Pedro Miguel Silva Fecha

The Return of the Investment of the Digital Channels in the Pharmaceutical Industry

Master Thesis in Marketing, supervised by Professor Arnaldo Coelho and Mr. Paulo Duarte, presented at the Economics Faculty of the University of Coimbra

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UNIVERSIDADE DE COIMBRA

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The conquer of personal and professional challenges are intrinsic attributes to the ones that strives for their goals and try to positivelty impact our world. Be ambitious, stay commited and be a leader!

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Abstract

Healthcare trends are being reshaped, patients are becoming more independent concerning their own health and there is a dissemination in the information allied to health products or treatments. During the last years there was an increment on the investment in digital channels by the pharmaceutical industry. Digital is now taking it to the next level (ATKearney, 2015).

The problem faced by many companies is how to evaluate whether their investment is profitable and whether they are communicating and catching consumers' attention efficiently.

Based on a sample of 186 sample size of healthcare costumers from a structured and revised questionnaire from more than 15 countries spread from 4 continents, it was possible to establish a correlation among the antecedents (informativeness, risk acceptance and positive attitudes toward advertising) and consequents (loyalty, WOM, purchase intention and engagement) of customer's attitudes towards email marketing.

This study was originally based in Brackett & Carr (2001) and Ducoffe's (1996) models and adapted to the this industry needs.

Multiple linear regression, as well as the factor analysis and the Student's t-test were used to test our study variables and to formulate our regression in order to assess the best results.

The main results of this study encourages the implementation of new and efficient strategies by marketers so that they start to change the consumer's attitudes towards digital channels such as email marketing and also to perform further researches into the digital channels. Also, the results reinforce the importance of establishing long term relationships with consumers once they will have more favorable antecedents of attitudes towards digital channels.

Key words: Pharmaceutical Industry; Digital Marketing; Customer Relationship; Digital Investment; Attitudes towards Email Marketing

Resumo

As tendências do mercado da saúde estão a ser reestruturadas, os pacientes estão a tornar-se cada vez mais independentes no que diz respeito à sua saúde e há uma aposta na disseminação de informação relativa a produtos de saúde e tratamentos. Durante os últimos anos, houve um incremento do investimento nos canais digitais por parte da indústria farmacêutica e assiste-se, atualmente, a uma nova era digital (ATKearney, 2015).

Hoje em dia, o problema enfrentado pela maioria das empresas é avaliar se o seu investimento é rentável e se a sua comunicação está a atrair a atenção dos consumidores de forma eficiente.

Com base numa amostra de 186 participantes de mais de 15 países espalhados pelos 4 continentes, foi possível estabelecer uma correlação entre os antecedentes (informatividade, aceitação do risco e atitudes positivas em relação à publicidade) e os consequentes (lealdade, WOM, intenção de compra e engagamento) das atitudes dos clientes em relação ao email marketing.

Este estudo foi baseado nos modelos de Brackett & Carr (2001) e Ducoffe (1996) e adaptado às necessidades desta indústria em particular.

A regressão linear múltipla, a análise fatorial e o teste T de Student foram utilizados para analisar as variáveis de estudo e formular uma regressão para avaliar os resultados obtidos.

Os resultados deste estudo encorajam a implementação de novas estratégias mais eficientes e capazes de melhorar as atitudes do consumidores em relação aos canais digitais, (como o email marketing) mas também a realização de estudos sobre canais digitais. Além disso, os resultados reforçam a importância de estabelecer relações a longo prazo com os consumidores, uma vez que os consumidores de longa data têm antecedentes mais favoráveis em relação aos canais digitais.

Palavras-Chave: Indústria Farmacêutica; Marketing Digital; Relação com Consumidor; Investimento Digital; Atitudes sobre o Email Marketing

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1. Introduction

1.1. Contextualization

We are currently living in a highly competitive world where companies must create their own advantage to get customers' attention, since without them there is no business. The pharmaceutical industry is no exception.

In the past, this business was significantly different from what people are used to today. There were several small and local companies that used to produce one or two types of medicines and managed to be self-sustainable. Due to the technological growth and the need to produce more, these small and local companies started to merge, leading to the development of bigger and better pharmaceutical companies, as we know them nowadays (Malerba and Orsenigo, 2015).

Looking back on the last decades, the evolution of this industry is outstanding. Industrialization and technological development allowed for emerging new start-ups or even bigger multinational firms. At the same time, the generic market was born which gave more people access to medicines and also increased the competition, this way increasing the industry's competition (Malerba and Orsenigo, 2015) .

This was a big step towards the way that pharmaceutical industry business was used to work (Ehrhardt, 2016). This is the reason why until that very moment there was neither a need for globalization nor competition.

Nowadays pharmaceutical industries are facing new problems. The competition has increased among companies as they must create more innovative strategies to keep their customers loyalty. When taking an overall look at digital approaches of pharmaceutical companies one notices a lack of digital interaction in this industry, compared to others that already implemented structured and effective digital strategies (Gandhi, Khanna, & Ramaswamy, 2016; Parekh, Kapupara, & Shah, 2016). Several different industries are adapting faster and faster to such digital movement, because consumers are more technology-friendly (Kaltenbach, Görlitz, and Herzig, 2014).

Two main factors are allied to this shift. On the one hand, there are the economic influences, due to the market progress, expired patents (directly proportional to the exponential growth of the generic market) (Ehrhardt, 2016). On the other hand, there is as customer paradigm shift. Nowadays customers have different needs making the approach more digital than ever.

According to recent data from *StartUp Health*, the digital health investments reached $6.5 billion in the third quarter of 2016, a record investment compared to the $4.8 billion and $5.4.5 billion (previous record) in the same period during 2015 and 2014, respectively[1].

Some pharmaceutical companies are one step ahead concerning the digital world. Pfizer, for example, is highly present in social network platforms, Johnson and Johnson was one of the first companies to create a YouTube channel, even Quantum Pharmaceuticals started promoting e-shopping for special medicines (Parekh, Kapupara, and Shah, 2016).

When taking a deeper look into the pharmaceutical industry, there is a big split when it comes to communication. The OTC (over-the-counter) market[2][3], including nonprescription medicines as well as cosmetics, where there is a flexible regulation to get closer to the customer. Another important market is Ethics, which includes all prescription products, where straight regulation prohibits direct communication with the customer. As a result of this separation, pharmaceutical companies are striving to create new and efficient approaches to keep customers attention.

This digital contact that these and other companies are creating with their customers is crucial for a healthy and long-term relationship with them. The big question is what the impact of this new digital attitude is and what is the return of such big investment?

A recent study, carried by Forrester Research[4] about consumer's attitudes towards email marketing, found that some negative attitudes are dropping out, even though that there are

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[1] StartUp Health Insights' report on Digital Health Funding Rankings (Q3 2016) (Startup Health, 2016)
[2] *Introduction to Nonprescription Products* Report, provided by FDA (U.S. Food and Drugs Administration) (Christl & Ph, n.d.)
[3] World Self-medication Industry is a global organization that promotes better health through responsible self-medication. *Advertising of nonprescription medicines to the public* Report (World Self-medication Industry, 2008)
[4] Forrester is one of the most influential research and advisory companies in the world (Forrester Research, 2017)

several problems to solve (Forrester Research, 2017). Other problem that they found out was the lack of engagement regarding to the subscription of these emails campaigns.

As an attitude is a learned predisposition to a respond in a consistently positive or negative way (Lutz, 1985), several authors studied the impact of the antecedents the consumer attitudes in order to see how does it influences the attitudes towards email marketing – like for example the Ducoffe's model (Ducoffe, 1996), that correlates the entertainment, the informativeness and the irritation with the attitudes towards email marketing and the Brackett and Carr's model (Brackett & Carr, 2001), that associates the entertainment, the informativeness, the irritation and the credibility (Noprisson et al., 2016).

As little is known about the impact of the digital channels, in this case about email marketing, in the pharmaceutical industry and what the benefits of creating and developing this digital channels are, we will perform an evaluation through the consumer attitudes towards email marketing in the pharmaceutical industry. Therefore, the purpose of this study is to understand and correlate consumers' attitudes toward email marketing in pharmaceutical industry and also to understand consumers' perceptions about email marketing in this industry.

1.2. Theme Relevancy

Today's world is very digital, where everything is connected. The pharmaceutical industry is no exception. Even thought that are a lot of industries highly capable of interacting digitally with their customers, the pharmaceutical industry still has a lot of room to improve.

The importance of the modernization is known in this aforementioned industry not only because of the deep connections it provides between the pharmaceutical sector and its customers. But also a great understanding of patients' needs and the imminent necessity of improvement.

As the industry is facing all these challenges, it is a must to understand how patients and customers react to this digital implementation. Reason why the return of the investment done on the various digital channels becomes relevant.

1.3. Stated Problem

According to an internet search made by the latest articles and consulting agencies' reports, it was noticed that so far there is low investment how effective are their digital campaigns. In particular email marketing campaigns, and what is the customer attitude towards this new approach model.

Conferring to that search, pharmaceutical industries are putting more and more effort in digital campaigns. They are trying to communicate with their patients/customers. However there were few metric or studies skilled to evaluate the return of the investments they were doing.

This study aims to clarify the determinants of consumers' attitudes towards email marketing and how impacts the pharmaceutical industry

This study was planned to be as broad and global as possible due to the lack of information available. As well as to contribute to any further studies through the generation of more data and information.

1.4. Purpose of Study

The purpose of this thesis evaluate and the consumers attitudes towards email marketing and its impacts on pharmaceutical industry. It will also generate and evaluate new data regarding the digital interaction between pharmaceutical industries and consumers, understand the impact of this channel approach and rate and comprehend the consumer's attitudes towards pharmaceutical advertising and email marketing in this industry.

Even thought that there is some literature about consumers' attitudes towards email marketing, few information about the consumers' attitudes towards pharmaceutical email marketing was yet generated.

In order to carry on this study, a survey was shared online through different social network's users in all around the world.

1.5. Study's Structure

This thesis is divided in six main chapters. The first contains a brief introduction and contextualization of the theme, presenting also the relevancy of this study as well as the purpose.

The second chapter covers the literature review, with all theoretical support embracing this study, including the new challenges the industry is facing, focusing on digital challenges. As well as consumers attitudes towards advertising and email marketing, along with all the inherent concepts.

In the third chapter the conceptual framework is presented. Structured according to the literature review and the new trends. The formulation of the hypothesis and the used metrics for the assessment of the study will also be referred to in this section.

The fourth chapter is devoted to the methodology used, including the questionnaire used, the sample and the population of the study. It also includes the strategy used for data collection and treatment.

The results of this study are presented in the fifth chapter, including the data analysis done as well as the variable analysis considered.

The last chapter of this study, the sixth chapter, discusses the results and findings. The limitations and further recommendations for subsequent studies are also part of this section.

2. Literature Review

2.1. Introduction

In this chapter the results of the literature review referring to this study will be present. Creswell (2012, p. 86) recommends that for it to be a good literature review it should follow a five step process: "identifying terms to typically use in your literature search; locating literature; reading and checking the relevance of the literature; organizing the literature you have selected; and writing a literature review".

This chapter will include a brief introduction on pharmaceutical marketing including its importance and significance of the digital era. The importance of email marketing and how it is being used will also be discussed.

To have a better overview about the chosen theme, in the following topics some crucial concepts will be discussed. Including attitudes towards email marketing, the attitudes towards advertising, credibility, informativeness, irritation, frequency of exposure, trust, risk acceptance, engagement, purchase intention, WOM (Word-Of-Mouth) and loyalty. These concepts will be the main structure for the investigation model.

2.2. Pharmaceutical Marketing

Much knowledge has been shared concerning the investment of digital information in the pharmaceutical industry, seen in *IMS Health*[5] or *StartUp Health's*[6] reports. However, all these reports are quantitative and always focused on the industry but not on the customers or the relationship with them.

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[5] IMS Health is a worldwide corporation that searches and analyzes information, services and technology for the healthcare industry (IMS Health, n.d.).
[6] StartUp health is the world's largest community of Health Transformers, which has a global network that helps healthcare entrepreneurs to improve the wellbeing of everyone in the world (StartUp Health, n.d.).

There are also some articles and reviews about the benefits and the interaction of digital information and gadgets in healthcare. For example, PwC[78] published a review in November of 2014 about the impact of digital technologies on the relations between clinicians and patients.

Conferring to *StartUp Health*, there are more than 7600 startups around the world that are putting more effort into digital health novelties, trying to create a paperless and consequently a more customer-friendly health world[9].

Some authors and consulting offices are working on this topic and they are developing new and stimulating data about this emerging digital pharmaceutical marketing. However, as this is a brand-new topic, there is a handful of opportunities to research, develop and improve countless new digital ideas for this on-growing and unstoppable industry.

2.3. Digital Era

Back in the early 80's, less than 1% of the world's information was stored in digital format, while in 2014, these number rise to more than 99% (Hilbert & López, 2011). The analog to digital shift was a big step for human kind. Access to information started to be easier as it was spread worldwide within moments which in the past was almost impossible.

It is estimated that 2002 was the year that humanity stored more content in digital than in analog. It was the beginning of the digital age[10].

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[7] PwC is the second largest global professional services network, that provides assurance, advisory and tax services among more than 20 industries including Healthcare and Pharmaceuticals (PwC, n.d.)

[8] PwC report – November 2014 – on new trends and visions on digital technology in healthcare industry (PwC Health Research Institute, 2014).

[9] StartUp Health Insights' report on Digital Health Funding Rankings (Q3 2016) (Startup Health, 2016).

[10] YouTube video about the world capacity of information made by The Economist (English weekly magazine-format newspaper) (The Economist, 2011) .

The internet that started as network for science labs, now it can be considered a crucial need in our lives. In 2016, it was expected that more than 46% of the world population had access to internet in their homes[11].

People are constantly connected to the internet, either for leisure (checking social networks, news, gamming, shopping, etc.) or for work (searching information or online work) with just a computer, smartphone or a table connected to the internet to do all this and even more.

A lot of efforts are been done by massive corporations to take the internet and the digital era to the next level and to connect the entire world in a blink of an eye. Almost every week there are new IT products' launching that are more and more high tech with some of them bringing real benefits to society.

Due to this big (r)evolution several industries started changing their approach, and started to be more digital and attract customers in order to break the conventional boundaries and develop closer and stronger relationships.

According to McKinsey & Company[12,13], latest research on digital maturity of the pharmaceutical industry, it confirmed that there are a lot of opportunities to improve the digital performance by establishing new digital connections with patients and physicians and adding value to this actions.

"For pharma and healthcare incumbents, the digital age raises new uncertainties about their position in the industry. As they adapt to the pace of change, companies face a stark choice: either evolve with the new era and build an organization that has digital at its core or risk losing ground as competitors become more deeply integrated in the patient and provider decision-making process by leveraging new digital tools" (McKinsey & Company, 2016, p. 1).

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[11] *Internet Live Stats* is a web platform that belongs to the *Real Time Project.* Its aim is to provide live time statistics available in a dynamic and time relevant format to a wide audience around the world (internet live stats, 2016).

[12] McKinsey & Company is a worldwide management consulting firm that serves leading businesses. It serves more than 20 different industries and it is the truest advisor and counselor of the world's most influential businesses and institutions (McKinsey & Company | Global management consulting, n.d.).

[13] McKinsey & Company report on digital maturity on progresses in pharmaceutical industry, compared to other industries – "Closing the digital gap in pharma" (McKinsey & Company, 2016).

2.4. Email Marketing

Nowadays we are living in an unstoppable world where technology is taking a huge advantage regarding to society's new life habits, both for leisure and work. In the past few years ago people were able to witness a massive paradigm shift of the communication channels – the digital started to take place and the traditional lost its space. People are living in a hectic world, where every day is a rush, so that the use of digital technologies are helping people to be more self-selective, choosing the contents that they are interested in.

The reduction in human and financial resources, over the past years, lead companies to create new and more customer friendly ways to communicate and interact with the customer, topping the engagement to the next level. That move, was not only done at business level, but also at customer level there is room for improvement. Now, customers demand more from companies, and expect them to adjust their communication to their preferences. All this done by different channels, creating an omni-channel experience, a cross-channel business model that corporations use to increase customer experience (Zhang, Kumar, & Cosguner, 2017).

Also, this new digital channels helped corporations find out unknown customers that, without this technological development could never have been embraced.

There is lot of known advantages concerning digital channels, but the most noteworthy are the facility/convenience that allows them to keep in touch anytime, everywhere.

Email marketing is a good example of digital technology that is getting bigger and very eco-friendly. In this study the impact of the email marketing will be evaluated, as a communication channel in the pharmaceutical industry.

Email marketing is an important tool that companies have been using since the internet access spreaded and this tool is seen as a cost-effective marketing tool (Ruth; Rettie, 2002), and according to Nail (2000) it is one of the most effective online tools due to its high response rate.

Also, several authors proved the benefits of email marketing. Jackson & DeCormier (1999) identified that email marketing was a key factor when marketers tried to create relationships and real time interactions with consumers. Also Wreden (1999, p. 1) labeled email marketing as the 'Internet's killer application' due to its precision concerning to the tailoring, targeting and tracking.

