

CONSUMER ATTITUDES AND PERCEPTIONS TOWARDS
MEDICINE TYPES:
BRAND MEDICINES VERSUS GENERIC MEDICINES

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ABSTRACT

Portugal, like the rest of the world, is going through a huge economic crisis, in this sense; other types of product emerge to meet consumer needs and the country's economy.

In fast moving consumer goods, arise distributors brands, parallel in Pharmaceutical Industry and market, arise brands with Generic medicines. These medications come with a much lower cost to the consumer and present the same quality of the correspondent Brand medicines.

In Portugal, these drugs have become a success story, recognized by the European Medicines Association (Gonçalves, 2009), which is related with the governmental measures adopted by governments, since the introduction of this type of medication in Portuguese market, as the creation of reference prices.

However, this growth could have been even greater if it had not been observed a low rate of prescription in an initial phase. In this study, in order to understand how to enhance the consumption of these drugs and understand why in many cases Brand medicines are still elected as the first choice, the researcher proposed to observe the consumer due to its active and participatory on their health. As such, through a questionnaire, subjects were approached and questioned regarding the attitude and behavior towards the two types of medications and performed a subsequent statistical analysis. The results of this research focus on consumer perceptions about the Generic drugs, the impact that the sources of information and new technologies have on consumer behavior, perception of quality and sense of security concerning both types of medicines and intent of repeating the purchase in the future.

Key words: Medicine type, consumer behaviour, branding.

JEL Classification System: M3 (Marketing and advertising), I1 (Health)

RESUMO

Portugal, assim como o resto do Mundo, está a atravessar uma enorme crise económica, neste sentido, surgem outros tipos de produto para fazer face às necessidades do consumidor e à economia do país.

No grande consumo surgem as marcas de distribuidor, paralelamente na Indústria e mercado farmacêutico, surgem as marcas de medicamentos Genéricos.

Estes medicamentos surgem com um custo bastante inferior para o consumidor e apresentam-se com a mesma qualidade dos medicamentos de Marca correspondentes.

Em Portugal, estes medicamentos tornaram-se um caso de sucesso, reconhecido pela Associação Europeia de Medicamentos (Gonçalves, 2009), o que está relacionado com as medidas governamentais adoptadas pelos vários governos, desde a introdução deste tipo de medicamentos no mercado Português, como é o caso da criação de preços de referência.

Contudo, este crescimento poderia ter ainda sido maior, caso não se tivesse observado a baixa taxa de prescrição inicial. Neste estudo, de forma a perceber como se poderá aumentar o consumo destes medicamentos e compreender o porquê de em muitos casos ainda serem eleitos como primeira escolha os medicamentos de Marca, o investigador propôs-se a observar o consumidor devido ao papel ativo e participativo que este tem na sua saúde. Como tal, através de um questionário, foram abordados e questionados temas relativos a atitude e comportamento perante os dois tipos de medicamentos e realizada uma posterior análise estatística. Os resultados desta investigação centram-se na percepção do consumidor sobre os medicamentos Genéricos, o impacto que as fontes de informação e novas tecnologias têm no comportamento do consumidor, a percepção de qualidade e sentimento de segurança relativo a ambos os tipos de medicamentos e a intenção de repetição de compra no futuro.

Key words: Medicine type, consumer behaviour, branding.

JEL Classification System: M3 (Marketing and advertising), I1 (Health)

DEDICATION

“Even the safest men and the more confident women have experienced a moment of hesitation, huge and small doubts, which may not even deserve to be called doubts, so small they are. Vacillations, it would be better to say. Should I go to this dinner, even though the homeowner does not know me well? Should I take all the money from the bank and invest in this madness? Should I send an e-mail apologizing for my negligence? At this time, we need a little push. And it is to the pusher that I dedicate this chronicle, to all those who witness the hesitations of others and say, go ahead!

At a time when almost no one looks in the eyes of the other, where most people are little interested in what concerns the other, just only thanking to those who realize our unbelief, indecision, suspicion, all that paralyzes us and spent a little of their energy with us, insisting.”

Martha Medeiros

It would be impossible to accomplish this stage of my life without the contribution of many people:

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To all friends and family (sorry for not mentioning names but I believe that each one will review the words that I leave here) who accompanied me and contributed to the realization of this project, I am very grateful for the support and encouragement received over the years, thank you!

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EXECUTIVE SUMMARY

Generic medicines are an important and recognised font of competition to Brand medicines, but also an important innovation for cost reduction in Pharmaceutical Market, which turns possible savings for both, patients and State.

In this context, it is important to understand the consumer behaviour associated to both medicine types (Generics and Brand), and it is also relevant to find out what is the attitude of people towards those, what can influence consumers attitudes and also if this attitude influences behavioural intension and the future purchase, due to the engagement created.

Besides, it is interesting to study if there are different answers according to different ages and different proximity with the new technologies (internet, websites and social networks).

This master thesis theme is *Consumer Attitudes and perceptions towards medicines types: Brand Medicines versus Generic Medicines*.

For the research purpose it was applied an online survey to a non-representative sample between the ages of 18-70 years, that buy medicines. From 26th to 30th of September, 269 valid questionnaire answers were collected.

From this research it was possible to conclude that the number of people that buy Generics and Brand Medicines does not vary too much within the more consumed therapeutic groups. Although it also proves that the Generic engagement is now as bigger as the engagement with Brand Medicines.

The majority of the inquiries are influenced by someone in their decision process. It is also interesting to observe that a certain number in this sample (9%) is searching for information about medicines in the internet.

There have been a contribution from doctors and pharmacists to the Generic spread, due to the fact that they are already prescribing this type of medicines. Although in what concerns the transmission of information, it can be concluded that there is still a lot to do, starting by those entites, that should talk more with patients in order to explain what those medicines are, why they are cheaper and to explain that they are as safe as the other type.

In what concerns consumer behaviour it could be concluded in this study that the majority of the respondents are more engaged with Generics and starting to substitute the Brand medicine for this type.

The reimbursement in this industry, is one of the more important issues for the consumer, although it could be concluded that the type of medicine is not influence by the existence of reimbursement.

In what concerns Generic future purchase, respondents have the intention of repeating the purchase due to the quality and safety transmitted by those.

Nevertheless, this research has some limitations that were assumed in the methodology, they do not compromise the results, as it is still with a high level of confidence that the researcher arrive into conclusions, and that hypotheses were done.

The main limitations of this research were the absence of preliminary qualitative studies, the way the sample recruitment was done and the fact that this is a non-probabilistic sample.

1. INTRODUCTION

The theme of this thesis is *Consumer Attitudes and perceptions towards medicines types: Brand Medicines versus Generic Medicines*.

Brand Medicines is a term to define those drugs that can only be produced and sold by the company that holds the patent for the drugs. On the other side, Generic Medicines can be defined as replicas of brand name drugs with the same quantities, effects and side effects, way of administration, risks and safety and as strength as the original medicine; which mean that the pharmacological effects are the equal as those from brand name medicines (Stoppler & Hecht, 2009).

This theme is relevant, as Generics Market has been growing in the last years, due to a variety of measures, as promotional campaigns, introduced by the health Ministry and Infarmed. Those campaigns have the aim of creating within the patients the confidence and safety so that they start consuming those medicines, that have great quality and lower prices, when comparing with Brand Medicines.

Portugal has been making huge efforts in order to improve the access to medicines, promoting more consistent health measures where the main objective is to reach the more patients as possible. Within those measures are the pharmaceutical products and the Generics Medicines politics.

Pharmaceutical market, is very special, with a great complexity and variety of intervenient: pharmaceutical companies, distributors, pharmacies, doctors, health technicians, patients, public and private health entities and insurance companies.

This thesis has four chapters. Chapter one, is the Literature Review, that approaches Consumer behaviour, in this topic it is developed the decision making process and its stages as well as types of buying. Branding and the types of brands were also topics explored at the Literature Review. Then, it was explored the Pharmaceutical Industry, its application in Portugal, its market and the types of product.

Distribution and price strategies were also topics developed in the Literature Review. Finally it was discussed the communication and the presence of it in the internet and made a research framework with the hypothesis to be tested.

The second chapter is Methodology, in this chapter the collection and analysis of the quantitative data is explained. There were collected 269 valid surveys from a convenience sample through an online basis. The survey was online from 26th to 30th of September. In order to analyse this data, some parametric and non-parametric tests were performed, with SPSS, statistical software, along with other descriptive analysis.

Chapter three represent the results, and interprets the results of this study, based on the model presented in the Literature Review, there are seven main hypothesis that are going to be tested:

- *If when buying the main therapeutic groups, the proportion of Portuguese's that prefer Generics is bigger than those that prefer Brand Medicines.*
- *If final purchase is influenced by industry prescribers or other advisers/influencers.*
- *If the information medical entities transmit about generics, influences positively the knowledge consumers have about it.*
- *If consumers experience with internet has influence in the purchase decision.*
- *If the majority of the inquiries do not change their behaviour after medical advice for a Brand Medicine.*
- *If quality and safety perceived by the past experience with generics have a positive influence in future Generic consumption.*
- *If the existence of reimbursement has influence in the type of medicine purchased.*

Finally the last chapter is the Discussion and Conclusions that include, conclusions, limitations of this research, implications for management and recommendations for future research.

2. LITERATURE REVIEW

2.1. Consumer behaviour

Consumer behaviour can have several definitions, it examines how individuals acquire, use and dispose of company offerings (Noel, 2009).

Consumer behaviour is defined “*as the behaviour that consumers display in searching for, purchasing, using, evaluating and disposing of products and services that they expect will satisfy their needs*” (Schiffman & Kanuk, 2007). According to these authors “*consumer behaviour focuses on how individuals make decisions to spend their available resources (time, money, effort) on consumption-related items*”. These decisions are related with what they buy, why and where, and also how often do they do and use that. The evaluation after purchase is also a buying behaviour because it will have impact on future purchases (Schiffman & Kanuk, 2007).

Solomon, 2010, went further and said that consumer behaviour is “*the process involved when individuals or groups select, purchase, use or dispose of products, services, ideas, or experiences to satisfy needs and desires*”.

Consumers are all unique, so there is no similar consumer behaviour, even since we are child until we get older we face lots of different buying behaviours. Despite the behaviour we all have, the important thing to retain is that we are all consumers, no matter our differences we all consume on a regular basis, food, clothes, education, transportation, (Solomon, 2010).

2.1.1 Decision making process

Consumer decision making has been a topic of great interest to researchers. Around 300 years ago *Nicholas Bernoulli, Jonh Van Newmann and Oskar Morgenstern*, started to think about consumer behaviour (Richarme, 2005). Those economists only explored the act of purchase (Loudon & et al, 1993). A model that resulted from this theory is the “Utility

theory” which suggests that consumers choose to have in mind the expected outcomes of their decisions. Consumers are viewed as rational decision makers who are only concerned with self-interest ((Schiffman & Kanuk, 2007) (Zinkham, 1992)).

Although contemporary research, considers lots of factors influencing the decision making of consumer, these factors can be described as the need for recognition, information search, search for alternatives and respective evaluation, building of purchase intention, act of purchasing, consumption and finally disposal.

There are five stages in this process that are described as: problem recognition, information search, judgement, decision making, and post-decision processes (Noel, 2009).

The author added that this is a process that happens every day; however it has more impact every day; however it has more impact in consumers when the purchase is important for them, for example if it is an expensive product or if has impact on health or self-image (Noel, 2009).

However the products that is not so important, as chewing gum do not follow such complicated process. In that case, consumers try to experience problem recognition and then they make a decision without losing too much time in gathering information and evaluate other alternatives (Noel, 2009).

