA	
	Informative	Emotional	Informative	Emotional
VI1	**0.130****	**0.131****	**0.154****	**0.157****
VI2	**0.140****	**0.145****	**0.179****	**0.174****
VI3	**0.129****	**0.127****	**0.130****	**0.142****
VI4	**0.161****	**0.111****	**0.132****	**0.152****
VI5	**0.129****	**0.154****	**0.122****	**0.148****
CR1	**0.130****	**0.153****	**0.118****	**0.128****
CR2	**0.157****	**0.169****	**0.133****	**0.135****
PR1	**0.136****	**0.147****	**0.162****	**0.156****
PR2	**0.160****	**0.133****	**0.183****	**0.186****
PR3	**0.132****	**0.134****	**0.139****	**0.144****
EN1	**0.206****	**0.143****	**0.218****	**0.166****
EN2	**0.220****	**0.153****	**0.189****	**0.143****
EN3	**0.205****	**0.153****	**0.192****	**0.161****
IR1	**0.158****	**0.190****	**0.161****	**0.179****
IR2	**0.187****	**0.221****	**0.186****	**0.170****
IR3	**0.174****	**0.229****	**0.155****	**0.180****
IR4	**0.183****	**0.213****	**0.168****	**0.207****
AA1	**0.129****	**0.130****	**0.134****	**0.131****
AA2	**0.137****	**0.128****	**0.167****	**0.136****
AA3	**0.137****	**0.115****	**0.177****	**0.145****
AA4	**0.142****	**0.122****	**0.142****	**0.127****
AA5	**0.156****	**0.139****	**0.143****	**0.124****
AM1	**0.219****	**0.219****	**0.135****	**0.135****
AM2	**0.198****	**0.198****	**0.149****	**0.149****
AM3	**0.220****	**0.220****	**0.135****	**0.135****
AM4	**0.256****	**0.256****	**0.183****	**0.183****
AM5	**0.218****	**0.218****	**0.129****	**0.129****
IC1	**0.211****	**0.211****	**0.139****	**0.139****
IC2	**0.184****	**0.184****	**0.120****	**0.120****
WO1	**0.165****	**0.165****	**0.199****	**0.199****
WO2	**0.193****	**0.193****	**0.162****	**0.162****
WO3	**0.137****	**0.137****	**0.173****	**0.173****
WO4	**0.157****	**0.157****	**0.159****	**0.159****

*Note: Hedonic informative (df=312), Hedonic emotional (df=312), Functional informative (df=309), Functional emotional (df=309). *p<0,05; **p<0,01*

Data did not show a normal distribution for any product (hedonic-Nespresso & functional-Activia) and for the type of advertising (informative & emotional). In addition to reviewing the distribution of the data, the box and whisker plots were reviewed with the intention of identifying if there were extreme values in the data (values that are located more than three times the standard deviations with respect to the mean) (see Figure 6.1). However, no extreme values were found in the data.

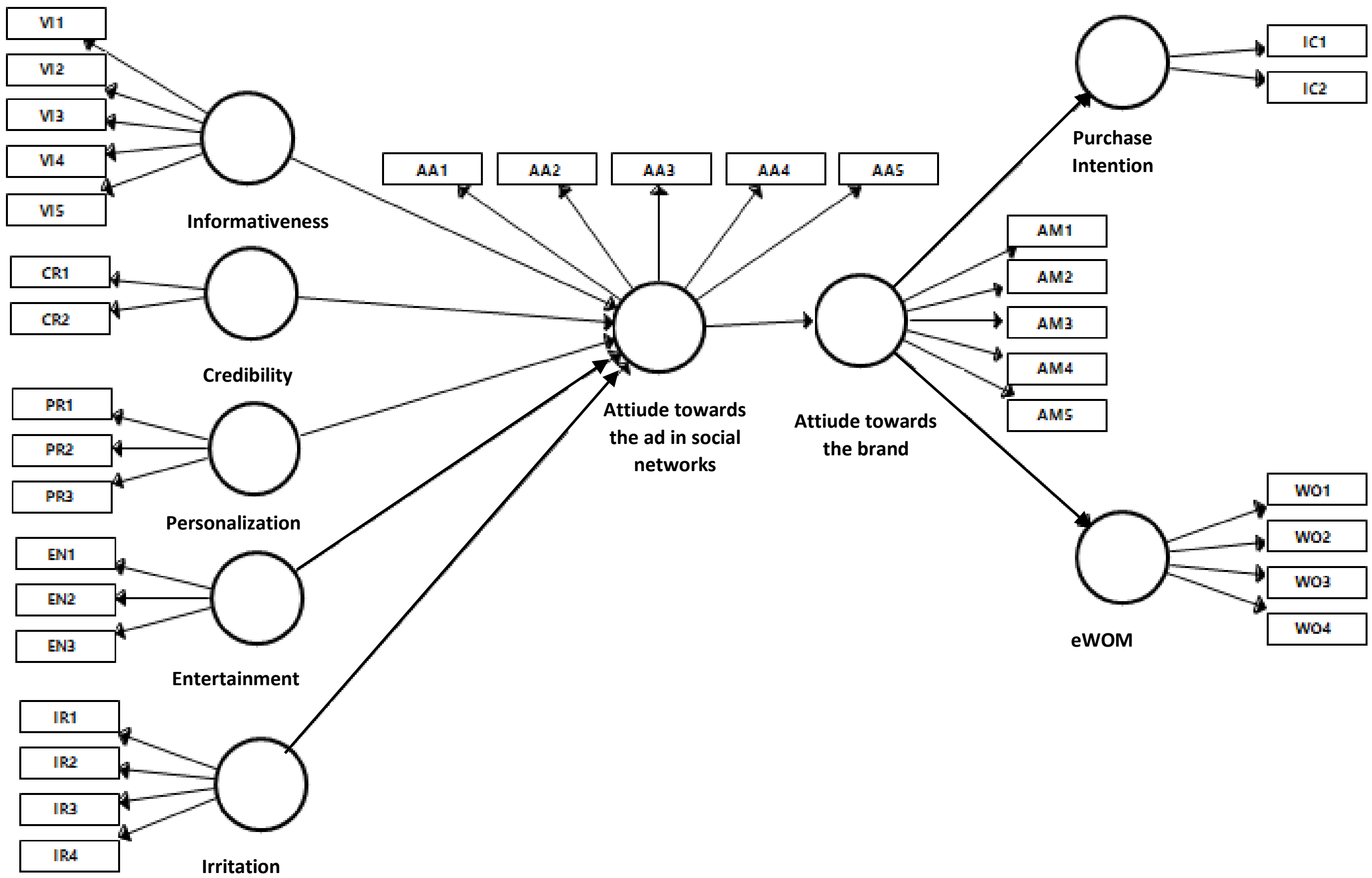
Figure 6.1. Box and whisker plots



Model Definition

As Chapter 5 explains and considering the nature of the data, we propose the use of PLS to test the theoretical model (Figure 6.2). But before it, it is necessary to validate the measurement model, as explain below.

Figure 6.2. Model to be tested



Reliability and validity of the instrument

To analyse the psychometric characteristics of the measurement model, the following criteria, proposed in the literature, were followed. The path weighting scheme option (Hair et al., 2012; Henseler, 2010), a stopping criterion of 10-5 (Hair et al., 2012; Wold, 1982), and a maximum number of iterations of 300 were used. (Hair et al., 2012; Ringle et al., 2015). In addition, following the recommendations of Hair et al., (2016), the bootstrapping technique was used with the 5.000 subsamples criterion to identify whether some values were statistically significant. Since, as Aldas Manzano & Uriel Jimenez (2017) explain, confirmatory factor analysis cannot be estimated in PLS-SEM as in a covariance-based structural equation model (CB-SEM), so the validation of the measurement instrument must be done by estimating the internal consistency and reliability of the instrument, the convergent validity and the discriminant validity of the reflective constructs (Aldas Manzano & Uriel Jimenez, 2017). The results obtained in this first part of the analysis are detailed below. The reliability and validity analysis were carried out on the four versions of the questionnaire.

Initially, the internal consistency of the questionnaires used in the study was evaluated to determine if the instrument used was reliable. This reliability was measured in two ways, through Cronbach's α coefficient (1951) and through Fornell and Larcker's (1981) composite **reliability** analysis.

- As can be seen in Table 6.8, the results show the high **internal consistency** of the latent variables. A Cronbach's Alpha of α=0.93-0.96 was obtained for the Information construct; α=0.92-0.96 for credibility, α=0.82-0.87 for personalization, α=0.89-0.94 for entertainment, α=0.84-0.89 for irritation, α=0.96-0.97 for attitude towards the ad, α=0.95-0.96 for attitude towards the brand, α=0.92-0.93 for purchase intention, and α=0.94-0.95 for eWOM. This value must be greater than 0.70 according to the Churchill Jr. (1979) criterion to consider that an instrument is reliable. As seen in Table 6.8, all values are above 0.70. Therefore, it can be stated that the instruments are reliable.

- Another way to measure the reliability of an instrument is the **composite reliability** (Bacon et al., 1995). In general, values above 0.70 are expected to consider an instrument to be reliable (Fornell & Larcker, 1981). Table 6.8 shows that all the constructs obtained values greater than 0.70 (CR=0.95-0.97 for the information construct, CR=0.96-0.98 for credibility, CR=0.89-0.92 for personalization, CR=0.93-0.96 for entertainment, CR=0.89-0.92 for irritation, CR=0.97-0.98 for attitude towards the ad, CR=0.96-0.97 for attitude towards the brand, CR=0.96-0.97 for purchase intention, and CR=0.96 for the eWOM).

Convergent validity refers to the fact that the measures of the same construct must be related (Batista-Foguet et al., 2004).

- To assess convergent validity, the **average variance extracted (AVE)** and the loadings of the indicators on each factor were evaluated. In general, the average variance extracted makes it possible to assess whether a group of indicators measures a given construct, instead of measuring a different construct. According to Fornell & Larcker (1981), its value is appropriate, it must exceed the Figure of 0.5, since this indicates that the latent variable explains at least half of the variance of its indicators, so it would be higher than the residual variance (associated with the error term) (Aldas Manzano & Uriel Jimenez, 2017). As can be seen in Table 6.8, all the latent variables meet the Fornell & Larcker (1981) criteria, since they have an average variance extracted greater than 0.50 (AVE=0.77-0.87 for the information construct, AVE=0.93-0.96 for credibility, AVE=0.75-0.79 for personalization, AVE=0.82-0.89 for entertainment, AVE=0.67-0.75 for irritation, AVE=0.87-0.90 for attitude towards the advertisement, AVE=0.84-0.85 for attitude towards the brand, AVE=0.93-0.94 for purchase intention, and AVE=0.86-0.87 for eWOM).

Table 6.8. Internal consistency values and convergent validity

		NESPRESSO (HEDONIC)										ACTIVIA (FUNCTIONAL)									
		Informative					Emotional					Informative					Emotional				
Latent variable	item	Λ	*t*	α	CR	AVE	Λ	*t*	α	CR	AVE	Λ	*t*	α	CR	AVE	Λ	*t*	α	CR	AVE
Informativeness	VI1	0.86**	46.79	0.93	0.95	0.77	0.92**	81.77	0.96	0.97	0.87	0.94**	129.16	0.95	0.96	0.84	0.92**	87.39	0.96	0.97	0.86
	VI2	0.83**	39.02				0.92**	64.89				0.86**	42.52				0.90**	57.43			
	VI3	0.92**	73.65				0.92**	116.32				0.95**	88.86				0.95**	105.68			
	VI4	0.88**	42.41				0.95**	108.40				0.91**	63.32				0.93**	85.03			
	VI5	0.90**	60.65				0.93**	84.82				0.92**	81.13				0.94**	110.25			
Credibility	CR1	0.97**	222.11	0.92	0.96	0.93	0.98**	214.10	0.95	0.98	0.96	0.98**	304.66	0.96	0.98	0.96	0.98**	191.40	0.95	0.98	0.95
	CR2	0.96**	146.05				0.98**	196.94				0.98**	287.07				0.98**	240.57			
Personalization	PR1	0.89**	51.24	0.83	0.90	0.75	0.90**	50.80	0.87	0.92	0.79	0.90**	60.17	0.82	0.89	0.74	0.94**	123.54	0.86	0.92	0.78
	PR2	0.90**	79.33				0.91**	76.86				0.90**	76.60				0.92**	82.84			
	PR3	0.80**	28.52				0.86**	34.88				0.78**	23.59				0.79**	23.57			
Entertainment	EN1	0.91**	47.14	0.89	0.93	0.82	0.95**	126.90	0.92	0.95	0.86	0.92**	71.48	0.91	0.94	0.84	0.95**	103.68	0.94	0.96	0.89
	EN2	0.95**	120.31				0.95**	99.37				0.95**	170.52				0.96**	168.30			
	EN3	0.86**	47.47				0.88**	49.65				0.87**	45.73				0.91**	63.82			
Irritation	IR1	0.85**	23.82	0.84	0.89	0.67	0.88**	10.44	0.89	0.92	0.75	0.85**	21.11	0.86	0.90	0.70	0.87**	8.58	0.88	0.92	0.73
	IR2	0.89**	31.81				0.95**	12.09				0.90**	41.71				0.92**	10.39			
	IR3	0.84**	19.49				0.83**	7.97				0.82**	18.14				0.86**	7.85			
	IR4	0.67**	8.88				0.79**	6.80				0.76**	12.93				0.77**	5.36			
	AA1	0.89**	54.71	0.96	0.97	0.87	0.92**	81.31	0.97	0.97	0.88	0.92**	66.66	0.97	0.98	0.89	0.90**	58.58	0.97	0.98	0.90
Attitude towards	AA2	0.94**	101.91				0.95**	88.70				0.95**	130.67				0.96**	142.63			
the ad	AA3	0.92**	47.49				0.94**	87.43				0.94**	85.21				0.96**	105.03			
	AA4	0.95**	147.27				0.94**	68.44				0.96**	157.46				0.96**	193.00			
	AA5	0.94**	101.96				0.95**	90.12				0.95**	104.99				0.95**	104.27			
	AM1	0.95**	126.96	0.96	0.97	0.85	0.95**	128.48	0.96	0.97	0.85	0.95**	116.52	0.95	0.96	0.84	0.95**	115.66	0.95	0.96	0.84
Attitude towards	AM2	0.91**	72.47				0.91**	70.10				0.93**	66.13				0.93**	67.79			
the brand	AM3	0.95**	134.66				0.95**	130.70				0.94**	122.30				0.94**	126.49			
	AM4	0.87**	43.51				0.87**	44.62				0.83**	34.02				0.83**	33.71			
	AM5	0.93**	81.30				0.93**	79.72				0.93**	92.31				0.93**	90.16			
Purchase	IC1	0.97**	151.08	0.93	0.97	0.94	0.97**	148.55	0.93	0.97	0.94	0.96**	174.85	0.92	0.96	0.93	0.96**	178.74	0.92	0.96	0.93
intention	IC2	0.97**	197.99				0.97**	195.74				0.97**	231.59				0.97**	235.11			
	WO1	0.92**	60.73	0.95	0.96	0.87	0.92**	61.54	0.95	0.96	0.87	0.92**	80.41	0.94	0.96	0.86	0.92**	82.07	0.94	0.96	0.86
eWOM	WO2	0.92**	73.69				0.92**	73.17				0.93**	78.22				0.93**	77.97			
	WO3	0.95**	159.85				0.95**	162.72				0.94**	96.77				0.94**	95.01			
	WO4	0.93**	101.08				0.94**	102.34				0.91**	59.25				0.91**	59.78			

λ = Loads; t = t Statistics; α = Cronbanch´s Alpha; CR = Composite reliability; AVE = Average variance extracted;
*** p<0.01, * p<0.05*
All α, CR and AVE values were also highly statistically significant with p<0.01, (n=624 for NESPRESSO, n=618 for ACTIVIA).

Table 6.9. Correlations between latent variables, square root of the extracted variance and HTMT ratio

	F1	F2	F3	F4	F5	F6	F7	F8	F9
F1. Informativeness	**(-0,88)**	0,64	0,69	0,49	-0,16	0,79	0,48	0,45	0,42
F2. Credibility	0,69	**(-0,96)**	0,42	0,32	-0,22	0,60	0,55	0,45	0,36
F3. Personalization	0,78	0,48	**(-0,87)**	0,51	0,00	0,68	0,37	0,34	0,37
F4. Entertainment	0,54	0,35	0,57	**(-0,91)**	-0,02	0,65	0,23	0,29	0,40
F5. Irritation	0,19	0,27	0,10	0,08	**(-0,82)**	-0,27	-0,16	-0,16	-0,17
F6. Attitude towards the ad	0,84	0,63	0,75	0,70	0,29	**(-0,93)**	0,47	0,45	0,47
F7. Attitude towards the brand	0,51	0,58	0,42	0,24	0,17	0,49	**(-0,92)**	0,86	0,64
F8. Purchase intention	0,49	0,48	0,38	0,32	0,17	0,48	0,90	**(-0,97)**	0,68
F9. eWOM	0,44	0,38	0,40	0,43	0,18	0,49	0,66	0,72	**(-0,93)**

Note: the diagonal contains the square root of the average variance extracted in parentheses. The upper triangle contains the correlations between the constructs. The lower triangle contains the HTMT ratio of the constructs, (n=624 for NESPRESSO, n=618 for ACTIVIA).

- In addition to the average variance extracted, it is important to evaluate the **loadings of the indicators on each latent variable** or factor. According to Bagozzi & Yi (1988), the value of the loads must be above 0.6 for the indicators to remain in the model. This criterion is shared by Hair Jr. et al., (2014). In addition, the loads must be statistically significant. As can be seen in Table 6.8, all the indicators (except for one) have values above 0.76 for the four versions of the questionnaire. The only indicator with a value lower than 0.76 is IR4 (in the questionnaire for NESPRESSO and informative ad) which belongs to the irritation construct and has a load of 0.667. All these loadings were highly significant, with a p-value less than 0.01. Considering the criterion that proposes that the indicators with significant loads above 0.6 remain in the model, all the indicators evaluated in the model were maintained. Considering the results obtained, in short, it can be affirmed that the instrument has convergent validity.

With **discriminant** validity, we seek to prove that a latent variable measures a construct other than that measured by other constructs. It indicates to what extent a construct is different from others (Martínez Ávila & Fierro Moreno, 2018). Therefore, the variance that certain latent variable shares with its indicators must be greater than the variance that it shares with other constructs in a model (Barclay et al., 1995). As Aldas Manzano & Uriel Jimenez (2017) explain, to have discriminant validity, the indicators of a latent variable must be more linked to that specific latent variable than to others for which they were not conceived. To identify whether an instrument has discriminant validity, three criteria must be evaluated: the Fornell & Larcker criterion (1981), the HTMT ratio criterion, and the cross-loads between the indicators and the latent variables (Martínez Avila & Fierro Moreno, 2018). The results of the evaluation of these criteria are presented below.

- According to the **Fornell &Larcker criterion (1981),** to determine discriminant validity, the variance that a latent variable obtains from its indicators must be greater than the variance that this variable shares with other constructs (Martínez Avila & Fierro Moreno, 2018). The data needed to assess whether the Fornell & Larcker (1981) criterion is met is found in Table 6.9, which contains the correlations between latent variables (located in the lower triangle, below the diagonal in bold), and the square root of the variance extracted (AVE) of each variable (located on the diagonal of the Table). What is expected is that the square root of the AVE of each construct is greater than the correlations between constructs (Martínez Avila & Fierro Moreno, 2018). Certainly, when analysing Table 6.9, it is observed that the square root of the AVE of each of the constructs is greater than the correlations between the constructs. Therefore, there is evidence that the instrument (in its four versions) has discriminant validity.

- Recently, Henseler et al., (2016) have proposed that a better way to assess discriminant validity is through **the HTMT ratio**. According to Gold et al., (2001), values above 0.90 would reveal a lack of discriminant validity. This ratio allows evaluating whether the correlations between the indicators that measure the same latent variable are greater than the correlations between the indicators that measure different latent variables (Martínez Avila & Fierro Moreno, 2018). Table 6.9 shows the HTMT ratio of each of the constructs (located on the top triangle in the Table, above the diagonal in bold). As can be seen, no value is higher than the 0.90 criterion. In this way, the review of the HTMT ratio also provides evidence that the instrument has discriminant validity.
- The last criterion to evaluate is the cross loads. For there to be discriminant validity, the factor loads of the indicators must be greater with their own construct than with the other constructs in the model (Barclay et al., 1995). As seen in Annex 6.A., all the indicators have higher values in the factor loadings of their own constructs.

In summary, considering the three criteria evaluated, it can be concluded that the instrument has discriminant validity. As can be seen, all the criteria to consider the instrument reliable and valid have been completed, so the analysis of the proposed model continues.

6.2.3. Hypotheses testing and answer to RQ1a and RQ2a

Once the psychometric properties of the scales of measure, the research focuses on the estimation of the equation models structures that will allow the contrast and presentation of the results achieved in terms of acceptance or rejection of the proposed hypotheses.

6.2.3.1. Contrast of hypotheses for the general model

First, we have evaluated the general model. To estimate it, we have analysed the answers of the sample for the four versions of the questionnaire. A total of 1242 assessments were analysed from 312/624 participants for NESPRESSO and 309/618 participants for ACTIVIA.

6.2.3.1.1. The general model fit

In the first step, we have analysed the **model fit**. Notice that model fit analysis works differently in PLS-SEM than in CB-SEM. In general, there is a lack of model fit indices in PLS-SEM (Wold, 1981), and those that do exist should be interpreted with caution, as more research on these indices in PLS is still required (Hair Jr. et al., 2017). Among the indices available for PLS-SEM, in the present study the value of the **SRMR** has been considered. This index was proposed by Henseler et al., (2016), and it is considered that there is an acceptable fit when it assumes values below 0.10 (García-Machado & Jachowicz, 2017; Garson, 2016; Ringle et al., 2015; Ringle, 2016. The use of other indices has been ruled out considering the literature. For example, previous studies have shown that the value of Chi square and other indexes based on it (for example, d_ULS, d_G1 and d_G2) have little value to evaluate the fit of the model in PLS-SEM (Hair et al., 2017). On the other hand, the use of the NFI index in PLS-SEM models is scarce in the literature (Ziggers & Henseler, 2016).