The low cost of this technique and the digital processing allow users to send a huge number of emails in a very easy and efficient way. Peppers & Rogers (2000, p. 4) said that 'clear benefits, including high response rates and low costs are rapidly turning email marketing into an invaluable tool'.

2.5. Attitude Towards Email Marketing

According to Kotler & G. (2015) attitudes denotes to a frame of mind or an individual propensity of liking or disliking an object, and consequently, moving towards or away from it.

Since the 80's researchers are putting more effort into understanding customers' attitudes and behaviors towards direct marketing (Chowdhury, Parvin, Weitenberner, & Becker, 2006; R. Mehta & Sivadas, 1995; Nan, 2006; Smith & Swinyard, 1983).

Back in time, when Fishbein & Ajzen (1975) come out with the Theory of the Reasoned Action (Behavioral Intention = Attitude + Subjective Norms), that correlates the beliefs, the attitudes, the norms, the intentions and the behaviors of persons. Conferring to this model, an individual's behavior is driven by its behavioral intention to accomplish it. Likewise, this intention is itself in agreement by the individuals' attitudes and its subjective norms towards the behavior (Fishbein & Ajzen, 1975, p.302). Conferring to Ajzen (2005), the definition of an attitude must consist of cognitive and affective components.

A recent study carried by Mariko Morimoto & Chang (2006), outlined two factors that predict consumer attitudes toward direct marketing, the perceived advertising intrusiveness and the irritation caused by marketing practices.

Y. Wang & Sun (2010, p.334) defined attitude toward advertising (ATOA) as "the aggregation of evaluations of perceived attributes and benefits [cognitive and affective] of online advertising". Even though the research done with ATOA is recent and has few information, mainly because the former studies were focused on consumer attitudes toward traditional media, more and more authors states that ATOA can significantly affect consumer behavior toward online advertising and purchase intention (D. A. Drossos, Giaglis, Vlachos, Zamani, & Lekakos, 2013; Tsang, Ho, & Liang, 2004).

The development of measurements for advertsing can be a very important tool, once it can measure advertising effectiveness and represent customers satisfaction with the products and the corporation (Haq, 2009). Also, research carried by Ducoffe (1996) points out that the advertising value of web advertising has proved to have a noteworthy impact on attitudes toward online advertising.

According to a recent report of Forrester Research, they pointed out that more than one third of the respondents said that most of the emails marketing that they received offer anything that is on their interest and almost half of the respondents delete most of emails advertising without opening (Forrester Research, 2017). These were just some of the high lights of this report and it cleared that companies are facing some big challenges and they must try to reverse this costumers' behaviors in order to change the consumer's attitudes towards adverting and email marketing.

So it can be said that attitudes toward email marketing are influenced by either positive or negative reactions that can be interpreted that may influence consumer's actions.

This study is aimed to understand what is the position of online customers towards pharmaceutical email marketing campaigns, as well as, how do they react to this informative tool.

2.6. Antecedents of Consumers' Attitudes

2.6.1. Credibility

According to MacKenzie & Lutz (1989) "advertising credibility is defined as consumers' perceptions of the truthfulness and believability of advertising in general". In broader words, credibility of advertising can be seen as the awareness of consumers concerning the degree to which they perceive the claims presented in advertisement to be truthful and believable (Lutz, 1985).

Also it is known that credibility has a huge influence on attitudes towards the brand, that is strongly related with the purchase intention (MacKenzie, Lutz, & Belch, 1986).

A study about consumers' attitudes in an emergent market of mobile advertising carried by Chowdhury, Parvin, Weitenberner & Becker (2006), concluded that credibility was the most impacting variable on consumers' attitudes.

The credibility of an advertisement can really affect the way consumers look at the company/ brand (Munnukka, Uusitalo, & Toivonen, 2016). That is corporative credibility, and according to Drossos, Giaglis, Lekakos, Kokkinaki & Stavraki (2007), corporative credibility is the consumers' beliefs that the company/brand is able to deliver in its products or services according to consumers' needs.

Several author have been studying corporative credibility and they are concluding that it has a huge impact on the positive consumers' attitudes towards advertising and also to the purchase intention, as it was mentioned in previous paragraphs.

As this study is focused on the pharmaceutical industry, and this is one industry that consumers do really care and ask for more information (at the end they are looking after their well-being), the credibility topic must be analyzed.

2.6.2. Informativeness

Informativeness takes an important role in determining the effectiveness of an advertising (Saadeghvaziri & Hosseini, 2011).

According to Ducoffe (1996), most consumers consider that advertising aims to inform them about the several products that exist, so that they can purchase with the highest satisfaction level.

Referring to Korkut Altune & Anil Konuk, (2009), advertising informativeness can be stated by the capability to provide up-to-date, timely and easily accessible information.

Zhang & Mao (2008), believe that the personality and the exclusivity of the message contents can help improve the relationship between the brand and the consumers.

Nowadays customers are demanding more through their brands and they want the email marketing content to be personalized according to their interests (Robins, 2003). They are also interested in receiving messages that they want and that are relevant to them. Varshney (2003) verified that email marketing information is considered very valuable by customers and that they react confidently to advertising transfer incentives. Also, several studies pointed out that positive messages with consumers interest contents do positively affect consumers attitudes (Schumann, von Wangenheim, & Groene, 2014; Tsang et al., 2004; Xu, 2006).

Tsang et al., (2004) likewise investigated the correlation between informativeness and consumers' attitude toward online advertising and found out that they are correlated with the promotion of better purchase decisions. Saadeghvaziri & Hosseini, (2011) alleged that an informative advertising can take consumer attention to new products and explain consumers why that product is better than others

At the end, it can state that the quality of email marketing messages in consumers' mailbox does impact the perception that they have concerning that company/ products/ services (Ünal, Erciş, & Keser, 2011). So, if the message is clear, up-to-date (Korkut Altune & Anil Konuk, 2009) and contains information that consumers are interested in (J. Zhang & Mao, 2008), they will develop a good attitude towards that brand.

2.6.3. Irritation

Is it known that advertisements have a massive impact on consumers' attitudes that can be either positive or negative.

Irritation is a negative outcome from advertising campaigns, referring to consumers' attitudes (Korkut Altune & Anil Konuk, 2009). Ducoffe, (1996) states that irritation is the main factor that primes to a change in consumers' behavior, leading to criticism of advertising.

Being the email marketing one of the cheapest ways for companies to interact with customers, it can also compromise that relationship. If they do not know how to manage the email content or focus on the right customers. Email overloading can be extremely annoying and it is associated with consumers losses (Kornias, 2012; Schumann et al., 2014; Ünal et al., 2011).

It is also known that advertising techniques, that are perceived by consumers as being annoying, offensives or extremely manipulative, make that consumer find that company undesirable and irritating (Ducoffe, 1996; Rejon Guardia & Martinez Lopez, 2014).

According to Stewart & Pavlov (2002), email marketing can offer a huge range of information that can be misunderstood by consumers or even be a distracting factor with non-important information, leading to confusion that can react negatively.

Annoyance is also correlated with unwanted messages, also known as spam. And spam in not seen as a good thing as it is intruding customers' privacy.

It can be concluded that irritation can be caused by an incomprehensive or unwelcomed email marketing messages that can be negatively perceived and misunderstood the email marketing value or purpose (Haq, 2009).

2.6.4. Frequency of Exposure

The number of emails received is correlated with the impact of the advertising value for customers, but too much can destroy the customer relation and too few can lead that customer forget the brand.

The increase of email marketing messages drives through a worsening of consumers' attitudes toward that type of information vehicle and also can lead to tedium from a customer's point of view (Ha & Mccann, 2008).

Tellis (1997), defends that effective frequency of a campaign relies on three major factors – brand familiarity, message complexity and message novelty. Brand familiarity takes and important role in the effectiveness of advertising, because if a brand is familiar to consumers it needs little repetition effect – the brand just need to be remembered. But if the brand is not familiar to the customers it should be shown to them more frequently in order to start being in a consumers' life. "A complexity message is one that is sufficiently difficult, rich or ambiguous, that the receiver cannot absorb all the information it contains in a single exposure" (Tellis, 1997, p. 77). Several studies (Pechmann & Stewart, 1992; Sawyer, 1981) suggest that repetition of advertising helps to enhance the persuasive effect of complex advertising. The last critical factor is the message novelty that claims that advertising need to be updated in order to not provoke tedium on customers. In fact, only very few advertisings remain unique during time, and these ones are exceptions.

Ducoffe (1996) states that the informativeness and entertainment content of advertising campaigns should reduce with the repetition since the content will be learned by the audience and thereby decreasing its value.

2.6.5. Trust

Conferring to Chaudhuri and Hoibrook (2001, p. 82) brand trust is the "willingness of the average consumer to rely on the ability of the brand to perform its stated function". Also brand trust points to brand loyalty or even commitment because "trust creates exchange relationships that are highly valued" (Morgan & Hunt, 1994 *in* Chaudhuri & Hoibrook, 2001, p. 83), and according to (Moorman, Zaltman, and Deshpande, 1992, p. 316) commitment is described as "an enduring desire to maintain a valued relationship".

Brand trust can be divided in two unique dimensions – intention and reliability (Chaudhuri and Hoibrook, 2001), whether intentions are described as the level of consumers' belief concerning to a particular brand, when a risky situation related to consumption happens and reliability is described as the level of consumer's belief that a brand is reliable to fulfill its value promise.

Overall, brand trust is an involving process, in which perception of "a brand's good intentions will help earn the customer's emotional trust, while the perception of a brand's reliability will help to earn customers' rational trust" (Ong, Salleh, and Yusoff, 2016, p. 5).

2.6.6. Risk Acceptance

Risk acceptance can be defined as the predisposition of one person providing personal information to online platforms such as websites, advertisements campaigns or even apps (Jin & Villegas, 2007).

For the current study, risk acceptance is considered as the propensity of individuals to provide personal information (such as name, age, gender or preferences) in order to subscribe to email marketing campaigns or to enroll in promotions, contests or even to receive gifts.

Literature has proved that when trust is established between consumers and brands and when consumers feel that they have a degree of control over the disclosure of their private information,

they will be less concerned and the propensity of adhesion will increase (Malhotra, Kim, & Agarwal, 2004; Milne, Rohm, & Bahl, 2004).

There are also some studies that point out that the lower the consumer's age the greater is the risk tolerance and propensity to provide personal information (Gross & Acquisti, 2005). Young consumers are known to be more open minded and risk takers referring not only to new technologies but also to new trends so that can be easily reached. Rather than, more mature consumers who are more prudent with privacy issues and whose risk acceptance is lower.

The challenge consists in conquering consumers' trust priming for a good relationship where consumers feel comfortable sharing their information and are more open minded to the brands that they follow.

2.6.7. Attitudes Towards Advertising

Everyday consumers from all over the world are exposed to hundreds of ads. Some more attractive than other, making these last ones sometimes unnoticeable. That is the power of the advertising world.

For the past decades, companies have started to advertise more and more their products in order to try to create a space and an ideal in consumers' minds. With the dissemination of the ads contents, consumers started to create attitudes, feelings or even positions towards advertising. And that attitudes are being studied by several authors (Saadeghvaziri, 2013).

MacKenzie & Lutz (1989, p.54), defined the attitudes toward an advertising as "a learned predisposition to respond in a consistently favorable or unfavorable manner toward advertising in general". According to the Cambridge Dictionary[14], an attitude is a "feeling or opinion about something or someone, or a way of behaving that is caused by this". Also it can be described by mental states that people use to recognize the way that they perceive the surrounding

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[14] Cambridge Online Dictionary (Cambridge English Dictionary, n.d.)

environment and to guide the way that they respond to such situations (Aaker, Kumar, & Day, 1995, p. 254).

Bogart (1985) claimed that due to the high amount of daily advertisements, the probability that individuals carefully process the advertising is very low. The time limitation and the daily hecticness makes it difficult for individuals to pay enough attention to most advertisements.

With the massification of internet usage and the boom of social networks, there was an explosion of online advertising and competition for the best place on the internet augmented exponentially. The long term consequence of this rivalry, that was happening since some time ago, is the intensification of the competition for customers' attention (C. Wang, Zhang, Choi, & D 'eredita, 2002).

Overall, consumer's attitudes towards advertising tend to be negative, and Zanot (1984) found that this attitudes became gradually negative after the 70's, with the boom of advertising.

This study is aimed to find what customers perceive about advertising campaigns in the pharmaceutical industry. How does it impact their lives and how do they face it.

2.7. Consequents of Consumers' Attitudes

2.7.1. Engagement

Engagement is one of the variable outcomes of brand love (Bergkvist and Bech-Larsen, 2010), consequently increased brand love is expected to lead to increased engagement.

Engagement is defined by Keller as "when customers are willing to invest time, energy, money, or other resources in the brand beyond those expended during purchase or consumption of the brand" (Keller, 2013, p. 72).

Examples of engagement embrace WOM (word-of-mouth), visits to brand websites, or even buying brand merchandise.

Satisfaction can also be related with engagement, otherwise if the customer is not satisfied they will not be engaged with the brand. Olivier (1997 *in* Han Bae, 2012, p. 8) describes customer satisfaction "as pleasurable fulfillment; as such, the consumer views consumption as satisfying some need, desire, goal, etc., in which its fulfillment is pleasurable".

2.7.2. Purchase Intention

According to Ajzen & Fisbein (1975), purchase intention is a deliberate action that a consumer is willing to buy a product. It also represents the degree of motivation that a customer has when buying a certain product from a specific brand, and the higher this motivation, the greater the tendency that a person has to make a purchase (Barone, Miyazaki, & Taylor, 2000; D. A. Drossos et al., 2013).

Conferring to Kapferer (2004) and Karsaklian (2000), a brand presents characteristics that generate value with the consumer. Comparisons are made between prices, features, functionalities or even emotions linked to the brand related to its competitors. Some of these characteristics are the main core of a brand, causing recognition and differentiation, while others aim to reduce the perceived risk by consumers, conducing to purchase intention and a further acquisition of a certain product or service.

Holbrook & Corfman (1985) also assign the perceived quality of a product can be influenced by past experiences and purchase intentions, among others factors.

The purchase intention is also related with perceived quality, so the higher the purchase intention also increases the perceived quality (Zeithaml, 1988).

2.7.3. WOM

Is it known that the human being is highly influenced, especially by the ones that surround him. Word-of-mouth is a valuable communication tool, which creates an engagement with satisfied customers that will further spread good critiques about the brand. This critiques come from personal experiences with the brand, and if there are positive experiences the brand will have a positive outcome.

According to Carroll & Ahuvia (2006), word-of-mouth is the customer's recommendation action among their friends and family and is strictly allied with pleasant experiences. Several authors also associate the word-of-mouth with brand love (Carroll & Ahuvia, 2006; Roy, Eshghi, & Sarkar, 2013).

It is said in literature that the stronger the emotional connection between the customer and the brand the stronger the commitment is and the investment in that customer-brand relation (Kim, Morris, & Swait, 2008).

Buttle (1998) understood that customer's inductions by others represents a higher purchase stimuli compared to advertising campaigns.

Several surveys show that word-of-mouth has a huge impact not only in a decision at the moment of purchase but also in post-purchase perceptions and behavior (Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004; Herr, Kardes, & Kim, 1991; Schumann et al., 2014).

It can be said that word-of-mouth is a strategic tool that helps customers create more reliable and trustable connections with the brand that could not be achieved by advertisings or products' promotions.

2.7.4. Loyalty

Loyalty, the key consequence of the customer satisfaction, has been studied and defined in several ways in the last decades (Han Bae, 2012). Olivier (1997, p. 434) characterized consumer loyalty as "a deeply held commitment to re-buy or re-patronize a preferred product or service consistently

in the future, despite situation influences and marketing efforts having the potential to cause switching behaviors".

Conferring to literature, customer loyalty has several dimensions, on which the behavioral and attitudinal part can be emphasized (Day, 1969; Erdoğmuş et al., 1973). The behavioral loyalty can be defined as the consumers' intention to keep a constant purchasing of a specific brand, while attitudinal loyalty can be defined as the consumers' commitment, disposition to invest more and the WOM (word-of-mouth) for a specific brand (Chaudhuri and Hoibrook, 2001).

When taking a look at different customers, the ones which have a bigger propensity to buy only products from a certain brand are known as behavioral loyal customers. On the other hand, customers who are attitudinally loyal have a bigger tendency to spread a positive WOM (word-of-mouth) recommendation towards family and friends. They also have a higher commitment to the brand and will not be so price dependent as the behavioral customers (Chaudhuri and Hoibrook, 2001; Ong, Salleh, and Yusoff, 2016).

2.8.   Conclusion

The topics discussed in this chapter are related with the antecedents and consequents of the consumers' attitudes towards email marketing, as well as the importance of the email marketing in this new Era and the correlation between the importance of the email marketing in the pharmaceutical industry are the head support for this research.

This chapter also help us to have a better understanding about some models, previously studied and validated by some authors that can be a starting point to develop this study.

The literature revision also allowed us to understand that there is still few investment on how to evaluate the consumer's attitudes towards email marketing and also in other digital channels on pharmaceutical industry.