2.1.1.1 Decision making process stages

There are four stages of the decision making process (Noel, 2009):

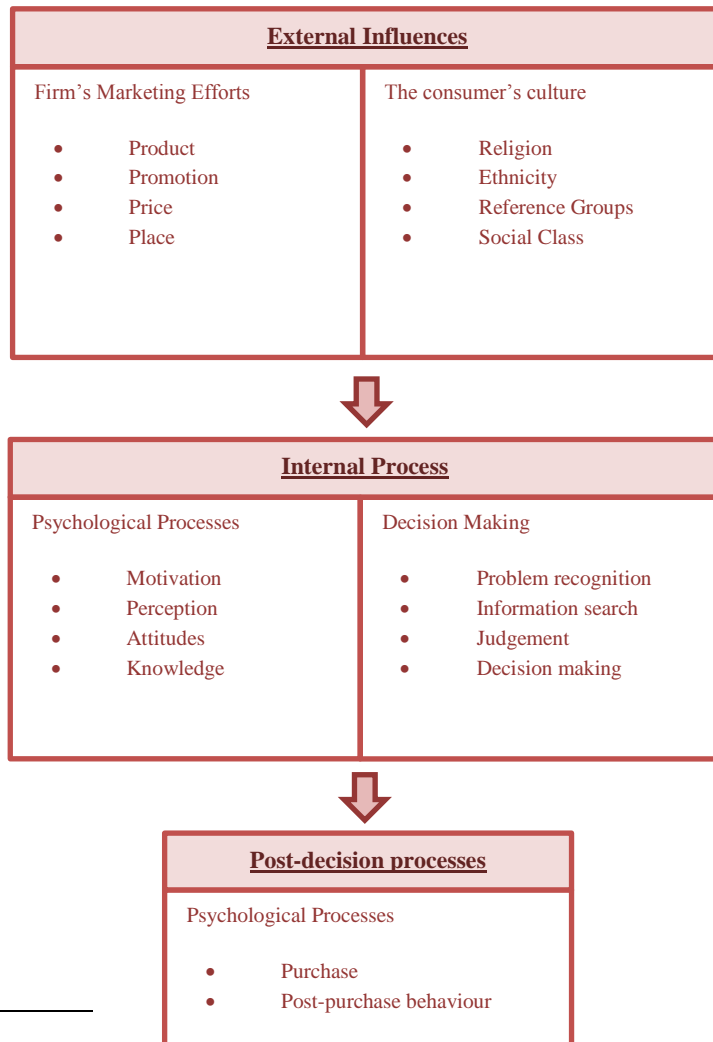
Problem recognition: There is a problem for consumers when their state differs from the state they would like to experience. That means that they have a need that is not satisfied.

Information search: in order to solve a problem the search for alternatives starts so that these needs can be meet.

Judgment and decision making: after the identification of the problem and the search for alternatives completed, the evaluation of alternatives should now take place, based on the possible options. This means that a decision about whether a brand satisfies a need has to be made.

Post- decision processes: when the decision is made and the product purchased, it is time for the last step, knowing if the consumer is satisfied with a product or service. If a person is satisfied with a product can have a positive reaction and recommend it to his/her friends, or repeat the purchase. When a person is dissatisfied, can have a negative reaction and make a complaint or even return the product.¹

Figure 1: The model of Consumer Behaviour



¹ Font: (Noel, 2009)

2.1.2. Types of buying

The decision to buy differs a lot from person to person; it all depends on the need of the person. There are different factors influencing the nature of buying (Kotler *et al.*, 2008). These authors classified buying decisions into four different categories: complex buying behaviour; dissonance reducing buying behaviour; habitual buying behaviour and variety seeking buying behaviour. The categories are classified according to the degree of involvement and difference among brands:

Complex buying behaviour: there is a high involvement with the purchase and there are significant perceived differences among brands. The consumer in that situation will go through a learning process by developing benefits about the product, attitudes and in the end make a thoughtful purchase. These situations occur with products of high price, risk low quality and so on. A good example is the purchase of a mobile or laptop. Both products are expensive and there is a variety of brands. Consumers feel uncomfortable to decide for a specific brand.

Dissonance reducing behaviour: happens when consumers are highly involved with a product that is expensive, not frequent and of risky purchase; however they see little differences between brands. In the post purchase phase, consumers may experience discomfort when they notice the disadvantages of the purchase.

Marketeers should take care of the post-purchase communication by providing evident support.

An example of this purchase is a sofa or a kitchen cabinet, consumers categorize the difference in accordance to price range.

Habitual Buying behaviour: there is a low involvement from the consumer as well as little significant brand difference. Normally consumers have less involvement with low-cost products. In this category the search for information is not high, consumers do not look for the characteristics of the brand and they do not make thoughtful decisions about which brand to buy. On the other side they are continuously receiving information while watching

television or reading magazines, in the end they will choose a brand because it is familiar to them. As it has created some kind of symbol and visual image in their minds, buyers will identify the product with which they feel attached too. In order to stimulate product trial marketers often use price and sales promotions.

A good example is a lighter, consumers just go for it and purchase it, there is no brand loyalty.

Variety seeking buying behaviour: this situation has a low involvement from consumers although it has a significant brand differences. Normally in this situation consumers change a lot the brand. The switching of brands occurs because there is sake of variety more than dissatisfaction. Consumers change preference for certain body soap for variation although satisfied with current brand.

2.2. Branding

Branding is a discipline that born from consumer goods domain, in particularly fast moving consumer goods (FMCG) (Garder & Levy, 1955).

A brand is inextricably linked to the product (Garder & Levy, 1955), as so a brand can be defined as a set of benefits (emotional and functional) that outspread a unique and welcome promised (de Chernatony & McDonald, 2003).

Kapferer (2008) also agrees with this definition, as he considers a brand as a set of added perceptions with an emotional component, which is led by a phenomenon of non-indifference in consumer's hearts that goes from emotion to like.

Moriarty & Duncan, (1998) defined branding as a siglaling concept, and this definition is still used nowadays, as it is considered as a *“differentiating sign, symbol, or any other feature that identifies one seller's good or service as distinctive from those of other sellers.*

A brand is a *“mixture of attributes, tangible and intangible, symbolised in a trademark, which if managed properly, creates value and influemce”* (Channel, 2013).

According to Kotler (1997), there can be six levels of meaning in a brand:

- Attributes: words associated to brand products. A brand has to convey its attributes;
- Benefits: customer do not buy a brand or product for its attributes, they buy it for their benefits. A brand has to convey meaning in terms of benefits;
- Values: a brand should identify values that coincide with the delivered benefit package and also say something to the customers;
- Culture: A brand may represent a certain culture;
- Personality: the brand can also project a certain personality, and it will attract those whom self-image matches the brand image;
- User: brand suggests the kind of consumer who buys or uses the product.

Gordon (2006), defines consumer perspective of branding as a continuous process of creation of a meaning, as they learn about a brand with the multiple experiences they share with it. Each experience will be integrated with the one that is already in their mind.

2.2.1 Types of brands

Nowadays dominance of manufacturer brands is being challenged by retailer's brands. This situation is more noticeable in some categories than others (Chimhundu, 2010). By definition, manufacturer brands can be defined as brand owned by manufacturers and retail brands are the ones owned by retailers (Baden-Fuller, 1984). These two types of brands are normally positioned side-by-side at the point of sale (Chimhundu, 2010).

2.2.1.1 Concept of manufacturer brand

Manufacturer brands are those created by producers and have their chosen brand name.

In these types of brands, the producer is responsible for marketing the brand. When creating their brand names, manufacturers gain extensive distribution, for example when retailers want to sell their brand, and also build customer brand loyalty (Riley, 2013).

There are some advantages in developing and selling a manufacturer brand (Onlamai, 2012):

- Develop customer loyalty;
- Attract new customers;
- Enhance prestige;
- Ensure dealer loyalty.

2.2.1.2 Concept of private label

According to Euromonitor (1998), a private label can be defined as a brand name owned by a retailer or wholesaler for a line or a variety of items under controlled or exclusive distribution. Later in 2002, ACNielsen, defined it as a product produced, improved, processed, packed or distributed exclusively by the organization that has the brand control and it can assume two formats: carry the company's name or use other brand not associated to the company's name. The same found in 2004, announced that due to these characteristics and their appeals, the market for private labels has grown a large amount in the last years. Semeijn *et al.* in the same year, defend that private brands are exclusive from one shop and they compete in different product categories

The distributor's brands have assuming different names among the years, Cardoso & Alves, (2008) agree with that name and also give the same name in their literature. Others like, Sayman *et al.* (2002), Gabrielsen T. & Sorgardb L., (2002), Bonfrer P. & Chintagunta A. (2003), Srinivasan & Pauwels, (2004), Morton & Zettelmeyer (2004), and Semeijn (2004), prefer the term store brands. It is also possible to call these type of brands, private label, and defensors of this name are Cotteril *et al.*, (2000), Shannon & Lockshin (2001), Hassan & Dilhan, (2004). Pereira, (2001) prefers the term white brands, whereas Neto, (2001) is more likely to call to these brands proper brands.

It is not exactly precise when private brands where born, although since its first approaches it is possible to know that they follow an optimization in price/quality relationship. The first products were not offering any additional benefit; the majority was not following severe patterns of quality, the absence of image and colour in the simple packaging, easily distinguished from competitors, and the low price concept exclusivity were the main

characteristics of those. With those features they were understood as low quality products for consumers.

According to Salgueiro (1994), the main idea was that client only wanted to buy the product not the publicity, neither the packaging. This idea was based in the principle that the notoriety of the competitor should be considered an advantage, in that way distributors will introduce in the market the same product with lower price and without investing in any innovation.

During the 70's and 80's the producers of big brands start to notice the power of the private brands and in order to destroy that power, they decide to make huge efforts in their adds exploring the quality of their products. When noticing that consumers were paying more attention to the quality. As a result, the private brands, by that time were not only competing by price, but also by quality. When private labels start feeling the need to show more quality, other aspects came on board too: new categories, better margins and more products.

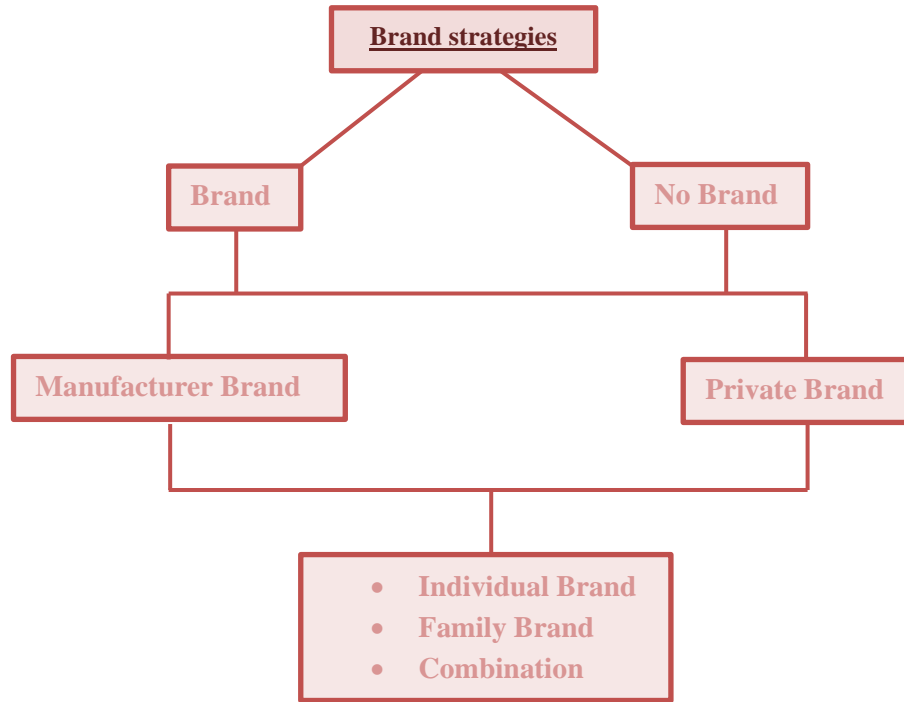
Consumers were by that time choosing based on price, quality and image. As a consequence, the private labels were able to show their power and Gutwilig (2000) said that in the USA, consumers considered the private label were in the same level of quality as the big brands.

Nowadays it is from all the preoccupation to know what the aspects more relevant are for consumers and answer to their needs, in order to create an attachment to the brand and product.

The most important advantages of private labels are (Onlamai, 2012):

- Earn higher profits;
- Less pressure to mark down prices;

Figure 2: Model of brand strategies



2.3. Application camp: Pharmaceutical industry

In a general aspect it is possible to say that after the Second World War the Pharmaceutical Industry showed a huge success, having as global leaders in the production of medicines Germany and Switzerland. However in recent decades USA has been gaining weight and supplants European companies. Also the globalization is an incentive for other countries to gain weight in the pharmaceutical industry, with particular prominence of China and India. Despite a weakness in Europe in this sector against other USA and some Asian countries, pharmaceutical industry is still one of the most important and competitive sectors in Europe (Lilaia, 2010).