Although it is true that one of the model fit indices proposed for PLS-SEM (the SRMR) has been considered in this study, it is important to mention that, in general, the application of the fit indices for the interpretation of the structural equation modelling with the PLS algorithm has been questioned in the literature (Lohmöller, 1989; Rigdon, 2016; Berntsen & Dibbetz, 2018). For this reason, some authors consider that the interpretation of the PLS-SEM models should be done considering the significance of the structural relationships of the model, the value of the squared R, and the predictive relevance of the model (Q2) (Aldas Manzano & Uriel Jimenez, 2017; Kwek et al., 2020). For this reason, it will not be enough just to mention the values obtained in SRMR, but also the sign, size and p-value of the standardized regression coefficients (β), the determination coefficients (R2), the predictive relevance (Q2), and the size of the effects (f2) (Martínez Avila & Fierro Moreno, 2018). The results obtained are explained below.

As can be seen on Table 6.10, the estimation of the proposed model offers a good fit within the values recommended by the literature (SRMR = 0,086) (García-Machado y Jachowicz, 2017; Garson, 2016; Ringle et al., 2015; Ringle, 2016). Specifically, it can be stated that the model had an acceptable fit considering the Ringle (2016) criterion.

6.2.3.1.2. The standardized regression coefficients (β) for the general model

In a second stage, the **standardized regression coefficients**, which measure the relationships established in the hypotheses, were evaluated. To evaluate these coefficients, their algebraic sign must be considered, if they are significant, and their value, since this refers to the intensity of the relationship between the model variables (Martínez Avila & Fierro Moreno, 2018). As Martínez Avila & Fierro Moreno (2018) explain, the standardized betas provide a value that ranges from -1 to +1, the higher this value, the greater the relationship. As can be seen in Table 6.10, all the relationships in the model were statistically significant considering a p-value < 0.01. In addition, all relationships have a positive sign, with the exception of the relationship between irritability and attitude towards the ad. This means that irritability has a negative influence on the attitude towards the brand.

Table 6.10 shows that all antecedents of the attitude towards the ad in social networks show values that are statistically significant.

- Specifically, a positive and highly significant effect is observed in many of the cases. First, a positive, weak and highly significant effect of **informativeness** on the attitude towards the ad in social networks was obtained (β=0.281**), therefore **H1 would be confirmed.**
- In relation to other variables, we also found a positive, weak and highly significant effect of **credibility** on the attitude towards the ad in social networks (β=0.195**), therefore **H2 would be confirmed.**
- Following, we can also state that there is a positive, weak and highly significant effect of **personalization** on the attitude towards the ad in social networks (β=0.190**), **thus H3 would be confirmed**.
- In relation to **entertainment**, there is a positive, moderate and highly significant effect of it on the attitude towards the ad in social networks (β=0.361**), hence, **H4 would be confirmed**.

- On the contrary, and regarding **irritation**, there is a negative, weak and highly significant effect towards the ad in social networks (β=-0.150**), and **H5 would be confirmed accordingly**.

Regarding the link between the **attitude** towards the ad in social networks and the positive attitude towards the advertised brand, we have found a highly significant, a positive coefficient, and also a moderate magnitude of the relationship (β=0.504**), so **H6 would be confirmed**.

Finally, we can observe that the positive attitude towards the brand generates two interesting effects that were confirmed by this research as positive, strong and highly significant: higher **purchase intention** (β=0.860**) and **higher eWOM** β=0.626**). Hence, both **H7 and H8, would be confirmed**.

6.2.3.1.3. The coefficients of determination (R2) for the general model

This value, which ranges from zero to one, indicates the amount of variance of an endogenous variable that is explained by its predictor variables in the model between zero and one (Martínez Avila & Fierro Moreno, 2018). The higher the value, the greater the amount of variance explained. According to Chin (1998) criteria, R2 values equal to or greater than 0.67 can be considered substantial; values less than 0.67 and greater than or equal to 0.33 can be considered moderate; and values less than 0.33 and up to 0.10 can be considered weak. Some authors believe that R2 should not have a value less than 0.10 (Falk & Miller, 1992).

As can be seen on Table 6.10, the predictors informativeness, credibility, personalization, entertainment and irritation explain 78.92% of the variance of attitude towards the ad (adjusted R2=0.789). While attitude towards the ad explains 25.31% of the variance of attitude towards the brand (adjusted R2=0.253). On the other hand, attitude towards the brand explains 74% of the variance of Intention to purchase (adjusted R2=0.740) and 39.09% of the variance of eWOM (adjusted R2=0.390).

Considering the criterion proposed by Chin (1998), we can state that the predictor variables substantially explain the variance of the attitude towards the ad, weakly explain the variance of attitude towards the brand, substantially explain the variance of purchase intention, and moderately explain the variance of eWOM.

6.2.3.1.4. The predictive relevance (Q2) for the general model

The Q2 (construct cross-validated redundancy) values were evaluated. According to Hair et al., (2016), Q2 reflects the predictive power of the model. According to Hair Jr. et al., (2016), this value reflects the predictive power of the model and for it to have predictive relevance, the Q2 coefficient must have positive values; specifically, the values can be interpreted as follows: numbers greater than 0.02 and less than 0.15 can be considered small; numbers equal to 0.15 and less than 0.35 can be considered as medium values; and finally, numbers equal to or greater than 0.35 can be considered large. Obviously, the models with higher values in Q2 will be considered as models with greater predictive relevance.

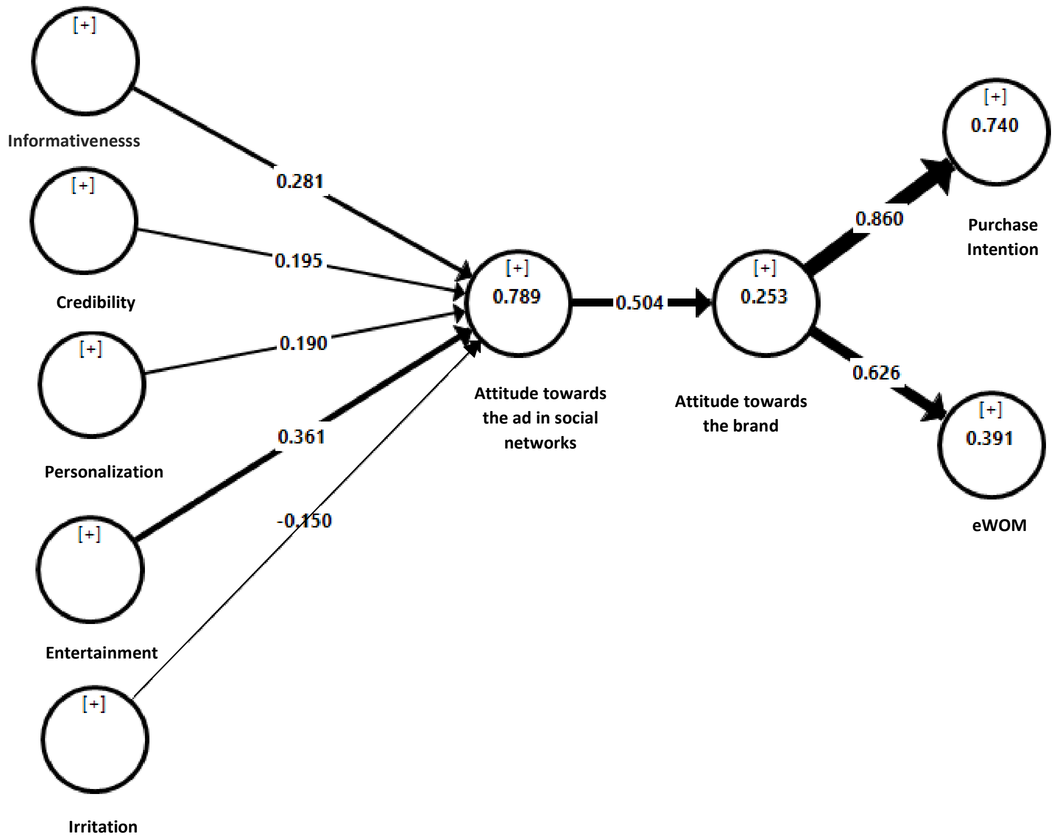
According to our results, a Q2 of 0.695 was obtained for the endogenous variable attitude towards the advertisement; 0.214 for attitude towards the brand; 0.686 for purchase intention; and 0.333 for the eWOM. As can be seen, the proposed model has the power to predict the endogenous variables, since the values of Q2 are greater than zero (positive). As can be seen, our model has the power to predict the endogenous variables, since the values of Q2 are greater than zero (positive). According to the criteria of Hair et al., (2016), it could be stated that the Q2 value was large for attitude towards the ad, medium for attitude towards the brand, large for purchase intention and medium for eWOM. In other words, the model showed an excellent predictive capacity.

6.2.3.1.4. The size effect (f2) for the general model

Finally, the f2 values of the proposed model were evaluated to identify the size effect in each relationship. The f2 values allow estimating the size of the effect that a construct has on endogenous constructs. Cohen (1998) considers that values less than 0.15 and equal to or greater than 0.02 represent a small effect; values equal to or greater than 0.15 and less than 0.35 represent a medium effect; and finally, values equal to or greater than 0.35 represent a large effect.

Following the Cohen (1998) criteria, we can affirm that the size of effect of the relationships proposed in H1, H2, H3 and H5 is small (f2=0.064-0.122), the size of effect of the relationship proposed in H6 is medium, and the size of effect of the relationships proposed in H4, H7 and H8 is big (f2=0.355-2.85).

Figure 6.3. Complete theoretical model



Note: the thickness of the arrows is greater if the intensity of the relationship is greater. The value on the arrows are the standardized regression coefficients. The value inside the latent variables is the adjusted R2.

Table 6.10. Contrast of Hypotheses for the general model

	Hypotheses	β	*t*	Magnitude of the relationship	f2	Acceptance/ Rejection
H1	Informativeness-Attitude towards the ad in social networks	**0.281****	9.944	weak	0.122	Accepted
H2	Credibility-Attitude towards the ad in social networks	**0.195****	9.587	weak	0.102	Accepted
H3	Personalization-Attitude towards the ad in social networks	**0.190****	7.416	weak	0.064	Accepted
H4	Entertainment-Attitude towards the ad in social networks	**0.361****	17.094	moderate	0.355	Accepted
H5	Irritation-Attitude towards the ad in social networks	**-0.150****	11.866	weak	0.102	Accepted
H6	Attitude towards the ad in social networks-Attitude towards the brand/product	**0.504****	22.164	moderate	0.34	Accepted
H7	Attitude towards the brand/product-Purchase Intention	**0.860****	92.351	strong	2.85	Accepted
H8	Attitude towards the brand/product-eWOM	**0.626****	36.433	strong	0.643	Accepted

Model Fit. Explained Variance. and Predictive Relevance

	Endogenous variables of the model	**R2 adjusted**	**Q2**
SRMR= 0.086	Attitude towards the ad	**0.789****	0.695
	Attitude towards the brand	**0.253****	0.214
	Purchase intention	**0.74****	0.686
	eWOM	**0.391****	0.333

Note: Classification of the magnitude of the relationship based on the values of the standardized beta coefficients. Values <0.30 are considered a weak relationship, values equal to or >0.30 and <0.60 are considered moderate; and finally, values equal to or > 0.60 are considered strong.

**p<0.05; **p<0.01, (n=1242)*

6.2.3.2. Answer to RQ1a and RQ2a

To answer RQ1a and RQ2a, a multigroup analysis was carried out. As Sarstedt et al., (2011) explain, multigroup analysis in PLS-SEM can be used to assess the influence of a categorical moderator variable on the model. Therefore, in this research, multigroup analysis (PLS-MGA) was used to assess whether the product variable (hedonic or functional) and the advertising variable (informative or emotional) have a moderating effect on the proposed model. Next, the results obtained are presented.

6.2.3.2.1. Is the message effectiveness independent of the type of product advertised?

Specifically, our first research question was the following: Is the message effectiveness independent of the type of product advertised (hedonic versus functional) in social networks, using declarative instruments? To respond this question, we have proposed to divide the sample into two sub-samples: (1) the assessments about NESPRESSO (hedonic product) (624 opinions) (2) and the assessments about ACTIVIA (functional product) (618 opinions). Then, we have run a model for NESPRESSO and a model for ACTIVIA to identify if there are any differences between them.

According to our results, all the relationships are maintained in both models. As can be seen on Table 6.11, all hypotheses are accepted. However, we have also found that the product type has a moderation effect on two relationships of the model. There are some differences between the compared models that affect the magnitude of the relationships in H1 and H2. Specifically, we have observed the following.

The influence of **informativeness** on attitude towards ad is stronger **when the product advertised is functional** (ACTIVIA) (β=0.238** for hedonic vs. β=0.358** for functional). Specifically, there is a significant difference in the relationship between informativeness and attitude towards ad ($p< 0.05$), and the magnitude of the relationship turns from weak to moderate if we pass from hedonic to functional model. This result suggests that the informativeness component is more relevant when the product advertised is functional. This is similar to results reported previously in literature. For example, Kang et al., (2020) found that informativeness is not a relevant variable when you are measuring the preferences for hedonic products in virtual reality stores.

On the other hand, the influence of **credibility** on attitude towards ad is **stronger when the product advertised is hedonic** (NESPRESSO) (β=0.245** for hedonic vs. β=0.127** for functional). Specifically, there is a highly significant difference in the relationship between credibility and attitude towards ad ($p< 0.01$), and the magnitude of the relationship is slightly higher in the hedonic model. This outcome suggests that the credibility component is more relevant when the product advertised is hedonic. Our results are consistent with those obtained in previous research. For example, Chakraborty & Bhat (2018) found that credibility in online reviews have more impact on brand image in hedonic rather than functional products in the context of the consumer electronics market.

In general, these findings mean that **the message effectiveness is not completely independent of the type of product advertised (hedonic or functional).** Below, you can find our results for the comparison between the rational and emotional messages.

6.2.3.2.2. Is the message effectiveness independent of the type of message?

Our second research question analyses if the message effectiveness is independent or not of the type of message (rational vs. emotional) in social networks, using declarative instruments. To respond to this question, we have proposed to divide the sample into two sub-samples: (1) the assessments about rational message (informative model) (621 opinions), (2) and the assessments about emotional message (emotional model) (621 opinions). Then, we have run a model for an informative ad and a model for an emotional ad to identify if there are any differences between them.
According to our results, all the relationships are maintained in both models. As can be seen in Table 6.12, all hypotheses are accepted. However, we have also found that the message type has a moderation effect on three relationships of the model. There are some differences between the compared models that affect the magnitude of the relationships in H1, H2 and H4. Specifically, we have observed the following.

The influence of **informativeness** on attitude towards ad is stronger **when the message is rational** (β=0.399** for informative vs. β=0.161** for emotional). Specifically, there is a highly significant difference in the relationship between informativeness and attitude towards ad ($p < 0.01$), and the magnitude of the relationship turns from weak to moderate if we pass from the emotional to the informative model. This result suggests that the informativeness component is more relevant when the message is rational.

This finding sounds logic, as quality information is relevant for rational advertising.

The influence of **credibility** on attitude towards ad is stronger **when the message is emotional** (β=0.146** for informative vs. β=0.235** for emotional). Specifically, there is a significant difference in the relationship between credibility and attitude towards ad ($p < 0.05$), and the magnitude of the relationship is slightly higher in the emotional model. This result suggests that the credibility component is more relevant when the message used is emotional.

The influence of **entertainment** on attitude towards ad is stronger **when the message is emotional** (β=0.304** for informative vs. β=0.419** for emotional). Specifically, there is a highly significant difference in the relationship between entertainment and attitude towards ad ($p < 0.01$), and the magnitude of the relationship is higher in the emotional model. This result suggests that the entertainment component is more relevant when the message used is emotional. In general, these results mean that the message effectiveness is not completely independent of the type of message used (rational vs. emotional).

In sum, we can conclude that there are differences considering the type of product (RQ1a) and the type of message (RQ2a). Our research has demonstrated that the **message effectiveness is not independent** of the product advertised, having compared hedonic versus functional products in social networks, and **not independent of the type of message used,** having compared emotional versus rational advertising in social networks, using declarative instruments.

Table 6.11. Comparison between NESPRESSO (Hedonic) versus ACTIVIA (Functional)

	NESPRESSO (sample: 312/624)				ACTIVIA (sample: 309/618)				Differences (*p-value*)	Accepted/ Rejected
Hypotheses	**β**	***t***	**MR**	**f2**	**β**	***t***	**MR**	**f2**		
Informativeness-Attitude towards the ad in social networks	**0.238****	**6.01**	**Weak**	**0.094**	**0.358****	**10.091**	**Moderate**	**0.178**	**0.027***	Accepted
Credibility-Attitude towards the ad in social networks	**0.245****	**8.291**	**Weak**	**0.154**	**0.127****	**5.053**	**Weak**	**0.046**	**0.003****	Accepted
Personalization-Attitude towards the ad in social networks	**0.209****	5.544	Weak	0.076	**0.152****	4.607	Weak	0.043	0.275	Accepted
Entertainment-Attitude towards the ad in social networks	**0.349****	12.075	Moderate	0.326	**0.372****	11.882	Moderate	0.382	0.591	Accepted
Irritation-Attitude towards the ad in social networks	**-0.165****	9.264	Weak	0.109	**-0.125****	7.798	Weak	0.08	0.097	Accepted
Attitude towards the ad in social networks-Attitude towards the brand/product	**0.505****	15.555	Moderate	0.342	**0.492****	14.706	Moderate	0.319	0.772	Accepted
Attitude towards the brand/product-Purchase Intention	**0.862****	67.173	Strong	2.897	**0.849****	60.497	Strong	2.571	0.474	Accepted
Attitude towards the brand/product-eWOM	**0.640****	27.546	Strong	0.694	**0.581****	21.105	Strong	0.509	0.1	Accepted

Model Fit, Explained Variance, and Predictive Relevance				
	NESPRESSO		ACTIVIA	
Endogenous variables of the model	**R2 adj.**	**Q2**	**R2 adj.**	**Q2**
Attitude towards the ad	**0.763****	0.664	**0.815****	0.726
Attitude towards the brand	**0.253****	0.214	**0.241****	0.2
Purchase intention	**0.743****	0.690	**0.720****	0.663
eWOM	**0.409****	0.347	**0.336****	0.284
Model fit	SRMR= 0.089		SRMR= 0.090	

*Note: NESPRESSO (n=624), ACTIVIA (n=618). Classification of the magnitude of the relationship based on the values of the standardized beta coefficients. Values <0.30 are considered a weak relationship, values equal to or >0.30 and <0.60 are considered moderate; and finally, values equal to or > 0.60 are considered strong. *p<0.05; **p<0.01.*

Table 6.12. Comparison between informative versus emotional message

	Informative (sample: 621)				Emotional (sample: 621)				Differences *(p-value)*	Accepted/ Rejected
Hypotheses	**β**	***t***	***MR***	**f2**	**β**	***t***	**MR**	**f2**		
Informativeness-Attitude towards the ad in social networks	**0.399****	**9.987**	**Moderate**	**0.235**	**0.161****	**4.029**	**Weak**	**0.039**	**0.000****	Accepted
Credibility-Attitude towards the ad in social networks	**0.146****	**0.146**	**Weak**	**0.058**	**0.235****	**8.489**	**Weak**	**0.149**	**0.024***	Accepted
Personalization-Attitude towards the ad in social networks	**0.170****	4.929	Weak	0.059	**0.209****	5.340	Weak	0.069	0.450	Accepted
Entertainment-Attitude towards the ad in social networks	**0.304****	**10.676**	**Moderate**	**0.282**	**0.419****	**12.893**	**Moderate**	**0.422**	**0.008****	Accepted
Irritation-Attitude towards the ad in social networks	**-0.149****	8.131	Weak	0.099	**-0.135****	8.105	Weak	0.085	0.573	Accepted
Attitude towards the ad in social networks-Attitude towards the brand/product	**0.482****	14.920	Moderate	0.303	**0.529****	16.884	Moderate	0.388	0.298	Accepted
Attitude towards the brand/product-Purchase Intention	**0.860****	65.193	Strong	2.851	**0.860****	65.592	Strong	2.848	0.995	Accepted
Attitude towards the brand/ product-eWOM	**0.626****	25.243	Strong	0.643	**0.626****	25.776	Strong	0.643	0.991	Accepted

Model Fit, Explained Variance, and Predictive Relevance				
	Informative		Emotional	
Endogenous variables of the model	**R2 adj.**	**Q2**	**R2 adj.**	**Q2**
Attitude towards the ad	**0.791****	0.692	**0,794****	0,703
Attitude towards the brand	**0.231****	0.196	**0,279****	0,236
Purchase intention	**0.740****	0.686	**0,740****	0,686
eWOM	**0.391****	0.333	**0,390****	0,332
Model fit	SRMR= 0.085		SRMR= 0.090	

*Note: Informative ad (n=621), Emotional ad (n=621). Classification of the magnitude of the relationship based on the values of the standardized beta coefficients. Values <0.30 are considered a weak relationship, values equal to or >0.30 and <0.60 are considered moderate; and finally, values equal to or > 0.60 are considered strong. *p<0.05; **p<0.0*

6.3. Qualitative Analysis

6.3.1. Sample Characterization

Table 6.13 shows the sociodemographic characteristics (gender and age) of the sample of the participants in the qualitative study.

As we can see in in Table 6.13, there is a slight difference among men and woman in terms of respondents (40%-52.50%; 39.02%-51.22%; 38.10%-53.09%; 37.80%-54.88%). In terms of age, the media is between 28 and 29 years old in all cases.