3. Conceptual Framework

3.1. Introduction

After a deep dive into the literature review, this chapter will be focused on the conceptual framework behind this study, where the study's variables as well as the metrics will be presented.

The research paradigm, the study model and the hypothesis formulation that support this investigation is also shown and presented in this section.

The last part of this chapter involves the operationalization of the variables of this research and how it was treated.

The aim of the conceptual framework is to aid and to structure the research, following the defined variables in order to fulfill the proposed objectives.

3.2. Research Paradigm

The pharmaceutical industry is one of the biggest industries which has a higher impact on the world, being responsible either for saving lives or changing them.

Even though that this industry is so massive and so powerful, only a little time ago started to flow into the digital world and improved relationships with patients. The reason for this time lapse was the fact that during too many years these massive industries had an easy life: the patients were looking for them and there were few competitors in the market.

Nowadays, the competition has increased and the pharmaceutical industry is facing new challenges in order to build relations with patients. They are trying to be closer to customers using new technologies.

As this is a recent update in the pharmaceutical industry, there is little information about the effectiveness and the efficiency of these new trends. This study aims to measure and asses the attitudes of costumers toward pharmaceutical email marketing.

Several authors have been studied the consumers attitudes toward email marketing and what influences it, such Ducoffe's model (1996) and Brackett & Carr's model (2001), that have also validated their models. In order to perform this study, it was designed a consumer attitudes towards email marketing model either based on listed models below and based on literature review.

Even though several authors have started to interpret the consumers' attitudes towards email marketing, there is still a lack on the available information and a lot of room to improve. So that it was recognized that was an even bigger lack of information about consumer attitudes towards email marketing on pharmaceutical industry.

This study will engender new information about the digital channels on this industry. It will also be a starting point for upcoming studies related to digital channels in the pharmaceutical industry.

3.3. Conceptual Framework

The following topic is referred to the conceptual framework behind this study. After the literature that was considered important for this study was reviewed, the following study design was developed, based on Traverso et al (2007) study's design, to create some structure to conduct this project, as it can be shown in the following image.
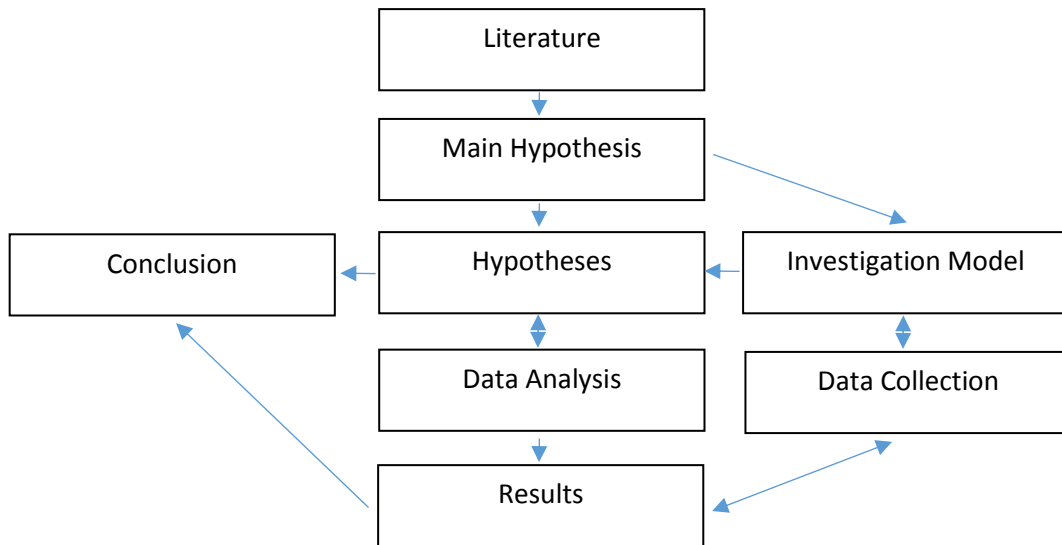
Figure 1: Study design
Adapted from Traverso et al. (2007)

In order to establish the conceptual framework for this study, several dependent and independent variables were also defined. These ones were settle based on the literature review done and based on the actual needs of the pharmaceutical market. The investigation model is shown in the following flux diagram.
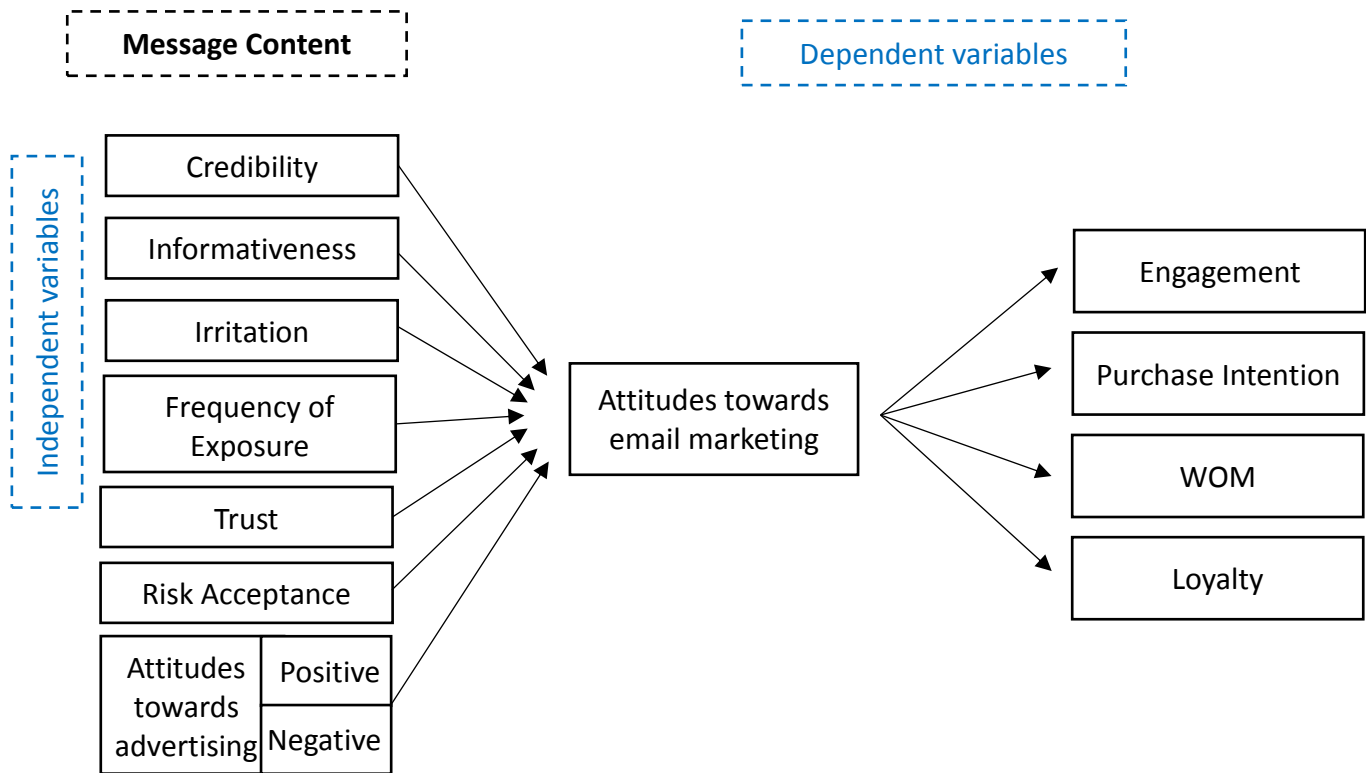
Figure 2: Proposed Investigation Model
Source: Elaborated by the author

The studied variables that were considered for this study on email marketing in the pharmaceutical industry are topped below:

- Credibility of email marketing contents among customers.

- Informative role of email marketing

- Annoyance level caused by email marketing amid customers.

- Weekly amount of email marketing that customers receive.

- Customers' opinion regarding email marketing they receive regarding trust and reliability.

- Propensity and willingness level of customers provide to their personal information to the companies and if they interact with the received emails.

- Customer action through e-mail marketing approaches. If the customer gets involved with the message content and if they act (buy, download a voucher, subscribe, etc.).

- Position of email marketing in the pharmaceutical industry.

- Position of the customers facing to email marketing campaigns: if the customers are satisfied with the companies' actions/ campaigns and if they have the right approach (frequency of email marketing, selection of content for each group of customers).

- Engagement of the population regarding email marketing and the positioning of email marketing concerning traditional channels.

- Propensity level and willingness of customers to buy from email marketing campaigns.

- Relation that consumers have with the email marketing they receive and the consequent word-of-mouth inherent.

- Loyalty level of customers regarding the brand that they follow.

Some moderation variables, the demographic variables, will also be included. Such as the country, age, gender or even educational background, so to understand and correlate certain groups with the propensity of using email marketing.

3.4. Hypotheses Formulation

After defining the model based on the literature review and exposing all conceptual framework, the hypotheses demarcated for this research will be exposed, in order to assess the attitudes of customers towards email marketing, advertising and all other factors inherent these attitudes.

According to Marconi & Lakatos (2007, p.28), a hypothesis is an assumption that precedes the verification of the facts and characteristics of a provisional formulation[15]. The authors also state that there are no rules for hypothesis formulation, but it should be supported by a good literature review and should be tested in order to check its validity.

3.4.1. Hypotheses – Antecedents vs Attitudes

Credibility

This variable is highly related with the effects of the marketing campaigns of a brand and so that it can be said that the trustability of a brand and their position on the market is extremely important to add credibility to a company (Erdem & Swait, 2004).

The credibility of advertisements is influenced by several effects such as the credibility of the brand/company or even the credibility of the advertised content. So it can be said that the higher the perceived credibility of the advertisement, the higher the added value and impact on costumers will be (Haghirian, Madlberger, & Tanuskova, 2005).

So that it was hypothesized:

H$_1$: There is a positive relationship between credibility and customers' attitudes toward email marketing.

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[15] Translation from the author. From the original: "(…) uma suposição que antecede a constatação dos fatos e tem como característica uma formulação provisória." (Marconi & Lakatos, 2007, p.28)

Informativeness

The informativeness role of the advertising is an important and determinant factor of effectiveness (Saadeghvaziri & Hosseini, 2011) and also help them to make purchase decisions (Tsang et al., 2004).

According to research carried by Muzaffar & Kamran (2011), there is a positive association between informativeness and consumers attitudes. The message content and variety and the appropriate timing can also influence consumers' attitudes toward advertising.

As it is important to keep costumers informed and make them feel informed, it was hypothesized:

H_2: There is a positive relationship between informativeness and customers' attitudes toward email marketing.

Irritation

Email marketing users use to feel irritated when the brands use techniques that annoy, irritate, offend or insult the receivers. Additionally, if the message content is very manipulative it also irritates them, leading to negative consumer attitudes (Palka, Pousttchi, & Wiedemann, 2009).

 Must of the time this kind of messages contain excessive information that can be extremely confusing and distracting to subscribers.

There are several factors that can lead to irritation of consumers, such as the amount of email marketing received, the veracity of the information and the entertainment content, among others.

Regarding a study carried by Morimoto & Chang (2006) there are three main issues that influence consumers' attitudes toward email marketing, such as the perceived advertising intrusiveness, the perceived loss of personal information and the irritation which is caused by such marketing techniques.

Then, it is hypothesized that:

H₃: There is a positive relationship between irritation and customers' attitudes toward email marketing.

Frequency of Exposure

The frequency that individuals get email marketing is an essential factor that influences their attitudes toward advertising, but more emails do not mean more positive attitudes (Haghirian et al., 2005). The frequency of exposure is one main factor that may help to create good relationships with customers, but also may trigger irritation and annoyance on them.

This study focus on the understanding of how customers deal with pharmaceutical email marketing, so that it was hypothesized that:

H₄: There is a positive relationship between frequency of exposure and customers' attitudes toward email marketing.

Trust

Once a brand is trusted by their consumers, this relation will be stronger and prosperous.

Morgan & Hunt (1994) referred to that trust as the main core for a good relationship and in the pharmaceutical industry. Trust is a very impactful factor, once patients are trusting in the companies to meliorate their lives, so that they are expecting more from this them.

So that it was aimed to understand how consumers trust email marketing campaign from pharmaceutical companies, and it was hypothesized:

H₅: There is a positive relationship between trust and customers' attitudes toward email marketing.

Risk Acceptance

Companies want to collect costumer's information in order to generate new and better databases so they can satisfy consumers' necessities. However, this task is not that easy, because lots of consumers do not like to provide their own information to websites or for advertising purposes (Malhotra, Sung, & James, 2004).

Even though costumers are more willing to provide information for health or medical reasons, with this survey it is intended to understand what the level of risk acceptance is for consumers regarding email marketing campaigns. So that it was hypothesized:

H6: There is a positive relationship between risk acceptance and customers' attitudes toward email marketing.

Attitudes toward Advertising

Attitudes toward advertising can be either positive or negative as companies are striving to conquer the consumers' heart.

The high amount of advertising (Bogart, 1985) allied to the low informative content may be a reason to trigger negative attitudes toward costumers, while the credibility and trustability may trigger positive attitudes toward advertising. In the pharmaceutical industry trust, credibility and informativity are crucial topics that should be fulfilled in order to have consumers on their side.

This study is aimed to understand what the costumers' attitudes toward pharmaceutical advertising are. So two hypotheses were hypothesized, one for the positive attitudes and another one for the negative ones:

H7a: There is a positive relationship between positive attitudes toward advertising and customers' attitude toward email marketing.

H7b: There is a negative relationship between negative attitudes toward advertising and customers' attitude toward email marketing.

3.4.2. Hypotheses – Attitudes vs Consequents

Engagement

As discussed previously, this variable is highly interrelated with the WOM, purchase intention, trust and other variables.

For several authors, engagement is one of the most important variables regarding consumers attitudes and relationship building, as it is a crucial point of the consumer decision-making process (Graffigna & Gambetti, 2016).

In this study it is intended to understand what the engagement level of consumers is regarding email marketing campaigns, since there is very few information about the relationship between the engagement and the digital channels in the pharmaceutical industry. So that it was hypothesized:

H_8: There is a positive relationship between the customers' attitudes toward email marketing and the engagement.

Purchase Intention

According to Spears & Singh (2004), purchase intention is an individual aware plan so that an individual can do an effort to purchase. In the pharmaceutical industry as well as in other industries, this is an important point, if costumers do not purchase, they will not earn money.

The impact of purchase intention and the relation with marketing has been studies for several authors (Fries, Gedenk, & Völckner, 2009; Westberg & Pope, 2005), and they verified that companies that practice cause related marketing are more favorable that their customers have positive purchase intentions.

In this study we want to analyses the impact of email marketing advertising on the consumers' intention to buy. Due to that, it was hypothesized:

H$_9$: There is a positive relationship between customers' attitudes toward email marketing and purchase intention.

WOM

As the pharmaceutical industry still does not have a lot of powerful digital techniques as it is very recent in this field, it is crucial that costumers start to make good reviews and share the good aspects of this brand new digital upgrades. This way the company will be able to start expanding their digital network among all patients.

Tsang et al. (2004), found some correlation between consumer attitudes and behavior, and WOM is an important variable that is linked with behavior. Also, Olivier (1997) stated that a positive WOM can be defined as the moment when the consumer starts to say positive things about the brand as they start to get closer to both the brand and the company.

So that it was hypothesized:

H$_{10}$: There is a positive relationship between customers' positive attitudes toward advertising and WOM.

Loyalty

Nowadays the competition has increased compared to the past. Pharmaceutical companies are trying to create loyalty programs and try to reach more costumers in order to create their own community where patients feel comfortable and relate to the company environment.

Conferring to Day (1969) one dimention of customers loyalty is the attitudinal. This one is extremely important and takes an important role when companies want to create long term relations. Even when they try to improve feelings in their customers.

For this variable, it was hypothesized:

H[11]: There is a positive relationship between customers' positive attitudes toward advertising and loyalty.

3.5. Variables & Metrics

For the elaboration of a good and a reliable questionnaire for this research project, used metrics were previously validated by their authors. They did this through the questionnaire data collection method. Hence, it is possible to adapt the metrics to this research once they were validated.

Once this questionnaire were only done in English language, there were no need to do the translation and the retroversion because the authors' metrics were already in English.

After adapting the metrics, they were reviewed by both an English native speaker and an intermediate English speaker in order to understand if they were clear and easy to understand.

The following table compiles all the metrics referring to each variable, adapted for this study, as well as the main author and the used scale. Conferring to the scale, the format of a five-level Likert scale[16] was chosen (1 - strongly disagree, 2 – disagree, 3 – neither agree nor disagree, 4 – agree, 5 – strongly agree). This scale is an easy way to collect individual answers, reducing the eventual human errors. With this Likert-type scale it is both possible to measure positive and negative responses rendering to the given affirmation.

According to Jacoby & Mattel, (1971), the evidence of reliability and validity of the variables depends on the amount of points of the Likert scale, but using scales with more than 5 points does not bring any advantage to the study.