The loss of competitiveness in the European Pharmaceutical Industry against other countries follows the general poor performance of the European economy, with very low growth rates when compared to USA or some Asian countries (Lilaia, 2010). Last year data

confirm the increasing weakness of European industry against its main competitor, USA (Bica, 2006).

Pharmaceutical industry is facing huge challenges, which are related with drug safety, intellectual property in emerging markets and industry image (Poli & Glass, 2009).

In recent years this industry has faced huge pressures which could be related to the environment of change that the healthcare is living (Jolly *et al.*, 2005). According to these authors, the business had to adjust to deal with the new demand of the byers while at the same time achieving profits. They also stated that in order to develop the future, strategic plans, adaptation to new paradigms and a rethink of the marketing strategy and selling strategies should be done, so that a reorganisation in the health systems arrives.

Chris David, has the opinion that in order to “*survive in today’s marketplace, pharmaceutical companies must tailor products and marketing techniques to meet individual needs*” (David, 2001). The author defends that the consumer empowerment is the main reason for the healthcare transformation, due to the fact that the new consumer has higher education, access to internet as an information source, and greater personal wealth, as so they expect to have bigger influence in their own medical treatment, by considering healthcare as a right, and not as a privilege as it used to be considered by prior generations. According to this author the centralization in the individual creates a different form of healthcare, one that delivers individualized, informed, interactive, immediate, and integrated health management.

Some of the industry major concerns are: government price controls, costs of launching new products and the growing number of people influencing product choice (healthcare payers, pharmacists and patients themselves, rather than just the physician) (PricewaterhouseCoopers, 1998).

This feeling of dissatisfaction with the pharmaceutical industry is also shared with other authors that defend that in the future complications with issues related with political

environment, drug safety, industry image and viability will appear. ((Patterson, 2008); (Rajamäki, 2008); (Klein, 2008); (Lopert & Moon, 2007)). Recent experiences with the safety of drugs had the consequence of slowed the rate of new drug development (Truelove, 2006).

What is known is that private and public spending on medicines slowed down in 2007, by providing the lowest rate since 1977 (Poli & Glass, 2009).

Those authors conducted a study involving more than 70 industry members from commercial operations and research and development (R&D), from many countries. This individuals where asked to rank the important industry issues in the first phase. In the second phase, statistical techniques were applied in order to found out the possible linkage with the identified issues. As a result six issues were considered of major significance:

Industry's image: industry image is a major problem for its leaders. In many countries the healthcare delivery is still not available for some portions of the population. One of the respondents from the study claimed that many people cannot afford that the healthcare system is also related with profits.

This poor view of the industry in both developed and developing areas is very attractive for the public leaders (David, 2001).

Drug safety: This issue is not the one receiving more attention in the media. The question of drug safety is not only related with problems that some medicines have found, it has more to do with long term and strong forces ((Leiden, 2008); (Keyhani, 2008); (Anderson, Juurlink, & Detsky, 2008)).

As stated before healthcare is considered a right in some countries, and soon customers will demand risk-free drugs as a right also.

Cost of drug development: There is a rise in the costs of drug development which can be associated with the complexity of the studies demanded by the regulatory. Another factor might be the medical conditions which in some cases are more difficult to treat.

One of the respondent said that his CEO wanted no just to stop the growing in costs but also to reduce them for half.

Price regulation: according to the study, some people are worried about the possibility of industry change due to its regulation.

Another problem that can be associated with price regulation is reducing patient's access to the products and diminishes medicine innovation.

Political environment: the political environment is said to have an influence in the price to the access that people might have to pharmaceutical products, and also limit medicines innovation.

Lack of new drugs: there is a concern that people may not be able to pay for this new drug, due to the price they might cost.

In order to understand the relationship between these issues a factor analysis was conducted:

Society perception of pharma: the image of the industry is one of major concern, especially due to the healthcare costs and prescription medicines. Prices in prescription medicines are increasing due to the price increase in commercialized products.

Availability of safe new drugs: There is a perception from the society that companies still do not know how to deal with the question of safety in medicine. Factor contributing to the availability of safety are the absence of intellectual property in key markets, the use of generic medicines and also the profits generated outside USA.

Politics and legislation: In this point there is little control from the executives. The politics and legislation has impact on:

- Price controls established by the law;

- Prohibition of the “authorized generic” products from the pharmaceutical brand, which will impact on the life cycle strategies;
- Attempts to coordinate the direction of the research which will affect the speed of discovery and development of cures and prevent the current diseases.

Regulatory environment: There is an increase in the regulation of medicines and also in the marketing. The cost to bring a new product to the market and the time for the product to be approved is, more than ten years (DiMasi & Grabowski , 2007). The pharmaceutical industry is in the top of the regulated industries, but somehow some people find it important as it represents safety and proves therapeutic value.

Drug innovation and diffusion: The concern in this area is related with the costs of development which causes worries about the potential lack of blockbusters in the next years, the absence of new and innovative medicines and the marketing strategies efficacy.

Global financial results: The traditional marketing will not be enough to provide the necessary profits that are required for the continuity of innovation. Although, profitability levels will still be needed to guarantee innovation.

One of the participants stated that “the largest problem is its inability to document the value of its innovative products to third party payers, who are critical to the industry’s future prosperity; increasingly the customer is the payer”.

2.3.1 Pharmaceutical Industry in Portugal

The OCDE classifies the sectors into four technology intensity groups and the Portuguese pharmaceutical industry is an economic activity which is part of the so called sectors with high technological density.

This sectors present growth rates of productivity much higher than the medium and low technological sectors. It has also been showed that in high technological sectors, the

capacity to produce more qualified and productive jobs is higher than in medium and low technological industrial sectors.

Portuguese pharmaceutical industry reveals persistence in term of maintaining a reasonable production capacity over the last few decades, the investigation shows that the sector has some imitative characteristics, revealing a set of sharp weaknesses that give it an internationally competitive position confirmed by weak economic indicators (Godinho, Bica , & Rodrigues, 2006).

The development and international positioning of the Portuguese pharmaceutical sector is important not only for the industrial development and its contribution to the exportations, but also for the maintenance of a strategic sector for our country (Godinho, Bica , & Rodrigues, 2006).

According to the annual Apifarma report of 2012, there were 122 pharmaceutical companies in that year and 406 medicines wholesalers (data from 2011).

According to the last data (2010) there were 9.580 people working for the pharmaceutical industry. The provisory data for production in the year of 2012 was 1.335.000.000 € and the exportations value in the same year achieve the value of 703.000.000 € while the importations represented 2.196.000.000 € which represents a huge imbalance between the input and output of medicines, which creates the necessity to reinforce the productive sector and export capacity (Apifarma, 2012).

According to Pinto (2002), Portuguese Pharmaceutical Market has a main stucture of three fundamental intervenients: State, doctor and patient.

State: Has a crucial role as regulator, having worries related to the financial nature. The state act as an intervenient in many phases of the control process, namely the MA (Market authorization) of new medicines, fixing the price and reimbursements, labeling rules, quality warranty and medicines safety (Cabrita, 2012).

Doctor: The doctor has the role of active agent, he is the prescriber, he has the power to decide which medicines the patient will receive (Cabrita, 2012).

Narciso (2005) in his studies about prescription habits, proved that doctors tend to have in attention consumers preferences when making a decision. Although, there is a tendency for them to choose medicines with which they are familiar, and that they still hesitate in prescribing generic medicines. Some doctors present fear in the differences of bioequivalent components between branded medicines and generics medicines, which can present complications to patients according to Run & Felix, 2006. That fear is related to the efficiency and success of the treatment, that means the effectiveness of the medicine (Pinto et al., 2010).

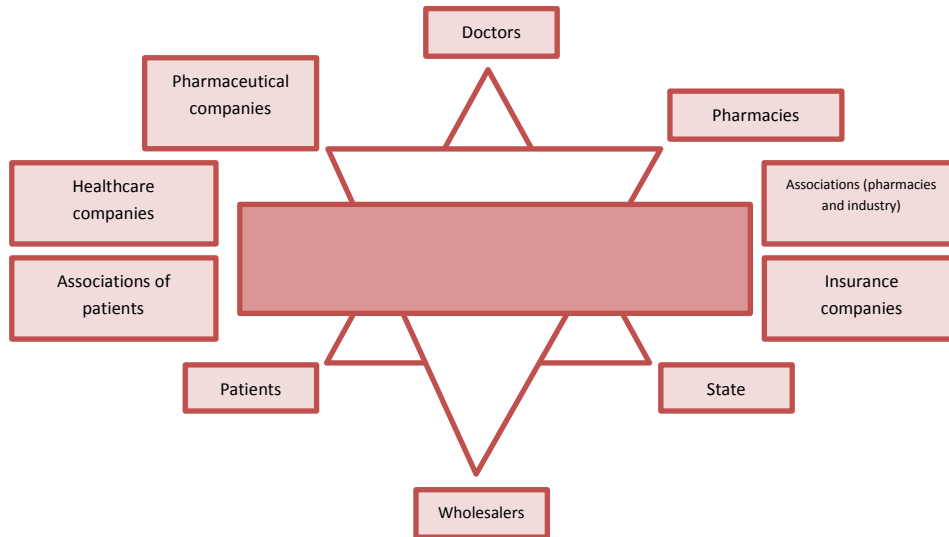
Nowadays, medicine prescription has to be done through information systems, which allows a better control from the State. In this way, the doctor has now access to all detailed information about pharmaceutical products existing in the market, all reimbursed medicines, technical evaluations of medicines, enumeration of the generics with lower price, price of branded medicines, and also the historic of the last medicines prescribed to his patient (Cabrita, 2012).

Patient: Is the effective consumer of the medicine product. Although, he is a passive agent, that is dependent of choice of the medicine more suitable for his therapeutic from the doctor, having in this way less power to choose (Pinto, 2002).

Other intervenients: There other entities that have an influence in the market, as the pharmaceutical companies, the wholesalers, pharmacies, insurance companies, associations (of patients, pharmacies or industry) and healthcare companies. Figure 3 represents the whole intervenients and relations existing in the pharmaceutical industry²:

² Source: Adapted from Pinto, 2002

Figure 3: Main intervenient in the Pharmaceutical industry



It is possible to form two big groups, excluding the three main intervenient; the first one is related with product offer (pharmaceutical companies, pharmacies and wholesalers. The second consists of establishing relations and power between the three main intervenient (associations from industry and patients, healthcare companies and insurance companies) (Cabrita, 2012).

2.3.2 Pharmaceutical Market

According to the *European Association of Pharmaceutical Industry, 2012*, Portugal saw a decrease in 1, 8% of its market, although it was not the only one, as Greece also followed this tendency with a diminution of 8, 3%. Ireland was not behind and confronted a reduction in 7,2% of its market, while the United Kingdom was fighting a break of 6,3%. Norway even though not such a big fall, also faced a decrease of 0, 7%. On the other side, countries such as Estonia, Romania and Slovakia saw an increase of 40, 1%, 32% and 29, 1% respectively (Apifarma, 2012).