Table 6.13. sociodemographic characteristics of the sample divided into sex and age.

	Nespresso - Info		Nespresso - Emo		Activia - Info		Activia - Emo	
	n=80		n=82		n=81		n=82	
Sex	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Men	32	40.00%	32	39.02%	32	38.10%	31	37.80%
Women	42	52.50%	42	51.22%	43	53.09%	45	54.88%
Anonymous	6	7.50%	8	9.76%	6	7.41%	6	7.32%
	80	100.00%	82	100.00%	81	100.00%	82	100.00%

Age	**Mean**	**STD**	**Mean**	**STD**	**Mean**	**STD**	**Mean**	**STD**
Men	29.43	7.539	29.55	7.433	29.55	7.433	29.55	7.282
Women	28.54	5.707	28.30	5.867	28.90	6.716	28.31	5.720

6.3.2. Eye Movement Analysis and Statistical Analysis

Before trying to answer the two research questions, we carried out an analysis of the results reached with the eye-tracking measure through Realeye.io. In this sense, and to test attention and its distribution across the stimuli, different areas of interest were manually delimited and named, to refer to the fixation measures of each of them (Muñoz-Leiva et al., 2019). (See annex 6.B. where it can be seen an example of how each area is delimited).

The size of the areas of interest is expressed as the percentage value relative to the size of the entire image; it is recommended to make AOIs of at least 5-10% of the item size.

As some researchers state (Bebko et al., 2014; Muñoz-Leiva et al., 2019), the number of fixations or fixation count (FC) refers to fixations - number of fixations within the area of interest. It is considered a general measurement that needs to be complemented by others. Measures related to average time to first fixation (TTFF), fixation length (FL), total fixation average duration (TFD) and first fixation average duration (FFAD) were additionally included. These metrics were extensively explained and analysed in chapter 5 and briefly detailed as follows in Table 6.14.

- ***Average Time to first fixation (TTFF)****:* it refers to the amount of time that it takes participants (on average) to look at this area for the first time.
- ***Fixation count:*** it refers to the number of fixations within the area of interest.
- ***Fixation length (FL):*** it refers to the total time spent by viewers (on average) in this area.
- ***Total Fixation duration (TFD):*** it refers to the time that the average fixation lasted for.
- ***First Fixation Average Duration (FFAD):*** it refers to how long on average lasted the first fixation.

Table 6.14. Metrics considered in the present analysis

Metrics		Observations	Measured in
Time to first fixation	**TTFF**	The amount of time participants (on average) takes to look at this area for the first time	Milliseconds
Fixation count	**FC**	Number of fixations within the area of interest	Milliseconds
Fixation length	**FL**	Time the average fixation lasted for	Milliseconds
Total Fixation duration	**TFD**	Total time spent by viewers (on average) at this area	Milliseconds
First Fixation Average Duration	**FFAD**	How long on average lasted the first fixation	Milliseconds

Source: own elaboration based on the information provided by RealEye.

Data is captured with a sampling rate of about 30 Hz (depending on a webcam and Internet connection). To measure the accuracy, 35 measuring points (evenly distributed on the screen) were chosen and research subjects were asked to click on each point (cross) while looking at it because the accuracy was measured by comparing the predicted eye position coordinates with the click coordinates (More information available at Realeye.io)

To answer the research questions, different means were extracted from every post and each of the areas of interest of each of them and, an analysis of variance (ANOVA) was performed.

Table 6.15. shows the main values for each of the posts comparing mean, standard deviation and standard error.

Table 6.15. Comparison of each post, main values: mean, std. dev. and std. error

			HEDONIC INFORMATIVE			HEDONIC EMOTIONAL			FUNCTIONAL INFORMATIVE			FUNCTIONAL EMOTIONAL		
			POST 1 NESPRESSO INFO			POST 2 NESPRESSO EMO			POST 3 ACTIVIA INFO			POST 4 ACTIVIA EMO		
			n=	80		n=	82		n=	81		n=	82	
Indicators		**Area of Interest - AOI**	**Mean**	**Std. Dev.**	**Std. Error**	**Mean**	**Std. Dev.**	**Std. Error**	**Mean**	**Std. Dev.**	**Std. Error**	**Mean**	**Std. Dev.**	**Std. Error**
Indicator 1: Time to first fixation	**TTFF**	header	2,698.200	2,457.642	448.702	4,881.833	5,097.311	930.637	5,505.368	5,033.535	1,154.772	3,672.125	5,698.125	1,163.125
		full body	825.475	306.627	34.282	763.593	190.037	21.115	820.400	326.619	36.517	833.630	225.124	25.014
		pic body	2,789.886	3,054.787	343.690	1,939.430	2,163.184	243.377	1,152.797	825.971	92.929	3,003.857	4,287.074	488.557
		text body	2,054.962	1,593.778	179.314	2,107.250	1,668.485	186.542	3,044.934	2,467.565	283.049	1,749.873	1,597.861	179.773
		Brand	10,402.500	5,713.382	2,856.691	6,718.250	6,144.504	1,536.126	4,193.731	4,065.807	797.370	7,864.286	6,510.199	1,004.545
Indicator 2: Fixation count	**FC**	header	1.100	1.985	0.222	1.024	1.950	0.215	0.605	1.375	0.153	0.622	1.420	0.157
		full body	32.825	20.115	2.249	28.476	18.925	2.090	39.864	23.671	2.630	34.988	20.500	2.264
		pic body	13.575	13.166	1.472	13.756	13.439	1.484	16.802	9.714	1.079	11.890	9.888	1.092
		text body	16.663	10.493	1.173	13.268	9.008	0.995	22.531	16.759	1.862	22.720	16.410	1.812
		brand	0.088	0.482	0.054	0.256	0.584	0.064	0.580	1.023	0.114	1.280	2.201	0.243
Indicator 3: Fixation length	**FD**	header	168.633	77.775	14.200	157.967	25.773	4.705	171.684	46.012	10.556	164.417	32.838	6.703
		full body	168.700	16.643	1.861	169.333	20.175	2.242	167.700	17.221	1.925	169.593	18.833	2.093
		pic body	164.405	26.103	2.937	175.367	36.188	4.071	164.456	19.326	2.174	165.974	25.941	2.956
		text body	171.063	24.032	2.704	166.613	24.251	2.711	169.934	21.474	2.463	169.329	22.190	2.497
		brand	152.500	35.303	17.652	176.750	58.880	14.720	161.115	38.008	7.454	171.357	48.986	7.559
Indicator 4: Total Fixation duration	**TFD**	header	496.933	407.204	74.345	460.367	415.514	75.862	429.316	302.915	69.493	357.625	350.907	71.629
		full body	5,525.350	3,511.808	392.632	4,919.222	3,445.447	382.827	6,785.563	4,022.320	449.709	6,015.988	3,674.279	408.253
		pic body	2,251.101	2,204.828	248.063	2,463.873	2,413.499	271.540	2,839.253	1,614.391	181.633	2,113.675	1,661.769	189.376
		text body	2,893.620	1,883.810	211.945	2,299.613	1,641.772	183.556	4,100.395	2,819.168	323.381	4,037.354	2,964.494	333.532
		brand	271.250	243.709	121.855	231.063	131.221	32.805	291.808	175.476	34.414	431.357	487.724	75.257
Indicator 5: First Fixation Average Duration	**FFAD**	header	170.167	98.400	17.965	150.867	35.265	6.439	183.684	60.308	13.836	165.042	44.488	9.081
		full body	175.163	90.801	10.152	161.432	49.552	5.506	163.425	63.106	7.055	154.852	44.894	4.988
		pic body	170.203	71.267	8.018	182.658	120.580	13.566	160.684	67.124	3.735	167.792	52.917	6.030
		text body	179.797	95.870	10.786	156.288	58.520	6.543	168.579	63.440	7.277	157.608	47.020	5.290
		brand	143.500	37.925	18.963	174.750	59.282	14.820	158.962	43.730	8.576	163.095	54.196	8.363

6.3.3. Answer to Research Questions (RQ1b & RQ2b)

To answer the research questions RQ1b and RQ2b, which were formulated in chapter 4, the indicators analysed were the following: (i) Indicator 1: time to first fixation; (ii) Indicator 2: Fixation Count; (iii) Indicator 3: Fixation Length; (iv) Indicator 4: Total Fixation Duration and finally (v) Indicator 5: First Fixation Average Duration.

To answer ***RQ1b, related to the type of product***, two stages have been followed.

- First, both categories of products (hedonic & functional) where compared, when the message is informative –announced from a rational perspective. Based on our results we can state that, effectively, there are significant differences between their respective posts.

  (a) As it can be seen in Table 6.16, the **informative message for the hedonic product (Nespresso)** shows values significantly higher than the informative functional product (Activia). Specifically, the post related to the hedonic product exceeds the functional products in 2 out of the 5 indicators analysed:
  - ✓ Time to first fixation: both in the picture in the body of the post and in the brand presence on the post.
  - ✓ Fixation count: in the header.

  (b) On the contrary, **the informative post from the functional product** (**Activia**) has values significantly higher than the informative posts of the hedonic products (Nespresso) in 3 out of the 5 indicators analysed as we can state as follows:
  - ✓ Time to first fixation: both in header of the post and in the text in the body of the post.
  - ✓ Fixation count: both in the full body of the post, the picture in the body of the post, the text of the body of a post and in the brand presence in the post.
  - ✓ Total Fixation Duration: both in the full body of the text, in the picture of the body of the post and in the text of the body of the post.

- Secondly, we have compared the hedonic and functional products, but in this case considering the **emotional messages**, meaning that both are announced from an emotional perspective.

  (a) In Table 6.16 results can be seen. In fact, **the emotional post of the hedonic product (Nespresso)** has values significantly lower than the functional product (Activia) in most of the cases, in fact in 4 out of 5 indicators. This means that the indicators of the hedonic products are lower, with the only exception that can be found in the indication fixation length and in relation to the picture of the body of the post.

  (b) The **emotional post of the functional product (Activia**), has significantly higher values in 3 out of the 5 indicators considered:
    - ✓ Time to first fixation in the full body of the post and in the picture in the body of the post itself.
    - ✓ Fixation count: in the full body of the post and in the text of the body of the post.
    - ✓ Total Fixation duration: in full body and text body.

We can conclude that, effectively, the unconscious response towards the ads of hedonic products is significantly different from the one given to the functional product ads; that is, the type of product affects the message efficacy.

When talking about informative ads, the consumer in front of functional products reacts with higher values in more indicators such as Time to First Fixation (header and text body), Fixation Count (full-body, picture of the body, text body and brand presence) and Total Fixation Duration (full-body, picture of the body and text of the body), which might be interpreted as more effective in terms of attention paid. On the contrary, in front of hedonic products, consumer reacts with higher values only in indicators such as Time of First Fixation (in the picture of the body and brand presence) and Fixation Count only in the header. So, an informative ad seems to work better for functional products.

When talking about emotional ads, the consumer in front of functional products reacts with higher values in more indicators such as Time to First Fixation (full body and picture of the body), Fixation Count (full body, and text of the body) and Total Fixation Duration (full body and text of the body) which might be interpreted as more effective in terms of attention paid. On the other hand, when talking about hedonic products, consumer reacts with only one higher value, as can be seen in Fixation Length in the picture of the body of the post. Hence, an emotional ad seems to work also better for functional products.

In Table 6.16., there is a comparison of values by types of products (Informative vs. Emotional).

Table 6.16. Comparison of values by types of products (Hedonic vs. Functional)

			HEDONIC INFORMATIVE NESPRESSO INFORMATIVE	FUNCTIONAL INFORMATIVE ACTIVIA INFORMATIVE		HEDONIC EMOTIONAL NESPRESSO EMOTIONAL	FUNCTIONAL EMOTIONAL ACTIVIA EMOTIONAL	
			Mean	Mean	ANOVA	Mean	Mean	ANOVA
Indicator 1 Time to First fixation	TTFF	header	2698.20	5505.37	6,825 **	4881.83	3672.13	0,676
		full body	825.48	820.40	0.010	763.59	833.63	4.577 **
		pic body	2789.89	1152.80	21.142 **	1939.43	3003.86	3.861 *
		text body	2054.96	3044.93	8.870 ***	2107.25	1749.87	1.902
		brand	10402.50	4193.73	7.319 **	6718.25	7864.29	0.370
Indicator 2 Fixation count	FC	header	1.10	0.60	3.390 *	1.02	0.62	2.283
		full body	32.83	39.86	4.129 **	28.48	34.99	4.467 **
		pic body	13.58	16.80	3.138 *	13.76	11.89	1.025
		text body	16.66	22.53	7.070 ***	13.27	22.72	20.902 ***
		brand	0.09	0.58	15.216 ***	0.26	1.28	16.588 ***
Indicator 3 Fixation length	FD	header	168.63	171.68	0.024	157.97	164.42	0.65
		full body	168.70	167.70	0.139	169.33	169.59	0.01
		pic body	164.41	164.46	0.000	175.37	165.97	3.46 *
		text body	171.06	169.93	0.095	166.61	169.33	0.54
		brand	152.50	161.12	0.181	176.75	171.36	0.13
Indicator 4 Total Fixation duration	TFD	header	496.93	429.32	0.387	460.37	357.63	0.934
		full body	5525.35	6785.56	4.456 **	4919.22	6015.99	3.840 *
		pic body	2251.10	2839.25	3.659 *	2463.87	2113.68	1.109
		text body	2893.62	4100.39	9.88 ***	2299.61	4037.35	20.975 ***
		brand	271.25	291.81	0.043	231.06	431.36	2.600
Indicator 5 First Fixation Average Duration	FFAD	header	170.17	183.68	0.289	150.87	165.04	1.708
		full body	175.16	163.43	0.901	161.43	154.85	0.784
		pic body	170.20	160.68	0.747	182.66	167.79	0.985
		text body	179.80	168.58	0.732	156.29	157.61	0.025
		brand	143.50	158.96	0.445	174.75	163.10	0.509

Related to **RQ2b** and comparing both informative versus emotional ads for both categories of products –hedonic (Nespresso) and functional (Activia), results shown in Table 6.17. suggest that, effectively, there are significant differences depending on the **type of message**.

- First, focusing on the **hedonic product (Nespresso)**, we can observe that:

  (a) The values obtained for the hedonic emotional ad (Nespresso) are higher than those obtained for the hedonic informative ad (Nespresso) in 3 out of the 5 indicators as follows:
  - ✓ Time to First Fixation: in the header of the post.
  - ✓ Fixation Count: in the brand presence in the post.
  - ✓ Fixation Length: in the picture of the body of the post.

(b) On the contrary, the hedonic informative ad (Nespresso) has values significantly higher in 4 out of the 5 indicators as follows:

- ✓ Time to First Fixation: in the picture of the body of the post.
- ✓ Fixation Count: in the text of the body of the post.
- ✓ Total Fixation Duration: in the text of the body of the post.
- ✓ First Fixation Average duration: in the text of the body of the post.

- Second, regarding the **functional product** (**Activia**), we can observe that:

(a) The emotional ad outstands only in 1 out of the 5 indicators considered compared to the informative ad (Activia):

- ✓ Time to First Fixation, both in the picture of the body and brand presence in the post of the ad.

(b) On the contrary, the hedonic informative ad (Nespresso) obtains higher values in the 3 out of 5 indicators, as follows:

- ✓ Time to First Fixation: in the text of the body of the ad.
- ✓ Fixation Count: in the picture of the body of the ad.
- ✓ Total Fixation Duration: in the text of the body of the ad.

In conclusion, regarding to **hedonic products**, our results show that the emotional messages provoke higher values for indicators such as Time to First Fixation in the header, Fixation Count for the brand presence, Fixation Length in the picture of the body of the post, which might be interpreted as more effective in terms of attention paid. On the other hand, when the message is informative, higher indicators will be found on Time of First Fixation in the picture of the body of the post, Fixation Count in the text of the body, Total Fixation Duration in the text of the body and Fist Fixation Average Duration on the text of the body. So, for a hedonic product, the best ad is the informative one, because it provokes higher values in most of the indicators, 4 out 5.

In relation to **functional products**, when the message is emotional, it provokes higher values in Time to First Fixation (picture of the body and brand presence). But, when the message is informative, it provokes higher values in Time to First Fixation in the text of the body, Fixation Count in the picture of the body and Total Fixation Duration in the picture of the body as well. So, for a functional product, the best ad is also the informative one because it provokes higher values in 3 out of 5 indicators.

In Table 6.17., there is a comparison of values by types of advertising messages (Informative vs. Emotional).

Table 6.17. Comparison of values by types of advertising messages (Informative vs. Emotional)

			HEDONIC INFORMATIVE NESPRESSO INFORMATIVE	FUNCTIONAL INFORMATIVE ACTIVIA INFORMATIVE		HEDONIC EMOTIONAL NESPRESSO EMOTIONAL	FUNCTIONAL EMOTIONAL ACTIVIA EMOTIONAL	
			Mean	**Mean**	**ANOVA**	**Mean**	**Mean**	**ANOVA**
Time to First fixation	**TTFF**	header	2698.20	4881.83	**4,467 ****	5505.37	3672.13	**1,215**
		full body	825.48	763.59	**2.375**	820.40	833.63	**0.090**
		pic body	2789.89	1939.43	**0.045 ****	1152.80	3003.86	**14.189*****
		text body	2054.96	2107.25	**0.041**	3044.93	1749.87	**15.156 *****
		brand	10402.50	6718.25	**1.177**	4193.73	7864.29	**6.638****
Fixation count	**FC**	header	1.10	1.02	**0.060**	0.605	0.622	**0.006**
		full body	32.83	28.48	**2.010**	39.864	34.988	**1.978**
		pic body	13.58	13.76	**0.008**	16.802	11.890	**10.233 *****
		text body	16.66	13.27	**4.888 ****	22.531	22.720	**0.005**
		brand	0.09	0.26	**4.003 ****	0.580	1.280	**6.754 ****
Fixation length	**FD**	header	168.63	157.97	**0.508**	171.68	164.42	**0.365**
		full body	168.70	169.33	**0.047**	167.70	169.59	**0.442**
		pic body	164.41	175.37	**4.768 ****	164.46	165.97	**0.172**
		text body	171.06	166.61	**1.351**	169.93	169.33	**0.030**
		brand	152.50	176.75	**0.608**	161.12	171.36	**0.827**
Total Fixation duration	**TFD**	header	496.93	460.37	**0.119**	429.32	357.63	**0.498**
		full body	5.525.35	4.919.22	**1.222**	6785.56	6015.99	**1.607**
		pic body	2.251.10	2.463.87	**0.335**	2839.25	2113.68	**7.651*****
		text body	2.893.62	2.299.61	**4.496 ****	4100.39	4037.35	**0.018**
		brand	271.25	231.06	**0.119**	291.81	431.36	**1.962**
First Fixation Average Duration	**FFAD**	header	170.17	150.87	**1.023**	183.68	165.04	**1.362**
		full body	175.16	161.43	**1.423**	163.43	154.85	**0.988**
		pic body	170.20	182.66	**0.625**	160.68	167.79	**0.538**
		text body	179.80	156.29	**3.493 ***	168.58	157.61	**1.504**
		brand	143.50	174.75	**0.986**	158.96	163.10	**0.108**

Hence, and considering those results, we can answer the RQ2b, concluding that effectively, the efficacy of the message, having been measured in terms of psychographic responses, is different between emotional and informative ads.

Chapter 7

Conclusions & Managerial implications

If you had asked people what they wanted,

they would have said a faster horse

Henry Ford

7.1. Introduction

The aim of this chapter is to summarize the findings of the present academic work that arises, first from the revision of literature and then, through the empirical part.

In relation to the revision of literature, the present academic work went through the characteristics of the Millennials cohort, the digital environment in which they are immersed, the revision of different communication models to shape the selected one, and the revision of innovative techniques to better understand the Millennial behaviour. The objective is to deepen, from an academic point of view, in the study of Millennials´ attitudinal and emotional effects on the perceptions towards advertising in social media, and the consequent impact on the effectiveness of the message in that mean of communication. In this sense, the main theoretical contributions in this field have been addressed.

In relation to the empirical part, it was divided into two parts. On one hand, the first is done through an online questionnaire to test two different messages and two different categories of products. On the other hand, the second part applies an innovative technique to capture the research subjects´ attention. Specifically, this research is based on testing communications in social networks for Millennials from different angles: different messages, different categories of products and different research techniques (questionnaires and neuromarketing) to nurture and leverage the quality of the insights.

The present academic work is aligned with the idea of reaching the Millennial through a proposed model, which covers the main variables that were extensively revised in the literature, with the main aim to measure advertising effectiveness when targeting them in social networks.

Although this cohort has capture the attention of the academia, research on them is still scarce (Tarabashkina et al., 2016) as it is a market of a considerable volume and furthermore, it is important to generate insights that can be useful to the marketing community. On the other hand, advertising effectiveness analysis has always been a major issue in marketing literature.

Besides, this generation produces a disruption that forces marketing professionals to redefine their marketing strategies on how to reach them (Cartagena, 2017). In this sense, Millennials are somehow immune to traditional media and hyperconnected to the digital world. Due to this fact, social media marketing becomes even more important and assuring and achieving advertising effectiveness, is one of the great challenges to be faced.

The previous chapter analysed the data obtained of both a quantitative and a qualitative analysis as stated before. Furthermore, all the developed hypotheses were verified and as of 8 hypotheses analysed, all of them were accepted, which confirms the robustness of the chosen model.

Therefore, this final chapter is divided into different sections. The first one, this introduction, which acts as a brief overview of the previous work being done. The second part, the main conclusions derived from the empirical work are developed and presented accordingly. In third place, there is a discussion on the main implications based on the results of the research and in relation to the communication strategy for this specific cohort. In fourth place, the limitations of this research are being exposed and finally, the future lines of research to address and overcome the limitations and to guide future research related with the topic.