Frequently, the Likert-type scale is the most common scale among authors when they want to access the answers of theirs studies (Barboza, Carvalho, Neto, & Costa, 2013). "Measurement will be defined in the wide sense as a process of empirical, objective assignment of symbols to

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[16] A Likert-type scale is a psychometric scale that is very frequently used in researches that uses questionnaires as the evaluative method. It is the most widely used approach to scaling responses in survey research.

attributes of objects and events of the real world in such a way as to represent them, or to describe them"(Finkelstein, 2009, p. 1271).

Table 1: Variables and metrics used for the research
Source: Elaborated by the author

Variable	Scale	Author	Metrics
Attitudes towards email marketing	Likert (1 to 5)	Ruth Rettie, Payne, & Grandcolas, 2012	1) I do intend to receive targeted email that I have requested 2) I like the fact that I could select my preferred advertisements 3) I like being able to choose the frequency of the newsletter sent to me 4) I prefer emails to postal mail 5)The emails are relevant to me 6) I feel comfortable that I could unsubscribe at any time 7) The emails encouraged me to look at the site 8) It took me too long to start to subscribe to email marketing campaigns 9) The emails encourage me to look at the contents 10) The emails are not intrusive 11) I will subscribe to email newsletters from any other site in the future
Attitudes toward advertising campaigns	Likert (1 to 5)	A. Mehta, 2000	1) Advertising helps me keep up-to-date about products and services that I need or would like to have 2) Products perform as well as the advertising claim 3) Advertising is more manipulative than it is informative 4) Much advertising is way too annoying 5) I like to look at advertising

	Likert (1 to 5)	Martin, 2003	1) Bad…….Good
			2) Uninteresting…… Interesting
			3) Dislike…….Like
			4) Non Irritating……. Irritating
Informativeness	Likert (1 to 5)	Tsang et al., 2004	1) Email marketing helps me keep up-to-date about products that I need
			2) Email marketing is a good source for timely information
			3) Email marketing usually provides the information I need
Irritation	Likert (1 to 5)	Tsang et al., 2004	1) I feel that email marketing is irritating
			2) I feel that email marketing is almost everywhere
			3) Contents in email marketing are often annoying
Credibility	Likert (1 to 5)	Tsang et al., 2004	1) I use email marketing as a reference for purchasing
			2) I can trust email marketing contents
			3) I am impressed by the email marketing
Risk Acceptance	Likert (1 to 5)	Gao, Sultan, & Rohm, 2010	1) I would provide my personal information (such as my name, age, gender, preferences …) to receive focused information
			2) I would provide personal information (such as my name, age, gender, preferences …) to receive discounts on future purchases
			3) I would be willing to receive information on where to buy certain products or services on my email
			4) When I receive an email marketing with hyperlinks I open it to take a look at the promotions/ information/ website

Frequency of Exposure	Likert (1 to 5)	Haq, 2009	1) How many email marketing do you receive per week
Engagement	Likert (1 to 5)	Bergkvist & Bech-Larsen, 2010	1) To what extent do you follow email marketing news that you have subscribed to? 2) How often do you talk about the brands that you follow? 3) How often do you visit brand's website? 4) Would you be interested in buying merchandise with the brand signature on it?
Purchase Intention	Likert (1 to 5)	Erdem, Swait, & Valenzuela, 2006	1) I have no problem buying a product from an email marketing campaign 2) I would seriously consider buying a product from an email marketing campaign 3) I only buy products of the brands that I follow 4) I intend to keep purchasing products from the brands that I follow
Trust	Likert (1 to 5)	Chaudhuri and Hoibrook, 2001	1) I trust the brands that I have subscribed to 2) I rely on email marketing that I have subscribed to 2) The brands that I follow are honest 3) The brands that I follow are safe
Loyalty	Likert (1 to 5)	Chaudhuri and Hoibrook, 2001	1) Next time I need to buy a similar product that was referred in the email marketing campaign I will choose this one 2) I intend to keep purchasing brands that I follow 3) I am committed to the brands that I follow 4) I am willing to pay a higher price for this brand over others brands.
	Likert (1 to 5)	Delgado-Ballester and Munuera-	1) I consider myself to be loyal to the brands I follow 2) Only under extreme circumstances would I consider purchasing a brand of this product different from brand

	Likert (1 to 5)	Maxham & Netemeyer, 2002	Alemán, 2005
WOM	Likert (1 to 5)	Maxham & Netemeyer, 2002	1) I say positive things about the brand that I follow to other people 2) I would recommend the brands to those who seek my advice about such matters 3) I would encourage friends and relatives to subscribe to email marketing

3.6. Operationalization of the Study's Variables

During the literature review search, it was a concern to identify how did the authors who were studying the topic in various countries, but also what kind of variables were being studied and how they were being measured. This was taken into deep account because this is an international research and there is only one questionnaire that must fit for all countries involved in it. All the metrics used were applied and analyzed in several studies, prior to validation by the authors.

After choosing the metrics and the scales, they were validated by experts both from Academy and from the Pharmaceutical Industry, so a good questionnaire could be structured.

As mentioned before, the Likert-type scale of 5 points was chosen for the collection of answers.

4. Methodology

4.1. Introduction

In this chapter all the methodology intrinsic to this study will be presented, as well as the sample size, the construction of the distributed questionnaire, the statistical analysis and the program used, the sample characterization as well as the variable analysis.

Even though Marconi & Lakatos (2007) pointed out several advantages and disadvantages for the utilization of questionnaires in this type of studies, this methodology was chosen because it is simpler and the one that fitted better to the available resources and time.

4.2. Sample Size

As there is very few studies about this topic, it was defined that not only answers from Portuguese respondents should be accepted, making it this way an international study. The sample of respondents contains people from all over the world once that the survey was shared via online in social networks.

For this study all respondents over 18 years old, that are internet users and familiar with email marketing campaigns were accepted.

This study was based on 186 respondents[17] (66 male and 120 female) from 17 countries and 4 continents. As the author of this study is Portuguese and his network majority consisted on Portuguese people, most of the respondents are Portuguese.

Most of the answers were collected in a university context, because is it known that a student sample is interesting for a marketing research, since they generally have more favorable attitudes toward marketing and advertising (Roberts, 2000).

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[17] The questionnaire was shared between middle of February until end of April.

According to Marconi & Lakatos (2000), there are some main factors that may influence data collection and consequently the sample size, such as the aim of the research, the financial resources or even some blocking elements that may appear during the study. The small number of answers for this questionnaire may be related with the following topped factors:

- The fact that the questionnaire was shared in a single language. It was only available in English. It is known that not everyone is comfortable to answer such a big questionnaire if it is not their native language;

- The size of the questionnaire. The presented questionnaire was slightly long and may have led to several withdrawals (unfortunately the used platform is not able to quantify the number of withdrawals);

- The lack of financial or sponsor support by a pharmaceutical company: if this study was supported by a pharmaceutical company it could have been more successfull because of the massive sharing power of these companies.

4.3. Questionnaire

Several authors mention the importance of certain components that should be added in a questionnaire, such as the identification of the respondents (age, nationality, gender, among other relevant demographic questions that can be useful for the research), the request of the respondents cooperation to complete the questionnaire without abandoning it, the instructions, or even the awareness of the respondents regarding to the topic (Chagas, 2000).

The data collection of the questionnaire of this study was confidential, so there is no track of the respondents.

The questionnaire, attached in the appendix, contains 63 questions and it is present with a brief introduction about the topic and the research, followed by the instructions for fulfillment.

The survey is divided by section and each section represents the variable that is being measured. Also, the questionnaire can be divided in main groups, as presented in the following table.

Table 2: Distribution of the questions of the questionnaire
Source: Elaborated by the author

Nº of Questions	Section	Variable	Nº of Questions
4	Demographic Questions		
4	Introduction Questions		
18	Antecedents	Credibility	3
		Informativeness	3
		Irritation	3
		Frequency of Exposure	1
		Trust	4
		Risk Acceptance	4
17	Consequents	Engagement	4
		Purchase Intention	4
		WOM	3
		Loyalty	6
20	Consumer Attitudes	Attitudes Toward Email Marketing	11
		Attitudes Toward Advertising	9

The demographic questions were used as moderation variables, as it helps to characterize the sample. The introduction questions aimed to describe the level of email marketing campaigns usage.

Referring to Malhotra & Taylor (2005, p. 227)[18],"a questionnaire guarantees the standardization and comparison of data between interviewers, increases speed and accuracy of records and facilitates data processing".

The full questionnaire can be seen in the appendix of this work.

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[18] Translation from the author. From the original: "Um questionário garante a padronização e a comparação dos dados entre os entrevistadores, aumenta a velocidade e a precisão dos registros e facilita o processamento dos dados" (Malhotra & Taylor, 2005, p.227)

4.4. Analysis of Pretest Performance

After the questionnaire was completed and analyzed by experts both in the academic field and in the pharmaceutical industry, a pretest evaluation was made in order to check if the questionnaire was clear to understand to the respondents.

The aim of the pretest is to check if the survey in congruent and if it does not lead to misunderstandings in the answers.

According to Lakatos & Marconi (2003), in order to validate the assessment instruments this should be done with a preliminary test, or a pretest. Before the data collection starts. This type of validation allows for detection of possible errors or questions that are not completely clear for the respondents. A pretest should be done in a small fraction of the sample, and Lakatos & Marconi (2003) advice to do it with between 5% and 10% of the total sample.

For this study, a pretest was done with 20 respondents which represents around 11% of the final sample.

After this step some respondents, pointed out not to use negative forms in some questions because it may lead to misunderstandings. Also it was proven that with this reformulations the questionnaire was clear and it could be easily answered by the respondents.

4.5. Approaches to Improve the Survey Response

According to Aaker et al. (1995), there is no strict guidelines that can be considered perfect for the construction of a survey, so that, the experience and knowledge of the author are critical aspects for a well-designed survey.

However, there are some procedures that should be adopted, to prevent errors or inconclusions, such as:

Table 3: Guideline for designing a questionnaire
Source: Elaborated by the author

Stage	Procedure
Research planning	State the main objective of the research
	Define the aim of the research on the questionnaire
	Collect other sources of information and other related questionnaires
	Define what will be asked in the questionnaire
Questionnaire	Define the question's content
	Define the typology of the questions
	Define a clear an easy way to present and write the questions
Questionnaire sequence and logic	Group the questions according to the topics
Pretest	Read and evaluate the whole questionnaire
	Detect possible errors
	Do a preliminary assessment (pretest)
	Correct inaccuracies

Also, in order to exclude participants' personal opinion and to easier analyze the answers, the whole questionnaire was presented with multiple choice answers.

4.6. Data Collection

After the validation of the questionnaire, the survey was shared among the population. This was a crucial point to perform this study, once that we rely on the biggest amount of respondents to have the most accurate conclusions.

As the studied topic is strongly related with the new technologies and the digital world, the questionnaire was developed by the Google Forms[19] platform and spread via online networks such as Facebook, LinkedIn, Google +, inbox messages and mailing lists.

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[19] Google Forms is part of Google's online apps suite of free tools. It is very useful and easy to handle and to create questionnaires to share online.

As this is a non-sponsored, exploratory and pioneer study it is difficult to have and to define a proper sample that reflect all the population, so it was used the convenience sample or also known as availability sample. This is a type of non-probability sampling method that is based on data collection from population respondents that are suitably available to participate in study.

It can be pointed several advantages of this type of samples, such as the simplicity of the data collection in a short time, the low budget associated to this studies and the suitability for pilot studies and for hypothesis generation (Saunders, Lewis, & Thornhill, 2012). For this kind of study, the biggest disadvantage that we struggled with this type of sample was the high bias number and the heterogeneity of the sample.

4.7. Statistical Analysis

Subsequently to the data collection, data was analyzed with the statistical software, SPSS 24.0 Statistical Package for the Social Sciences that allowed the creation of a final data base for this investigation.

The software scrutinized all the data, grouping the variables and helped with the remove of some questions form some variables that were not relevant for the analysis. It was also possible to analyze the variables according to the demographic factors and make deeper conclusions.

After the software analysis was finished all data was correlated in order to present the best results for the current study.

4.8. Sample Characterization

Along this subtopic the characterization of the sample for this study will be done. This characterization will be presented according to the demographic variables – gender, age, education and nationality – relative and absolute frequencies will also be presented.

For this research 186 valid respondents were collected. They are presented in the following charts.

4.8.1. Gender

The sample of this empiric study is composed of 35.5% (*n* = 66) male respondents and 64.5% (*n* = 120) female respondents. This non-homogeneity of the sample may be allied to the fact that women follow more email marketing campaigns from the pharmaceutical companies, especially when related to cosmetics and supplements.

Table 4: Sample distribution by gender
Source: Elaborated by the author

Gender	Absolute Frequency	Relative Frequency
Male	66	35.5%
Female	120	64.5%
Total	186	100%

4.8.2. Age

The majority of the respondents were students and first time workers. Consequently the sample is considered a young one. This is also related to the fact that the survey was shared in social media, like Facebook and LinkedIn. This age group (18 – 24 years) represents 65.5% of the whole sample and the second biggest representative age group (25 – 34 years) is composed by 26.9% of all sample.

Table 5: Sample distributed by age groups
Source: Elaborated by the author

Age	Absolute Frequency	Relative Frequency
18 – 24	122	65.6%
25 – 34	50	26.9%
35 – 44	6	3.2%
45 – 54	7	3.8%
55 – 64	1	0.5%
+65	0	0%
Total	186	100%

4.8.3. Education

Regarding the education profile of this sample, it could be said that almost 90% of them have an university education, and almost 50% have a Master Degree. This can be linked with the fact that the questionnaire was directed to individuals who were over 18 years old, since there were some questions related with the intention of purchasing.

Table 6: Sample distributed by educational levels
Source: Elaborated by the author

Education	Absolute Frequency	Relative Frequency
Lower Education	0	0
High School	19	10.2%
Bachelor or equivalent level	73	39.2%
Master or equivalent level	92	49.5%
Doctoral or superior level	2	1.1%
Total	186	100%

4.8.4. Nationality

This study was initially elaborated with the idea in mind of being a global study with individuals from all over the world. With the intention to compare theirs attitudes towards email marketing and advertising in the pharmaceutical industry. Several international contacts in pharmaceutical industry were reached in order to find out to extra support for the disclosure of the survey. As this is a brand new topic it was difficult to manage that, so the majority of the respondents are from Portugal (66.7%), followed by Spanish respondents (13.5%).

Table 7: sample distributed by nationality
Source: Elaborated by the author

Nationality	Absolute Frequency	Relative Frequency
Portuguese	124	66.7%
Spanish	25	13.5%
Albanian	8	4.3%
Brazilian	6	3.3%
Greek	5	2.7%
Turkish	4	2.2%
Italian	2	1.1%

Pakistani	2	1.1%
American	2	1.1%
Chinese	1	0.5%
Croatian	1	0.5%
Filipino	1	0.5%
English	1	0.5%
Moroccan	1	0.5%
Russian	1	0.5%
Serbian	1	0.5%
French	1	0.5%
Total	186	100%

Even after striving to get as many international respondents as possible, only a fraction of almost 10% of non-European respondents, both from America, Asia and Africa were collected.

Table 8: Sample distributed by European/ Non-European
Source: Elaborated by the author

Nationality	**Absolute Frequency**	**Relative Frequency**
European	168	90.3%
Non-European	18	9.7%
Total	186	100%

4.9. Variable Analysis Methodology

After the characterization of the sample and the description of the control variables (demographic variables) the analysis of the model variables will be presented.

The first step is to ensure the operationalization of the variables in order to safeguard the consistency of the data and the unidimensionality of the metrics. This is crucial to have a better study and ensure that the metrics used for each variable are reliable.

The unidimensionality consists on the assessment of all used metrics for each variable, in order to check if all items are evaluating the same concept, protecting, this way the reliability of the study.

To check the unidimensionality the factor analysis and the internal consistency were used.

According to Hair (2005), the factor analysis consist in a statistical method that aims to define the structure of a data group. In order words, this analysis, allows to condensate all the information referring to one variable into one simpler variable without losing the subjacent information as well as describing the variability among all observed data. This analysis considers all inter relation among the used metrics, in order to explain one variable through the essential dimensions that have in common.

It is advised to check the correlation among variables before performing the factor analysis (Damásio, 2012). In order to analyze the quality of the study's correlation two statistical procedures were used: Kaiser-Meyer-Olkin (KMO) and the Bartlett's Test.

KMO's Test is a measurement that indicates how appropriate the data is for the factor analysis. This test compares sampling adequacy for each variable in the model and also for the complete model. It is presented between 0 – when the correlation coefficients are low – that can mean that the factor analysis is not viable – and 1 when the correlation coefficients are strong (Pestana & Gageiro, 2014).

The following table explains the interpretation of KMO values.

Table 9: Interpretation of KMO measure according to Kaiser
Source: Adapted from Kaiser

KMO	Interpretation
0.9 – 1	Marvelous
0.8 – 0.9	Meritorious
0.7 – 0.8	Middling
0.6 – 0.7	Mediocre
0.5 -0.6	Miserable
>0.5	Unacceptable

Bartlett's Test, is a sensitive method used to check if the samples have identical variances (Snedecor & Cochran, 1977). If the variances are homogeneous, it can be said that the samples have equal variances. This statistic test was designed to assess equality among variances across groups against the alternative that the variances are different for at least two groups.