Table 1: Pharmaceutical Market³

Units: Millions of euros (WP)

Countries	2007	2008	2009	2010	Growth 07/10
<i>Germany</i>	25.241	26.523	27.047	27.002	7,1%
<i>Austria</i>	2.736	2.921	2.996	3.022	10,5%
<i>Belgium</i>	3.932	4.189	4.320	4.428	12,6%
<i>Bulgaria</i>	542	617	616	671	23,8%
<i>Cyprus</i>	174	188	n/d	200	14,9%
<i>Denmark</i>	1.860	2.006	2.073	2.150	15,6%
<i>Slovakia</i>	846	1.057	1.064	1.092	29,1%
<i>Slovenia</i>	487	493	509	519	6,6%
<i>Spain</i>	13.209	13.949	14.744	14.858	12,5%
<i>Estonia</i>	137	141	189	192	40,1%
<i>Finland</i>	1.848	1.978	1.979	2.005	8,5%
<i>France</i>	25.501	26.196	27.146	27.334	7,2%
<i>Greece</i>	5.503	5.573	5.850	5.047	-8,3%
<i>Netherlands</i>	4.616	4.680	4.654	4.686	1,5%
<i>Hungary</i>	1.955	2.091	1.984	2.064	5,6%
<i>Ireland</i>	1.902	1.760	1.888	1.766	-7,2%
<i>Italy</i>	16.734	17.824	18.540	19.909	19,0%
<i>Latvia</i>	257	291	277	276	7,4%
<i>Lithuania</i>	404	436	478	479	18,6%
<i>Polonia</i>	4.237	5.014	4.484	5.016	18,4%
<i>Portugal</i>	3.490	3.660	3.716	3.428	-1,8%
<i>United Kingdom</i>	14.493	12.826	12.512	13.583	-6,3%
<i>Czech Republic</i>	1.586	1.832	1.895	1.976	24,6%
<i>Romania</i>	1.601	1.914	1.909	2.113	32,0%
<i>Sweden</i>	3.052	3.172	2.771	3.172	3,9%
Total EU 27	136.343	141.331	143.641	147.085	7,9%
<i>Switzerland</i>	2.726	2.919	3.235	3.235	18,7%
<i>Norway</i>	1.360	1.345	1.350	1.350	-0,7%

The same font also found out that, in 2008 Portugal spent 71 million of Euros in R&D; in 2009 this number increased to 103 million Euros. Although in 2010 it was possible to assist to a huge reduction of this investment, to less than half, 42 million Euros. This reduction made Portugal, one of the lowest investors in Europe (Apifarma, 2012).

³ Source: EFPIA - European Association of Pharmaceutical Industry

Table 2: R&D investment in Europe⁴

Units: Millions of euros

Countries	2008	2009	2010
<i>Germany</i>	4.840	5.379	4.812
<i>Austria</i>	433	280	190
<i>Belgium</i>	1.884	1.809	1.780
<i>Bulgaria</i>	n/d	1	1
<i>Denmark</i>	1.052	1.102	1.102
<i>Slovakia</i>	n/d	n/d	n/d
<i>Slovenia</i>	100	88	91
<i>Spain</i>	914	967	966
<i>Estonia</i>	n/d	n/d	n/d
<i>Finland</i>	228	255	227
<i>France</i>	5.120	4.964	4.964
<i>Greece</i>	84	n/d	84
<i>Netherlands</i>	471	550	550
<i>Hungary</i>	n/d	n/d	n/d
<i>Ireland</i>	250	260	194
<i>Italy</i>	1.200	1.220	124
<i>Latvia</i>	n/d	n/d	n/d
<i>Lithuania</i>	n/d	n/d	n/d
<i>Polonia</i>	n/d	n/d	n/d
<i>Portugal</i>	71	103	42
<i>United</i>	5.426	4.976	5.402
<i>Czech Republic</i>	n/d	49	49
<i>Romania</i>	30	150	199
<i>Sweden</i>	811	746	988
Total EU 27	22.914	22.899	21.916
<i>Switzerland</i>	3.500	4.320	4.619
<i>Norway</i>	117	96	104

⁴ Source: EFPIA - European Association of Pharmaceutical Industry

In what comes to percentage, during the year of 2010, according to EFPIA, Portugal had only 2% of the total European Pharmaceutical Market; in contrast, France and Germany were the bigger detectors of the Pharmaceutical Market with 19% and 18% respectively. (Apifarma, 2012)

Between 2007 and 2011, 2007 was the year with less market authorization introduction, whereas 2011 was the one with more, 12.616 and 15.859 units respectively, in the category of medicinal products, which represents an evolution of 25.7% between 07/11. In the branded medicines category, 2008 was the year with less market authorization and 2011 the year with more, 7.923 and 8.738 respectively, which represents a growth rate of 3.2% between the period of 2007 and 2011. The percentage of branded products in this period suffered a diminution of 17.9% (Apifarma, 2012).

Table 3: Medicinal product with marketing authorization⁵

Units: N° %

	2007	2008	2009	2010	2011	Growth 07/11
<i>Medicinal products</i>	12.616	12.381	13.555	14.817	15.859	25,6%
<i>Medicinal products (brands)</i>	8.465	7.923	8.246	8.535	8.738	3,2%
<i>% branded products</i>	67%	64%	61%	58%	55%	-17,9%
<i>Presentations</i>	41.659	44.192	50.118	53.777	53.733	38,6%

The total market value (retail price), between the period of 2007 and 2011, the growth rate was always decreasing, respectively: 4.1% (2007); 3% (2008); 1.7 % (2009); -1.1% (2010); -6.5% (2011). The main responsible for this decreasing is the ambulatory market which has always been decreasing while the hospital market only starts to decrease from 2009 on (Apifarma, 2012).

Table 4: Table 3: Total Market Value (retail price)⁶

% Units: Millions of euros;

	2007	Growth	2008	Growth	2009	Growth	2010	Grow	2011	Growth
<i>Total Market</i>	4.144	4,1%	2.267	3,0%	4.341	1,7%	4.294	-1,1%	4.014	-6,5%
<i>Ambulatory Market</i>	3.300	4,4%	3.371,4	2,2%	3.344,2	-0,8%	3.266,4	-2,3%	2.973,1	-9,0%

⁵ Source: Infarmed – Medicinal Statistic 2011

⁶ Source: Infarmed

<i>Prescription medicines</i>	3.118	-1,4%	3.182,5	2,0%	3.134,0	-1,5%	3.064,5	-2,2%	2.767,3	-9,7%
<i>Non Prescription medicines</i>	181,0	n/d	188,9	4,4%	210,1	11,2%	201,9	-3,9%	205,8	2,0%
<i>Hospital Market</i>	843,8	3,2%	896,0	6,2%	997,3	11,3%	1.028,1	3,1%	1.040,9	1,2%

There is a negative evolution in the ambulatory market, while the hospital market had a positive evolution between the years of 2007 till 2011 (Apifarma, 2012).

It is also possible to observe a huge evolution along the years in the number of generic medicines, representing a growth rate of 134.2% between 2007 and 2012 (Apifarma, 2012).

Table 5: Number of generic medicinal products⁷

Units: N° %

	2007	2008	2009	2010	2011	2012	Growth 07/12
<i>N. of generic medicinal products</i>	4.063	5.230	6.400	7.891	8.979	9.516	134,2%
<i>N. of GM presentations</i>	16.786	21.622	27.135	32.983	37.138	38.598	129,9%
<i>% of GM</i>	34,9%	45,6%	50,6%	56,7%	60,2%	n/d	---
<i>N. of INN with authorized</i>	n/d	272	301	325	351	357	18,6%
<i>% of INN with authorized</i>	n/d	15,9%	17,4%	18,9%	20,3%	n/d	---

Table 6: Main therapeutic groups in 2012

Units: N° %

Therapeutic Groups	Market Share (in value, retail price)	Growth rate 11-12
<i>Modifiers of the rennin angiotensin</i>	10,7	-16,9
<i>Lipid-lowering</i>	6,7	0,1
<i>Oral antidiabetics</i>	6,2	-19,7
<i>Antidepressants</i>	4,5	-17,5
<i>Antipsychotics</i>	3,8	-21,6
<i>Modifiers of gastric secretion</i>	3,0	-9,4
<i>Medicines used for symptomatic treatment</i>	2,9	-17,8
<i>Anticoagulants</i>	2,8	-1,2

⁷ Source: Infarmed

<i>Antiepileptic's and anticonvulsants</i>	2,7	-20,9
<i>Other</i>	56,6	-9,3
<i>Total</i>	100,0	---

The group with higher market share are the medicines used to cure hypertension (modifiers of the rennin angiotensin), with 10.7%. Then, with 6.7% are positioned the medicines used to regulate cholesterol (lipid-lowering). Medicines used to cure diabetes are also well positioned in terms of market share (6.2%). The pills used for depression and anxiety have a market share of 4.5%. Medicines used for delirium and hallucination are placed in the 5th position with a market share of 3.8%. Other medicines that also have an important positioning in what concerns market share are modifiers of gastric secretion (3%), symptomatic treatment (2.9%), anticoagulants (2.8%), antiepileptic and anticonvulsants (2.7%).

2.3.3 Types of product

2.3.3.1 Brand medicines

Brand name medicine is a term to define those drugs that can only be produced and sold by the company that holds the patent for the drugs. Normally brand name medicines are given a patent for around 20 years, which provides a protection for the company that spent money in research, development and marketing for the new product. With the patent it is not allowed for other companies to make and sell the product. Nevertheless, when the patent expires, other pharmaceutical companies, when approved, can start producing a generic version of the medicine (Bihari, 2010).

2.3.3.2 Generics medicines

Generic medicines can be defined as replicas of brand name drugs with the same quantities, effects and side effects, way of administration, risks and safety and as strength as the original medicine; which mean that the pharmacological effects are the equal as those from brand name medicines (Stoppler & Hecht, 2009).

Generic medicines have the same active substances as the original medicine, whose intellectual property rights, relating to the active substances or manufacturing process have expired and are therapeutic equivalents of those, not only because they have the same qualitative and quantitative composition but also because they have the same pharmaceutical form (Infarmed, 2005).

According to the medicine status (Decree law 176/2006, 30 of August), generic medicine is referred to “a product containing the pharmaceutical form and whose bioequivalence with the reference product has been demonstrated by appropriate bioavailability studies” (Maria, 2007).

By law, all the generic medicines should have the acronym “MG” in their package, as well as a market authorization with the respective register number (Infarmed, 2013).

Generics must submit bioequivalence with the branded original. Bioequivalence means that the generic has to release the active ingredient at the same rate and extent as the original brand name drug (Barros & Nunes, 2011).

A normal phenomenon that happens is that companies that originally started to develop the medicine will still continue to produce and market the brand name version of the product, while at the same time creating a generic version and sell the product under both types, branded and generic (Weber, 2008).

Sometimes generic medicines may have different colours, flavours or different inactive ingredients than the original branded medicine (Stoppler & Hecht, 2009). Although by law generics should have the same active ingredients. Nevertheless, law does not specify anything more about generic formulation, which means that inactive ingredients can be changed in order to adjust pill size, colour, and the same properties like how much time it will be needed for the pill to dissolve in the stomach. Each manufacturer has its own variation of the inactive properties (Weber, 2008).

2.3.3.2.1 Safety, quality in Generics

Due to the fact that generic medicines are cheaper than the branded, many patients are attracted by this powerful argument (Weber, 2008). Although people are still concern about why these medicines are less expensive, wondering if the quality and effectiveness are compromised when using generics (Stoppler & Hecht, 2009). Nevertheless, the answer, according to these authors is simple, this medicines are less expensive due to the fact that manufacturers have no expenses in the development, research, marketing and promotion, because this issues have already been done by the company that possess the patent.

When the medicines patent protection ends, the molecular formula becomes a matter of public, and by this time other pharmaceutical companies are allowed to manufacture the medicine as well. In the end the only investment necessary for generic manufactures are the costs of setting up a production line (Weber, 2008).

2.3.3.2.2 Advantages

Generic medicines represent an advantage not only for the final consumer but also for the National Health Service and country economy.

Generic medicines, are those, whose active substances have been in the market for several years, provide greater assurance of effectiveness and allow a better understanding of its safety profile (Lilaia, 2010).

The decree law n. 176/2006 of 30th August requires that generic medicines have the same quality of the reference medicine, which can be done through the bioequivalence, using bioavailability studies, which means that there is also an advantage in what concerns quality.

In Portugal, the expenses with health represent a huge part of the country wealth, according to GDP, and in turn, drugs also represent a larger share of health spending, which puts into

question the sustainability of the health system. Generics as price reducers may be a solution for this problem.

Another advantage of the generics is that in general they are 20 or 35% cheaper than the reference medicine whose pharmaceutical form is the same and which have the same dosage, which is an economic advantage not only for users but also for the Health National Service, due to the fact that the prices are substantially cheaper than the reference medicine (Infarmed, 2013).

European Union generics are sold at a price between 20 and 90% less than the reference medicine, which mean that in countries such as Holland, United Kingdom and Switzerland, generics are responsible for half of the total medicines, which in terms of costs, just represent a fifth of the expenditure with medicines (Apogen, 2010).