7.2. Conclusions

This section presents the main conclusions and highlits the novel findings while applying the roots of a traditional communication model to the new digital envinronment. Furthermore, including two different types of products, two different types of messages and two different methodologies might be considered an innovation in how to approach the Millennials cohort.

As seen below, there is a very brief summary of the key points and main findings of each chapter.

The *first chapter* revises Millennial behaviour in a general way. How they behave, what is different from this cohort from the previous ones, what makes them unique and why it is important to address them from a marketing communication perspective. When talking about Millennials, the importance of this cohort comes first: they are the most educated cohort ever, with important purchasing power.
In relation to their choice preferences, they are first developed among the family and related to cultural factors, but they may vary along the time

because of external factors (Shipman, 2020). As they pay attention to health issues, they spend more money for food items that considere beneficial (Peskett, 2006).

Companies are approaching healthy food communication content in social media prudently and trying to cover the largest number of consumers as social media can help communication management by targeting consumers more effectively. Consumers are using social media to access information and share their experiences and social media communication about food has increased by focusing on taste, beauty and healthiness of the food (Samoggia et al., 2019). From the retailers' side, they are focusing their communication on product promotion and on building their image through healthy food and lifestyle-focused messages. There is a need to expand their communication scope to convey with consumers healthy food objectives showing how healthy food products and brands can support them to achieve their desired outcomes (Samoggia et al., 2019).

Based on the literature, Millennials have short attention spans (Buzzetto-Hollywood et al., 2021) and they are not fond of traditional advertising, which transforms them into a difficult target market. In any case, building a successful marketing communication strategy to target them implies big opportunities and important challenges, too. This first chapter addresses part of it and it is also discussed in the second chapter as most of the strategies are based on the digital environment.

The *second chapter* analyses in deep of the digital ecosystem and it is related to the importance of Internet and the evolution of marketing activities, how social media has shaped new forms of communication and how Millennials are feeding the digital territory. As already and widely discussed in chapter one, the digital world is the natural environment of this cohort, as they are used to new technologies. This chapter addresses the technological advances that collaterally, generate changes in the marketing environment and how those can be translated into the marketing strategy.

The *third chapter* revises the evolution of the communication models to adapt the model that has been tested. The idea of the old one-way communication models where companies and brands were the only ones to start conversations, is over. Nowadays, social media users are not only users, but content generators changing the way companies control their own brands and messages. The emergence of new forms of relationship in the digital world, widely discussed in chapter 2, like communities in the form of social media networks, has a tremendous impact on advertising effectiveness measurement and brand or companies´ perception. And, probably more important for the purpose of this thesis, the importance of measuring the emotional impact the message provokes in the receivers.

The *fourth chapter* introduces the idea of new techniques that come from other fields of study such as neuroscience, to be applied to the marketing field. Furthermore, applying as a complement to traditional market research, those modalities, were vital to leverage the quality of the data collected. Although in this chapter the application of different modalities to different means of communication is being revised, only one of the modalities was used in the empirical part, and it is explained in the following chapter. Eye tracking was the one selected to, as its name states, track eye movements across a piece of communication. During the revision of the literature, several research has shown different variables, most of them included in the model that has been tested.

The revision of literature has been done until the fourth chapter. Such revision offers a wide range of academic research related to this cohort, to the digital environment and specifically to the communication in social networks as well as the use of applied neuroscience techniques in the field of marketing. Moreover, most of those techniques are focused on a particular category of product or a particular type of message. In this sense, the present academic work tries to address Millennials from an innovative perspective and with the main aim of having a more complete vision of the topic.

The *fifth chapter* shows in detail both methodologies used and how they will converge. In this sense, and following the idea of combining a quantitative and a qualitative approach, the objective is to delve into Millennials' perceptions and behaviours. The first is a qualitative analysis related to the different variables that influence consumers´ attitudes while trying to be persuaded by social networks. And the second analysis tends to understand how attention is grabbed in the digital environment.

In this chapter, specifications for the qualitative analysis such as sample selection, number of valid responses of each of the sample collections, measurement instrument design, and scales used in the questionnaire, can be found and explained.

In relation to the qualitative analysis, there is a detail of equipment specifications to carry on with the experiment and the most relevant metrics used in the online Eye Tracking experiment.

The *sixth chapter* digs into the results of each of the methodologies. In this chapter, sample characterization can be found as well as all the model validation, the reliability and validity of the instrument and a detail of the 8 hypothesis and their main indicators tested.

7.2.1. General conclusions of the quantitative study

The proposed model contains variables that have been selected after a careful analysis of the literature and they are the backbone of the adapted model. This model comes from the extended and well-recognized academic work of Ducoffe (1995).

The present thesis followed the original model (Ducoffe, 1995) with the aggregate or adaptation of variables such as personalization, attitude towards the ad in social networks, attitude towards the brand or product, purchase intention or eWOM, to complete the model and to update it to the times being.

In relation to the results of the quantitative study, first, all the hypotheses of the model were accepted. This fact demonstrates that the proposed model, a modification of a previous one from Ducoffe (1995) and extensively discussed previously, encourages a theoretical revision of those relationships. In this sense, it is important to highlight that the attitudes and behaviours of the Millennial cohort, must be followed closely. Even though an incipient amount of research is being done on the next generation, the Millennial cohort is still very important from a marketing perspective. Probably, in the near future, the academia will focus mostly on comparisons between generations, which will be translated into a deeper knowledge of them.

First, we analyse the five predictors of **Millennials' attitudes towards an ad in social networks. These five predictors concerned message characteristics:** (i) **informativeness,** (ii) **credibility** (iii) **personalization** (iv) **entertainment and** (v) **irritation**

- ✓ The first conclusion is that: **the higher the informativeness of the message, the better attitude toward advertising on social networks.**

Informativeness has two angles, the first, the advertiser perspective which, as Ducoffe (1996) states, informativeness refers to the ability of advertising to inform the target audience, by creating awareness. On the other hand, and from a consumer´s point of view, advertising is the ability to inform customers and help them satisfy their needs for information of any kind.

In the specific case of Millennials, past research has shown that approximately 64% of them search for information on the Internet as a common source (Beaudoin & Hong, 2021) and they found social media platforms more attractive than traditional media in terms of brand loyalty and news habits. This indicates that technology has a significant impact in news consumption habits (Alsulaiman, 2022). Social media with their intrinsic characteristics such as massive information, quickly spread and openness, has become the main platform for information release (Sun, 2021).

In sum, several authors have already demonstrated that the informative character of a message will influence the attitude toward advertising (Ducoffe, 1995; 1996; Haghirian et al., 2005) and that informativeness in social networks will draw user´s attention that leads to a positive attitude towards the ad (Lee & Hong, 2016).

In our study, it seems that the success of a functional food depends both on its efficacy and on the ability to meet the demands of consumers (Topolska et al., 2021). Informativeness is the perceived richness of information or product-related knowledge that can enhance a consumer's confidence (Kang et al., 2020).

In the case of hedonic products (Nespresso coffee in our study), there is more affective involvement while in the case of utilitarian products (Activia yoghurt), there is more cognitive involvement. In the case of utilitarian products, they are more easily involved in comparisons with other products and individuals are more likely to use alignable information to make choices (Shao & Li, 2021).

Past research being done on utilitarian vs. hedonic products properties have suggested consumers tend to prefer rational ads for utilitarian products and affective ads for hedonic products (Drolet et al., 2007). Our results have concluded the same.

That is, in sum, our global results suggest that there is a positive, weak and highly significant effect of **informativeness** on the attitude towards the ad on social networks. Meanwhile, the empirical work also shows relevant results with the effect of the moderations such as product type and message type. In fact, that the influence of **informativeness** on attitude towards ads **is stronger when the product advertised is functional**. The relationship between informativeness and attitude towards ad, and the magnitude of the relationship turns from weak to moderate if we move from the hedonic to the functional model. In addition, regarding the influence of **informativeness** on attitude towards the ad, it is stronger **when the message is rational** as there is a highly significant difference in the relationship between informativeness and attitude towards the ad. Moreover, the magnitude of the relationship turns from weak to moderate if we move from the emotional to the informative model. This result is congruent with the fact that the informativeness component is relevant for the quality of the information to address rational advertising.

- ✓ The second conclusion is that **the more credibility perceived of the message; the better the attitude towards the advertising in social networks.**

When talking about **credibility**, it measures up to what extent consumers perceive information as believable. Information from a credible source may affect consumers' beliefs, attitudes and behaviours (Hassan et al., 2021). In fact, researchers believe that the more credible a source is, the more persuasive it will be and more the intention to buy the brand (Schneewind & Sharkasi, 2022). The quality of the information is also considered an important factor that influences decision-making (Maltz, 2000; Price et al., 2008).

On one hand, some researchers think that social media has an open space for anyone to express their opinions, and due to this fact, credibility in social media as a source of information can be weakened (Sun, 2021).

On the other hand, social media reinforces credibility from peers and new actors such as influencers that make the message even more credible. Past research has shown that over 90% of young people follow an influencer in social media and that 73% of respondents are more influenced by people on social platforms than ‘traditional’ celebrities. The content from peer influencers has affected brand culture (Hassan et al., 2021). Following this line, marketing research emphasizes that showing knowledge and expertise of reviewed products and services affects consumers' purchase decisions (Filieri et al., 2018) and credibility also plays an important role in the development of the cognitive response or perception of utility and not only of the emotional response. Hence, if a recommendation is made by celebrities or reliable experts, it can influence people's cognitive responses and the perceived usefulness of the information received (Filieri, et al., 2018).

The Millennials cohort, as stated before, prefers social media rather than traditional media. If an ad is not credible, it will be avoided or ignored, which will consequently lead to a negative attitude towards the ad. In fact, advertising in online social media environments is more likely to be avoided if the advertising is not relevant to the user or even if the user is skeptical towards the advertising medium (Kelly et al., 2010). Furthermore, emotional appeals and credibility may affect emotional responses, attitudes, and behavioural intentions (Ness et al., 2017).

The experiences users share on the Internet, consist of hedonic and utilitarian elements. In the case of hedonic and pleasant experiences, they are gratified by the product experience. On the other hand, when talking about utilitarian experiences, they refer to product functionality and effectiveness. When users review their experiences, they do it contributing with relevant attributes or benefits and the information is rational, objective and concrete, based on the facts of the product. Or they do it by presenting their subjective feelings, from emotional and abstract feelings about the product itself (Wu & Wang, 2011). Kim & Morris (2007) have shown in their research that affective play significant roles in the formation of certain attitudes for both hedonic and functional products. However, and following this line, Chakraborty & Bhat (2018) found that credibility in online reviews have more impact on brand image in hedonic rather than functional products.

Our general results suggest that there is a positive, weak and highly significant effect of credibility on the attitude towards the ad on social networks. The results of the empirical work also show relevant results with the effect of the moderations such as product type and message type.

On one side, the influence of **credibility** on attitude towards an ad **is stronger when the message is emotional.** That is, there is a significant difference in the relationship between credibility and attitude towards the ad, and the magnitude of the relationship is slightly higher in the emotional model. These results are consistent with previous research that suggests that the credibility component is more relevant when the message is emotional.

On the other hand, the influence of **credibility** on attitude towards ad is **stronger when the product advertised is hedonic**. Specifically, there is a highly significant difference in the relationship between credibility and attitude towards the ad, and the magnitude of the relationship is slightly higher in the hedonic model. In this case, the outcomes are consistent with previous research suggesting that credibility is a relevant component when the product advertised is hedonic.

- ✓ The third conclusion is that **the more personalization perceived of the message; the better the attitude towards the ad in social networks.**

Personalization describes up to what extent the outlined marketing strategy can fulfil consumers´ needs. Brands are striving to generate engagement with their target audiences and personalization may be the key.

In fact, one of the pillars of social networks is **personalization** which allows users to choose the type of advertising they want. This results in paying attention to those ads suitable for the users. Moreover, social media marketing strategy should allow users to switch from different types of devices as mobiles, whose importance is huge nowadays. Nowadays, viewers´ attention is somehow the new currency and personalized ads are the vehicle to get it.

Personalization strengthens advertising efficiency (Leppaniemi & Karjaluoto, 2005) and following this line, some authors state that people are more receptive to advertising when it is personalized (Hobbs, 2020), developing better attitudes towards a personalized ad than towards more generic ones.

In sum, personalized advertising makes ads more self-relevant for consumers (Walrave et al., 2018). Some researchers have found that there is a linear relationship between personalization and social networking sites' ad responses (Kalyanaraman & Sundar, 2006), increasing the personalization in social networking sites advertising –and increasing self-relevance- evokes more favourable responses and a more positive attitude towards the ad and brands (Walrave et al., 2018).

In the case of **personalization** and considering the results of our general model we can state that there is a positive, weak and highly significant effect of **personalization** on the attitude towards the ad in social networks, which is congruent with past research.

In this case, although considering the whole model, there are differences considering the type of product (RQ1a) and the type of message (RQ2a), for this specific predictor, there are no differences between the relationships. The influence of personalization on the attitude towards the ad does not differ from hedonic or functional products neither from rational nor for emotional messages. For both categories of products and both type of messages, the impact of this predictor is equivalent.

- ✓ The fourth conclusion is that **the more entertainment perceived in the message, the better the attitude towards the ad in social networks.**

Entertainment motivation implies using the Internet to pass time and engage in enjoyable activities (Carlson et al., 2022). During the pandemic lockdown, as people were unable to carry out some of their daily activities, social networks were a form of entertainment using different devices for doing it (Areiza-Padilla et al., 2021). Furthermore, entertainment can be interpreted as the pleasure that comes from the social media experience, especially for the joy of gaming or any other activity that provides fun to users, and moreover, entertainment affects consumers' attitudes to reinforce interaction between brands and consumers (Ebrahimi et al., 2021). No doubt that, entertainment is a very important motivation for Millennials to spend time on social networks, and moreover, it has been even more important during the pandemic. In fact, according to the Global Web Index, there was more content consumption since the outbreak (Suwana et al., 2020).

In this sense, and mainly focusing on adolescents, past research has shown that using devices while waiting for food or while eating decreases boredom and, somehow, kills time as they are used for entertainment purposes (Toh et al., 2019). There is also a question of age. Young people are more likely to eat alone while using their smartphones, which may evoke the impression that actually they are not alone (Lemke & Schifferstein, 2021).

Past research has shown that social media advertising is more likely to be trusted if users are engaged in entertainment, which, at the same time minimizes privacy concerns (Carlson et al., 2022).

In relation to the ads, those ads that tell a story are considered narrative ads and are more persuasive than non-narrative ads. This enjoyable effect is generated by the pleasant entertainment experience this type of ad provides. Humorous narratives do so by evoking positive emotions and providing a hedonic experience (Hoeken & den Ouden, 2022).

The results for our general model suggest that there is a positive, moderate and highly significant effect of **entertainment** on **the attitude towards the ad in social networks.**

Moreover, the empirical work also shows relevant results with the effect of the moderation role of the type of message. The influence of **entertainment** on the attitude towards the ad **is stronger when the message is emotional**. Specifically, there is a highly significant difference in the relationship between entertainment and attitude towards the ad, and the magnitude of the relationship is higher in the emotional model. This result suggests that the entertainment component is more relevant when the message used is emotional and it is congruent with the findings of past research, such as the one of Kim et al., (2017) that showed that, when people consider an ad entertaining, it has a superior persuasive effect.

In this case, comparing both categories of products (RQ1a) there is no differences between the relationships. The influence of entertainment on the attitude towards the ad does not differ from hedonic and functional products. Related to both categories of products -hedonic and emotional-, the impact of this predictor is equivalent.

- ✓ The fifth conclusion is that **the less the irritation perceived of the message, the better the attitude towards the ad in social networks.**

Advertising irritation is defined to those offensive, displeasing feeling provided by advertising that leads to an unfavourable experience and in consequence, unfavourable emotions. Any aspect that irritates consumers is far from persuading them to purchase the advertised product or service. And hence, contradicting the main goal of advertising.

Previous research shows that irritation generates negative responses and reduces advertising value (Shareef et al., 2019; Sharma et al., 2022). Several studies in the context of digital advertising have shown such negative influence of irritation on perceived advertising value (Shareef et al., 2019). Moreover, irritation may lead to lose consumers´ attention (Kang et al., 2022), which is critical in the digital environment (Sharma et al., 2022). Furthermore, several studies on digital advertising have shown that irritation predicts advertising value and attitude towards advertising concluding that irritation erodes both, while reduces advertising effectiveness (Sharma et al., 2022).

This empirical work has shown that **irritation** has a negative, weak and highly significant effect towards the ad in social networks.

Considering the type of product (RQ1a) and the type of message (RQ2a), in the case of this specific predictor, there are no differences between the relationships. The influence of irritation on the attitude towards the ad does not differ from hedonic or functional products neither for rational nor for emotional messages. For both categories of products and for both types of messages, the impact of this predictor is equivalent. Hence, in both scenarios the impact of the attitude towards the ad, and emotional and rational irritating messages have an equivalent impact on the consumer's attitude.

- ✓ The sixth conclusion is that **the better the attitude towards the advertising, the better the attitude towards the product/brand announced.**

Social media can stimulate brand experience with entertainment, attractive products or content or brand endorsement, among others (Khan, 2022). In other words, social media marketing activities can modify or shape customers´ attitudes towards a brand (Jin, 2012). Attitudes are related to a favourable or unfavourable evaluation, emotional feeling and action towards an object or an idea (Kotler & Keller, 2006; Khan, 2022) and those attitudes, are translated into like or dislike, moving them away or towards an object or idea.

The more positive attitude the individuals have towards the brand, the higher the probability to use the product. When applying it to social networks, the more customers perceive social media marketing actions as relevant for them, the better they will feel with brands on such social network (Pace et al., 2017).

Past research has shown the interaction between consumers and brands in social media is positively related to the attitude toward the brand (Kim & Lee, 2019).

Regarding the link between the **attitude** towards the ad in social networks and the positive attitude towards the advertised brand, the empirical work showed a highly significant, positive coefficient, and also a moderate magnitude of the relationship. Those results are congruent with past research.

The **attitude towards the advertising and its** influence on **the better attitudes towards the product/brand announced does not differ from hedonic or functional products neither for rational nor for emotional messages.** Hence, in both scenarios the impact of the attitude towards the advertising on better attitudes towards the product/brand announced does not vary from hedonic or functional products neither for rational nor for emotional messages. For both categories of products and both categories of messages, the impact of this predictor is equivalent.

- ✓ The seventh conclusion is that the **better attitude towards product/brand; better purchase intention**

The attitude of consumers informing their intentions to purchase a product or service can be influenced by the value of the benefits they will get out of them, in other words, the perceived value they get. Consumers evaluate products not only in terms of quality value or price but also in terms of enjoyment. The perceived value increases through recommendations (Wirya & Syah, 2022).

Past research has shown that there is a significant positive relationship between perceived advertising value and purchase intention (Sharma et al., 2021) and that advertising value is a predictor of consumer purchase intention (Sharma et al., 2022). Moreover, a favourable attitude towards advertising has as a result, a positive outcome such as purchase intention of the brand advertised (Wang & Genç, 2019).

According to past research, consumers are more likely to purchase a product if they have a positive attitude (Pienwisetkaew et al., 2022). Consumers' acceptance has a substantial impact on purchase intentions and product acceptance (Pienwisetkaew et al., 2022).

Messages in social media have a huge impact, mainly on consumers' behaviour towards the brand and those messages on social media have a positive impact on consumers´ attitudes towards the brand (Phyu, 2022).

Our results show that there is a positive attitude towards the brand that generates a positive, strong and highly significant effect on **purchase intention**.

The **better attitude towards the product/brand** and its influence on **better purchase intention does not differ from hedonic or functional products neither for rational nor for emotional messages.** Hence, in both scenarios the impact of the attitude towards the product/brand on better purchase intention does not differ from hedonic or functional products neither for rational nor for emotional messages. For both categories of products and both categories of messages, the impact of this predictor is equivalent.

- ✓ The eighth conclusion is **that the better the attitude towards the product/brand; the more eWOM**.

In relation to eWOM, we can state that nowadays, online reviews are making decision-making easier for consumers as they reduce cognitive load and improves sales. No doubt, only if the reviewer is someone the user trusts. Moreover, eWOM provides consumers with unbiased product information through their social networks and for marketers, this represents a good opportunity to understand how it influences product choices (Kudeshia & Kumar, 2017).

Nowadays, social media had a significant impact on consumer buying behaviour and eWOM emerges as a very useful resource with significant influence over users. The quality of content in social media makes a big impact to generate awareness. In fact, it is not all about consumer awareness or selling the product itself but involving users and building relationships in a frame of a two-directions communication.

Social media is widely used to search for information, and it is used as a trust factor while making purchasing decisions. And, as a matter of fact, reviews and suggestions about product or services through eWOM have a clear influence over users purchase decisions (Jith et al., 2022).

Our results show that a positive relationship exists between attitudes towards the brand and eWOM. The results of our empirical work are congruent as there is a positive attitude towards the brand that generates a positive, strong and highly significant effect on **eWOM**.

The **better attitude towards the product/brand** and its influence on **more eWOM does not differ from hedonic not for functional products neither for rational not for emotional messages.** Hence, in both scenarios the impact of the attitude towards the product/brand on better purchase intention does not differ from hedonic or functional products neither for rational nor for emotional messages. For both categories of products and both categories of messages, the impact of this predictor is equivalent.

7.2.2. General conclusions of the qualitative study

Social media brings diverse content into the same space (Vraga et al., 2019) which generates a contemporary challenge with the increasing importance of measuring the exposure to different types of content.

To contribute to generating value in this sense, this qualitative analysis wants to compare visual attention in three dimensions related among them. The first is to compare different types of products, one functional with one hedonic. Clearly, the utilitarian value is tangible and represents the functional benefits experienced or anticipated by the consumer, such as product quality, price or benefits while the hedonic value is subjective and symbolic (Lin et al., 2018).