For this test acceptable values are considered if ≤ 0.05. The lower the value (closer to 0) the better the factor analysis is.

Another important statistical analysis that must be analyzed is the internal consistency. This will show the reliability of the used scales for the different variables (Pestana & Gageiro, 2014). The Cronbach's alpha test allows for the interpretation of the values according to the following table:

Table 10: Interpretation of KMO measures according Kaiser
Source: Adapted from George & Mallery (2003)

Cronbach's alpha (α)	Interpretation
α ≥ 0.9	Excellent
0.9 > α ≥ 0.8	Good
0.8 > α ≥ 0.7	Acceptable
0.7 > α ≥ 0.6	Questionable
0.6 > α ≥ 0.5	Poor
0.5 > α	Unacceptable

Before performing the factor analysis each variable was examined individually in order to detect outliers, bias or flat values, as suggested by Pestana & Gageiro (2014).

4.10.Constitution of Final Variables

After analyzing all variables in the statistical software with the factor analysis and the internal consistency, the suitability of the sample for this study could be checked. All the data is presented in the following table:

Table 11: Results from the Factor Analysis and the Internal Consistency Analysis
Source: Elaborated by the author

Variable	Item	N° of Items	KMO	Bartlett's Test	% Variance	Cronbach's alpha
Initial Questions (InitialQ)	*InitialQ 1, InitialQ 2, InitialQ 3, InitialQ 4*	4	0.723	0.000	58.08%	0.796
Attitudes toward email marketing (AttEmailMkt)	*AttEmailMkt 1, AttEmailMkt 2, AttEmailMkt 3, AttEmailMkt 4, AttEmailMkt 5*,*	11	0.786	0.000	52.00%	0.761

		AttEmailMkt 6*, AttEmailMkt 7*, AttEmailMkt 8, AttEmailMkt 9*, AttEmailMkt 10, AttEmailMkt 11*					
Attitudes towards advertising (AttAd)	Positive (AttAdPos)	AttAdPos 1, AttAdPos 2, AttAdPos 3, AttAdPos 4, AttAdPos 5, AttAdPos 6	6	0.865	0.000	60.39%	0.600
	Negative (AttAdNeg)	AttAdNeg 1, AttAdNeg 2, AttAdNeg 3	3		0.000		0.856
Informativeness (Infor)		Infor 1, Infor 2, Infor 3	3	0.713	0.000	73.09%	0.815
Irritation (Irr)		Irr 1, Irr 2, Irr 3	3	0.610	0.000	63.91%	0.712
Credibility (Cred)		Cred 1, Cred 2, Cred 3	3	0.675	0.000	64.03%	0.716
Risk Acceptance (Risk)		Risk 1, Risk 2, Risk 3, Risk 4	4	0.726	0.000	64.00%	0.807
Engagement (Eng)		Eng 1, Eng 2 Eng 3, Eng 4	4	0.767	0.000	60.31%	0.779
Purchase Intention (PI)		PI 1, PI 2, PI 3, PI 4*	4	0.623	0.000	68.15%	0.759
Trust (Trust)		Trust 1, Trust 2, Trust 3, trust 4	4	0.793	0.000	71.08%	0.857
Loyalty (Loy)		Loy 1, Loy 2, Loy 3, Loy 4, Loy 5, Loy 6*	6	0.790	0.000	63.90%	0.854
WOM (WOM)		WOM 1, WOM 2, WOM 3	3	0.598	0.000	64.33%	0.700

In order to have the best results some metric were scraped. They were considered outliers for some variables. The metrics market with (*) were discarded because they did not properly assessed the variable.

Almost all KMO's values obtained by this statistical analysis were above the 0.75, making them reasonable values. One value of around 0.87 was spotted for the attitudes towards advertising. Even though the values between 0.6 and 0.7 were presented on this study values, they are still acceptable, once the sample is not very homogeneous.

Seeing the observed values it can be said that the Cronbach's alpha values are acceptable/good for this study, even though there are no excellent values due to the small sample and the heterogeneity of the demographic factors of the respondents. The variable positive attitudes toward advertising shows the worst Cronbach' alpha value (0.6), and the best values were revealed for the negative attitudes toward advertising, trust and loyalty (0.85).

Conferring to the Bartlett's Test, all values were 0.000, meaning that the null hypothesis were rejected and that the there is a strong correlation among variables.

Concerning the percentage of the variance, for the used instruments, the values were between 52% and 73%.

After the results' analysis all data from the factor analysis was verified and the test done shows the aptness of the used metrics for each model's variable.

4.11. Conclusion

During this chapter all the methodology inherent to this study is presented, including the elaboration of the questionnaire, passing through the statistical analysis, the sample characterization and the variables analysis.

It was also noticed the importance of a good literature review and a good investigation model in order to have a good study design.

The demographic analysis of the variables helped make considerations about the sample and to realize that the sample was not very homogeneous, due to the fact that this is an early exploratory study with a small background on the field.

Even though the sample size was not very good, through factor analysis the metrics showed to be suitable to evaluate the study's variables, allowing the upcoming statistical procedures: the multiple linear regression analysis for each variable that will be presented in the next chapter.

5. Results

5.1. Introduction

This chapter aims to present the results of this research. First the descriptive analysis of the study's variable will be presented, in order to make a brief conclusion about the perception of the respondents about the variables.

The role of the demographic factor and the interaction effect on the studied variables is also revealed in this chapter. These factors effect on the study variables will also be explained. For the demographic variables analysis the Student's t-test was used.

In order to validate the proposed model, the multiple linear regression analysis was used. The model was splitted in several sub models, since this analysis does not allow to estimate simultaneous regressions. The multiple linear regression analysis helps validate the study's hypothesis.

At the end of this chapter the results will be discussed so to understand if the results obtained corroborate with the delineated test hypotheses.

5.2. Descriptive Statistic for the Variables

The following table presents the output of the SPSS analysis concerning to the descriptive statistic of the study's variables. Here the minimum and the maximum values for each variable are presented, as well as the mean and the standard deviation.

Table 12: Results of the Descriptive Analysis for the study's variables
Source: Elaborated by the author

Variable		Minimum	Maximum	Mean	Standard Deviation
InitalQ		1.00	4.75	2.4301	0.81941
AttEmailMkt		1.20	5.00	3.5258	0.72774
AttAd	Positive	1.00	4.83	3.2948	0.69760
	Negative	1.67	5.00	3.3950	0.70494
Infor		1.00	5.00	3.1505	0.82603
Irr		1.67	5.00	3.6093	0.74757
Cred		1.00	4.67	2.5771	0.76898
Risk		1.00	5.00	2.9664	0.87295
FreqExp		1.00	5.00	3.6559	1.19000
Eng		1.00	4.75	2.7446	0.79183
PI		1.00	5.00	2.8584	0.81482
Trust		1.00	5.00	3.2500	0.73240
Loy		1.00	5.00	2.9774	0.83032
WOM		1.00	5.00	3.2115	0.74783

The obtained mean values are pretty much homogeneous, between 2.43 (InitialQ) and 3.65 (FreqExp). The lower average value belongs to the credibility (Cred), and that can be explained as there is a lot of non-credible information on the internet and spreading through emails. As this topic involves peoples' health and their well-being, they end up being more reticent about the information that they receive as part of the pharmaceutical emails marketing.

Also the loyalty (Loy), the engagement (Eng) and the purchase intention (PI), it has low mean values. This is also related to the same reasons explained for credibility. The pharmaceutical industry still has a lot of work to do in order to shift the paradigm and start creating a trustable image on consumers' minds about their campaigns and also start interacting more often with them.

Concerning the higher mean values observed in the study, this are referred to the frequency of exposure (FreqExp), the irritation (Irr) and the attitudes toward email marketing (AttEmailMkt). On the one hand, the frequency of exposure and attitudes toward email marketing can be interpreted as good results. Once people are received/ registered in several email marketing campaigns and/or mailing lists. On the other hand, the irritation value is also high, so that means

that most of the time, respondents get annoyed and bored with most of the emails that they receive.

This is the smallest of both evils that also should be improved in order to reduce the values such as the irritation and the negative attitudes toward advertising and increase loyalty, engagement and purchase intention.

Even if some values do not look so good, the results are pretty satisfying once that all averages for all variables are above the half positive in the Likert 5-type scale (≥2.5).

5.3. The Role of Socio-Demographic Variables And Their Interaction Effect on Studied Variables

In the following topic the impact of socio-demographic variables (gender, age, education and nationality) into the study variables will be analyzed using the Students' t-test in order to determine if two sets of data are significantly different from each other.

In the t-test, the null hypothesis (when $p \geq 0.05$) means that there is no relationship/ association among groups.

In order to do this test we had to divide each social-demographic variables in two groups.

5.3.1. Gender

The following analysis represents the Students' t-test done with the gender's socio-demographic variable. This analysis pretends to check if there are differences between males and females concerning the study variables. In this case the gender is the independent variable and all other study variables are the dependent ones.

Table 13: Students' t-test for the independent variable gender
Source: Elaborated by the author

Gender	Male (N=66)		Female (N= 120)			
Variable	Mean	Standard Deviation	Mean	Standard Deviation	t-Student	Sig.
InitalQ	2.2803	0.78754	2.5125	0.82811	- 1.861	0.064
AttEmailMkt	3.5273	0.74556	3.5250	0.72091	0.020	0.984
AttAdPos	3.2601	0.76075	3.3139	0.66287	- 0.502	0.616
AttAdNeg	3.6515	0.72190	3.5639	0.69652	0.810	0.419
Infor	3.1313	0.84100	3.1611	0.82104	- 0.235	0.815
Irr	3.6111	0.69819	3.6083	0.77624	0.024	0.981
Cred	2.5909	0.73216	2.5694	0.79141	0.182	0.856
Risk	2.9167	0.83704	2.9938	0.89435	- 0.575	0.566
FreqExp	3.5152	1.31550	3.7333	1.11320	- 1.198	0.233
Eng	2.8068	0.73745	2.7104	0.82120	0.794	0.428
PI	2.9040	0.82018	2.8333	0.81421	0.565	0.573
Trust	3.2917	0.70245	3.2583	0.75100	0.296	0.767
Loy	2.9970	0.75202	2.9667	0.87326	0.238	0.813
WOM	3.2071	0.72975	3.2139	0.76075	- 0.059	0.953

With this test shows that there are no significate differences between males and females facing all the study's variables.

For initial questions (0.064) the significance was very close to 0.05, that is because the sample was not so homogeneous and maybe there are differences among the rate of subscription to email marketing or pharmaceutical email marketing or even to online shopping.

It can be concluded that same gender customers share the same attitudes toward advertising and email marketing as well as all factors that influence these attitudes.

5.3.2. Age

It was also intended to assess the effect of the age onto these variables. All age ranges were splitted into two groups in order to do the Student's t-test. One group of respondents under 25 years-old (N=122) and another group of respondents over 25 years-old (N=64).

Age	<25 (N=122)		≥25 (N= 64)			
Variable	Mean	Standard Deviation	Mean	Standard Deviation	t-Student	Sig.
InitalQ	2.3934	0.82755	2.5000	0.80549	- 0.842	0.401
AttEmailMkt	3.5377	0.71169	3.5031	0.76261	0.307	0.759
AttAdPos	3.3019	0.70494	3.2813	0.68871	0.191	0.848
AttAdNeg	3.6311	0.69209	3.5260	0.72934	0.966	0.335
Infor	3.1694	0.84983	3.1146	0.78392	0.429	0.668
Irr	3.5984	0.75325	3.6302	0.74208	- 0.275	0.783
Cred	2.5765	0.80749	2.5781	0.69577	- 0.014	0.989
Risk	2.9775	0.92263	2.9453	0.77596	0.238	0.812
FreqExp	3.5574	1.18565	3.8438	1.18481	- 1.565	0.119
Eng	2.7746	0.84636	2.6875	0.67847	0.712	0.478
PI	2.8579	0.82201	2.8594	0.80738	- 0.012	0.991
Trust	3.2643	0.77826	3.2813	0.64164	- 0.149	0.882
Loy	2.9426	0.89645	3.0438	0.68866	- 0.788	0.432
WOM	3.2432	0.81316	3.1510	0.60547	0.797	0.426

The Student's t-test allowed the understanding that age does not influence consumers' attitudes toward advertising neither toward email marketing.

Even though the values do not demonstrate differences between customers' ages, the fact that over 25 years-old are more exposed (3.84 vs 3.55) to emails marketing is noticeable. Consequently they think that they are more annoying (3.63 vs 3.59) and will spread less WOM (3.15 vs 3.24) compared to under 25 years-old customers. Over 25 years-old customers seem to be more loyal (3.04 vs 2.94) regarding email marketing, advertising and the brands that they follow.

5.3.3. Education

The impact of education was also studied with the Student' t-test. In order to do it the sample was splitted into two subgroups. Majority of this respondents were bachelor's customers or master's customers. Follows the analysis done.

Table 15: Students' t-test for the independent variable education
Source: Elaborated by the author

Education	< Bachelor (N= 19)		≥ Bachelor (N= 167)			
Variable	Mean	Standard Deviation	Mean	Standard Deviation	t-Student	Sig.
InitalQ	2.4342	0.80727	2.4296	0.82318	- 0.023	0.982
AttEmailMkt	3.5789	0.70204	3.5198	0.73240	- 0.335	0.738
AttAdPos	3.4123	0.73150	3.2814	0.69467	- 0.774	0.440
AttAdNeg	3.4912	0.76467	3.6068	0.69931	0.676	0.500
Infor	3.1228	0.80285	3.1537	0.83092	0.154	0.878
Irr	3.4737	0.73967	3.6248	0.74910	0.834	0.405
Cred	2.5614	0.96898	2.5788	0.74644	0.093	0.926
Risk	3.0395	0.91766	2.9581	0.87021	- 0.384	0.701
FreqExp	3.4211	1.01739	3.6826	1.20785	0.907	0.365
Eng	3.0658	0.78988	2.7081	0.78611	- 1.879	0.062
PI	3.1228	0.87637	2.8283	0.80482	- 1.489	0.136
Trust	3.5658	0.88130	3.2365	0.70884	- 1.869	0.063
Loy	3.2000	0.88192	2.9521	0.82322	-1.235	0.218
WOM	3.5263	0.84119	3.1756	0.73068	- 1.951	0.053

The Student's t-test analysis proves that education does not influence consumers' attitudes toward advertising neither toward email marketing. Also it does not show differences concerning the attitudes antecedents neither consequents.

It can be noticed that the significance for the WOM and for the Trust is very close to 0.05, which means that maybe, if the sample had been bigger and more homogenous sample some significate differences among these two attitudes' consequents could be expected. Usually these values are decreasing as the level of education of consumers increases.

5.3.4. Nationality

As it was intended to do an international study, it was expected to have several respondents from different places of the world. As the sample did not have a big representation per country or per continent, it was decided to divide the sample in two ways. Split between Europeans and Non-Europeans and split between Portuguese and Non-Portuguese. The next two tables present the analysis made.

Table 16: Students' t-test for the independent variable nationality (European / Non-European)
Source: Elaborated by the author

Nationality	European (N=168)		Non European (N=18)			
Variable	Mean	Standard Deviation	Mean	Standard Deviation	t-Student	Sig.
InitalQ	2.3690	0.78627	3.0000	0.92355	- 3.180	0.002
AttEmailMkt	3.4988	0.72624	3.7778	0.71254	- 1.552	0.122
AttAdPos	3.2579	0.68702	3.6389	0.72140	- 2.225	0.027
AttAdNeg	3.5972	0.71189	3.5741	0.65485	0. 132	0.895
Infor	3.1270	0.81716	3.3704	0.89945	- 1.189	0.236
Irr	3.6032	0.75463	3.6667	0.69546	- 0.342	0.733
Cred	2.5258	0.75346	3.0556	0.77754	- 2.830	0.005
Risk	2.9182	0.87141	3.4167	0.77174	- 2.330	0.021
FreqExp	3.6161	1.19843	4.0556	1.05564	- 1.504	0.134
Eng	2.6920	0.77562	3.3261	0.79739	- 2.823	0.005
PI	2.7897	0.79046	3.5000	0.77754	- 3.629	0.000
Trust	3.2351	0.73752	3.5972	0.60718	-2.010	0.046
Loy	2.9107	0.79993	3.6000	0.87313	- 3.444	0.001
WOM	3.1825	0.73031	3.4815	0.87240	- 1.619	0.107

Table 17: Students' t-test for the independent variable nationality (Portuguese/ Non-Portuguese)
Source: Elaborated by the author

Nationality	Portuguese (N=125)		Non Portuguese (N=61)			
Variable	Mean	Standard Deviation	Mean	Standard Deviation	t-Student	Sig.
InitalQ	2.4100	0.74960	2.4713	0.95208	- 0.478	0.633
AttEmailMkt	3.5232	0.71019	3.5311	0.76845	- 0.070	0.944
AttAdPos	3.3040	0.68557	3.2760	0.72705	0.257	0.798
AttAdNeg	3.5680	0.73204	3.6503	0.64815	- 0.746	0.456
Infor	3.1600	0.83987	3.1311	0.80342	0.223	0.824
Irr	3.5440	0.75555	3.7432	0.71852	- 1.715	0.088
Cred	2.5680	0.77022	2.5956	0.77248	- 0.229	0.819
Risk	2.9740	0.85361	2.9508	0.91835	0.170	0.866
FreqExp	3.6969	1.17553	3.5738	1.24444	0.657	0.512
Eng	2.7500	0.76134	2.7336	0.85741	0.132	0.895
PI	2.8107	0.79688	2.9563	0.84869	- 1.145	0.254
Trust	3.3120	0.72447	3.1844	0.74708	1.116	0.266
Loy	2.9840	0.75844	2.9639	0.96782	0.154	0.878
WOM	3.2453	0.73096	3.1421	0.78282	0.884	0.378

When taking a look at the Students' t-test analysis it was noticed that the values are considerable significant when respondents are splitted between European and Non-European.