Savings generated by the use of generics allows the purchase of new innovative drugs, usually much more expensive and therefore, there is a positive complimentary between generic and innovative medicines (Lilaia, 2009).

Simoens (2010), also agrees with (Lilaia, 2009), saying that generic medicines guarantee huge savings to the health care providers and foster innovation.

Although the author adds that, EU is not maximizing their full potential in generic drugs. It is possible to achieve a saving of around 27% to 48% if taken appropriate measures in EU countries. In average, each of the 98 000 patients that uses generic, spared 100 Euros a year, which means that generics allow more patients to be treated at a lower cost.

By the state, there is also a direct correlation between increased prescribing of generic drugs and reducing public expenditure on health.

In Portugal a phenomena that is possible to assist in some therapeutic areas is the fact that the reference medicines decrease their price in order to compete with generic medicines this fact leads to a widespread fall in prices, and consequently, a better access to health.

In average users pay 33% of the medicine price in the act of buy, which means that the State, rather, all of us, we pay the remaining 67%. Consequently, if the generic prices are low, there will be fewer costs for the Portuguese economy as well as for all of us, as taxpayers (Aguiar, 2008).

2.3.3.2.3 Generics market

The implementation of the generic medicines in Portugal is a huge successful case which is recognise by the European Generics Association (Gonçalves, 2009). The author add that there are several reasons for this success which might be related to a set of measures implemented by various governments since the introduction of generic drugs in our country, such as the creation of reference prices.

These measures have helped increase the efficiency of the national health system and generate significant savings for users and for the state, allowing the reimbursement of new drugs.

As stated before, the Portuguese generic market presents a very recent history, and even more when compared with other European countries. One of the factors contributing for the Portuguese results, were the communication campaigns and the health politics adopted by the government, which lead not only in sales but also in a huge acceptance by all intervenient in the health area (Lilaia, 2008). Another factor that might have contributing for the consolidation of the Portuguese generics market was the fact that the Symposium about generic medicines in Europe took place in Portugal during the year of 2007 and was organized by INFARMED and Apogen, the objective of this Symposium was to inform about the generic medicine as a front line in the prevalent pathologies.

About the Portuguese market, Portugal is on the right track relatively to generic medicines consumption, but there is still a huge margin for progress in these drugs (Lilaia, 2008).

2.3.3.2.4 Generics positioning in the Portuguese Market

It is an objective for the Portuguese generic market to establish its position in a European context, although some European countries have realities that are quite different. United Kingdom is an example of this, due to the fact that they have a free price policy. On the other side, United Kingdom has introduced lots of financial advantages for the users, establishing differences among the prices of brand medicines and generics, as well as reducing the percentage that must be supported by consumers (Gonçalves, 2009).

Other authors, (Simoens & Coster, 2006), agree that lots of studies have shown that this type of measures represent a great incentive to the change in the usage of branded medicines into generics.

Medicines are divided in homogeneous groups and the reference price of each medicine is equivalent to the sell price of the generic medicine with higher price in the market, from the same group. The reference price is used for the State to establish the reimbursement price of the medicines (Gonçalves, 2009).

There are still some imperfections in the Portuguese generic market, such as high prices, bonding prices to the reference price, lots of medicines with similar prices, absence of competitors, huge amount of generics with the same active substances or lots of active substances without a generic (Maria, 2007).

Although generics market share had an increase in the last years, Portugal is still too far from the sales volume of other European countries, not only because it is one of the poorest countries, but also because it has the smallest reference pension. (Gonçalves, 2009).

In a context where Portugal is suffering from a huge crisis, all the savings resulting from the generics into the State and users, its usage is still far away from its potential, that is why doctors should increase the prescription of generics (Lilaia, 2009).

In table 5 there is a resume of a study conducted by European Generics Association, where it is possible to understand the positioning of the generics in Portugal, comparatively with other countries. It is possible to observe that in Portugal there are only two activities being implemented from the existing five which are “competitiveness existence” and “incentives for the users that are looking for generic medicines”. Comparing with Sweden and United Kingdom that are implementing more activities, Portugal is still too far and still has lots of path to develop.⁸

Table 7: Comparative analysis about generics medicines politics

	Austria	Belgium	Portugal	Italy	Spain	France	Polonia	Holland	Denmark	Germany	United Kingdom	Sweden
I: Countries with coherent generic medicines politic	x X	x X	x X	x X	x X	✓	x X	x X	✓	x X	✓	✓
II: existing competition from generic drugs within the regulatory frameworks	x X	x X	✓	x X	x X	x X	✓	✓	✓	✓	✓	✓
III: Countries with incentives for doctors to prescribe generics	x X	x X	x X	x X	x X	✓	x X	x X	x X	✓	✓	✓
IV: Countries with incentives for pharmaceuticals to dispense generics	x X	x X	✓	x X	✓	✓	✓	✓	✓	x X	✓	✓
V: Countries with incentives for patients when looking for generics	x X	x X	x X	x X	✓	✓	✓	x X	✓	✓	x X	✓

⁸ Font: EGA Market Review, 2007

2.3.3.2.5 Competitiveness of the generic medicine

Much has been said in order to increase the competitiveness of generics, for example, during the year of 2003 the G10 reunion about medicines took place in Portugal, Lisbon. The results to promote generics competitiveness were ⁹ten measures to be implemented in a national context:

- Awareness of doctors to use active substances denomination;
- Help doctors in the perception of economic impact in the prescribing decision;
- Increase the usage of electronic receipt;
- Creation of substitution list;
- Increase incentives to dispense generic and replacement (seen as particularly important in systems where doctors are not very sensitive to issues of economics and health);
- Improve consumer awareness about the offer and quality of generics;
- Improve the pharmacoeconomic evaluation of new products in comparison with existing products;
- Creation of reimbursement systems and health insurance oriented to generics;
- Adoption of reference prices and free pricing systems;
- Reducing the waiting time between the receptions of the MA to a generic medicine, pricing, reimbursement and/or substitution situation.

The fact that there are scarce resources, associated with the necessity to guarantee equal access conditions independently of the paying capacity, constitute by itself, a strong rational basis for generics usage (Marques, 2006).

The European Generics Association, 2013, agrees that Europe's generic medicines companies already have the scientific knowledge and technical experience to produce safe and effective biosimilar pharmaceuticals, which are medicines derived from biotechnology (EGA, 2013).

⁹ Font: European Generics Medicine Association, 2003

Since 2006 the European Commission has authorized several biosimilar medicines in Europe, sustaining that each of them was compared to and matches the reference medicine in what concerns quality (how it is made), safety (side effects that can occur when receiving treatment are similar), and effectiveness. Europe's healthcare systems are excited about the cost relief and the increased patient access to the life enhancing treatments that biosimilar products will bring (EGA, 2013).

2.3.3.3 With prescription versus Without Prescription - OTC

Over the counter medicines, are those that can be bought from pharmacies even without physicians or doctor's prescription. There can be several sorts of those medicines in the market, to relieve pains, itches and aches to cure diseases like athletes foot. In order to be considered an OTC, drugs must be deliberated by a regulatory body to accomplish if they are safe for public use to be sold over the counter, within a period of 3 to 5 years, they were proven to be safe and effective as a prescribed medicine, they may already be regarded as an OTC drugs. Consumers should pay attention to the fact that OTC drugs have contraindications with drinks, foods, supplements and other medicines. OTC medicines are to be used even without supervision from a medical practitioner or doctor, although manufactures should abide by concept that OTC's should have little potential or no potential at all of being used excessively (Tsang, 2010).

2.3.3.4 Reimbursed versus Non Reimbursed medicines

Portuguese National Health System (SNS) contains a medicines' reimbursement system that covers the whole inhabitants. The cost of the medicine is usually shared between the State and the patient. In some rare circumstances, the entire cost of the medicine can be paid by the State (Perehudoff, 2009).

INFARMED, is the authority responsible to determine which medicines will be reimbursed based on the product's efficacy in treating disease and its cost. Over-the-counter (OTC) products are not usually reimbursed, but may be included in the positive list (list of

medicines prescribed for the patients that are outside of a health care facility) if justified by the public health (Perehudoff, 2009).

The price of prescription is determined by reimbursement categories. The price that is paid by the patient is called the co-payment, is dependent on his/her condition/disease, the need to have that medicine for his/her daily function, and the social-economic situation (Perehudoff, 2009).

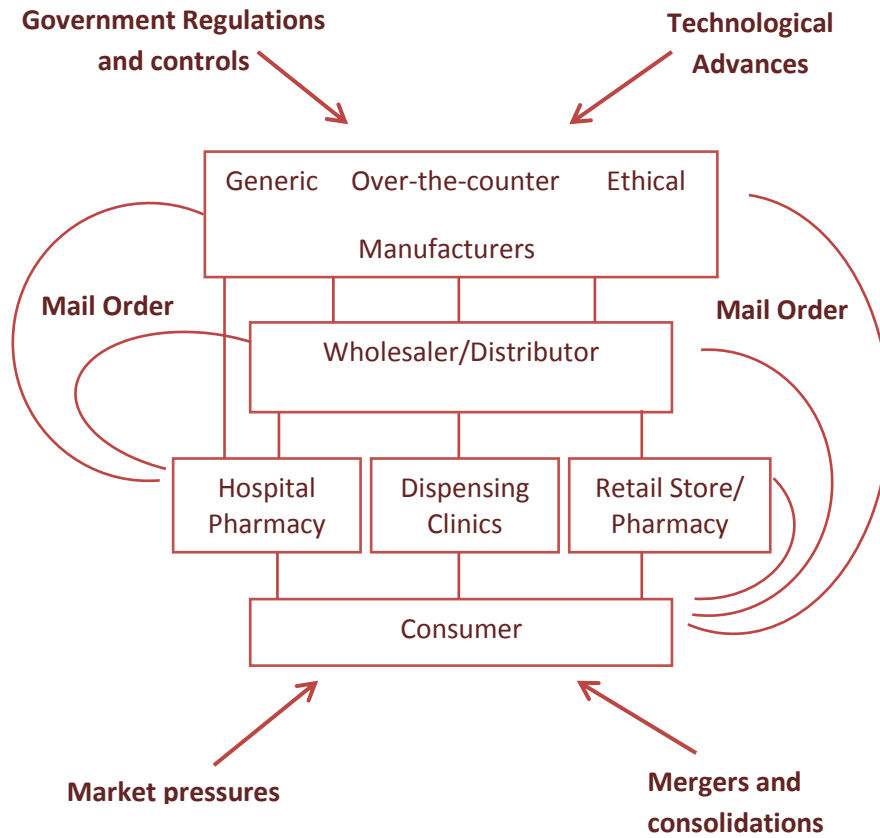
According to the Health Portuguese Portal, 2011, the Portuguese system provides four different levels participation for patients in the cost of medicines: A: 90% Level B: 69% Level C: 37% Level D: 15%. The classification of the medicinal products in the different reimbursement categories depends on its therapeutic classification (Saúde, 2013).

In opposite to those, there are the non-reimbursed, which can be described as those who have no reimbursement from the state.

2.3.4 Distribution circuit

With the growth of the competition, all industries are facing pressures to cut costs while at the same time providing greater customer service. In USA drug industry plays a central role in health care delivery system. Below it is possible to see Pharmaceutical industry in USA (Oswald & Boulton, 1995):

Figure 4: The Pharmaceutical Industry Structure



Pharmaceutical Wholesalers have established a standard for efficiency and customer prescription and over the counter drugs from manufactures and distributing them to retail pharmacies, hospitals and other care facilities (Oswald & Boulton, 1995).

Wholesalers have provided retailers with minor prices due to more well-organized distribution, improved service through information systems, databases and strong client relationships (Oswald & Boulton, 1995).

Pharmaceutical industry has a unique problem to solve; it deals with healthcare, which means that it has to work within a strongly regulated and competitive environment. The normal route is: manufactures produce pharmaceuticals, then distribute either to large drug chains or drug wholesalers, who in turn send product on to final customers, other drug stores, hospitals and healthcare facilities (Morton R. , 2003).