The second is to compare different types of messages by evaluating on one side, a rational message and, on the other hand, an emotional one. As Kotler & Keller (2008) pointed out, advertising messages should appeal to present the attributes of the product (rational appeal) or to elicit consumer emotions to arouse purchase willingness (emotional appeal) (Kotler & Keller, 2008; Wu & Wang, 2011).

And last, but not least, to divide each of the posts in different and relevant areas from a marketing communication point of view.

In relation to attention, it can be categorized into two: the first, bottom-up attention, which refers to attentional guidance purely by external stimuli that are salient because of their properties and the ones relative to background, and the second, top-down attention, referring to internal guidance of attention based on prior knowledge and goals (Katsuki & Constantinidis, 2014).

As an example, to measure the saliency of certain elements such as the brand, the text, the header among other elements, Eye tracking data allows to test the attention effect of different elements and design characteristics. Eye movements are good indicators of visual attention (Wedel & Pieters, 2000). Eye-tracking data permits proper tests of the attention effects of ad elements and other ad design characteristics.

In this case, the fieldwork is more like a pre-testing of static pieces to determine the most significant elements to consider in marketing communication, than evaluating *per se*, only for advertising effectiveness.

Marketing stimuli are complex and usually contain multiple areas of interest which includes pictures, texts, a brand and a headline (Wedel, 2013). The posts selected were divided into areas of interest to evaluate each of them separately and cross them with the metrics selected. The measurements of the areas of interest were delimited by hand, following other eye tracking studies such as the one on banner blindness by Muñoz-Leiva et al., (2019). As the purpose of this empirical work is to evaluate visual attention, the static posts are following a certain structure, so, five areas of interest were delimited: (i) header; (ii) full body; (iii) picture in the body of the post; (iv) text in the body of the post and (v) brand presence.

Regarding the evaluation of those different areas, we can divide them into three main blocks:

- ✓ The first would be how to process visual attention in areas of interest that are **related to images**.
- ✓ The second would be how to process visual attention in areas of interest that are related **to text and pictures**.
- ✓ And the third one would be to include those parts related to the symbol and the text that mentions the **brand**. In the case of the brand, we can consider both brands as well-known ones, and with a strong presence worldwide. So, probably they capture the attention just by their own

logo. Moreover, we consider there might be an influence of the name of the brand on consumer choice. In fact, McClure et al., (2004) demonstrated that, when research subjects knew the name of the brand they were drinking (commonly known as The Coke vs. Pepsi challenge). In fact, in the phase of the brand-cued experiment, brand knowledge for one of the drinks had a dramatic influence on expressed behavioural preferences and on the measured brain responses with fMRI (McClure et al., (2004)

First, in relation to the **images**, they tend to receive the most attention of users as a general rule (Zhou & Xue, 2021). In fact, research done by Castillo et al., (2011) are following this line and it is in accordance to the way the human visual system seems to work while recognizing scenes in images. As they state, first, humans extract the essence of them in few milliseconds while adding details and looking for overall coherence to visually explore the image (Castillo et al., 2011).

Soleh et al., (2021) in their research to identify the differences of visual attention between Millennials and Non-Millennials and focusing on "memes", found that Millennials are only attentive on images. The results from the Millennials, showed they understand communication just with the images shown. And, talking about the difference in processing images, "memes" are better known as words. In fact, technological advances have contributed to their popularity on the Internet. Millennials, who are active users of social media, could understand the meaning of memes and what those images mean (Soleh et al., 2021)

Following this line, and applied to images for a fashion retailer, Boardman & McCormick, (2021) have found that the images are drawing participants´ attention, receiving their first fixation. They also found out that having personalized product recommendations resulted in increased attention, which leads to an increase of the likelihood of purchasing a higher number of items.

As Țichindelean et al., (2021) state, the most efficient option to present information is the use of images. They are viewed earlier, for a longer time and allow better memorization compared with text. Moreover, the use of pictures using persons seems to capture the attention in a better way (Țichindelean et al., 2021).

Second, **regarding the text**, it is evident that many types of information must be put in words. As Țichindelean et al., (2021) found out in their research, the text has a better chance to be read when it is not very long. Moreover, it should not use specialized words or should use a picture shown beside the text.

Considering both, **pictures and texts**, previous findings have proved that when mixing pictures with text, photographs drew visual attention to whether or not the text is understood (Li et al., 2016). In fact, when there is a task of reading for comprehension, the picture slows down the readers in their speed and it seems to be related to the extra effort to relate pictures with text (Beymer et al., 2007). It was found that viewers spent more time viewing photographs with a single textual message than those with multiple textual messages. (Li et al., 2016). These results are similar to previous research that also showed that an image and text presented together can contribute to a better understanding of the information presented separately (Schnotz, 2005). It implies switching the attention between text and images to establish links between the two elements that help to integrate the new information to remember it (Petrova, et al., 2020).

Third, in relation to the **brand**, previous research has shown that elements such as the brand, are one of the most meaningful ad elements that capture attention (Wedel & Pieters, 2000). Following this line, Kleih et al., (2022) support those findings with in-lab research on branding, and the conclusions are, that looking at the brand and brand surface, as well as larger size brands, has a positive effect on brand recall. Furthermore, salient branding has a longer-lasting effect and could lead to better recognition of the brand and hence, improve purchase intentions (Kleih et al., (2022), Furthermore, visual fixation frequency was found to have significantly improved research subjects´ brand recognition performance and, using first-person view images may help reinforce the positive effect of fixation frequency on brand recognition performance (Zhou & Xue, 2021).

In relation to the comparison of the *types of products* and trying to answer research question (RQ1b), and in relation to the comparison between types of messages, to answer research question (RQ2b), we can conclude as follows.

In relation to the first indicator, ***time to first fixation (TTFF)*** this metric is very useful to analyse how quickly certain element captures attention. In fact, this metric is calculated based on how long it takes for the research subject to notice an object within an area of interest.

In relation to the second indicator, ***fixation count,*** it means that a higher number of fixations might be due to the revisits that users do to the same area. It could mean a high level of interest but on the other side, it could also indicate difficulty in comprehension.

The third indicator, ***fixation length***, refers to the time that the average fixation lasted for, and can be a complementary metric to time to the first fixation and might help determine the first impressions of objects or areas of interest. In some cases, an increase in time spent on certain areas could be associated with top-down attention and might indicate a high level of interest. Shorter duration times can indicate that other areas might more interesting.

The fourth indicator, ***total fixation duration***, refers to the average total time of fixation duration that provides a certain understanding of how users perceive the areas of interest and it is calculated by summing the total time fixated on an object or area of interest. Higher fixation duration can be a signal of a higher level of interest. On the other hand, shorter fixation durations might mean less level of interest in relation to other areas.

The last indicator, ***first fixation average duration*,** refers to the duration of the first or only fixation, for example, in an area of interest. It provides data about how long that fixation lasted, and combined with the time to first fixation, can give an idea of how much attention was attracted and can be compared with other regions.

In order to answer the **research question 1b**, and comparing the of **types of products (*functional versus hedonic*)**, we can conclude as follows.

- ✓ First of all, when the **messages are informative, functional products stand up in several areas of interest** within time of first fixation, fixation count and also, within the total fixation duration.

The reason might lay in the presence or not of larger text. The functional-informative is full of text (18 lines), it is extremely overloaded of information while the *hedonic-informative* is plain (6 lines). The functional-informative, also uses several hashtags (#), which might explain another interesting point that Klein et al., (2020) highlights in their research and, it is the fact that young adults paid significantly greater visual attention to the labelling strategy. The hashtag generates a great amount of visual attention for the young adults´ target audience.

- ✓ Second, when the **messages are emotional**, **the functional product performs better** in time of first fixation, fixation count and total fixation duration.

In this case, there is an interesting fact that might support the prevalence in attention. This post contains a picture of a couple. And the answer might lay in the results that previous research has shown that images of people are more visually appealing (Djamasbi et al., 2020). And those results are congruent with the social presence theory that suggest that by including images, even when they are not in a relevant top visual hierarchy (Faraday, 2000; Djamasbi et al., 2020) they can positively affect the appeal of -in this case- the post. Those results are also congruent with the brand saliency and the importance of capturing the attention with images, as this post has humans in the picture, which is congruent with the findings of Țichindelean et al., (2021).

Another reason might lay in the layout of each of the posts. While the emotional message of the hedonic product is plain in terms of the picture, the informative message of the hedonic product, has a picture with richer content in terms of visuals.

In order to answer the **research question 2b**, and comparing the types of messages **(*informative versus emotional*)**, we can conclude as follows.

- ✓ First, when the **product is hedonic, the emotional message stands up in several areas of interest** within time of first fixation, fixation count and fixation length.

In the case of time of first fixation, and in relation to the header, the hedonic emotional has values significantly higher. These results are congruent and somehow similar to the ones of Bucher & Schumacher (2006) in their research on attention towards media stimuli. They state that in relation to the switch of attention to page headers, subjects shifted attention to page headers as they try to identify the medium and their own position within it (Bucher & Schumacher, 2006). Moreover, they found a sequential pattern between the main picture of the page and the headline of the main article and then, a refixation of the picture. Another interesting finding, related to the digital environment, is that only the biggest elements such as pictures and headlines could be identified at first glance (Bucher & Schumacher, 2006).

- ✓ Second, **when the product is hedonic, the informative message, stands up in other areas of interest** such as: time of first fixation, total fixation duration and first fixation average duration.

In relation to the fixation count, the emotional message has values significantly higher related to the brand presence. While the informative message has it in the text of the body. The possible reason for such values might lay in the layout of each of the posts. Both of them, have a very similar layout but the text in the informative is longer.

- ✓ Third, **when the product is functional, the informative message** stands up in Time to First Fixation, fixation count and total fixation duration.

The reason might lay in the fact that the informative has a long layout with a lot of text.

- ✓ Fourth, **in the case of the functional product and emotional message**, there is an interesting fact that stands up: **the brand presence**.

The brand presence seems to capture viewers´ attention not only as the brand saliency but also it seems to do it again in the picture of the body. These results are congruent with the research done by Zhou & Xue, (2021).

7.3. Management Implications

After the analysis of the results and the development of the conclusions, the management implications are presented.

The aim is to generate value for companies willing to address the Millennial cohort in social networks as long as to provide a model that can be followed to measure the effectiveness of their strategy.

Nowadays, probably no marketing practitioner can doubt of the importance of a social media strategy. Moreover, the social media strategy should be integrated into broader marketing strategy or even, business strategy as a whole.

Social Media needs to reinforce the company´s or brand´s visibility but being congruent with the changes of consumers or potential ones. Hence, measuring their evolution along the time would generate new business opportunities.

In relation to some of the variables tested in the model, the suggestion of managerial implications would be the following: (i) managerial implications of the quantitative study and (ii) managerial implications of the qualitative study.

7.3.1. Managerial Implications of the quantitative study:

In relation to the managerial implications of the quantitative study, the main implications are proposed and explained below as follows:

1.- The message should be **informative**
2.- The message should be **credible**
3.- The message should be **personalized**
4.- The message needs to **entertain**
5.- The message should avoid **irritation**
6.- Comparing **hedonic and functional products**, it has been demonstrated that **message effectiveness is not independent of the type of product advertised**.
7.- Comparing **rational messages - versus emotional messages**, it has been demonstrated that **message effectiveness is not independent of the type of message**.
8.-A social media marketing strategy is a **crucial driver of brand experience, purchase intention and attitude towards the brand**.
9.- An **engaged customer** is more likely to show a positive reaction towards

Since the eight drivers of attitudes are significant, it is recommended to create messages that include all of them as they are all relevant in their influence on the value of the advertising pieces.

First, the message should be informative. As stated before, informativeness is one of the reasons why social media is so important. Such role of providing the information must be followed by adding value to it. In this sense, the quality of content, the frequency of publishing and making it visually relevant, is a must.

Past research has shown that product quality information influences a positive attitude towards the product and, the literature state that it dominates decision-making processes as consumers use social media to seek information about their purchases and then, use them to entertain or to socialize by sharing and reacting to the informative messages (Son et al., 2022).

Nowadays, consumers are always looking for information and there is plenty of imperfect information, hence, the quality of information plays an important role in choosing a specific brand (Elsharnouby et al., 2021). Following this line, the quality of information will be based on certain attributes such as accuracy, relevancy or timeless information (Elsharnouby et al., 2021).

The quality of information is especially important when the company is using influencer marketing. Integrating influencers into the company´s marketing strategy is a real challenge as companies should select the best and appropriate options to engage the audience (Alrwashdeh et al., 2022).

Second, the message should be credible. Somehow communication and marketing departments have a serious task of maintaining and leveraging credibility in what they communicate. In fact, social networking is based on trust. In this sense, and as it is very common nowadays, many companies are associating their images with the role of influencers. While this Figure is more effective from a consumer point of view, companies face the challenge of finding and selecting the appropriate influencer (Chetioui et al., 2022). And, to follow their steps in order to line up their values with the ones of the company, at least from a marketing perspective. The relationship those influencers have with their audience is based on the credibility they transmit. Although they are mere ambassadors and, although they just provide a service for the company and/or the brand, companies should take a close look to their actions and the kind of content they deliver. Consequently, their actions might create consequences in the brand´s reputation.

The concept of credibility is linked the communication in two directions and with the intention to influence and to get an economic transaction (Zirena-Bejarano et al., 2022). Credibility raises three aspects (Eisend, 2002). The first is related to how credible the receiver perceives the message. The second is related to objects that can be true or false and finally, the multidimensional concept that recognizes the importance of information as a relevant factor for trust in the message that can lead to purchase decision (Eisend, 2002).

Along with the previous predictor, Information, social media influencers have a strong strength on Millennials purchase decisions by improving the perception of credibility. Influencers generate trust over Millennials and the positive effect of credibility, reinforces brand value (Zirena-Bejarano et al., 2022).

Third, the message should be personalized. As well as credibility, in the fact of personalization lays the foundations of social networks. Marketing practitioners should focus their efforts on delivering personalized messages and to put consumers in the centre of their marketing strategy. A lot is being said about it, but still, there is a lot to do about it. Many marketing processes are being automated with no personalization at all which generates friction in the attraction or even in the engagement process. In the case of Millennials and talking about food selection, they like to personalize their food with different presentations and food is a reason for socializing and bringing people together in a highly digitalized environment. They are used to declaring their individuality even if social networks consist of collective opinions, affecting their food choices, purchase decisions and helping define both for the future (Okumus, 2021).

Fourth, the message needs to entertain. Previous research has proven that entertainment increases the value of advertising. Following the line of informativeness, and even credibility, fulfilling customers´ needs with emotional enjoyment generates positive reactions in the audience. The empirical evidence reveals that humour may discourage negative comments.

Humour evokes positive emotions and it is a strong and effective advertising strategy (Hoeken & den Ouden, 2022), as an example Walter et al., (2018) made a comparison between humour and nonhumour conditions, confirming a positive relationship on the effect of humour on knowledge and behaviour. Furthermore, in relation to marketing, the stronger effects have taken place when incorporating parody within the stimulus (Walter et al., 2018). A meta-analysis (Eisend, 2009) showed and concludes that humour enhances attitudes towards the ad, towards the brand, generates positive affect, reduces negative affect and moreover, humour effects are primarily based on affective processes (Eisend, 2009).

Fifth, the message should avoid irritation. Following the line of entertainment, practitioners should focus on avoiding irritation and avoiding making consumers feel annoyed. Irritation may distract consumers and, specifically speaking about Millennials, as they have short lapses of attention, it is even more critical.

In this sense, is especially important to avoid certain marketing tactics used by marketers that may annoy, insult, offend, manipulate, hurt consumer´s dignity or even to generate unwanted irritating influence (Ducoffe, 1996; Abidi, 2022). Consumers can be exposed to irritating ads that can affect the value of advertising or even, social media may intrude into their privacy (Abidi, 2022).

Dwinanda, et al., (2022) on their study about short videos, found out that when the advertising displayed met the viewer´s interests, and they are interactive, credible and entertaining, irritation becomes insignificant. Moreover, if advertising brings also, economic benefits or value for the recipient, customers tend to have a good perception of it, although at the same time they feel disturbed. Hence, irritation is minimized. Those results are congruent with the ones of Kim & Han, (2014) that found out that irritation can be reduced with personalization, credibility and entertainment.

Sixth, comparing hedonic and functional products, the most intense relationship is, in both cases, between attitude towards the brand/product and purchase intention. After it, the second most intense in both cases, is attitude towards the brand/product and its influence in eWOM. And the third relationship for both cases, is attitude towards the ad in social networks and its influence on attitude towards the brand/product. For this reason, the emphasis should be focused on reinforcing the attitude towards the brand or product to trigger purchase intention and to generate positive eWOM.

As stated before, there are differences considering the type of product that has demonstrated that the message effectiveness is not independent of the product advertised, having compared hedonic versus functional products and the differences lay in informativeness and credibility. When the product is functional, the differences lay in informativeness, that has a moderate relationship regarding attitude towards the ad in social networks. On the other hand, when the product is hedonic, there is a weak relationship of informativeness about Attitude towards the ad in social networks. In relation to credibility, in both types of products, the relationship of credibility regarding Attitude towards the ad in social networks is, in both cases, weak.

Seventh, comparing rational messages - versus emotional messages-, the most intense relationship is, again, between attitude towards the brand/product and purchase intention. After it, the second more intense relationship in both cases, is between attitude towards the brand/product and eWOM. And the third stronger relationship is between attitude towards the ad in social networks and attitude towards the brand/product.

As stated before, there are differences considering the type of message that has demonstrated that the message effectiveness is not independent of the type of message, having compared rational versus emotional messages. The differences lay in informativeness, credibility and entertainment. When the message is rational, the differences lay in informativeness, that has a moderate relationship regarding attitude towards the ad in social networks. On the other hand, when the message is rational, there is a weak relationship of informativeness regarding attitude towards the ad in social networks. In relation to credibility and in relation to entertainment as well, in both types of products, the relationship of credibility regarding attitude towards the ad in social networks is, in both cases, weak and the relationship of entertainment regarding attitude towards the ad in social networks is, in both cases, moderate.

Therefore, according to the results and the review of the literature, we conclude that for functional products, the recommendation would be to use informative messages. On the other hand, when the product is hedonic, the recommendation would be to use emotional messages. In both cases, reinforcing the attitude towards the brand/product would lead to a better purchase intention and to a positive eWOM effect.

Eighth, as past research has shown, *a social media marketing strategy is a crucial driver of brand experience, purchase intention and attitude towards* *the brand* (Khan, 2022). In fact, social media should be considered a strategic tool to engage their audience. In this sense, managers should maintain social media brand pages updated and aligned with their target audience providing meaningful and valuable brand experiences using social media platforms as their strategic tool. As Khan, (2022) demonstrated, a well-managed social media marketing campaign can help develop purchase intention and an attitude towards the brand. The same research has also shown that Millennials recognize and evaluate brand activities in social media platforms (Khan, 2022). Taking this into account, marketing practitioners should craft specific campaigns for this cohort.

And nineth, and related to customer engagement, an engaged customer is more likely to show a positive reaction towards a brand (Khan et al., 2020). To increase the impact of social media marketing, it is critical to make consumers interact, such as liking, sharing, commenting or even to have a space to complain (Son et al., 2022). Social media managers should put their efforts to design and to implement digital content with high levels of engagement. Making the audience part of the two-directions communication can be a way to leverage engagement.

7.3.2. Managerial Implications of the qualitative study

In relation to the second study, using eye tracking for marketing purposes, the recommendations are simple ones. In the case of static posts in social networks, the layout of the post itself has a certain structure. Bearing in mind that the structure is limiting, somehow, the space for tommunications, we would suggest the following:

First, messages should be short and direct to the point. We are trying to address a generation with short attention spans. Their attention is as valuable as a new currency, hoping this analogy seems to clarify that advertising effectiveness means cost efficiency. Consumers commonly pay little attention to most of these messages; they scan rather than read them carefully (Davis et al., 2019).

Readability is defined as the ease of understanding written content, meaning how readers understand a text, reading at an optimal speed and finding it interesting (Gkikas et al., 2022). As Gkikas et al., (2022) have demonstrated, the lowest engagement is observed when readability is difficult. On the other hand, consumer engagement with brands depends on how easy to read a message is (Davis et al., 2019). Those findings are congruent with conventional marketing communications that are clear, fluent and easily understood (Davis et al., 2019).

In fact, messages that are more readable lexically (with familiar words) and syntactically (simple sentences structure) can create greater consumer engagement. Moreover, processing fluency increases perceived familiarity with a product, leading to greater attractiveness for everyday products or lesser attraction to special occasion products Davis et al., (2019).

Results from Šola et al., (2022) provide further information suggesting that material presented on social networks must be brief and concise to capture attention and promote retention while proposing a combination of text, colours and visual formats to hold the attention for a longer time (Šola et al., 2022).

In this line, our results indicate that the time to first fixation (TFF) shows that the functional emotional post is the one with better performance to grab the viewers´ attention. secondly and with slight differences the hedonic posts and lastly, the functional informative, which shows a heavy text.

As the target audience is the Millennial cohort, the recommendation would be to keep a simple communication such as the one of the Hedonic Posts.

In second place, the use of pictures visually appealing with a prominent space for the brand, as cited before in relation to Wedel & Pieters (2000), reinforcing it in the header and in the body of the picture.

Visual attention has been described as an effective indicator of viewer´s focus in order to identify what they are looking at (Simonetti & Bigne, 2022). While filtering content viewing is the result of selective attention which is driven by the principle of less effort. To reduce such cognitive effort, viewers use heuristic mechanisms instead of analysing each piece of information presented (Simonetti & Bigne, 2022). In the case of social media, consumers´ attention follows a top-down mechanism when only text is present and bottom-up when pictures are included (Bigne et al., 2020).

Past research has shown that visual content and context are essential elements to create and increase awareness of a product posted in social media (Hoon, 2021). Visual context such as a single dominant colour, image aesthetic, combination of features of words, emojis and images, and video or animated images, can make the post in social media more attractive. Furthermore, humour, branding, human related images, language preference and fashion or trending of the product images provides better visual result and therefore, might gain more attention for the young generations (Hoon, 2021). In relation to branding, Zhou & Xue, 2021 found out that brand recognition performance and brand recall could positively be influenced by repeating exposure.