Through the analysis of the results it can see that the Non-Europeans respondents are more likely to have a higher credibility and risk acceptance rate having a higher positive attitudes toward advertising compared with Europeans (3.64 vs 3.25). Also they are more favorable to engage, trust and be loyal to the brands and more willing to purchase email marketing products/services.

When the sample is divided between Portuguese and Non Portuguese respondents, they are much more similar and there are no significant differences among them.

5.4. Multiple Linear Regression Analysis

Once the factor analysis was made, new variables were created in the Statistical Software in order to start to do the linear regression analysis.

According to Pestana & Gageiro (2014), the linear regression analysis comprises a statistical model that can predict the behavior of a quantitative variable (dependent variable), through one or several quantitative variables (independent variables). The linear regression model can be divided into the simple linear regression, when there is only one independent variable, or multiple linear regression, when the model embraces more than one independent variable.

The multiple linear regression model can be represented by the following expression:

$$Y_i = \beta_0 + \beta_1 X_{1j} + \beta_2 X_{2j} + \beta_3 X_{3j} + \ldots + \beta_X X_{Xj} + \epsilon_j,$$

Where Y represents the dependent variable, X the independent variable, β_0 the constant term, $\beta_{(p+1)}$ the dimensional parameter vector and ϵ the error term.

To do the multiple linear regression analysis, first the respective coefficients (β) should be estimated, following the least squares approach. This way the residual errors of the approach can be minimized (Pestana & Gageiro, 2014).

The next step includes the evaluation of the influence of independent variable into dependent variables. This verifies if the model can predict the dependent variables in the population.

The Pearson correlation coefficient (R) and the coefficient of determination (R_2) were also considered in order to check the proportion of the variance in the dependent variable that can be predictable as of the independent variable. According to Hair, Back, Babin & Anderson (2014), the Pearson correlation coefficient predicts how strong is the correlation among the variables. Its values vary between -1 and +1, once the signal means if the relations is positive or negative. When the Pearson correlation coefficient value is closer to -1 or +1 it means that the correlation is almost perfect, while when this value is closer to 0, it means that there is no correlation among the variables.

The coefficient of determination is the square of the Pearson correlation coefficient, which varies between 0 and 1, and when this value is closer to 1 it means that the model is well represented and adjusted by the expression.

When the model comprises more than one independent variable it is recommended to also calculate the adjusted coefficient of correlation, in order to ensure the robustness of the model.

The F-test (ANOVA) analysis was also made in order to determinate the significance of the regressions and to test the null hypothesis (H_0). When the F value is high the regression will be more significant. In this case scenario, the null hypothesis should be rejected, once there is no substantial correlation among the dependent and independent variables. Also the null hypothesis is rejected when the significance in the Student' t-test is lower than 0.05. If the null hypothesis is rejected, it can be concluded that the model's parameters are significantly different from zero (Maroco, 2003).

For this research the t-test 95% degrees of freedom for the confidence interval was considered, which means that the t-value varies between -1.96 and +1.96. Any value lower than -1.96 and higher than 1.96 means that the test is statistically significant.

5.4.1. Sub Model's Analysis

In this subtopic the results of the analysis of each sub model are presented in order to validate the research's model exposed before. The presented sub models will help explain and corroborate or not the stated hypothesis, to make conclusion about this study.

5.4.1.1. Antecedents of Consumers' Attitudes Toward Email Marketing

The subsequent sub model presents the correlation between consumers' attitudes toward email marketing (*AttEmailMtk*), as a dependent variable, and the informativeness (*Infor*), the risk acceptance (*Risk*) and the positive attitudes toward advertising (*AttAdPos*), as independent variables.

This model aimed to assess how the independent variables influence consumers' attitudes toward email marketing (*AttEmailMtk*).

The multiple linear regression model for this correlation is shown on the following formula:

$$AttEmailMkt = \beta_0 + \beta_1\,Infor + \beta_2\,Risk + \beta_3\,AttAdPos + \mathcal{E}$$

The graphic representation of this sub model can be seen in the following figure:
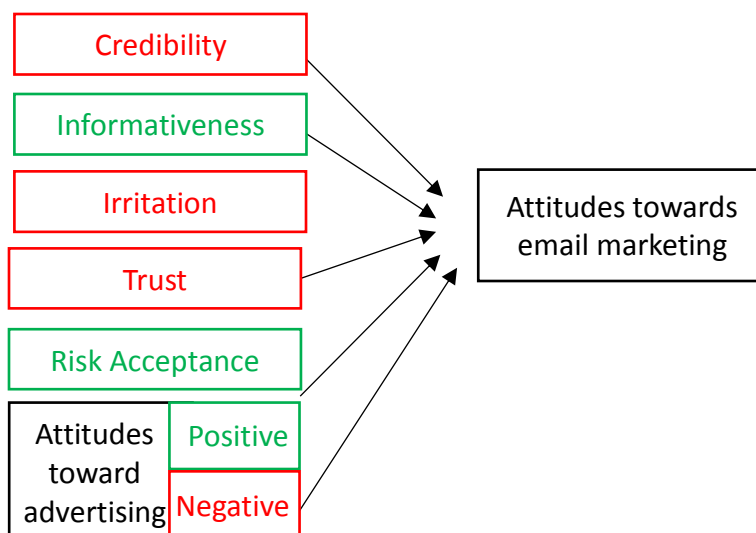
Figure 3: Sub model of the Attitudes toward Email Marketing
Source: Elaborated by the author

According to the statistical software used and to the Stepwise method, the following table was generated with the statistical information about this sub model:

Table 18: Results of the sub model of the Attitudes toward Email Marketing
Source: Elaborated by the author

R^2	R^2 Adjusted	F	Sig.		B	β Standardized	t	Sig.
0.497	0.489	59.905	0.000	(Constant)	1.122		5.808	0.000
				Infor	0.357	0.406	5.903	0.000
				Risk	0.165	0.198	3.071	0.002
				AttAdPos	0.239	0.229	3.347	0.001

Once the data is collected from the statistical software it is possible to represent the multiple linear regression of this sub model:

$$AttEmailMkt = 1.122 + 0.357\,Infor + 0.239\,AttAdPos + 0.165\,Risk + \epsilon$$

According to the statistical analysis, for this sub model, the coefficient of determination was 0.497 and the coefficient of determination adjusted was 0.489. These values mean that this model can explain 48.9% of the variance of the consumer's attitudes toward email marketing (*AttEmailMkt*)

through the informativeness (*Infor*), the risk acceptance *(Risk)* and the positive attitudes toward email marketing (*AttAdPos*).

The significance of the regression, that was tested conferring to the F-test analysis, was lower than 0.05 (0.00) and the F value was 59.905, the null hypothesis was rejected, concluding that the model is adjusted to the data.

The informativeness (*Infor*) allied to email marketing in the pharmaceutical industry can have a positive effect on consumers' attitudes towards email marketing (*AttEmailMkt*). According to the statistical analysis, it can be said that an increase of 1% on the informativeness represents a direct increase of 0.357% on consumers' attitudes toward email marketing (*AttEmailMkt*). Also this model states that this is the variable that influences more the consumers' attitudes toward email marketing (*AttEmailMkt*).

Considering the presented data before, H_2 is corroborated:

H_2: There is a positive relationship between informativeness and customers' attitudes toward email marketing.

The positive attitudes toward advertising (*AttAdPos*) are another variable that powers the consumers' attitudes toward email marketing (*AttEmailMkt*). This sub model shows that an increase of 1% on the positive attitudes toward advertising (*AttAdPos) represent a direct increase of* 0.239% on consumers' attitudes toward email marketing (*AttEmailMkt*).

Considering the data presented before, H_{7a} is corroborated:

H_{7a}: There is a positive relationship between positive attitudes toward advertising and customers' attitudes toward email marketing.

The risk acceptance (*Risk*) is the last variable that was considered for this study to impacts consumers' attitudes toward email marketing (*AttEmailMkt*). For this regression, an increase of 1% on the risk acceptance (*Risk) represents a direct increase of* 0.165% on the consumers' attitudes toward email marketing (*AttEmailMkt*). This is the variable that less influences consumers' attitudes toward email marketing (*AttEmailMkt*).

Considering the presented data before, H_6 is corroborated:

H_6: There is a positive relationship between risk acceptance and customers' attitudes toward email marketing.

According to this study and to the statistical analysis made, the variables credibility (*Cred*), irritation (*Irr*), frequency of exposure (*FreqExp*), trust (*Trust*) and negative attitudes toward advertising (*AttAdNeg*) does not influence the studied variable.

When looking to the corroboration of our study variables with the ones validated in the literature, such as in Brackett & Carr (2001) and Ducoffe (1996) models, it was only possible corroborate the H_2 related with the informativeness and not the hypotheses related to credibility or irritation. This can be explained because of the heterogeneity of the sample.

As an attitude is a behavior or disposition face to something, as we can see in Fishbein & Ajzen's model (1975), we hypothesized and corroborated that attitudes toward email marketing were related and influenced by attitudes toward advertising.

Against to what Mou, Dong-Hee Shin, & Jason Cohen (2015) found in a recent study about the relationship between the risk acceptance and the trust regarding to the acceptance to the e-services, our trust hypothesis does not fit with their conclusion. In our study we could not find a correlation between the dependent variable, trust, with the attitudes toward email marketing, while Mou et al. (2015) found that this variables somehow impacts that acceptance and the attitudes of consumers.

5.4.1.2. Consequents of Consumers' Attitudes Toward Email Marketing

In this topic will be presented four sub models that represents the relation between the dependent variables and consumer attitudes toward email marketing (*AttEmailMkt*).

For the first sub model, which the purchase intention (*PI*) was the dependent variable, the statistical analysis identified the following independent variables: Attitudes toward Email Marketing (*AttEmailMkt*).

It is aimed to understand how this independent variables impact the purchase intention (*PI*), the following linear regression was established, as in the previous model.

The multiple linear regression model for this correlation is shown on the following formula:

$$PI = \beta_0 + \beta_1\,AttEmailMkt + \epsilon$$

The graphic representation of this sub model can be seen in the following figure:

Figure 4: Sub model of the Attitudes toward Purchase Intention
Source: Elaborated by the author

According to the statistical software used and to the Stepwise method, the following table with the statistical information about this sub model was generated:

Table 19: Results of the sub model of the Purchase Intention
Source: Elaborated by the author

R^2	R^2 Adjusted	F	Sig.		B	β Standardized	T	Sig.
0.147	0.142	31.685	0.000	*(Constant)*	1.345	0.247	4.902	0.000
				AttEmailmKt	0.429	0.076	5.629	0.000

Once the data is collected from the statistical software it is possible to represent the multiple linear regression of this sub model:

$$PI = 1.345 + 0.429\,AttEmailMkt + \epsilon$$

According to the statistical analysis, for this sub model, the coefficient of determination was 0.147 and the coefficient of determination adjusted was 0.142. These values mean that this model can explain 14.2% of the variance of the purchase intention (*PI*) through the consumer attitudes toward email marketing (*AttEmailMkt*).

The significance of the regression, that was tested conferring to the F-test analysis, was lower than 0.05 (0.00) and the F value was 31.685, so that the null hypothesis was rejected, concluding that the model is adjusted to the data.

With this model we can say that consumer attitudes toward email marketing (*AttEmailMkt*) is directly correlated with the purchase intension (*PI*). According to this regression, an increase of 1% on the trust (*Trust*) *represents a direct increase of* 0.429% on the purchase intention (*PI*).

Considering the presented data before, H_9 is corroborated:

H_9: There is a positive relationship between customers' attitudes email marketing and purchase intention.

The next sub model refers to the WOM associated to the attitudes towards email marketing (*AttEmailMkt*). For this model, the Stepwise analysis considered as independent variables the consumer attitudes toward email marketing (*AttEmailMkt)*.

It is intended to understand how this independent variables impact the WOM, so that was established the following linear regression, as in the previous models.

The multiple linear regression model for this correlation is shown on the following formula:

$$WOM = \beta_0 + \beta_1 \, AttEmailMkt + \epsilon$$

The graphic representation of this sub model can be seen in the following figure:
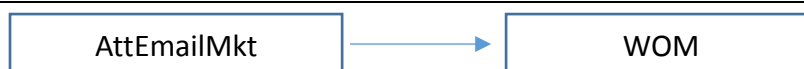
AttEmailMkt	→	WOM

Figure 5: Sub model of the WOM
Source: Elaborated by the author

According to the statistical software used and to the Stepwise method the following table with the statistical information about this sub model was generated:

Table 20: Results of the sub model of the WOM
Source: Elaborated by the author

R^2	R^2 Adjusted	F	Sig.		B	β Standardized	T	Sig.
0.179	0.175	40.244	0.000	*(Constant)*	1.677		6.787	0.000
				AttEmailmKt	0.435	0.424	6.344	0.000

Once the data is collected from the statistical software it is possible to represent the multiple linear regression of this sub model:

$$WOM = 1.677 + 0.435 AttEmailMkt + \in$$

According to the statistical analysis, for this sub model, the coefficient of determination was 0.179 and the coefficient of determination adjusted was 0.175. These values mean that this model can explain 17.5% of the variance of the WOM through consumer attitudes toward email marketing (*AttEmailMkt*).

The significance of the regression, that was tested conferring to the F-test analysis, was lower than 0.05 (0.00) and the F value was 35.674, so that the null hypothesis was rejected, concluding that the model is adjusted to the data.

According to this sub model, the consumer attitudes toward email marketing (*AttEmailMkt*) were proven that influence the WOM. Giving this regression, an increase of 1% on the consumer attitudes toward email marketing (*AttEmailMkt) represents a direct increase of* 0.435% on the WOM.

Considering the presented data before, H_{10} is corroborated:

H10: There is a positive relationship between customers' attitudes toward email marketing and WOM.

This following sub model of this study has as dependent variable the loyalty (*Loy*) associated to the attitudes towards email marketing. For this model, the Stepwise analysis considered as independent variables the consumer attitudes toward email marketing (*AttEmailMkt)*.

It is intended to understand how this independent variables impact the loyalty (*Loy*), so that was established the following linear regression, as in the previous models.

The multiple linear regression model for this correlation is shown on the following formula:

$$Loy = \beta_0 + \beta_1 AttEmailMkt + \epsilon$$

The graphic representation of this sub model can be seen in the following figure:

Figure 6: Sub model of the Attitudes toward Loyalty
Source: Elaborated by the author

According to the statistical software used and to the Stepwise method, the following table with the statistical information about this sub model was generated:

Table 21: Results of the sub model of the Loyalty
Source: Elaborated by the author

R^2	R^2 Adjusted	F	Sig.		B	β Standardized	T	Sig.
0.162	0.158	35.674	0.000	(Constant)	1.356		4.894	0.000
				AttEmailmKt	0.460	0.403	5.973	0.000

Once the data is collected from the statistical software it is possible to represent the multiple linear regression of this sub model:

$$Loy = 1.356 + 0.460 AttEmailMkt + \epsilon$$

According to the statistical analysis, for this sub model, the coefficient of determination was 0.162 and the coefficient of determination adjusted was 0.158. These values mean that this model can explain 15.8% of the variance of the loyalty (*Loy*) through consumer attitudes toward email marketing (*AttEmailMkt*).

The significance of the regression, that was tested conferring to the F-test analysis, was lower than 0.05 (0.00) and the F value was 36.674, so that it was rejected the null hypothesis, concluding that the model is adjusted to the data.

The consumer attitudes toward email marketing (*AttEmailMkt)* was proven to influence the loyalty (Loy). Giving this regression, an increase of 1% on the consumer attitudes toward email marketing (*AttEmailMkt) represents a direct increase of* 0.460% on the loyalty (Loy).

Considering the presented data before, H_8 is corroborated:

$H_{11:}$ There is a positive relationship between customers' attitudes toward email marketing and loyalty.

Follows the sub model subsequent to the consequents of the attitudes towards email marketing, referring to the engagement (*Eng*). For this model, the Stepwise analysis considered as independent variables the consumer attitudes toward email marketing (*AttEmailMkt)*.