Pharmaceutical wholesaler has the function of ensure smooth, safe and cost-efficient distribution of health care products. Wholesalers are responsible for select, purchase and stock the number of transactions required to serve the entire pharmaceutical distribution system (Oswald & Boulton, 1995).

The same author refers to three major market dominants in USA: Cardinal Health, AmeriSource Bergin and McKesson HBOC.

Bonifant in the article from (Morton R. , 2003), said that it is a tight margin business, the nature of competition is extremely tight and the strongest distribution channel wins.

In this article Pfizer is used as an example, as they keep their product under control, and the only flow is going from their own distribution centre to their customers. This means that they pay a lot of attention to overall cycle time, from the placement of an order from a customer until the final actual delivery to the customer location.

According to Dr. Miller (Pfizer Director of logistics), normally when they do manufacturing and distribution modelling, they use their own shipment, history and forecast to understand where their products are moving and what is the best delivery point for Pfizer.

USCO's is another example , their distribution channel is really to the wholesaler, however there may be exception for some products, where USCO's may send directly to specialty clinics, sometimes it is needed to send directly to an hospital emergency. According to Britton (Manager of USCO's distribution centre in Japan), distribution function varies from company to company, depending on their distribution strategy (Morton R. , 2003).

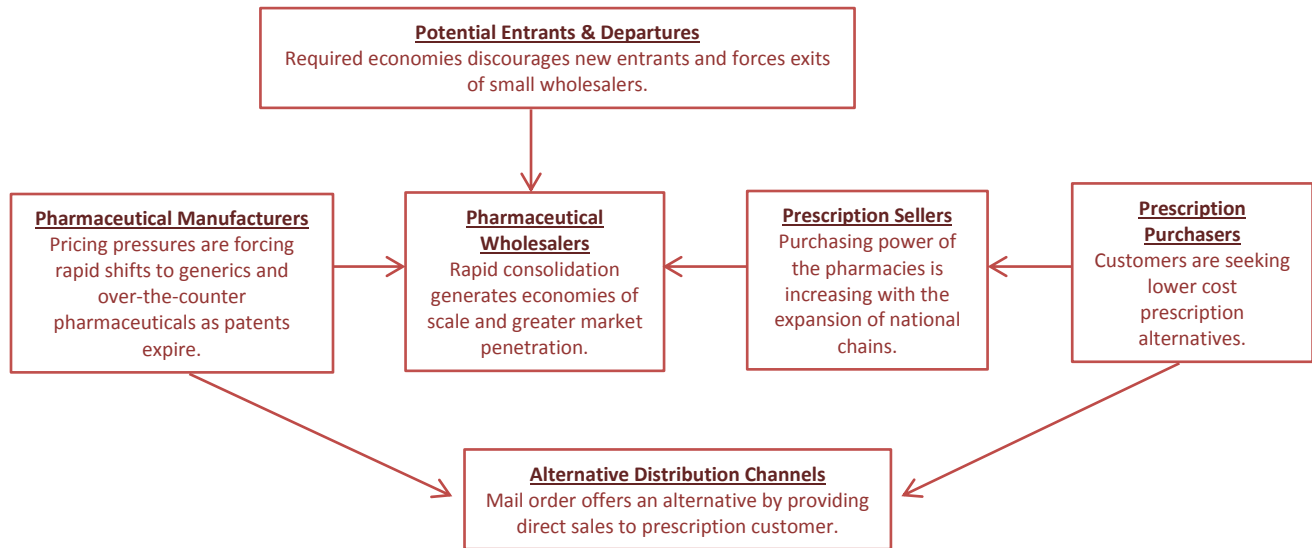
Canada is a very good example of what an organized distribution method can be. Canada's pharmaceutical suppliers and their customers saw a fragmented supply chain, hospitals were placing orders many times per day in small amounts. There was a recognized need for change, and that was what made thinkers to felt that they could benefit from a

consolidation, and the manufacturers listened. Some companies joined together in order to implement this consolidation. Their objective was to provide all the conveniences of a wholesale model but one that allows the direct relationship between the customer and the manufacturer. It also avoids the charge-backs that potentially could exist in other models. This model created lots of savings, and nowadays hospitals are ordering on a weekly basis or twice a week. Rooney said that the success is obvious. CPDN is shipping about 450\$ million out of a total market of about 1.2\$ billion (Morton R. , 2003).

2.3.5.1 Industry pressures involving distribution

The economic structure of the industry (Figure 2) according to Porter's model is determined by industry pressures (Oswald & Boulton, 1995):

Figure 5: Economic Structure of the Wholesale Industry



Those pressures may be described as Environmental forces: market pressures, technological changes, governmental controls and consolidations:

Market pressures: Increase in price forces from government, business and third party providers have forced rapid modifications by manufactures to low cost generics and over the counter pharmaceuticals. An example is Mckesson that moved into the production of generics hoping to become the main supplier in U.S.A.

Technological change: Application of technology to distribution has been crucial to cost decrease in drug wholesalers, with new technologies, productivity results appear and it was possible to purchase and delivery efficiencies that made the wholesalers the preferred distribution channel for retailers. With this tendency, wholesalers start working closely with manufacturers to further improve efficiencies and take more cost out of the system. New technologies cut out the paper flow, by introducing computer-to-computer communication. It also made possible the just in time inventory and one day deliveries.

Governmental regulation/control: Regulation will keep on affecting the industry; it will force wholesalers to find out another way to search for additional ways to cut costs. Due to governmental suggestion on price increases, pharmaceutical wholesalers adopted the self-imposed price constraints, with a limit of 4% annually.

Consolidation: The number of wholesalers in the U.S.A fell from 4000 in 1963 to 74 in 1993. In figure 6, it is possible to see the development of this tendency. Consolidation started in the 80's when wholesalers required economies of scale and cost drops in the new order-entry systems.

2.3.5.2 Distribution strategies

In order to survive in this industry, wholesalers started to adopt new strategies (Oswald & Boulton, 1995):

Differentiation strategies: manufactures remain dedicated to patented products, while wholesalers started using voluntary retail programs. They develop the ability to provide rapid order processing and delivery, as well as information sharing.

Cost strategies: wholesalers created the automated huge distribution centre.

Niche or customer strategies: Target of specific market segments (diabetes clinics, hospitals). Generally this is the preferred strategy for small wholesalers.

There are a few good examples of how companies turn around with distribution strategies:

McKesson Corporation: In order to become industry leading wholesaler, McKesson has look deeply in how to approach market segmentation. In order to achieve its position in the future they entered in the generic market, investing in distribution technology. McKesson is not the best in terms of efficiency although it keeps on working to expand existing distribution centre and making effort to reduce those costs, while increasing profit margins at the same time.

Bergen Brunswig Corporation: The strategy of Bergen was based on serving a huge geographic area, supporting customer with next to day delivery, merchandising and marketing services. Their distinction passes through having an automated mega-distribution centre, and their achievements it's to have efficiency first and assuming that the cost will be what will determine their survival in the industry.

Moore Medical Corporation: In order to achieve and increase market penetration this company is trying to expand regionally, by using telemarketing and catalogue sales gives the opportunity to penetrate in different market segments with interesting and effective means. Their strategy is also a low cost, based on strengthened the purchasing department and supplier alliances.

D&K Wholesale Drug Corporation: Entered in the market acquiring a wholesale, the company objective is to keep the costs low and as a consequence the prices, while concentrating in niche markets at the same time.

Walker Drug Corporation: This Company has a family-oriented approach which has been the success in selling to independent retailers, having independent pharmacies has a part of its family. Their objective with this strategy was to become efficient regionally and focused on wholesaler in order to offer an excellent customer service (financial advice, store layout, signage and pharmacist training).

Medco Containment Services: Its strategy is to cut costs for individuals with chronic medical conditions which require long term medication prescriptions. In order to achieve so, Medco started mailing medication to patients with these conditions, which saves them

the trip and cut costs to the corporate clients. Medco also uses generic drugs in order to save patient costs. When they start using this strategy mail order sale only represented 7% of the market, but its rapid growth was what calls their attention.

2.3.6 Price Strategies

“Price is the value that is put to a product or service and is the result of a complex set of calculations, research and understanding and risk taking ability. A pricing strategy takes into account segments, ability to pay, market conditions, competitor actions, trade margins and input costs, amongst others. It is targeted at the defined customers and against competitors.”

In Economic Times, 2013

In order to compete in this global and regulated market worldwide, companies should embrace strategic pricing growing importance (Information, 2013).

The action of adjusting prices is called pricing strategies, and it has the goal of establishing the optimum price at the same time that is maximizing the profit and maximizing the number of units sold. It has been shown that modifying the price in 1% has changes of at least 10% in everyday consumption (Dolgui & Proth, 2010).

According to Talluri & Van Ryzin, (2004), pricing strategy has benefits when:

- Customers are heterogeneous (which means that their purchasing behavior over time varies, the willingness to pay varies from customer to customer, and each of them see different benefits offered by the same type of product);
- Demand changeability and uncertainty are high;
- Production is rigid.

According to Dolgui & Proth, (2010), the common pricing strategies are divided in high and low price strategies and adjustable strategies:

High and low price strategies:

An high price strategy should be practiced if it agrees with the value of the product perceived by consumers, otherwise such a strategy will lead to a commercial failure (e.g Apple with i-Pod, most expensive among similar products, although the leader).

A low price strategy may also turn into a commercial value (e.g Amazon gained share of book market by reducing the prices by 40%-50%)

Bothe these strategies may have some disadvantages due to the fact that the image of the items sold by the company is somewhat frozen and long term price expectation is established, which can lead to reductions in the flexibility of the decision making system. When these strategies don't have the ability to adapt to fundamental disturbances it is called drawback.

Adjustable strategies:

Market segmentation (price discrimination): Different groups of customers give a different level of importance to the benefits offered by a product or service. This strategy consists of segmenting the market and charge different prices per segment, which depends on the willingness of the customer to pay more or less to purchase the product.

Discount strategy: This strategy aims at selling a number of items at a low price for a limited period of time. This reduction in order to compensate, should guarantee supplementary sales.

Price skimming: Within this strategy the price is set to high at the first and then lower over time. There is a similarity between this strategy and price discrimination, although with the time factor. This strategy is normally applied when customers are less price sensitive, or when they are attracted by an innovation. It is very useful to reimburse the huge investment made for research and development.

Penetration pricing: This strategy consists of setting an initial price lower than the one existing in the market. With the expectation that this price will be low enough to break down purchasing habits. The strategy may be classified as a low price strategy with the

time factor. Penetration pricing leads to pressure in costs reduction and it discourages the entrance of competitors.

Yield management (revenue management): This price strategy aims at anticipating consumers and rivals behaviour in order to maximize revenue. Companies that are using this strategy review time by time earlier situations in order to analyse the effects on past customer and competitor behaviour. Taking into account future events is also possible in order to adjust price decisions.

Another method of fixing the price is the competition pricing which is setting the price in comparison with competitors. The firm has three options and these are: setting the price lower, price the same or price higher (Marketing, 2013).

2.3.6.1 Portuguese Pharmaceutical Price Strategies

According to (Batista & Mendes, 2009), ERR of pharmaceutical products in Portugal are a result of a complex approval system. It starts in Economic Ministerial and ends at Health Ministerial. This means that in pharmaceutical market prices are not free, and they do not come from a company marketing department. In this way the demand does not determine price decrease. Although, pharmaceutical companies can provide promotion campaigns through *rappel* or prompt-payment discounts for wholesalers, which will then sell to pharmacies at a lower price (Cabrita, 2012).

Through certain circumstances, patient will not pay the whole price. A part of this value has a contribution from state, the reimbursement already explained.

Reimbursed medicines have a particularity in the price. Those medicines have a maximum value to be reimbursed which is calculated through the percentage of reimbursement applicable in the reference price or equals to the sell RRP of the medicine, the one that is lower, for each group of medicines that have the same composition of active substances, pharmaceutical form, dosage and way of administration, in each a generic medicine should be included (Infarmed, 2013). If a medicine is priced above the reference price (RP), the patient pays the difference (Initiative, 2010).

Not all countries have price regulation, although only 18% opt for free market competition to control prices. Of the countries that regulate prices, 36% set the price of generic

medicines at a predetermined percentage below the originator price. For example, the minimum price difference between originator and generic medicines was 20% in Italy in 2004 (Initiative, 2010).