The recommendation would be to use visually appealing images that generate somehow contrast among the publication. In this case, the Functional posts have better performance. The Functional Informative captures the attention sooner in the picture of the body area and the Functional Emotional post performs better in Total Fixation Duration in the brand area.

In third place, avoiding heavy text or specialized words to make an easy reading and a full comprehension of the message to communicate. Moreover, hashtags can be used to reinforce the message. As an example, during the pandemic, there was a spread of new related vocabulary (Al-Azzawi & Haleem, 2021) and an increasing number of medical terms have emerged. In their research, Al-Azzawi & Haleem, (2021) analysed both qualitatively and quantitatively a dataset of over 5 million tweets collected between January and June, 2020 and they found out that the word pandemic and the symbol of the hashtag (#pandemic) had a frequency of usage of 1.966.513.

Another example can be found in the research done by Pilař et al., (2021) of a basic analysis of the frequency of use of individual hashtags in 2020, that revealed that #healthylifestyle was the most used hashtag used related to #healthyfood. In the same vein, Gkikas et al., (2022) showed in their research that posts containing many hashtags trend to achieve higher performance to engage users throughout all social media networks. Some social media features, such as hashtags, at-mentions and emojis affect consumer response (Davis et al., 2019).

The recommendation would be, again, to use a simple communication avoiding heavy texts. In this case, the functional emotional post has heavy text, making it difficult to grab viewers´ attention as it can be seen in the time to first fixation indicator.

In our study, almost all the posts analized are using hashtags. The only one without using it, is the hedonic informative post. In any case, our results are not showing significant differences, but we must bear in mind that our research is under in-lab conditions. The recommendation would be to use them to categorize the communication while using them in social networks.

In fourth place, when dealing with hedonic products, and based on Delen & Ilter (2021), we recommend **to use human images carefully** while designing an ad. They suggested that the use of human images is especially useful with the hedonic type of products. On the other hand, **for the utilitarian type of product, the usage of human images would be distractin**g rather than capturing consumers´ attention (Delen & Ilter, 2021).

In any case, crafting effective messages to engage the audiences suggest creating different solutions for different targets. As Davis et al., (2019) highlights, this due to the hedonistic nature of the brand. Hedonic brands should rely on short, eccentric messages, using more fun, novelty, rather than long messages that use simple language. Those brands providing utilitarian benefits use clear and descriptive language to communicate with consumers in search of utilitarian benefits.

In our results, the use of human images is done in the Functional Emotional post and it is congruent with the literature revised. The Time to First Fixation in the picture of the body, has significantly higher values than the rest of the post analysed. Furthermore, there are some other indicators, such as Fixation Count and Total Fixation Duration with values significantly lower than the rest of the posts being analysed.

In fifth place, when dealing with functional products, **visual cues are recommended**. Previous research has shown that information processing has been related to decision making, as several studies have shown higher fixations likelihood on attributes that are more relevant for reaching a decision (Oliveira et al., 2016). As shown in their study on functional foods applying eye tracking on labels, the results have shown that the information provided plays an important role for differentiation. Furthermore, consumers may not perform an in-depth evaluation of key information related to the functional aspects of the product (Oliveira et al., (2016). Visual cues will attract more attention, and attention increases the perception of product meaning (Sun & Li, 2022). In fact, using visual attention to measure one's cognitive attention is based on the eye-mind assumption (Kohout, et al., 2022) that there is "a direct link between where one looks and what one cognitively attends" (King et al., 2019, p. 150). Visual cues of products are the key factors to promote consumers' cognitive response that can change people´s attitudes, as visual clues not only affect consumers´ initial impression of products but also their subsequent cognitive reactions (Sun & Li, 2022). In fact, there is a direct link between fixation information and predicting consumers´ attitudes. Fixation information can be used to measure the degree of individuals' attention to stimulus, and the time of focusing on the main product can predict consumers' attitudes and actual purchase behaviours (Sun & Li, 2022). All that is especially important as one difficult task on marketing communication of functional foods is that consumers cannot experience the positive effects before purchasing the product. Credibility has an undeniable effect on willingness to purchase (Plasek & Temesi, 2019).

Our results are congruent as the funcional informative post shows higher values in fixation count and total fixation duration in the whole body of the post compared with the rest of the posts analysed. However, there is a need of further research on the effect of the heavy text of this post. As shown before, for functional products, the recommendation would be to use informative messages but also to keep them short. Although the values of fixations are higher than others, a possibility might be that there is a need of more time to get the post read and that might explain those higher values.

In sixth place, it is important to capture viewer´s attention mostly in the areas that might have a clear influence in the posts´ performance. Certain parts of the posts might add value from a marketing perspective. Undoubtedly, the **name of the brand** is a clearly one. As an example, the header (where the name of the brand is displayed and verified with the special blue check) or the brand presence in the body of post, are relevant from an attention and from a marketing point of view.

As stated before, companies and brands communicate with their target audiences in a two ways communication and more and more, the perception the audience has of a brand is the result of what they share in social networks rather than on web pages. This allows companies to communicate, to promote dialogue, and to try to engage with their audience. The creation of brand communication strategies that integrate social networks reinforces brand recognition and influences the content of the message. Moreover, as Langaro & de Fátima Salgueiro, (2018) showed in their research, brand awareness and brand attitude are the two main pillars of brand knowledge. Their results have identified a significant, positive and direct impact of users' participation on brand awareness, and brand attitude also benefits from users' participation when there is brand awareness (Langaro & de Fátima Salgueiro, 2018).

Brand attitude is defined as a consumer's overall evaluation of a brand (Mitchell & Olson, 1981) and the strength of brand attitude, might be a predictor of certain behavioural intentions such as brand consideration, purchase intention, choice of brand and purchase behaviour (Priester et al., 2004).

To evaluate visual attention in consumer research there are two metrics commonly used that are time to first fixation (TTFF) and also total fixation duration (TFD), meaning the total duration of all fixations on a specific AOI (Peschel & Orquin, 2013). As bottom-up processes, (meaning attention captured by visual saliency such as colour, contrast, visual clutter and location), are influencing visual attention, visually more salient advertisements and news articles are looked at longer and are more likely to be fixated on first, compared to less visually salient alternatives (Orquin & Loose, 2013). Moreover, higher visual saliency could result in a higher likelihood and it could also retain attention to such item (longer fixation duration) and, therefore, increase preferences (Orquin & Loose, 2013). Or, as other academics state with a slight nuance, visually salient items are more likely to attract fixations and to enter into the items under consideration for choice (van der Laan et al., 2015).

The impact on visual attention suggests that branding does matter in social media marketing (Zhou & Xue, 2021). Moreover, Peker et al., (2021) suggests that familiarity with the brand is an important factor affecting visual attention. Moreover, Zhou & Xue, (2021) suggest that visual fixation frequency improves participants' brand recognition performance and recommends marketers to use effective leading lines embedded in visual design to increase brand repetitions which could lead to more brand recognition. Those results are aligned with the previous findings of Pieters et al., (2002), indicating that attention to different ad elements promotes subsequent memory for advertisement pictorials and brand logos. Nevertheless, and on the contrary, brand familiarity might affect the amount of attention paid to the ad as previous research has shown that the brand area receives less attention when customers are familiar with the brand (Pieters et al., 2002) and they focused rather on other type of information such as promotions or any other information they might consider relevant or even new for them.

The functional posts have better results in fixation count and total fixation duration in the areas where the brand is present, which might suggest a higher level of attention to those areas. The functional products have logos that contrast with the rest of the images and with vivid colours. The Hedonic products have a corporate image in dark colors that are not contrasting enough with the rest of the colors of the posts. It would be highly recommendable to reinforce brand presence in any of the posts, being Functional or Hedonic products.

The last managerial implication would be to bear in mind the importance of crossing the eye tracking metrics to generate new hypothesis to be tested and, moreover, to complement the eye tracking experimental design with other methodologies to get better insights.

Given the lockdown and lack of possibilities to perform in-lab studies, neuroscience methods used to analyse human behaviour and to understand how to capture consumers´ attention, have been transitioned to online formats. In this sense, and although using a webcam eye-tracking might not work as optimum as under in-lab conditions, still it is possible to obtain reliable data to improve user´s attention capture. In fact, this type of online study can be complemented with other techniques such as facial coding that can be done successfully online to address deeper questions on human behaviour (Šola, et al., 2022). Some specific software, such as Noldus, can also analyse heart rate and heart rate variability of the participants without additional hardware and using the same recording. Although it is still in the beginning and with some drawbacks due to its sensitivity to movement, the Photoplethysmography (PPG) technique measures the small changes in colour caused by changes in blood volume under the skin epidermis, determining the subject's heart rate. This additional indicator can be particularly useful to measure arousal for subjects or situations where there is little variation in facial expressions (Noldus, 2019).

7.4. Limitations and further lines of research

This last section delves into the limitations and future lines of research. Moreover, there are aspects not addressed before that need further analysis.

As stood before, there is still scarce research being done on Millennials. This cohort has huge importance due its characteristics and the potential, they are globalized target market.

Furthermore, there is a new generation emerging -the Centennials- with their own characteristics, that might be the heirs of the previous generation.

7.4.1. Limitations of the research

The limitations can be divided into three main categories:

i. Methodology
ii. Types of products
iii. New digital environments

Methodology

Regarding the first limitation and related to the methodology, should be subdivided into two groups. The first one, based on the quantitative study and the second one related to the qualitative.

One possible limitation to be discussed for the *quantitative study* might be the idea to compare this cohort in terms of geography. In the present research, and previously based on the literature, due to technological advances, this cohort seems to be globally homogeneous in attitudes, behaviours and perception of the world around. On one side, asymmetries may lay on the purchasing power of different regions and on the other, the access or not to the latest technological advances.

Another possible limitation to be fulfilled is to extend the sample to a larger number of participants. The structural equation modelling methodology may perform better with a larger sample. Although, some authors found that "a sample size of 100 will usually be sufficient for convergence. A sample of 150 will be sufficient for a convergent and proper solution" (Anderson & Gerbing 1988, pp.170–171).

And the last limitation can be found in the sample selection itself. As it was a convenience sampling, on one side it was the most convenient and less time consuming nor expensive but on the other hand, this type of sample selection may lead to selection bias, or to one that is not representative of all the universe nor for descriptive or casual research (Taherdoost, 2016)

In relation to the qualitative study, the most important limitation is to have the capability to use online eye tracking that can perform through a mobile device (smartphone). By the time the study was carried out, that functionality was not available.

Another point that can reinforce the quality of the data collected is the combination and the use of other modalities commonly used in neuromarketing. As an example, eye tracking methodology is usually combined with facial coding, skin conductance, and/or EEG. Or even, some other modalities such as electromyography or electrocardiogram. Today´s applications made it easy to combine them in only one platform and perform the experiment at the same time. In any case, the criteria to combine such modalities should be the delta or value added that each of them can provide to the research.

Another limitation is the lack of information about the sequence of the path that the gaze takes. This type of functionality might give a deeper insight into how attention is evolving. It is also important to cross this type of information with different metrics to enrich this type of research.

In relation to the time of exposure, it would have been important not to limit the time of exposure as it could biased the results. Although in the experiment being analysed, the time frame selected was *"ad libitum"*, there was a limit of time to move from one post the next one, in case that the viewers do not click to make it quicker. In the instructions, it was clear that once viewed the post, by clicking, the next post will appear. Due to the content of the different posts, the heaviest in terms of text, took viewers in average almost 6 seconds to be visualized. For the whole set of posts (4 in total), the information on the average of attention spent to read each post is of approximately 5.8 seconds. A new experimental design could be performed without limiting the time of viewers´ exposure to the ads. As found by Šola, et al., (2022) in their research on social media, participants spent less than 1.5 seconds reading a post on a page.

Last, but not least, the qualitative study has been performed under each participant´s conditions and although the eye tracking application splits data collection by their level of quality, some participants were discarded due to the lack of quality in their visualizations. In any case, repeating the experiment under laboratory conditions might give homogeneous quality for data collection.

In annex 7.A. there are the Heat maps, Fog maps and Opacity maps for each of the posts been analysed.

i. Types of products and type of messages

In relation to the types of products, this thesis has only analysed two types of products, with brands that are present in several countries, that can be perceived as strong brands. Both products are from food categories, but communication can be extended to other categories such as travels, clothes or any product that can be purchased online.

In relation to the types of messages, the post that has already been analysed -somehow- appeal only to informative (rational) approach or to an emotional approach. That might be a limitation when analysing a complete set of pieces of advertising. The idea of mixing the approach -informative and emotional- together is something that can be research in further opportunities.

Furthermore, this limitation on the type of product and type of message might turn into a future line of research, including other types of products.

Regarding the objectives pursued, there are two broad ones:

I. Create a model to test advertising effectiveness on social networks oriented to highlight attitudinal and emotional variables on Millennials' perceptions

II. The use of innovative techniques to test the proposed model

And those broad objectives can be divided into two groups of objectives – general and specific ones – as follows:

Regarding the general objectives, from a marketing perspective the present thesis tries:

(1) to get closer to the new generations of young people (called Millennials) (Kraft & Weber, 2012);

(2) to understand how companies must shape their messages to reach these new generations (Sweeney, 2006) amid the digital environment; and

(3) to make an alert on the risks for the future of (somehow) unhealthy food (Rubio, 2002).

Related to the specific objectives, this research tries:

(1) to analyses the use of innovative techniques to know in deep how this young generation respond food messages (Küster & Vila, 2013);

(2) to find the critical factors on the election and or preference of healthy food (Story et. al, 2008); and

(3) to promote the use of innovative marketing techniques to properly design food communication (Küster & Vila, 2013; Story et al., 2018).

In accordance with the above explanations, the general objectives are covered in a wider dimension.

In relation to the specific objectives, they are covered to a certain extent although the model itself can be used not only to communicate healthy food but also as a frame of communication for Millennials in social media. Both products selected are well-known by Millennials and although they are in different categories -functional versus emotional- both are considered healthy food.

Nowadays, and more and more, food companies and consumers are interested in healthy food. In the specific case of coffee, it is one of the most commonly consumed beverages worldwide and there is an increasing consensus that consuming coffee can be beneficial to health (Samoggia, et al., 2020).

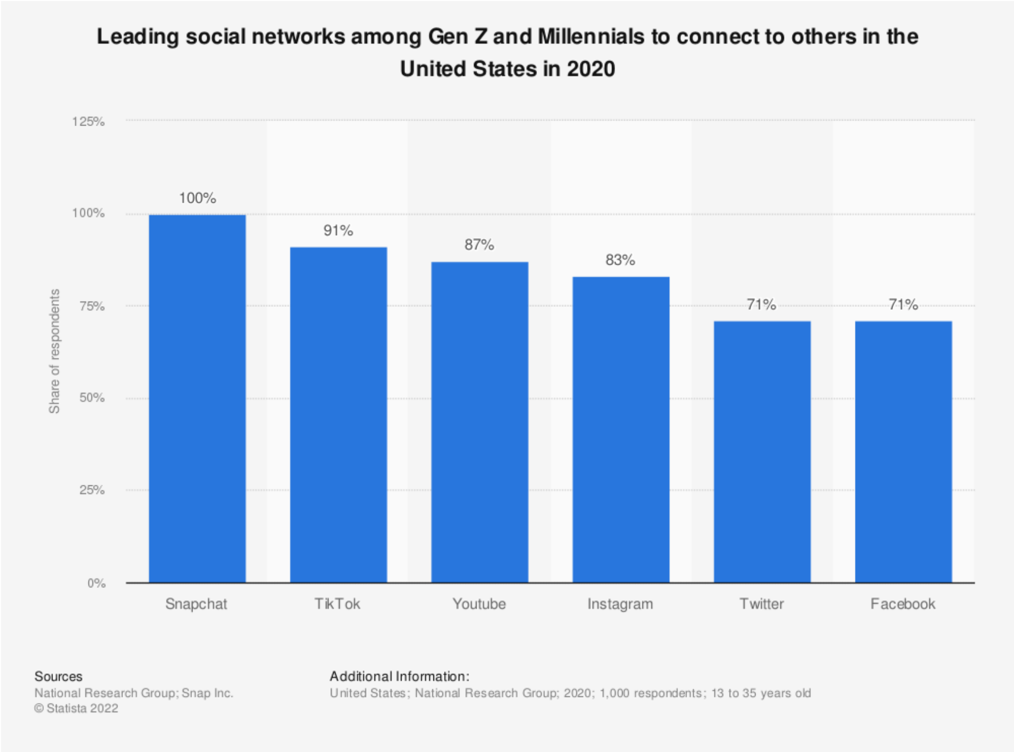
In the case of yoghurt, it is an ancient food, that has been part of the human diet for thousands of years and promoted as healthy food, too. It is source of probiotics that provides a wide range of benefits for health (Fisberg & Machado, 2015). Moreover, yoghurt is viewed as an essential food and an important source of nutrients, clinical evidence suggests that it is involved in weight control and may play a role in reducing the risk of type 2 diabetes (Panahi et al., 2016).

In this sense, delving deeper into how Millennials interact with healthy food, might be a must. What can be a good opportunity to delve in such wide topic, is also a limitation in this specific research since it addresses the issue of healthy food only from the Millennials' perspective in the digital environment.

iii. New digital environment

Due the technological advances, the ranking of most commonly used/visited social networks is changing. By the time, the present thesis is finished, the influence of certain social networks like Tik Tok with an important penetration in certain countries (Chittawarakun & Phimcharoen, 2022), is still to be discovered and deeply researched. Moreover, as stated before, the irruption of a new generation is still under incipient research. In Figure, 7.1, we can see the US most commonly used social networks among Millennials (Generation Y) and Centennials (Generation Z) as from 2020 is shown:

Figure 7.1. the US most commonly used social networks among Millennials and Centennials



Source: Dixon (2022)

However, the digital environment is not only limited to social networks. And marketing strategy and subsequent actions are not only focused on them. The launch of applications based in Artificial Intelligence, the Metaverse, and the cookless future, among others, are trends that are part of such digital environment and will shape the future of marketing.

Moreover, the digital environment is immersed in permanent competition for consumer attention that requires effective communication tactics as consumers are overwhelmed by the online messages and they scan messages rather than read them carefully (Davis et al., 2019).

7.4.2. Future lines of Research

In relation to the future lines of research of aspects that we suggest deepening on, or even, addressing them from a different angle.

The *first suggestion for future lines of research* would be to continue doing research on Millennials and their evolution. Moreover, continuing researching the evolution of Millennials and Centennials. One of the most important lines of future research to be considered is the idea of comparing the following cohort with the next one, Centennials. Although both cohorts are very fond of the digital environment, differences in their behaviours and day-to-day perceptions might be found. Besides, technological changes and the fact that these cohorts are tech savvy, generates then, changes in marketing communication. The line that separates the generations is not linear, nor arbitrary but there will be some characteristics that will make each generation distinctive. Nowadays, still there is a need of research on both generations covering on one side the evolution of Millennials and on the other, the irruption with force of the next generation. A lot is being said form the marketing perspective in blogs, specialized magazines or even prestigious newspapers about all of them but, still there is a need of a solid and accurate approach to them.

The *second suggestion* would be to do research in different countries with local samples. Although the two brands selected can be considered global brands, with presence in more than 60 countries (Durā & Guillén, 2013; Nespresso Corporate Communication, 2016), their marketing efforts are not only global, but they also act locally. Doing research on this topic can lead to truly know the preferences of a cohort meant to be global.

The *third one* would be to research on the impact of transforming the informative narrative into a narrative that generates value to viewers. In this sense, brands like the ones cited in the analysis, have the capacity of taking marketing actions to the next level. In topics such as healthy food, those type of brands have an excellent opportunity to enhance their values by educating their consumers. Especially when communicating about healthy nutrition as they have a social responsibility as part of their value proposition.

On one side, the Millennial generation gives importance to health issues and when selecting food alternatives, they pay attention to nutritional values and they check them and eat accordingly (Okumus, 2021)

On the other hand, past research has shown that there is an emerging correlation between eating disorders, eating attitudes and the impact of social media among Millennials, mostly by comparing their own bodies with the celebrities that often represent the ideal body type (Lenza, 2020).

Moreover, as food production will need to be increased by roughly 70% to feed grown population around the world against the limiting factor of land and water, the big challenge is to focus on producing sustainable food (Patel et al., 2021). The Millennials are very influenced by and concerned for a sustainable environment. They pay attention to ethical issues in their food choices and they are more likely to purchase food items whose packages are environmentally friendly (Okumus, 2021). Hence, from a marketing perspective and as a segment, there is a huge potential for healthy and green products, if addressed correctly.

The concern of Millennials for gaining weight is normal and they are at a higher risk of chronic illnesses as a result of their particular lifestyle, high levels of stress, lack of sleep and unhealthy eating habits (LaRose et al., 2012). In addition, social media and online games affect their sleep patterns and lead to irregular nutrition. Although this, some Millennials that are concerned about their appearance and weight, are more selective about choosing healthier food items. (Shipman, 2020).

Furthermore, the Federal and Drug Administration (FDA) in United States of America has recently proposed and update to the criteria for when foods can be labelled with the nutrient content claim "healthy" on their packaging (FDA, 2022) and stating that more than 80% of people in U.S. aren´t eating enough vegetables, fruit and dairy and instead, they consume too much added sugar, saturated fat and sodium. The FDA is a well-known influential administration aiming to ensure consumers to build a diet consistent with dietary recommendations and whose standards could be followed the by food industry leaders. Brands like the ones being analysed, should follow closer future steps to adapt their marketing strategies to their recommendations.

The *fourth suggestion* would be to take into consideration variables such as as age, gender and nationality, or even in terms of cultural differnces, to make the research even richer from the outcome perspective and managerial implications.