 It is intended to understand how this independent variables impact the engagement (*Eng*), so that was established the following linear regression, as in the previous model.

The multiple linear regression model for this correlation is shown on the following formula:

$$Eng = \beta_0 + \beta_1 AttEmailMkt + \epsilon$$

The graphic representation of this sub model can be seen in the following figure:

| AttEmailMkt | → | Engagement |

Figure 7: Sub model of the Attitudes toward Engagement
Source: Elaborated by the author

According to the statistical software used and to the Stepwise method, it was generated the following table with the statistical information about this sub model:

Table 22: Results of the sub model of the Engagement
Source: Elaborated by the author

R^2	R^2 Adjusted	F	Sig.		B	β Standardized	T	Sig.
0.256	0.252	63.272	0.000	*(Constant)*	0.804		3.228	0.001
				AttEmailmKt	0.550	0.506	7.954	0.000

Once the data is collected from the statistical software it is possible to represent the multiple linear regression of this sub model:

$$Eng = 0.804 + 0.550 AttEmailMkt + \in$$

According to the statistical analysis, for this sub model, the coefficient of determination was 0.256 and the coefficient of determination adjusted was 0.252. These values mean that this model can explain 25.2% of the variance of the engagement (*Eng*) through consumer attitudes toward email marketing (*AttEmailMkt*).

The significance of the regression, that was tested conferring to the F-test analysis, was lower than 0.05 (0.00) and the F value was 62.272, so that it was rejected the null hypothesis, concluding that the model is adjusted to the data.

The consumer attitudes toward email marketing (*AttEmailMkt*) is the depend variable that influence more the engagement (*Eng*). According to this model, an increase of 1% on the consumer attitudes toward email marketing (*AttEmailMkt) represents a direct increase of* 0.550% on the engagement (*Eng*).

Considering the presented data before, H_8 is corroborated:

H₈: There is a positive relationship between customers' attitudes toward email marketing and engagement.

Conferring to the models of the consequents of the attitudes toward email marketing, our study proved that all models were corroborated with our stated hypothesis.

According to Gvili & Levy (2015) , they also found associations between the WOM and the consumer attitudes toward email marketing.

Fisher, Ivey, & Karson (2005), Lord, Lee, & Sauer (1995) and MacKenzie et al. (1986) were some of the authors that found associations between the purchase intention and the consumer's attitudes toward online advertising.

According to Suh & Youjae (2006), they found out some links between brand attitudes and loyalty. In our study we could also corroborate our loyalty hypothesis that were connecting the attitudes toward email marketing with consumer loyalty.

Concerning to engagement we found some correlations with consumer attitudes toward email marketing, findings that are in agreement with studies already reported (Chu & Yoojung, 2011; Herr et al., 1991; Rodgers & Chen, 2002; Trusov M & K., 2009).

5.4.2.   Others models

Additional models related to the consumers' consequents toward the email marketing were also explored in order to understand further correlation among the antecedents and the consequents of the attitudes toward the email marketing.

For the following sub model, where the purchase intention (*PI*) was the dependent variable, the statistical analysis identified the following independent variables: trust (*Trust*), credibility (*Cred*) and risk acceptance (*Risk*).

It is aimed to understand how these independent variables impact the purchase intention (*PI*), the following linear regression was established, as in the previous model.

The multiple linear regression model for this correlation is shown on the following formula:

$$PI = \beta_0 + \beta_1\,Trust + \beta_2\,Cred + \beta_3\,Risk + \epsilon$$

The graphic representation of this sub model can be seen in the following image:
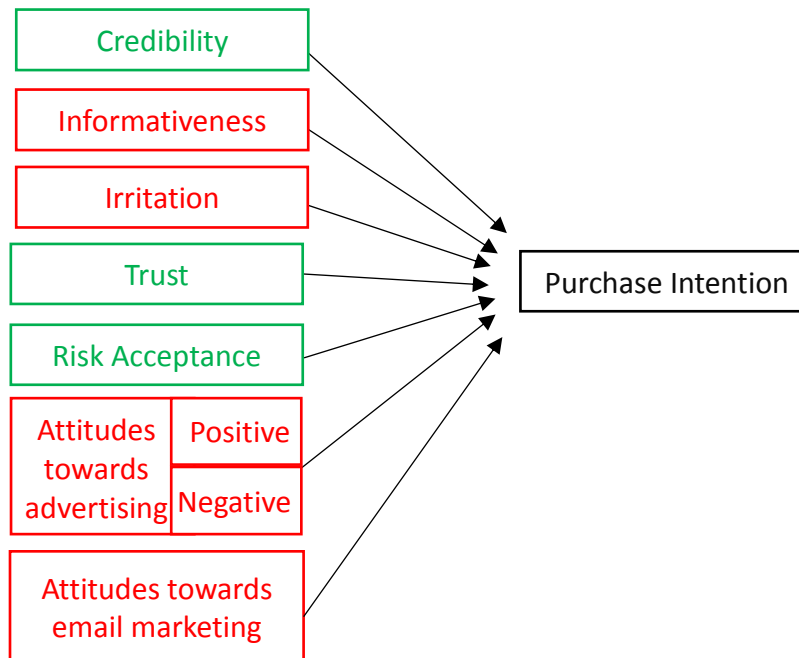

Figure 8: Sub model of Purchase Intention
Source: Elaborated by the author

According to the statistical software used and to the Stepwise method, the following table with the statistical information about this sub model was generated:

Table 23: Results of the sub model of the Purchase Intention
Source: Elaborated by the author

R^2	R^2 Adjusted	F	Sig.		B	β Standardized	T	Sig.
0.422	0.412	44.219	0.000	*(Constant)*	0.421		1.898	0.059
				Trust	0.356	0.320	4.744	0.000
				Cred	0.259	0.244	3.290	0.001
				Risk	0.204	0.219	2.942	0.004

Once the data is collected from the statistical software it is possible to represent the multiple linear regression of this sub model:

$$PI = 0.421 + 0.356\,Trust + 0.259\,Cred + 0.204\,Risk + \text{\euro}$$

According to the statistical analysis, for this sub model, the coefficient of determination was 0.422 and the coefficient of determination adjusted was 0.412. These values mean that this model can explain 41.2% of the variance of the purchase intention (*PI*) through the trust (*Trust*), the credibility (*Cred*) and the risk acceptance (*Risk*).

The significance of the regression, that was tested conferring to F-test analysis, was lower than 0.05 (0.00) and the F value was 44.219, so that the null hypothesis was rejected, concluding that the model is adjusted to the data.

The trust (*Trust*) is the dependent variable for this sub model that influences more the purchase intention (*PI*). According to this regression, an increase of 1% on the trust (*Trust*) *represents a direct increase of* 0.356% on the purchase intention (*PI*).

The credibility (*Cred*) also affects the purchase intention (*PI*), when talking about email marketing as a source of purchase. This regression says that an increase of 1% on the credibility (*Cred*) *represents a direct increase of* 0.259% on the purchase intention (*PI*).

Also the risk acceptance (*Risk*) was proven to influence the purchase intention (*PI*). Giving this regression, an increase of 1% on the risk acceptance (*Risk*) *represents a direct increase of* 0.204% on the purchase intention (*PI*).

Considering the presented data before, H$_9$ is not corroborated:

H$_9$: There is a positive relationship between customers' attitudes email marketing and purchase intention.

Follows the sub model subsequent to the consequents of the attitudes towards email marketing, referring to the engagement (*Eng*). For this model, the Stepwise analysis considered as independent variables the credibility (*Cred*), the trust (*Trust*), the positive attitudes toward advertising (*AttAdPos*) and the risk acceptance (*Risk*).

It is intended to understand how these independent variables impact the engagement (*Eng*), the following linear regression was established, as in the previous model.

The multiple linear regression model for this correlation is shown on the following formula:

$$Eng = \beta_0 + \beta_1\ Cred + \beta_2\ Trust + \beta_3\ AttAdPos + \beta_4\ Risk + \in$$

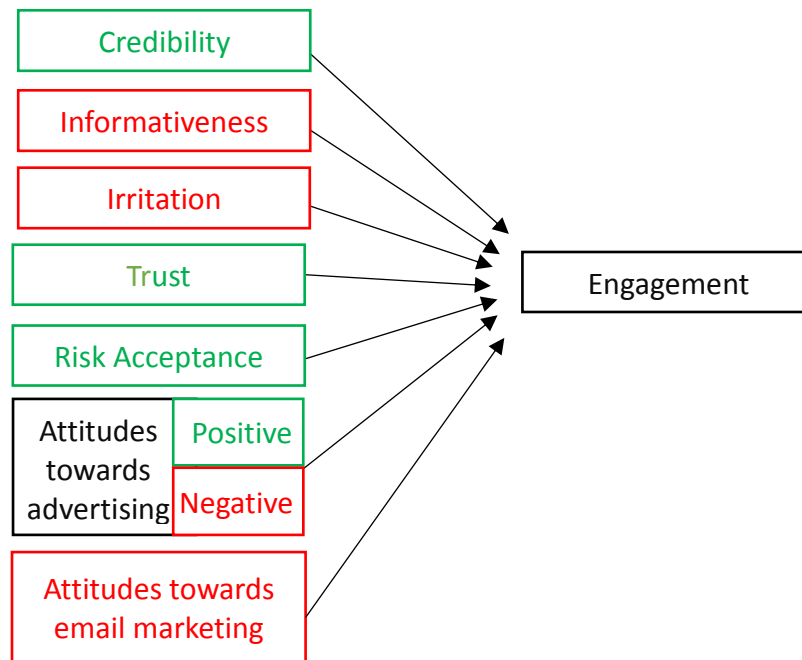The graphic representation of this sub model can be seen in the following image:

Figure 9: Sub model of the Engagement
Source: Elaborated by the author

According to the statistical software used and to the Stepwise method, the following table with the statistical information about this sub model was generated:

Table 24: Results of the sub model of the Engagement
Source: Elaborated by the author

R^2	R^2 Adjusted	F	Sig.		B	β Standardized	t	Sig.
0.563	0.553	58.260	0.000	(Constant)	- 0.214		- 1.019	0.309
				Cred	0.255	0.480	3.556	0.000
				Trust	0.306	0.283	4.643	0.000
				AttAdPos	0.254	0.224	3.400	0.001
				Risk	0.157	0.173	2.632	0.009

Once the data is collected from the statistical software it is possible to represent the multiple linear regression of this sub model:

$$Eng = - 0.214 + 0.255Cred + 0.306Trust + 0.254AttAdPos + 0.157Risk + \in$$

According to the statistical analysis, for this sub model, the coefficient of determination was 0.563 and the coefficient of determination adjusted was 0.553. These values mean that this model can explain 55.3% of the variance of the engagement (*Eng*) through the credibility (*Cred*), the trust (*Trust*), the positive attitudes toward advertising (*AttAdPos*) and the risk acceptance (*Risk*).

The significance of the regression, that was tested conferring to the F-test analysis, was lower than 0.05 (0.00) and the F value was 58.260, so that it was rejected the null hypothesis, concluding that the model is adjusted to the data.

The credibility (*Cred*) is the dependent variable that influences more the engagement (*Eng*). According to this model, an increase of 1% on the credibility (*Cred*) *represents a direct increase of* 0.255% on the engagement (*Eng*).

As well as the credibility (*Cred*), the trust (*Trust*) also impacts the engagement (*Eng*). According to this regression, an increase of 1% on the trust (*Trust*) *represents a direct increase of* 0.306% on the engagement (*Eng*).

The positive attitudes toward advertising (*AttAdPos*) is also one of the dependent variables that influence the engagement (*Eng*). According to this regression, an increase of 1% on the positive attitudes toward advertising (*AttAdPos*) *represents a direct increase of* 0.254% on the engagement (*Eng*).

Also the risk acceptance (*Risk*) was proven to influence the engagement (*Eng*). Giving this regression, an increase of 1% on the risk acceptance (*Risk*) *represents a direct increase of* 0.157% on the engagement (*Eng*).

Considering the presented data before, H_8 is not corroborated:

H_8: There is a positive relationship between customers' attitudes toward email marketing and engagement.

This sub model refers to the WOM associated to the attitudes towards email marketing. For this model, the Stepwise analysis considered as independent variables the positive attitudes toward advertising (*AttAdPos*), the trust (*Trust*) and the informativeness (*Infor*).

It is intended to understand how this independent variables impact the WOM, so that was established the following linear regression, as in the previous models.

The multiple linear regression model for this correlation is shown on the following formula:

$$WOM = \beta_0 + \beta_1 \, Trust + \beta_2 \, Infor + \beta_3 \, AttAdPos + \in$$

The graphic representation of this sub model can be seen in the following image:
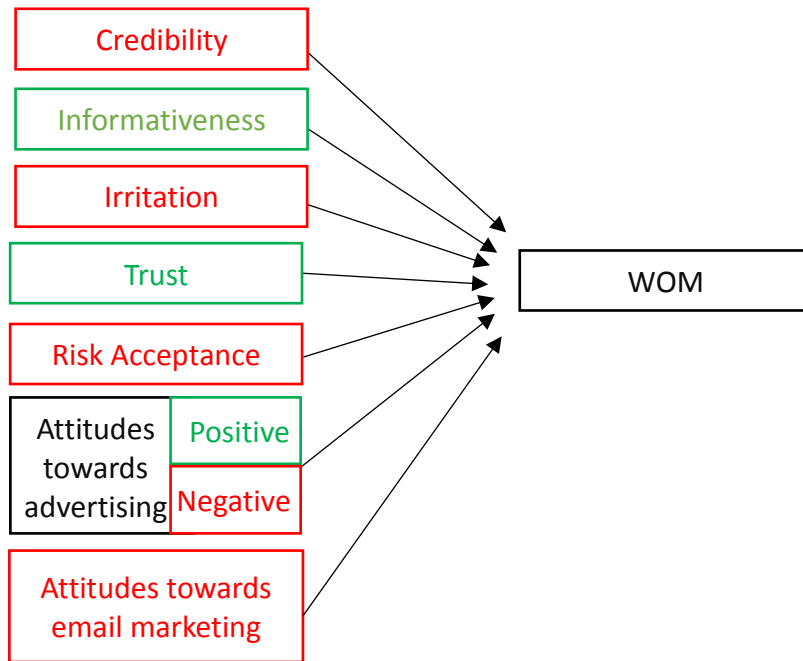
Figure 10: Sub model of the WOM
Source: Elaborated by the author

According to the statistical software used and to the Stepwise method, the following table with the statistical information about this sub model was generated:

Table 25: Results of the sub model of the WOM
Source: Elaborated by the author

R^2	R^2 Adjusted	F	Sig.		B	β Standardized	T	Sig.
0.425	0.415	44.779	0.000	(Constant)	0.651		2.852	0.005
				Trust	0.362	0.354	5.251	0.000
				Infor	0.195	0.215	2.979	0.003
				AttAdPos	0.232	0.216	2.926	0.004

Once the data is collected from the statistical software it is possible to represent the multiple linear regression of this sub model:

$$WOM = 0.651 + 0.362 Trust + 0.195 Infor + 0.232 AttAdPos + \in$$

According to the statistical analysis, for this sub model, the coefficient of determination was 0.425 and the coefficient of determination adjusted was 0.415. These values mean that this model can

explain 41.5% of the variance of the WOM through positive attitudes toward advertising (*AttAdPos*), the trust (*Trust*) and the informativeness (*Infor*).

The significance of the regression, that was tested conferring to the F-test analysis, was lower than 0.05 (0.00) and the F value was 44.779, so that the null hypothesis was rejected, concluding that the model is adjusted to the data.

According to this sub model, the trust (*Trust*) is the dependent variable that influence more the WOM. Conferring to this regression, an increase of 1% on the trust (*Trust*) *represents a direct increase of* 0.362% on the WOM.

The positive attitudes toward advertising (*AttAdPos*) were proven to influence the WOM. Giving to this regression, an increase of 1% on the positive attitudes toward advertising (*AttAdPos*) *represents a direct increase of* 0.232% on the WOM.

Also the informativeness (*Infor*) was also proven to positively influence the WOM. Rendering to this regression, we know that an increase of 1% on the informativeness (*Infor*) *represents a direct increase of* 0.195% on the WOM.

Considering the presented data before, H_{10} is not corroborated:

H_{10}: There is a positive relationship between customers' attitudes toward email marketing and WOM.

The last sub model of this study has as dependent variable the loyalty (*Loy*) associated to the attitudes towards email marketing. For this model, the Stepwise analysis considered as independent variables the trust (*Trust*), the informativeness (*Infor*), the risk acceptance (*Risk*) and the irritation (*Irr*).

 It is intended to understand how this independent variables impact the WOM, the following linear regression, as in the previous models was established.