In what concerns generics, in 21% of countries, price is based on the average price of medicines in a selection of countries. Other mechanisms used to set generic medicine prices are a maximum price (19% of countries) and a negotiable price (12% of countries) (Initiative, 2010).

Every year prices suffer legislative revisions, not only branded products but also generic medicines. In the year of 2012, according to Price Legislation generic medicines had to reduce the price to 50% below the RRP of the reference product or 25% if the wholesale price is less than 10€. Two years before, 2010, not only generics saw a reduction in prices, also the reimbursed medicines saw a discount in retail price, of 6% and 7,5% in the biological products.

2.3.7 Communication

Communication in the pharmaceutical sector is very multifaceted as it comprises multiple strategies, constraints, formats and targets. They can be divided in four main areas: characteristics of the Portuguese Pharmaceutical companies, the Portuguese legislation, usage of internet, communication agencies specialized in health in Portugal. In opposite to other countries in Portugal it is forbidden to advertise medicines that require medical prescription in any media that is not exclusively directed to health professionals. However this limitation, communication for pharmaceutical companies is a key strategy (Aroso, 2013).

During the year of 2009, pharmaceutical sector was the one that registered a bigger investment in communication which can be justified by the arrival of new brands in the market (RCMPHARMA, 2010).

The main recipient of marketing in the Pharmaceutical industry is the doctor. Some companies believe that, by having an aggressive communication, they are able to destroy doctor's will, forgetting that their scientific knowledge and ethical posture are more competitive and assertive.

Some solutions have been created by pharmaceutical companies which are the organization of colloquies or congresses, or even a medical visit more focused on therapeutic value (Proença, 1993).

This last issue, medical visit, is the technique with more effects and the one that characterizes Portugal the most (Proença, 1993).

Although, the information font with bigger intension to use, for doctors are journalists, soup operas, books or colleagues (Lopes, 2008).

Nelson Pires, president of the Portuguese Association of Pharmaceutical Marketing, defines a new concept in order to characterize the promotion of a product or service without using media, which is the "Slippers Marketing". According to Nelson Pires, there are some advantages in this new concept as the individualization of communication, fleeing from mass communication, durable results, reallocation of client (doctor) in the middle of the decision and communication in different ways. Moreover, the creation of long-term relationships, more personalized with prescribers and influencers is a tendency of communication in pharmaceutical area (Marketeer, 2009).

Then, communication policies in pharmaceutical industry are traditionally based on the hermetic promotion of medicines among health professionals, due to the fact that the doctor occupies a prominent and powerful position. That is why sometimes pharmaceutical sector has a less positive image, as it is seen as a machine without face, which is just making money at the expense of the sickness and suffering of others (Marketeer, 2009).

Nowadays, some new tendencies in health communication seeking to reverse this situation have already started in Portugal. There are new targets, which can be divided in: Who prescribe (doctors), who pays (hospital, patient), who approves (Infarmed), who makes the legislation (govern), who buys (patient), who advise (pharmaceuticals), who makes pressure (groups of patients, medical societies), who influences (media, online communities). In this context, communication practices are no longer only based in the visit of the medical delegate, they are also a multidirectional strategy stimulated by lots of communication mechanisms, public relations, web 2.0, partnerships with industry associations, communication strategies, pre-marketing and marketing plans, are fundamental (Marketeer, 2009).

On the other side, mass communication does not make sense in this industry, because people are different and differentiated; they have access to mechanisms that allow getting access to information when they want and how they want, which means that each person can select the information to have access. Part of population is getting more informed and is conscious that should have an active role in his/her own health, that is why they look for information in all the media available and face the doctor (Aroso, 2013).

Fernando Santos, from Bayer, considered the sales force the biggest investment, although there are still other means of communication to communicate with health professionals, as press publicity, presence national and internationally in congresses, in the interventional areas of the company (Aroso, 2013).

2.3.7.1 Presence of pharmaceutical companies in the internet

In Portugal, some companies assume communication as an external activity. Others have reference to communication agencies in their press releases. On the other side, institutions connected to the pharmaceutical sector emphasize communication and its presence in the internet. Apart from the fact that pharmaceutical sector is starting to be present in the internet; the non-actualization is one of the problems identified. Another big issue refers to the absence of information (Aroso, 2013).

Concluding, there is disparity in the frame of communication in the organizational structure. There are plenty of designations used to classify the departments dedicated to communicational activity. This issue can be explained by both, different papers given to communication in different companies or pharmaceutical institutions, or also by the absence of maturity in the communication area in Portugal, which prevents existence of a uniform and organized system (Aroso, 2013).

2.3.7.2 Empowerment of customers

Empowerment is considered one of the main factors for change. Nowadays, consumers are more educated, they have access to information more quickly. Due to those factors consumers are starting to question their physicians, demanding better healthcare conditions, not just for elite but for everyone. This new demanding consumer looks at medicines not just as a way to cure a disease but as a way to prevent as well (David, 2001).

According to the author pharmaceutical companies should learn how to work with this customer in order to target them and create partnerships with them, so that they can find some possible alliances.

On the other side, if the pharmaceutical industry ignores these customers they may become an obstacle (David, 2001).

Internet reinforces the importance of final consumer of pharmaceutical industry products: there is a need for transparent information, it is given the opportunity for consumer to expose his/her opinion, and all of this converges as never in the internet (Marketeer, 2009).

João Pereira, Communication Accessor from Roche, also agrees with the paper of the internet saying that “nowadays we are living in a different paradigm in communication, with social networks, internet and the emergence of issues that place the patient in a different position. Some years ago people just received information; now communication is much more dynamic” (Aroso, 2013).

2.3 Research Framework

While writing the literature review a model was design in order to support this thesis statement. The main objective is to understand consumer attitudes and perceptions towards generic medicines versus branded medicines.

Schiffman & Kanuk (2007), defined consumer behaviour has a discipline focused on how individuals make decisions to spend their available resources (time, money and effort) on consumption-related items. Those decisions are related with what they buy, why and where and also how often they do that. Consumer behaviour is related with the decision making process, which is the stage for which consumers passes throught until final decision (Noel, 2009). The author says that consumer will centered their choices based on how important this purchase is for them, for example if it is an expensive product, if it has impact on health or self-image.

In Portugal the main therapeutic groups of medicines are modifiers of the rennin angiotensin (medicines for hypertension), medicines used to regulate cholesterol (lipid-lowering), medicines used to cure, pills used for depression and anxiety, medicines used for delirium and hallucination, modifiers of gastric secretion, symptomatic treatment (analgesic) , anticoagulants, antiepileptic's and anticonvulsionants.

In order to analyse if there is any relation between the type of medicine and the consumer behaviour the first research hypothesis is:

- **H1:** *When buying the main therapeutic groups, the proportion of Portuguese's that prefer Generics is bigger than those that prefer Brand Medicines.*

According to Pinto (2002), Portuguese Pharmaceutical market has a main structure of three fundamental intervenients: state, doctor, and patient. Although there are others influenciating consumer attitudes towards purchase, such as pharmaceutical companies,

healthcare companies, associations (industry, pharmacies or patients), wholesalers, state and insurance companies.

Nowadays even the communication in health sector has those influencers as objective. There are new targets to communicate for: who prescribe (doctors), who pays (hospital, patient), who approves (Infarmed), who makes the legislation (govern), who buys (patient), who advise (pharmaceuticals), who makes pressure (groups of patients, medical societies), who influenciates (media, onlines communities) (Marketeer, 2009).

Based on the fact that there are many influencers communicating with the final consumer, it is possible to formulate the second hypothesis as follow:

- **H2a):** *Final purchase is influenced by industry prescribers or other advisers/influencers.*
- **H2b):** *The information medical entities transmit about generics, influences positively the knowledge consumers have about it.*

Consumer empowerment is one of the main factors to change: consumers are getting more educated and they have access to information more quickly (David, 2001). Due to this factor population is getting more informed and is conscious about having an active role in his/her health, that is why they look for information in all media available and face the doctor (Aroso, 2013).

Marketeer, 2009, also agrees, saying that the internet reinforces the importance of final consumer, so there is a need for transparent information. It is given the opportunity for consumer to expose his/her opinion.

Nowadays we are living a different paradigm in communication, with social networks and internet. Some years ago people just receive information, now the communication is much more dynamic (*João Pereira, Roche in Marketeer, 2009*).

Taking into account the growth of internet role to patients/consumers it is possible to formulate the third hypothesis:

- **H3:** *Consumers experience with internet has influence in the purchase decision.*

According to Economic Times, 2013, price is the value that is put to a product or service and is a result of a complex set of calculations, research and understanding and risk taking ability.

In fact, in order to compete in this global and regulated market worldwide, companies should embrace strategic pricing and pay more attention to its growing importance (Information, 2013). Although in Portugal, price in pharmaceutical industry is a result of a complex governmental approval system. This means that in pharmaceutical market prices are not free, they do not come from a company marketing department, it comes from state regulamentation (Cabrita, 2012).

In 2012, it was approved the prescription of medicines with the international common denomination, that means with the name of the active substance. Later in April, it was introduced the opportunity for the patient during medical consult to choose the type of treatment that he/she would like to follow, if he would like to be treat with a generic (it will be mentioned tha maximum price) or a branded medicine.

With the new law approved this month (September, 2013), patients can choose in the pharmacy the cheaper medicine that he/she wants. It was introduced as a response to the absence of right from the patient, that in the past had to made this choice during medical consultation.

With this law, patient although having the opportunity to choose was still pressured to be strict to the doctor opinion, as the decision had to be made during consultation.

Based on this new opportunity the formulation of hypothesis four, appear as follow:

- **H4:** *The majority of the inquiries do not change their behaviour after medical advice for a Brand Medicine.*

First private label products were not offering any additional benefit; and the majority was not following severe patterns of quality. They were understood as low quality products for consumers. Although the years went through, and those products were improved. According to Gutwilig (2000) consumers started to consider private label as having the same level of quality as big brands.

Due to the fact that generics are cheaper than the branded medicines, many patients are attracted by this argument (Weber, 2008).

Although some people are still concern about why these medicines are less expensive, wondering if the quality and effectiveness are compromised when using generics (Stoppler & Hecht, 2009).

The decree law 176/2006 of 30th of August requires that generic medicines have the same quality of the reference one. With the growing quality perceived of generic medicines the 5th hypothesis can be formulated as follow:

Post decision process is the phase where the decision is already made and the product purchased. If the consumer is satisfied he/she can have a positive reaction and recommend it or repeat the purchase. When a person is dissatisfied can have a negative reaction and make a complaint or return the product.

Having in mind the quality and safety perceived by consumers in the past purchase phase, it is possible to formulate hypothesis five:

- **H5:** *Quality and safety perceived by the past experience with generics have a positive influence in future Generic consumption.*

Through certain circumstances, patient will not pay the whole price. A part of this value has a contribution from state, the reimbursement.

Reimbursed medicines have a particularity in the price. Those medicines have a maximum value to be reimbursed which is calculated through the percentage of reimbursement applicable in the reference price or equals to the sell RRP of the medicine.

Portuguese National Health System (SNS) contains a medicines' reimbursement system that covers the whole inhabitants. The cost of the medicine is usually shared between the State and the patient. In some rare circumstances, the entire cost of the medicine can be paid by the State (Perehudoff, 2009).

The price of prescription is determined by reimbursement categories. The price that is paid by the patient is called the co-payment, is dependent on his/her condition/disease, the need to have that medicine for his/her daily function, and the social-economic situation (Perehudoff, 2009).

According to the Health Portuguese Portal, 2011, the Portuguese system provides four different levels participation for patients in the cost of medicines: A: 90% Level B: 69% Level C: 37% Level D: 15%. The classification of the medicinal products in the different reimbursement categories depends on its therapeutic classification (Saúde, 2013).