The *fifth suggestion* would be to turn the limitation on the type of product and type of message into a future line of research. In this sense, adding new types of products, such as symbolic ones, might give a wider marketing perspective.

Finally, *the sixth suggestion* would be that the model can be tested with certain variables that will enrich not only the original one from Ducoffe (1995), but this adaptation tested before. In this sense, there were two aspects that are part of the questionnaire but not part of the analysis of chapter 6. Specifically, we are talking about the research subjects´ general opinion on advertising and about brand familiarity. Both variables with their corresponding scales might enrich the model to a certain extent. Specifically, the attitude towards the brand, that as this study suggests, has a positive, strong and highly significant effect on purchase intention and eWOM.

Moreover, the model can have a longer path including variables such as health, mood, ethical concerns, weight control and price, among others, as outcomes predictors.

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ANNEXES

Annex 5.A.

Table 5.A.1. Spearman's Rho correlations between the indicators of each construct

Informativeness

			VI1	VI2	VI3	VI4	VI5
Spearman's Rho	VI1	Correlation coefficient	1.000	.686**	.739**	.643**	.691**
		Sign. (bilateral)	.	.000	.000	.000	.000
		N	312	312	312	312	312
	VI2	Correlation coefficient	.686**	1.000	.701**	,596**	.640**
		Sign. (bilateral)	.000	.	.000	.000	.000
		N	312	312	312	312	312
	VI3	Correlation coefficient	.739**	.701**	1.000	.806**	.781**
		Sign. (bilateral)	.000	.000	.	.000	.000
		N	312	312	312	312	312
	VI4	Correlation coefficient	.643**	.596**	.806**	1.000	.839**
		Sign. (bilateral)	.000	.000	.000	.	.000
		N	312	312	312	312	312
	VI5	Correlation coefficient	.691**	.640**	.781**	.839**	1.000
		Sign. (bilateral)	.000	.000	.000	.000	.
		N	312	312	312	312	312

**. The correlation is significant at the 0.01 level (bilateral).

Credibility

			CR1	CR2
Spearman's Rho	CR1	Correlation coefficient	1.000	.856**
		Sign. (bilateral)	.	.000
		N	312	312
	CR2	Correlation coefficient	.856**	1.000
		Sign. (bilateral)	.000	.
		N	312	312

**. The correlation is significant at the 0.01 level (bilateral).

Personalization

			PR1	PR2	PR3
Spearman's Rho	PR1	Correlation coefficient	1.000	.714**	.582**
		Sign. (bilateral)	.	.000	.000
		N	312	312	312
	PR2	Correlation coefficient	.714**	1.000	.565**
		Sign. (bilateral)	.000	.	.000
		N	312	312	312
	PR3	Correlation coefficient	.582**	.565**	1.000
		Sign. (bilateral)	.000	.000	.
		N	312	312	312

**. The correlation is significant at the 0.01 level (bilateral).

Entertainment

			EN1	EN2	EN3
Spearman's Rho	EN1	Correlation coefficient	1.000	.864**	.628**
		Sign. (bilateral)	.	,000	,000
		N	312	312	312
	EN2	Correlation coefficient	.864**	1.000	.692**
		Sign. (bilateral)	.000	.	,000
		N	312	312	312
	EN3	Correlation coefficient	.628**	.692**	1.000
		Sign. (bilateral)	.000	.000	.
		N	312	312	312

**. The correlation is significant at the 0.01 level (bilateral).

Irritation

			IR1	IR2	IR3	IR4
Spearman's Rho	IR1	Correlation coefficient	1.000	.730**	.567**	.382**
		Sign. (bilateral)	.	.000	.000	.000
		N	312	312	312	312
	IR2	Correlation coefficient	.730**	1.000	.634**	.476**
		Sign. (bilateral)	.000	.	.000	.000
		N	312	312	312	312
	IR3	Correlation coefficient	.567**	.634**	1.000	.682**
		Sign. (bilateral)	.000	.00	.	.000
		N	312	312	312	312
	IR4	Correlation coefficient	.382**	.476**	.682**	1.000
		Sign. (bilateral)	.000	.000	.000	.
		N	312	312	312	312

**. The correlation is significant at the 0.01 level (bilateral).

Attitude towards the ad

			AA1	AA2	AA3	AA4	AA5
Spearman's Rho	AA1	Correlation coefficient	1.000	.792**	.748**	.805**	.789**
		Sign. (bilateral)	.	.000	.000	.000	.000
		N	312	312	312	312	312
	AA2	Correlation coefficient	.792**	1.000	.853**	.880**	.850**
		Sign. (bilateral)	.000	.	.000	.000	.000
		N	312	312	312	312	312
	AA3	Correlation coefficient	.748**	.853**	1.000	.856**	.831**
		Sign. (bilateral)	.000	.000	.	.000	.000
		N	312	312	312	312	312
	AA4	Correlation coefficient	.805**	.880**	.856**	1.000	.884**
		Sign. (bilateral)	.000	.000	.000	.	.000
		N	312	312	312	312	312
	AA5	Correlation coefficient	.789**	.850**	.831**	.884**	1.000
		Sign. (bilateral)	.000	.000	.000	.000	.
		N	312	312	312	312	312

**. The correlation is significant at the 0.01 level (bilateral).

Attitude towards the brand

			AM1	AM2	AM3	AM4	AM5
Spearman's Rho	AM1	Correlation coefficient	1.000	.829**	.855**	.801**	.868**
		Sign. (bilateral)	.	.000	.000	.000	.000
		N	312	312	312	312	312
	AM2	Correlation coefficient	.829**	1.000	.891**	.649**	.781**
		Sign. (bilateral)	.000	.	.000	.000	.000
		N	312	312	312	312	312
	AM3	Correlation coefficient	.855**	.891**	1.000	.698**	.837**
		Sign. (bilateral)	.000	.000	.	.000	.000
		N	312	312	312	312	312
	AM4	Correlation coefficient	.801**	.649**	.698**	1.000	.785**
		Sign. (bilateral)	.000	.000	.000	.	.000
		N	312	312	312	312	312
	AM5	Correlation coefficient	.868**	.781**	.837**	.785**	1.000
		Sign. (bilateral)	.000	.000	.000	.000	.
		N	312	312	312	312	312

**. The correlation is significant at the 0.01 level (bilateral).

Purchase Intention

			IC1	IC2
Spearman's Rho	IC1	Correlation coefficient	1.000	.879**
		Sign. (bilateral)	.	.000
		N	312	312
	IC2	Correlation coefficient	.879**	1.000
		Sign. (bilateral)	.000	.
		N	312	312

**. The correlation is significant at the 0.01 level (bilateral).

eWOM

			WO1	WO2	WO3	WO4
Spearman's Rho	WO1	Correlation coefficient	1.000	.888**	.801**	.754**
		Sign. (bilateral)	.	.000	.000	.000
		N	312	312	312	312
	WO2	Correlation coefficient	.888**	1.000	.806**	.784**
		Sign. (bilateral)	.000	.	.000	.000
		N	312	312	312	312
	WO3	Correlation coefficient	.801**	.806**	1.000	.911**
		Sign. (bilateral)	.000	.000	.	.000
		N	312	312	312	312
	WO4	Correlation coefficient	.754**	.784**	.911**	1.000
		Sign. (bilateral)	.000	.000	.000	.
		N	312	312	312	312

**. The correlation is significant at the 0.01 level (bilateral).

Annex 5.B.

Questionnaire in English version

We invite you to participate in this survey on Advertising in Social Networks oriented to Young people from 18 to 38 years old. It won´t take more than 10 minutes to fill it out. All replies are anonymous. All data collected will be treat only for the research. Thank you for your help!

Informed consent: filling out this survey is voluntary and anonymous and all data collect will be treated in a confidential way and only be used with the scientific aim mention above. Please, mark the following option if you agree in participating. Thank you in advance,

☐ I accept participating in this anonymous and voluntary survey. I hereby authorize that data collected can be used to the purpose of the present research that has been explained in the introduction.

Please, tell us how old are you?

We would like to know your opinions about advertising in general. Please, indicate from 1 to 7 your degree of agreement or disagreement with the following sentences, being 1 completely disagree and 7 completely agree

1=completely disagree 7=completely agree

	1	2	3	4	5	6	7
Advertising in general is good							
I like advertising in general							
I have a favourable opinion on advertising in social networks							

We would like to know your opinions about advertising in social networks. Please, indicate from 1 to 7 your degree of agreement or disagreement with the following sentences, being 1 completely disagree and 7 completely agree

	1	2	3	4	5	6	7
Advertising in social networks in general is good							
In general, I like advertising in social networks							
I have a favourable opinion on advertising in social networks							

What is your opinion about the following post? Please, indicate from 1 to 7 your degree of agreement or disagreement with the following sentences, being 1 completely disagree and 7 completely agree

	1	2	3	4	5	6	7
I do trust in the content of this message in social media							
The content of this message in social media is credible							
This post in social media is annoying							
This post in social media is irritating							
This post in social media is deceptive							
This post in social media is confusing							
This post in social media is enjoyable							
This post in social media is entertaining							
Receiving advertisement in social media is pleasant							

This post in social media is a good source of information of products and services							
This post in social media offers me relevant information of products/services							
This post in social media is a good source of updated product/services information							
This post in social media makes accessible products or services information							
This post in social media is a good source of updated product/services information							
This post in social media shows me personalized messages.							
This post in social media is adjusted to my preferences and interests							
In general, social media posts are showing personalized messages.							
This post in social media is good.							
I like this post in social media							
This post in social media is interesting							
I have a favourable opinion of this post in social media							
This post in social media is pleasant.							

In relation to the advertised brand, please, indicate from 1 to 7 your degree of agreement or disagreement with the following sentences, being 1 completely disagree and 7 completely agree

	1	2	3	4	5	6	7
It´s good							
I like it							
It´s nice							
It´s prestigious							
I´ve got a favourable opinion							
I might buy this product							
This product is worth buying it							

Do you have the intention to recommend the advertised vendor? (being 1 completely disagree and 7 completely agree)

	1	2	3	4	5	6	7
I tell my friends about this vendor							
I want my friends to buy from this vendor							
I say positive things about this vendor to other people							
I recommend this vendor to someone that seeks for advice							

Does the Brand sound familiar for you? (being 1 completely disagree and 7 completely agree)

	1	2	3	4	5	6	7
I had no information about the brand							
I had not much information about the brand							
I had no previous experience with this brand							
I have a lot of experience with the brand							

Are you a social media user?

- [ ] YES
- [ ] NO

Which social media networks do you use?

	YES	NO
Facebook		
Youtube		
Whatsapp		
Facebook Messenger		
WeChat		
Instagram		
TikTok		
Twitter		
LinkedIn		
Snapchat		
Pinterest		
Others		

What is the frequency you connect to social networks?

	None
	Less than 1 hour a day
	From 1 to 2 hours a day
	More than 2 hours but less than 5 hours a day
	5 or more hours a day

Gender (how you identify yourself)

	Woman
	Man
	Prefer not to tell

Please tell us your education level

	Without studies
	Primary studies
	High School
	University
	Master/PhD

Please tell us your occupation

	Student
	Work on my own
	Employee
	Unemployed
	Retired
	Others

Please give us an estimate of your average salary

	Monthly incomes up to 499 euros (590 dollars).
	Monthly incomes up to 500 to 999 euros (600 to 1200 dollars).
	Monthly incomes up to 1000 to 1499 euros (1200 to 1800 dollars)
	Monthly incomes up to 1500 to 1999 euros (1800 to 2400 dollars)
	Monthly incomes up to 2000 to 2499 euros (2400 to 3000 dollars)
	Monthly incomes up to 2500 a 2999 euros (3000 to 3600 dollars)

Please tell us your citizenship

	Spanish
	Portuguese
	Other (please indicate)

Thanks for participating! Your help is very welcome!!!

Annex 6.A.

Table 6.A.1.

Cross loads of the indicators (Hedonic Informative questionnaire)

	AA	AM	CR	EN	IN	IC	IR	PE	WO
AA1	0,89	0,47	0,62	0,53	0,78	0,45	-0,23	0,65	0,42
AA2	0,94	0,41	0,56	0,64	0,73	0,38	-0,24	0,63	0,41
AA3	0,92	0,39	0,51	0,63	0,69	0,39	-0,20	0,62	0,44
AA4	0,95	0,46	0,56	0,59	0,75	0,44	-0,29	0,66	0,45
AA5	0,94	0,45	0,54	0,63	0,72	0,43	-0,28	0,61	0,47
AM1	0,43	0,95	0,54	0,18	0,46	0,79	-0,16	0,35	0,58
AM2	0,48	0,91	0,44	0,28	0,44	0,85	-0,15	0,37	0,65
AM3	0,48	0,95	0,52	0,30	0,48	0,84	-0,14	0,37	0,64
AM4	0,34	0,87	0,48	0,09	0,38	0,67	-0,12	0,28	0,47
AM5	0,42	0,93	0,54	0,20	0,45	0,81	-0,16	0,33	0,59
CR1	0,59	0,55	0,97	0,36	0,64	0,48	-0,22	0,43	0,37
CR2	0,56	0,51	0,96	0,26	0,59	0,39	-0,21	0,37	0,32
EN1	0,51	0,16	0,24	0,91	0,40	0,23	-0,01	0,42	0,31
EN2	0,63	0,21	0,31	0,95	0,46	0,28	-0,05	0,50	0,36
EN3	0,61	0,25	0,31	0,86	0,47	0,29	0,00	0,46	0,39
IC1	0,42	0,81	0,40	0,26	0,41	0,97	-0,14	0,30	0,63
IC2	0,45	0,86	0,47	0,30	0,46	0,97	-0,17	0,35	0,68
IR1	-0,25	-0,10	-0,11	-0,08	-0,11	-0,13	0,85	0,02	-0,19
IR2	-0,26	-0,16	-0,16	-0,05	-0,14	-0,17	0,89	0,02	-0,14
IR3	-0,20	-0,16	-0,29	0,04	-0,15	-0,13	0,84	-0,02	-0,13
IR4	-0,14	-0,09	-0,22	0,07	-0,14	-0,06	0,67	-0,06	-0,08
PR1	0,58	0,31	0,33	0,47	0,58	0,28	0,05	0,89	0,32
PR2	0,68	0,33	0,37	0,53	0,67	0,33	-0,08	0,90	0,36
PR3	0,49	0,34	0,40	0,29	0,52	0,26	0,03	0,80	0,25
VI1	0,72	0,44	0,59	0,46	0,86	0,39	-0,15	0,53	0,38
VI2	0,70	0,36	0,45	0,54	0,83	0,39	-0,10	0,65	0,38
VI3	0,72	0,44	0,60	0,43	0,92	0,42	-0,18	0,59	0,39
VI4	0,64	0,45	0,60	0,31	0,88	0,38	-0,11	0,62	0,33
VI5	0,70	0,43	0,58	0,42	0,90	0,41	-0,16	0,64	0,37
WO1	0,38	0,54	0,29	0,40	0,32	0,58	-0,11	0,31	0,92
WO2	0,42	0,51	0,31	0,41	0,38	0,57	-0,14	0,34	0,92
WO3	0,47	0,64	0,36	0,34	0,41	0,67	-0,17	0,35	0,95
WO4	0,48	0,66	0,37	0,34	0,45	0,69	-0,21	0,36	0,94

Note: AA=Attitude towards the ad, AM=Attitude towards the bran, CR=Credibility, EN=Entertainment, IN=Informativeness, IC=Purchase Intention, IR=Irritability, PE=Personalization, WO=eWom

Table 6.A.2.

Cross loads of the indicators (Hedonic Emotional questionnaire)

	AA	AM	CR	EN	IN	IC	IR	PE	WO
AA1	0,92	0,55	0,77	0,63	0,70	0,47	-0,17	0,72	0,48
AA2	0,95	0,50	0,66	0,76	0,65	0,46	-0,15	0,68	0,51
AA3	0,94	0,50	0,69	0,75	0,68	0,47	-0,16	0,69	0,55
AA4	0,94	0,50	0,66	0,71	0,62	0,47	-0,18	0,66	0,53
AA5	0,95	0,50	0,67	0,73	0,62	0,48	-0,16	0,64	0,53
AM1	0,51	0,95	0,52	0,31	0,43	0,79	-0,13	0,43	0,58
AM2	0,51	0,91	0,46	0,41	0,45	0,85	-0,09	0,43	0,65
AM3	0,53	0,95	0,48	0,39	0,47	0,84	-0,08	0,44	0,64
AM4	0,46	0,87	0,49	0,26	0,35	0,67	-0,16	0,34	0,46
AM5	0,49	0,93	0,51	0,31	0,43	0,80	-0,16	0,39	0,59
CR1	0,73	0,55	0,98	0,55	0,55	0,48	-0,16	0,54	0,44
CR2	0,71	0,49	0,98	0,49	0,52	0,43	-0,18	0,53	0,40
EN1	0,71	0,33	0,49	0,95	0,55	0,36	0,09	0,60	0,45
EN2	0,74	0,38	0,54	0,95	0,62	0,41	-0,01	0,62	0,50
EN3	0,66	0,32	0,45	0,88	0,58	0,35	-0,01	0,59	0,47
IC1	0,44	0,80	0,39	0,36	0,40	0,97	-0,09	0,35	0,63
IC2	0,53	0,86	0,51	0,42	0,47	0,97	-0,14	0,43	0,68
IR1	-0,14	-0,13	-0,09	0,00	0,04	-0,13	0,88	0,04	-0,16
IR2	-0,21	-0,13	-0,17	-0,04	-0,01	-0,13	0,95	0,02	-0,14
IR3	-0,10	-0,10	-0,17	0,10	0,08	-0,08	0,83	0,06	-0,02
IR4	-0,08	-0,06	-0,20	0,12	0,11	-0,05	0,79	0,09	0,04
PR1	0,60	0,38	0,44	0,58	0,75	0,33	0,09	0,90	0,38
PR2	0,73	0,42	0,52	0,66	0,72	0,41	-0,01	0,91	0,49
PR3	0,57	0,38	0,50	0,48	0,63	0,33	0,06	0,86	0,41
VI2	0,67	0,43	0,46	0,65	0,91	0,44	0,10	0,80	0,49
VI3	0,62	0,41	0,51	0,55	0,95	0,40	0,07	0,71	0,45
VI4	0,65	0,42	0,53	0,56	0,95	0,41	0,04	0,73	0,44
VI5	0,66	0,46	0,53	0,56	0,93	0,43	-0,02	0,75	0,47
WO1	0,48	0,54	0,36	0,50	0,42	0,58	-0,08	0,44	0,92
WO2	0,48	0,51	0,35	0,48	0,46	0,57	-0,05	0,44	0,92
WO3	0,55	0,64	0,43	0,48	0,47	0,67	-0,14	0,46	0,95
WO4	0,55	0,66	0,44	0,45	0,50	0,69	-0,12	0,47	0,93
VI1	0,65	0,44	0,54	0,62	0,92	0,43	0,01	0,68	0,48

Table 6.A.3.

Cross loads of the indicators (Functional Informative questionnaire)

	AA	AM	CR	EN	IN	IC	IR	PE	WO
AA1	0,92	0,46	0,66	0,64	0,81	0,41	-0,28	0,69	0,46
AA2	0,95	0,46	0,62	0,72	0,79	0,46	-0,23	0,69	0,53
AA3	0,94	0,43	0,60	0,74	0,80	0,42	-0,25	0,70	0,51
AA4	0,96	0,45	0,66	0,70	0,83	0,43	-0,25	0,68	0,47
AA5	0,95	0,45	0,60	0,69	0,80	0,41	-0,29	0,65	0,48
AM1	0,45	0,95	0,42	0,29	0,42	0,77	-0,13	0,38	0,52
AM2	0,49	0,93	0,38	0,35	0,41	0,84	-0,14	0,34	0,59
AM3	0,47	0,94	0,35	0,35	0,43	0,80	-0,13	0,40	0,58
AM4	0,36	0,83	0,34	0,16	0,36	0,65	-0,04	0,32	0,40
AM5	0,41	0,93	0,35	0,26	0,35	0,81	-0,15	0,31	0,55
CR1	0,66	0,38	0,98	0,49	0,65	0,32	-0,11	0,50	0,37
CR2	0,64	0,41	0,98	0,44	0,65	0,34	-0,15	0,47	0,37
EN1	0,65	0,25	0,42	0,92	0,56	0,25	-0,02	0,54	0,40
EN2	0,74	0,30	0,47	0,95	0,66	0,28	-0,13	0,62	0,48
EN3	0,64	0,31	0,41	0,87	0,58	0,27	-0,01	0,52	0,46
IC1	0,41	0,79	0,27	0,27	0,30	0,96	-0,13	0,27	0,59
IC2	0,46	0,84	0,38	0,29	0,41	0,97	-0,13	0,34	0,63
IR1	-0,23	-0,08	-0,01	-0,08	-0,19	-0,11	0,85	0,00	-0,04
IR2	-0,28	-0,11	-0,07	-0,09	-0,23	-0,10	0,90	-0,07	-0,06
IR3	-0,21	-0,15	-0,23	0,01	-0,15	-0,13	0,82	0,00	-0,06
IR4	-0,18	-0,10	-0,17	-0,03	-0,17	-0,10	0,76	-0,02	-0,02
PR1	0,61	0,30	0,46	0,52	0,70	0,25	-0,03	0,90	0,40
PR2	0,71	0,32	0,45	0,65	0,71	0,31	-0,05	0,90	0,43
PR3	0,51	0,37	0,37	0,37	0,54	0,25	0,00	0,78	0,26
VI2	0,78	0,37	0,54	0,70	0,86	0,40	-0,16	0,72	0,45
VI3	0,80	0,35	0,61	0,61	0,94	0,28	-0,19	0,68	0,38
VI4	0,74	0,42	0,61	0,49	0,91	0,34	-0,21	0,69	0,37
VI5	0,79	0,43	0,63	0,58	0,91	0,34	-0,22	0,71	0,38
WO1	0,49	0,49	0,31	0,49	0,40	0,51	-0,05	0,40	0,92
WO2	0,49	0,53	0,37	0,49	0,42	0,58	-0,04	0,40	0,93
WO3	0,50	0,54	0,36	0,45	0,41	0,59	-0,07	0,41	0,94
WO4	0,44	0,58	0,33	0,37	0,38	0,64	-0,04	0,39	0,91
VI1	0,79	0,40	0,63	0,61	0,94	0,36	-0,25	0,67	0,40

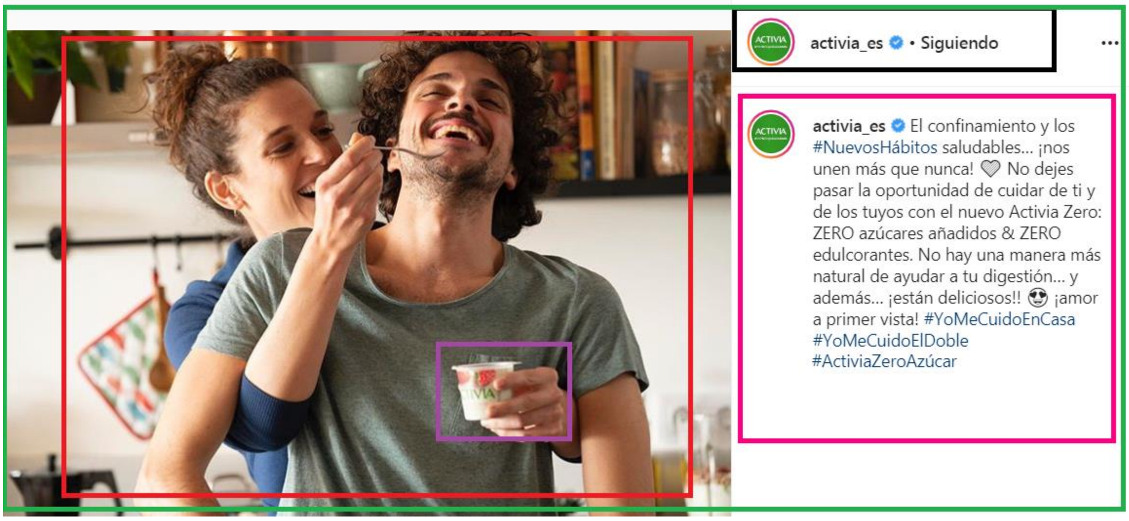
Table 6.A.4.