The multiple linear regression model for this correlation is shown on the following formula:

$$Loy = \beta_0 + \beta_1\, Trust + \beta_2\, Infor + \beta_3\, Risk + \beta_4\, Irr + \in$$

The graphic representation of this sub model can be seen in the following image:
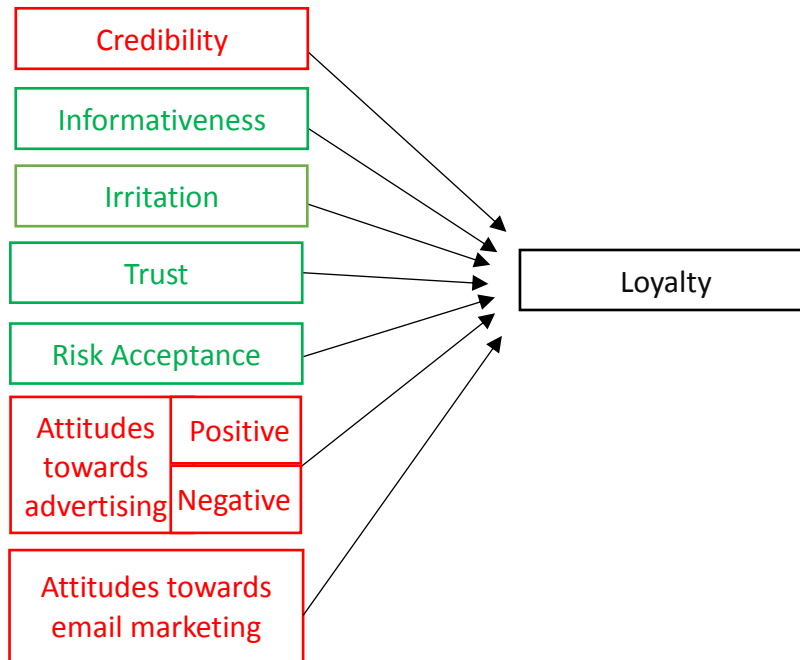

Figure 11: Sub model of the Loyalty
Source: Elaborated by the author

According to the statistical software used and to the Stepwise method, the following table with the statistical information about this sub model was generated:

Table 26: Results of the sub model of the Loyalty
Source: Elaborated by the author

R^2	R^2 Adjusted	F	Sig.		B	β Standardized	T	Sig.
0.543	0.533	53.701	0.000	(Constant)	- 0.842		- 2.223	0.027
				Trust	0.531	0.468	7.728	0.000
				Infor	0.283	0.281	4.260	0.000
				Risk	0.188	0.198	3.166	0.002
				Irr	0.176	0.159	2.780	0.006

Once the data is collected from the statistical software it is possible to represent the multiple linear regression of this sub model:

$$Loy = -0.842 + 0.531 Trust + 0.283 Infor + 0.188 Risk + 0.176 Irr + \in$$

According to the statistical analysis, for this sub model, the coefficient of determination was 0.543 and the coefficient of determination adjusted was 0.533. This values means that this model can explain 53.3% of the variance of the loyalty (*Loy*) through trust (*Trust*), the informativeness (*Infor*), risk acceptance (*Risk*) and irritation (Irr).

The significance of the regression, that was tested conferring to the F-test analysis, was lower than 0.05 (0.00) and the F value was 53.701, so that it was rejected the null hypothesis, concluding that the model is adjusted to the data.

Once again, the trust is the dependent variable that influences loyalty (*Loy*) more. According to this regression, an increase of 1% on the trust (*Trust*) *represents a direct increase of* 0.531% on the loyalty (*Loy*).

The informativeness (*Infor*) was proven to influence the loyalty (Loy). Giving this regression, an increase of 1% on the informativeness (*Infor) represents a direct increase of* 0.283% on the loyalty (Loy).

The risk acceptance is also a dependent variable that does impact the loyalty (*Loy*). According to this regression, an increase of 1% on the risk acceptance (*Risk) represents a direct increase of* 0.188% on the loyalty (Loy).

Also the irritation (*Irr*) was proven to influence the loyalty (*Loy*). Giving this regression, an increase of 1% on the irritation (*Irr*) *represents a direct increase of* 0.176% on the loyalty (*Loy*).

Considering the presented data before, H_{11} is not corroborated:

H_{11}: There is a positive relationship between customers' attitudes toward email marketing and loyalty.

5.5. Discussion of the Results

As stated at beginning of this study, it was aimed to evaluate the consumers' attitudes toward pharmaceutical email marketing. By this was it was divided the study's model into several sub models so that it could be analyzed easily and obtained better conclusions.

Follows the table with both corroborated and not corroborated the study's hypothesis that it was possible to gauge from the delivered questionnaire and analyzed with a statistical software:

Table 27: Summary of the study's hypothesis
Source: Elaborated by the author

Hypothesis	Validation
H_1: There is a positive relationship between credibility and customers' attitudes toward email marketing.	Not corroborated
H_2: There is a positive relationship between informativeness and customers' attitudes toward email marketing.	Corroborated
H_3: There is a positive relationship between irritation and customers' attitudes toward email marketing.	Not corroborated
H_4: There is a positive relationship between frequency of exposure and customers' attitudes toward email marketing.	Not corroborated
H_5: There is a positive relationship between trust and customers' attitudes toward email marketing.	Not corroborated
H_6: There is a positive relationship between risk acceptance and customers' attitudes toward email marketing.	Corroborated
H_{7a}: There is a positive relationship between positive attitudes toward advertising and customers' attitudes toward email marketing.	Corroborated
H_{7b}: There is a negative relationship between negative attitudes toward advertising and customers' attitudes toward email marketing.	Not corroborated
H_8: There is a positive relationship between customers' attitudes toward email marketing and engagement.	Corroborated
H_9: There is a positive relationship between customers' attitudes email marketing and purchase intention.	Corroborated
H_{10}: There is a positive relationship between customers' attitudes toward email marketing and WOM.	Corroborated
H_{11}: There is a positive relationship between customers' attitudes toward email marketing and loyalty.	Corroborated

Even though few hypotheses were corroborated, the results were pretty satisfying once the several coefficient of determination were good, taking into account the topic, the lack of available information and the heterogeneity of the sample.

Also it was learned new information that can be extremely useful for further investigations.

6. Conclusion

6.1. Study Learning / Contributions

The results of this study are believed that are crucial and encouraging for further investigation about not only email marketing but also all digital channels in the pharmaceutical company.

During this study we focused in understanding which motives are related with consumer attitudes towards the email marking in the pharmaceutical industry and at the end it was possible to corroborate several of our study hypotheses, as we can see in the following figure:
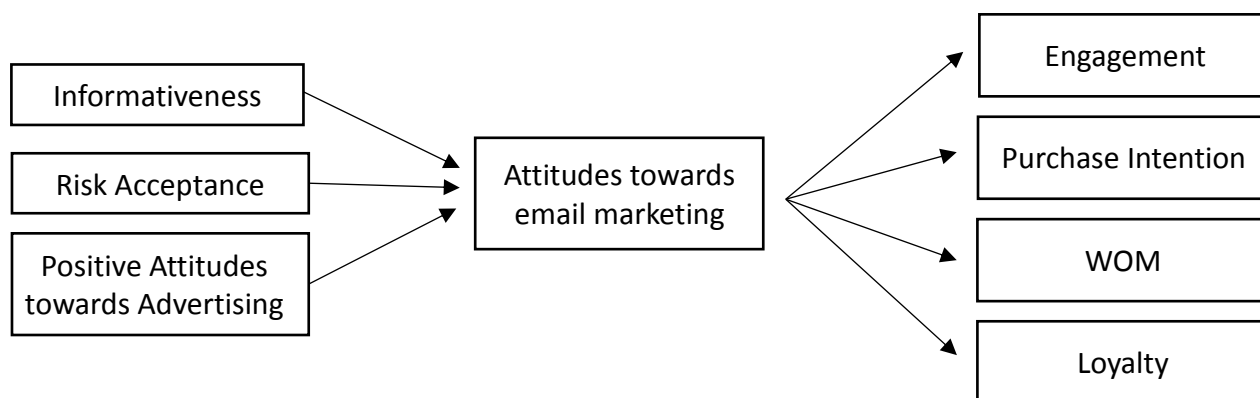
Figure 12: Study model with corroborated hypothesis
Source: Elaborated by the author

Taking into account our study model, we can confirm that the informativeness, the risk acceptance and the positive attitudes towards advertising are the antecedents of the attitudes towards email marketing, once this variables were considered significant in our statistical analysis. And even though the others variables were not considered significantly related with the attitudes toward email marketing, we believe that if will be conducted further studies with more accurate sample (not convenient sample) it will be possible to validate the excluded variables in this study.

Concerning to the consequents of the attitudes towards email marketing, it was possible to validate all the selected variables (engagement, purchase intention, WOM and loyalty).

Another big conclusion about this academic work is that the pharmaceutical companies must invest more time and effort spreading their digital improvements and change the paradigm that was developed around the ordinary email marketing campaigns. That is why lot of consumers does not really trust into pharmaceutical advertising because normally their attitudes toward the advertising are not so optimistic and positives. According to our data, the average of the credibility and trust metrics is 2.58 and 3.97, respectively, and even though this values are reasonable are not good enough for one industry that is based in trust between the patients and the health workers/ companies.

The major academic contribution of this study was the validation of an attitudinal model for the digital channels in the pharmaceutical industry. This is an important and crucial step for future researches focus on this industry and on the digital channels. Also it was possible to conclude that the antecedents of attitudes toward email marketing are different from business sector, that's because even though our model were based on Brackett & Carr (2001) and Ducoffe (1996) models, it was not possible to validate the same variables that they had corroborate.

The business sector contributions were the highlight point of this study once that, as mentioned at beginning of this study, very little was known about the digital impact that the pharmaceutical companies were doing and as this was a global study, comprising several nationalities and different cultures, it was possible to create an overview about the actions that companies must start taking into account. This study shows that there is still a lot work to do concerning the development of strong relationships with consumers so that they will have better trust and credibility responses and consequently they have meliorate the attitudes toward email marketing. It was also possible to spot that different cultures had different attitudes toward email marketing, as it can be seen in the sub chapter of the impact of the social variables metrics.

6.2. Limitations and Future Investigations

During the ongoing of this study, several difficulties were faced especially because of the few reliable information available on internet about the topic. But even though all this struggles, the ambition was bigger and it was possible develop a brand new study design for this industry.

One of the main limitation was the few number of studies and information related with pharmaceutical marketing and about the digital channels on the pharmaceutical industry.

The few number of the respondents may be related with the long questionnaire shared and may lead a negative impact to several persons and so to avoid the conclusion and its submission. Due to the long questionnaire, we had to extend the period of the data collection, delaying the study schedule.

The fact that we used a convenience sample may lead to a bigger heterogeneity of our data and biased.

The last limitation of this study that may be related of the few number of answers may be it is related with the non-translation of the survey in different languages. In this case it was just shared the English version. Probably if it was done the translation to other languages, such as Portuguese, Spanish and French, we could get more answers.

As this is a brand new field, very few explored, there is a plenty of opportunities to design new and attractive studies. One of the biggest advices is that for future researches try to have a Pharmaceutical or Consultant Company's support so they can work together with cleaner objectives. Even though there was not possible to corroborate all the tested hypothesis, we believe that our model is a strong and coherent model, so it is advised to keep on going with further analysis of this model, not only in the pharmaceutical sector. Also, it is advised to do not present to the population such bigger questionnaires, because it will lead to a lower number of answers.

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8. Appendix

Table 28: Questions used in the questionnaire
Source: Elaborated by the author

Nº	Question	Variable
1	Age	*Demog 1*
2	Gender	*Demog 2*
3	Scholarity	*Demog 3*
4	Nationality	*Demog 4*
5	How often do I follow marketing campaigns on social networks?	*InitialQ 1*
6	How often do I subscribe to email marketing campaigns?	*InitialQ 2*
7	How often do I buy pharmaceutical products online (e.g. Over The Counter medicine, cosmetics, nutrition supplements, health services, …)?	*InitialQ 3*
8	How often do I subscribe to email marketing from the Pharmaceutical Industry? (e.g. Over The Counter medicines, cosmetics, nutrition supplements, health services, …)	*InitialQ 4*
9	I do intend to receive targeted emails that I have requested	*AttEmailMkt 1*
10	I like the fact that I can select my preferred advertisements	*AttEmailMkt 2*
11	I like being able to choose the frequency of the newsletters sent to me	*AttEmailMkt 3*
12	I prefer emails to post	*AttEmailMkt 4*
13	The emails are relevant to me	*AttEmailMkt 5*
14	I feel comfortable that I can unsubscribe at any time	*AttEmailMkt 6*
15	The emails encouraged me to look at the website	*AttEmailMkt 7*
16	It took me too long to start to subscribe to email marketing campaigns	*AttEmailMkt 8*
17	The emails encourage me to look at the contents	*AttEmailMkt 9*
18	The emails are not intrusive	*AttEmailMkt 10*
19	I will subscribe to an email newsletter from another website in the future	*AttEmailMkt 11*
20	Advertising helps me to keep up-to-date on products and services that I need or would like to have	*AttAdPos 1*
21	Products perform as well as the advertising claim	*AttAdPos 2*
22	Advertising is more manipulative than it is informative	*AttAdNeg 1*
23	Much of advertising is too annoying	*AttAdNeg 2*
24	I like to look at advertising	*AttAdPos 3*
25	Concerning advertising campaigns, what do you think about them? (bad … good)	*AttAdPos 4*
26	Concerning advertising campaigns, what do you think about them? (uninteresting … interesting)	*AttAdPos 5*
27	Concerning advertising campaigns, what do you think about them? (dislike … like)	*AttAdPos 6*

28	Concerning advertising campaigns, what do you think about them? (non-irritating … irritating)	AttAdNeg 3
29	Email marketing helps me keep up-to-date on products that I need	Infor 1
30	Email marketing is a good source for timely information	Infor 2
31	Email marketing usually provides the information I need	Infor 3
32	I feel that email marketing is irritating	Irritation 1
33	I feel that email marketing is almost everywhere	Irritation 2
34	Contents in email marketing are often annoying	Irritation 3
35	I use email marketing as a reference for purchasing	Cred 1
36	I can trust email marketing contents	Cred 2
37	I am impressed by email marketing	Cred 3
38	I would provide my personal information (such as my name, age, gender, preferences …) to receive targeted information	Risk 1
39	I would provide personal information (such as my name, age, gender, preferences …) to receive discounts on future purchases	Risk 2
40	I would be willing to receive information on where to buy certain products or services in my email	Risk 3
41	When I receive email marketing with hyperlinks I open them to see the promotions/ information/ website	Risk 4
42	How often do you receive email marketing per week?	FreqExp 1
43	To what extent do you follow email marketing news that you have subscribed to?	Eng 1
44	How often do you talk about the brands that you follow?	Eng 2
45	How often do you visit brand websites?	Eng 3
46	Would you be interested in buying merchandise with the brand signature on it?	Eng 4
47	I have no problem buying a product from an email marketing campaign	PI 1
48	I would seriously consider buying a product from an email marketing campaign	PI 2
49	I only buy products of the brands that I follow	PI 3
50	I intend to keep purchasing products from brands that I follow	PI 4
51	I trust the brands that I have subscribed to	Trust 1
52	I rely on emails marketing that I have subscribed to	Trust 2
53	The brands that I follow are honest	Trust 3
54	The brands that I follow are safe	Trust 4
55	Next time I need to buy a similar product that was referred in the email marketing campaign I will choose this one	Loy 1
56	I intend to keep purchasing the brands that I follow	Loy 2
57	I am committed to the brands that I follow	Loy 3
58	I am willing to pay a higher price for brands that I know and follow than to another brands	Loy 4
59	I consider myself to be loyal to brands that I follow	Loy 5

60	Only under extreme circumstances would I consider purchasing a brand of this product different from brand that I follow	*Loy 6*
61	I say positive things about the brand that I follow to other people	*WOM 1*
62	I would recommend the brands to those who seek my advice about such matters that I follow	*WOM 2*
63	I would encourage friends and relatives to subscribe to email marketing	*WOM 3*

Table 29: Summary table of Standardized Coefficient β for the study's variables
Source: Elaborated by the author

Standardized coefficient β	*AttEmailMkt*	*PI*	*Eng*	*WOM*	*Loy*
Cred	p ≥ 0.05	0.244	0.480	p ≥ 0.05	p ≥ 0.05
Infor	0.406	p ≥ 0.05	p ≥ 0.05	0.215	0.281
Irr	p ≥ 0.05	p ≥ 0.05	p ≥ 0.05	p ≥ 0.05	0.159
FreqExp	p ≥ 0.05	p ≥ 0.05	p ≥ 0.05	p ≥ 0.05	p ≥ 0.05
Trust	p ≥ 0.05	0.320	0.283	0.354	0.468
Risk	0.198	0.219	0.173	p ≥ 0.05	0.198
AttEmailMkt	-	p ≥ 0.05	p ≥ 0.05	p ≥ 0.05	p ≥ 0.05
AttAdPos	0.229	p ≥ 0.05	0.224	0.216	p ≥ 0.05
AttAdNeg	p ≥ 0.05	p ≥ 0.05	p ≥ 0.05	p ≥ 0.05	p ≥ 0.05
R^2	0.497	0.422	0.563	0.425	0.543
β	1.122	0.421	- 0.214	0.651	- 0.842