Cross loads of the indicators (Functional Emotional questionnaire)

	AA	AM	CR	EN	IN	IC	IR	PE	WO
AA1	0,90	0,46	0,68	0,69	0,77	0,37	-0,12	0,74	0,44
AA2	0,95	0,48	0,60	0,82	0,78	0,43	-0,18	0,73	0,48
AA3	0,96	0,50	0,58	0,82	0,79	0,48	-0,17	0,77	0,51
AA4	0,96	0,49	0,61	0,77	0,79	0,44	-0,17	0,74	0,47
AA5	0,95	0,48	0,60	0,77	0,74	0,42	-0,18	0,70	0,47
AM1	0,46	0,94	0,57	0,36	0,53	0,77	-0,08	0,44	0,52
AM2	0,53	0,93	0,50	0,44	0,55	0,84	-0,11	0,50	0,59
AM3	0,51	0,94	0,47	0,42	0,53	0,80	-0,11	0,45	0,58
AM4	0,36	0,83	0,46	0,22	0,44	0,65	0,06	0,33	0,40
AM5	0,45	0,93	0,48	0,33	0,46	0,81	-0,11	0,38	0,55
CR1	0,62	0,52	0,98	0,47	0,70	0,40	-0,16	0,55	0,37
CR2	0,65	0,53	0,98	0,50	0,72	0,39	-0,15	0,56	0,40
EN1	0,74	0,36	0,45	0,95	0,61	0,33	0,00	0,63	0,40
EN2	0,80	0,40	0,49	0,96	0,66	0,37	-0,06	0,68	0,44
EN3	0,77	0,35	0,47	0,91	0,66	0,33	-0,04	0,70	0,46
IC1	0,41	0,79	0,34	0,34	0,43	0,96	-0,11	0,37	0,59
IC2	0,46	0,84	0,44	0,37	0,51	0,97	-0,07	0,42	0,63
IR1	-0,17	0,01	-0,04	-0,08	-0,06	-0,07	0,87	0,03	-0,04
IR2	-0,18	-0,07	-0,11	-0,06	-0,10	-0,07	0,92	-0,03	-0,05
IR3	-0,15	-0,14	-0,25	-0,01	-0,14	-0,11	0,86	0,00	-0,07
IR4	-0,07	-0,12	-0,20	0,10	-0,06	-0,09	0,77	0,04	-0,04
PR1	0,73	0,43	0,52	0,67	0,76	0,39	0,01	0,94	0,49
PR2	0,76	0,42	0,48	0,73	0,76	0,42	0,01	0,92	0,49
PR3	0,57	0,38	0,52	0,46	0,60	0,26	-0,01	0,79	0,25
VI2	0,77	0,45	0,59	0,71	0,90	0,45	-0,05	0,77	0,49
VI3	0,76	0,53	0,69	0,63	0,95	0,48	-0,11	0,74	0,49
VI4	0,71	0,52	0,67	0,56	0,93	0,45	-0,07	0,75	0,46
VI5	0,78	0,54	0,71	0,60	0,94	0,48	-0,12	0,79	0,49
WO1	0,47	0,49	0,32	0,46	0,47	0,51	-0,01	0,45	0,92
WO2	0,49	0,53	0,36	0,46	0,48	0,58	-0,01	0,47	0,93
WO3	0,48	0,54	0,39	0,44	0,49	0,59	-0,10	0,45	0,94
WO4	0,42	0,58	0,37	0,36	0,46	0,64	-0,08	0,38	0,91
VI1	0,78	0,49	0,70	0,66	0,92	0,42	-0,14	0,69	0,47

Annex 6.B.

Figure 6.B.1. Areas of Interest



Green: full body of the post

Red: picture in the body of the post

Black: header of the post

Pink: text in the body of the post

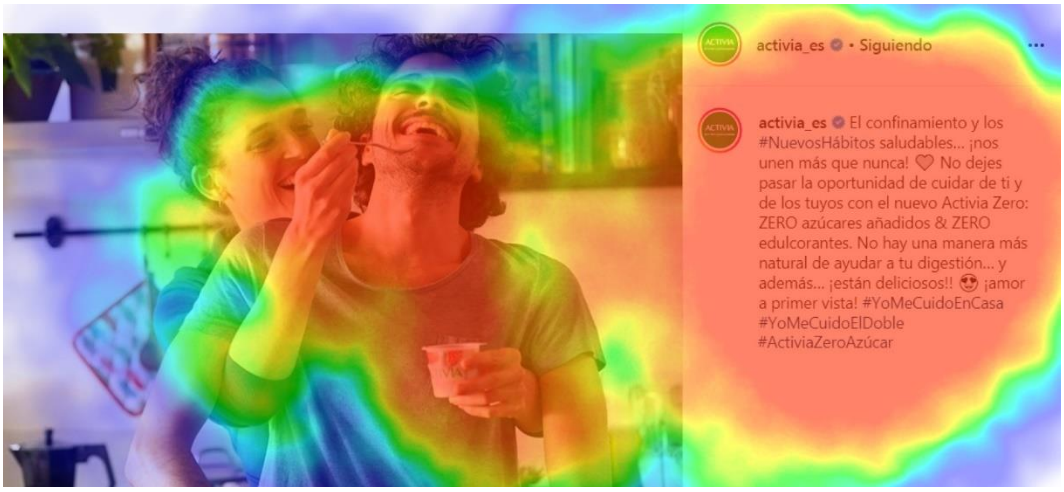
Violet: Brand in the body of the post

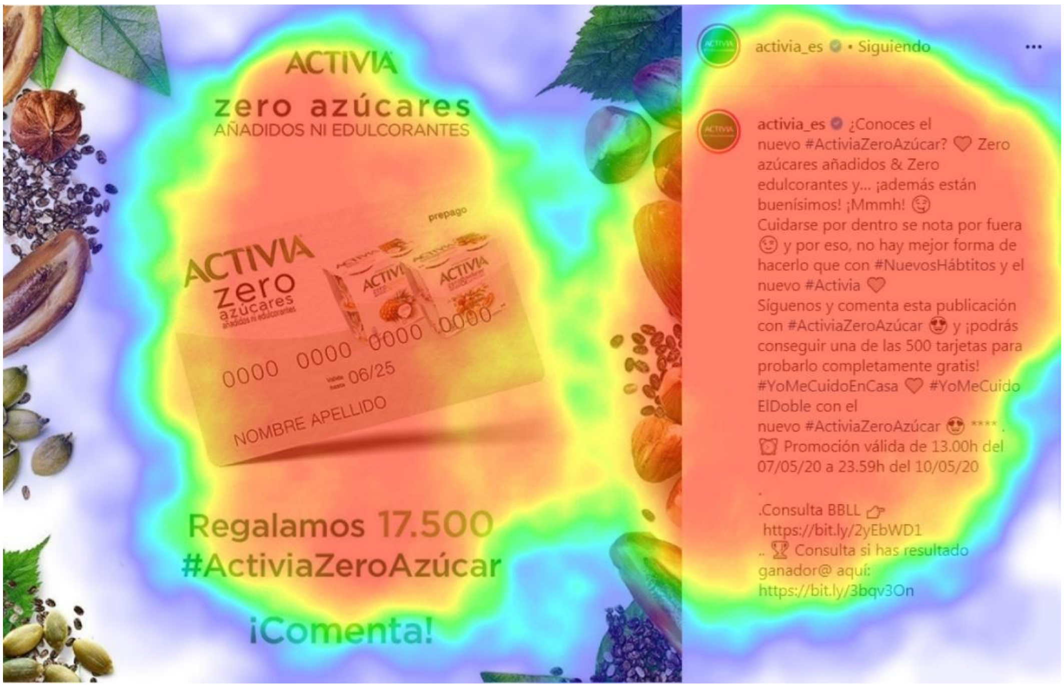
Note: all areas were delimited by hand, so we can state that they are approximate. For this research purposes, differences are not supposed to be significant.

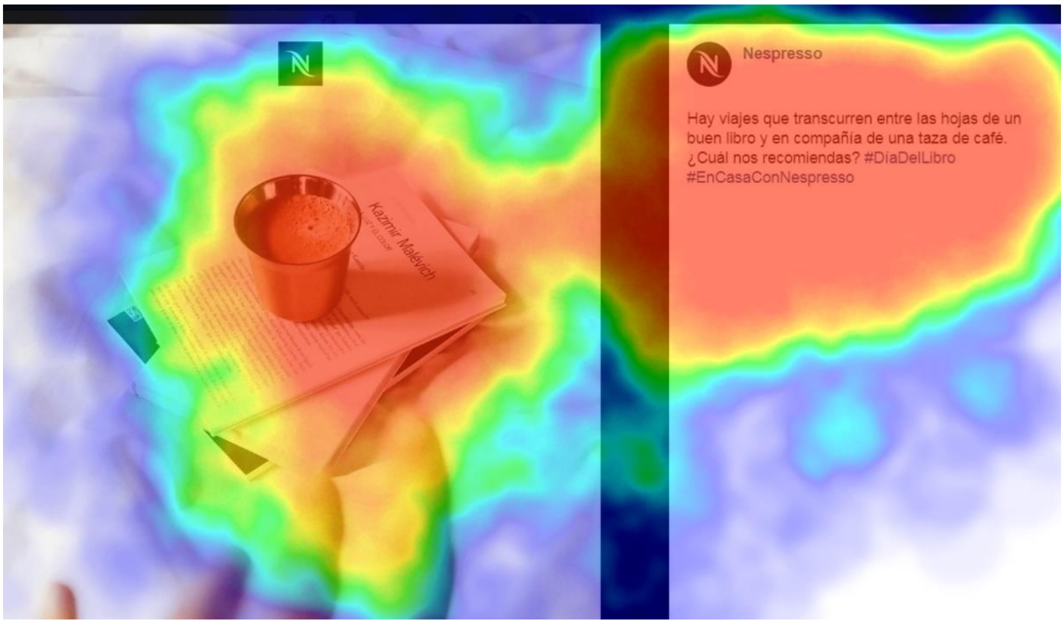
Annex 7.A.

All maps have been done by aggregating data from valid views after quality filter.

Figures 7.A.1. Heat Maps

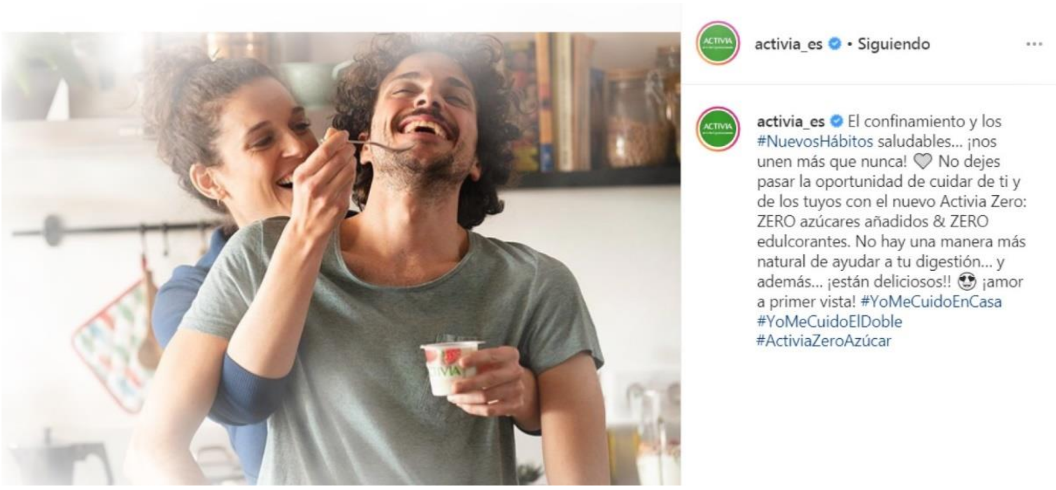


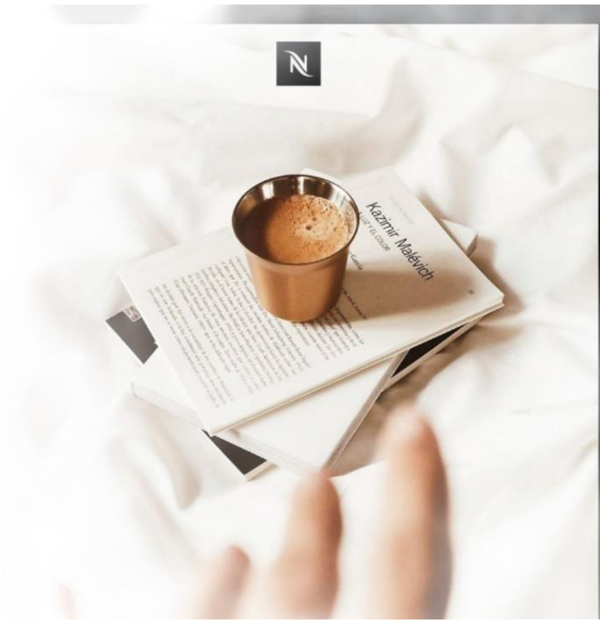



Nespresso
Hay viajes que transcurren entre las hojas de un buen libro y en compañía de una taza de café. ¿Cuál nos recomiendas? #DíaDelLibro #EnCasaConNespresso
Kazimir Malévich


Nespresso
¡Di hola al nuevo Asistente Virtual de Nespresso! En Nespresso seguimos cerca de ti, por eso hemos creado esta herramienta de Messenger para poder ayudarte las 24 horas del día. Resuelve tus dudas y consultas con un solo clic: m.me/nespresso.assistant

Figures 7.A.2. Fog Maps





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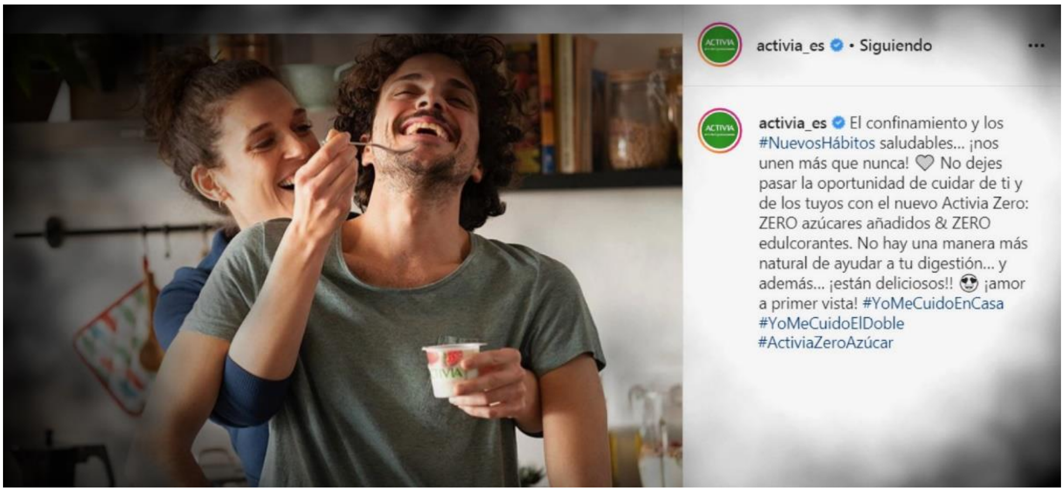
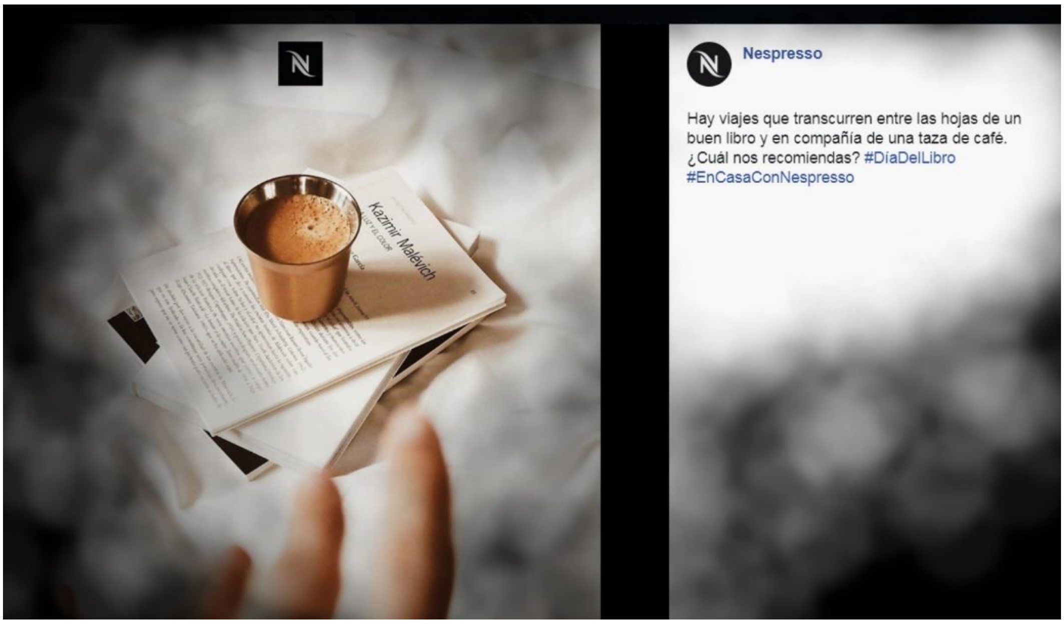
Figures 7.A.3. Opacity Maps




Kazimir Malévich
Nespresso
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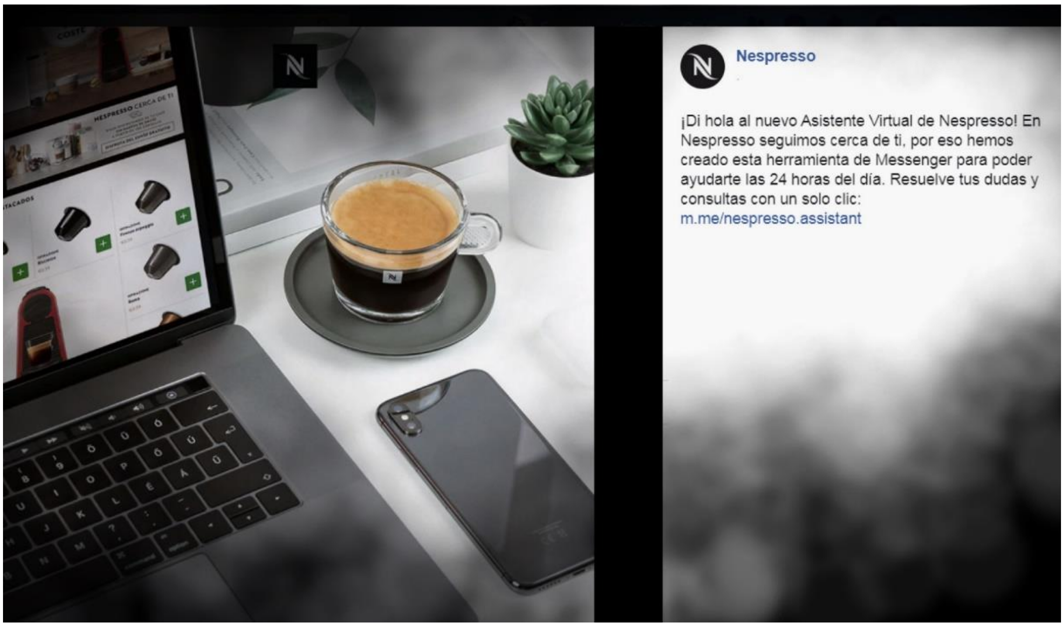
NESPRESSO CERCA DE TI
Nespresso
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