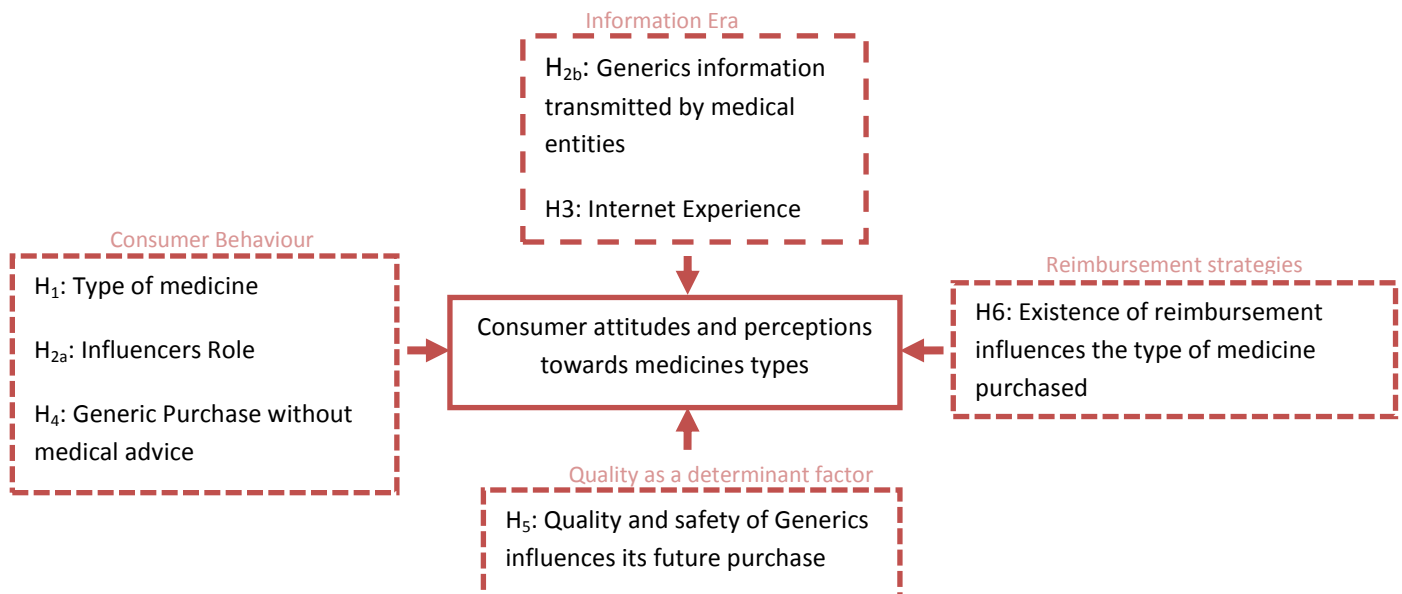
Reimbursement is not only made through the state, it can also have other ways such as health insurance, in this method, people pay monthly or annually a budget to have this insurance and have access to a reimbursement is health, namely in medicines too. It can also be a reimbursement made buy the employer companies, in this case workers pay for medicines in advance and then they are reimbursed by the company.

An important issue to find out is if the existence of a reimbursement leads consumers to choose a more expensive medicine, a Brand Medicine, or if it does not have any impact in type of medicine purchase, as so, the final research hypothesis can be formulated as follow:

- **H6:** *The existence of reimbursement has influence in the type of medicine purchased.*

The research can be summed up in the following chart:

Figure 6: Research Hypothesis



3. METODOLOGY

In this chapter methodology and empirical investigation is explained. Here are addressed topics such as the research design and the choice of the method for gathering information. The first topic aims at describing the methodological choices, which means, the explanation of how the necessary information was obtained through various sources of information and why certain techniques of data analysis were applied.

The second topic aims at describing the population and sampling of the study, which aims at describing the profile of our study respondents. The third point has the objective of analysing the type of scales used in the study. Then, follows the topic fourth that aims at explained how the information was gathered. The last point refers to the method of data analysis procedures, which mean how the analysis was made.

3.1 Methodological choices

The study focuses on consumer attitudes and perceptions of generic medicines versus branded medicines.

This study will be based in an empirical analysis, this means, making observations to better understand the phenomenon of the study which allows building more adequate explanations or theories (Hill, 2008). In this case, it is an extension of the topic presented in the literature review, by applying the assumptions and methods to new realities (Portugal) and situations (behavioral attitudes and perceptions of generics versus branded medicines) as well as deduction of new hypothesis about the influence of the type of medicine, influencers and prescribers, internet and information, price, quality and safety perceived and the impact those have in post purchase. Besides and because generics medicines usage in Portugal is still recent, the deep understanding of this phenomena in the population of the study will also be conducted.

Given the extent of objectives of research the research design was defined. Malhotra & Birks (2006), believe that the most appropriate research design is a *conclusive*, as its purpose is to identify behaviours and get some conclusions from the research. Specifically it

is a descriptive research , as it is generally used to describe consumers characteristics, estimate percentages in a specific population exhibiting a certain form of behaviour. This reseach design fits with the objective of studying the generic medicines in Portugal; it is also used to determine perceptions of service characteristics and to determine the degree to which marketing variables are related, which also fits with the objective of the study of understanding the relation between consumer attitudes and perceptions and other certain variables (type of medicine, influencers/prescribers, internet/information, price, quality and safety and post purchase intension). From the descriptive research it has a cross-sectorial design, which according to Malhotra (2007) involves the collection of information from any given sample of population elements only once.

The data collection for this study followed an approach of the positivist paradigm. It was assumed that this is a measurable reality and therefore capable of being quantified (Malhotra & Birks, 2006).

This approach followed the hypothetical-deductive scientific method or test hypothesis, embodied in the techniques of quantitative research, and specifically the research surveys. This strategy enables to generate primary data that met specific objectives and research hypothesis.

3.2 Population and sampling

In order to get information about the characteristics or the parameters of the individuals in the study, the empirical research implies data collection in form of observations, in this way *population* can be defined as “*aggregate of all the elements that share some common set of characteristics and that comprise the universe for the purposes of the marketing research problem*” (Malhotra, 2007).

Information about population parameter may be obtained by taking a sample, which is a subgroup of the population selected for participation in the study (Malhotra, 2007).

The target population in this study are adults with more than 18 years and less than 70.

With the objective that the selection of enquiries was the more random possible, there was no filtering criteria except the age bigger than 18 and being Portuguese. It was limited to

Portuguese population due to the fact that it is a much delayed country in what concerns generic medicines when compared to Poland (more than 80% market share), Romania (71% Market Share) and Germany (68% Market Share).

Due to time and resources constraints, a non-probabilistic sampling process was chosen. These processes aims at arbitrary or consciously choose what elements to include in the sample Malhotra & Birks, (2006), this means that the selection of respondents was made by convenience and proliferation (snow-ball). Convenience sample comprises selecting sampling units, normally respondents are selected because they are at the right place at the right time Malhotra & Birks, (2006). Snow-ball means that after being interviewed, respondents are asked to identify others who are also part of the target population (Malhotra & Birks, 2006). The application of these methods will be further explained.

The sample obtained is a non-representative one, which means that it is not possible to extrapolate the findings obtained in the sample to the universe with confidence, due to the fact that it is not guarantee that this sample will be representative of the population (Hill, 2008). However the same authors consider that, this type of sample is appropriate and preferable, to make a good academic research of limited scope.

The target sample size considered the minimum number of cases needed to perform all the tests and statistical techniques required to validate hypothesis, so it had into account the *Law of big numbers* (a minimum of 30 individuals to ensure the approaching of the normal distribution). It also takes into account the rule of *thum* (Hill, 2008). This rule has the objective of estimating the minimum size of the sample in order to make it possible to apply the statistical analysis adequate to the data. In order to do so, the test that needs the biggest minimum number of individuals was considered: ANOVA factorial with two independent variables (r x k levels of two independent variables, in this case, 4 * 4 levels – 160 respondents). It was established a target of 200 individuals as the initial size of the sample target. Although, final results do not allow to extrapolate with confidence to the universe. However, it allows measuring perceptions of respondents and draw valid conclusions in order to meet the objectives of the study and conclude about the acceptance or not of the hypothesis in order to answer research objectives.

3.3 Scales

In this research different types of variables were used to build the survey and therefore different types of scales.

It was used some nominal scales like: sex, occupation, marital status, academic background, yes/no questions. Some variables were also represented by ordinal scales as the age and income.

Nevertheless, most of the scales used were non-comparative with itemized scoring, in other words there were 5 categories Likert type, due to the fact that those are adequate to measure attitudes and opinions, which mean appropriate regarding the research objectives (Malhotra & Birks, 2006).

In the majority of the questions it was asked for the respondent to evaluate a sentence that explained an attitude or behaviour. Below it is possible to observe the examples:

1. Represents very few my behaviour	2. Represents few my behaviour	3. Represents my behaviour	4. Represents well my behaviour	5. Represents very well my behaviour
1. No information	2. Very few information	3. Some information	4. Lots of information	5. All information
1. No influence	2. Very few influence	3. Few influence	4. Some influence	5. Strong influence

It was used a non-forced-choice scale, that has not only an odd number of categories and a neutral answer (number 3) to improve the quality of results.

3.4 Instrument collection

As it was mentioned previously the quantitative observation technique chosen, was a survey, which according to Malhotra & Birks (2006) is based upon the use of structured

questionnaires given to a sample of population. The questionnaire applied in this study is in the **Appendix 7.3**.

This questionnaire was written in Portuguese, as it would be applied to Portuguese population only. At the beginning of the questionnaire, respondents were informed about the objectives of the study as well as about the anonymity of the answers.

When designing a questionnaire we have to be conscious of consumer, about how he/she will interpret it, and trying to make it the more interesting possible. The sequence of questions was not random, it aimed at taking the respondent through a journey in his/her mind. In the first part, respondent had to answer to simple questions in order to be comfortable, then, in the second part, questions went deep in his/her mind making him/her remind last experiences with types of products, influencers and information sources. Finally, in the last questions, when last experiences are reminded, questions about future purchase intention were asked.

The survey had 34 questions, 23 of them mandatory (the rest of them, 11, only appear if the respondent answer to a certain hypothesis). The questionnaire had maximum of 2 questions per page, in order to increase the focus in few questions per moment. The majority of the questions were closed, respondents had to choose between alternative answers. According to Hill, (2008) it turns it easier to apply statistical analysis, and in respondent point of view it is less boring. There were also some multiple questions, where respondents, could choose more than only one answer.

In order to have an homogeneous interpretation of the generic medicines and brand medicines concept, a definition of those two types of medicines was given in the beginning of the second part of the survey.

There were some questions where there was an available answer "*I don't know/ I don't want to answer*", which were represented by N/A in the questionnaire. This number was considered a missing value when the database was analysed. With the existence of this possible answer, some measurement and bias errors can be decreased.

As recommended by Malhotra & Birks, (2006) with the objective of verifying the adequacy of the questions, alternative answers, and structure of the survey, a pre test was done. The pre test was conducted online with 10 persons within the target population. In this test, some adaptations were made, re-phrasing , introduction to the questions and re-order of survey questions. Those results were not introduced in the final sample.

3.5 Data collection

In order to conduct this research the data was collected through a quantitative web-based survey using the “Qualtrics” platform, during 5 days, from 26th to 30th of September.

Malhotra & Birks (2006), believe that this method presents some advantages: it is faster comparing with traditional methods (in presence, by telephone, etc.) in what concerns data collection as it does not involve researcher to collect the answers; as it does not require the introduction of data in the database (it is automatically done) it is also faster in terms of data analysis; as it does not require printing it is less expensive; there is no bias regarding the interviewer. However this method also presents some disadvantages: it is easier for respondents to quit and not answer the whole survey, the data collected usually is not representative of the population, first because not everybody has access to the internet and second because all the population does not have the same access to the survey itself.

The main factor to choose this method of data collection was the fact that it is easier to apply as it does not require the presence of the researcher, and also due to its faster propagation (allows the collection of data from a larger number of respondents in limited time).

Due to the fact that not all the target is familiar with the internet, this method can have this limitation for some age intervals.

In order to avoid the error of duplication the platform blocked IP numbers, which means that an IP address could only answer once. Although in order to maximize the number of respondents and strengthen the sample results. To promote the completion of the questionnaire, the link “...” was sent to personal and professional contacts of the researcher known to be on target. The spread took place mainly through two media: Social Networks

(Facebook and LinkedIn) and through email. To those personal contacts it was also asked to re-resent the survey link to other individuals within the target in order to assure maximization of responses.

In the end 370 answers were collected, although only 269 valid answers were considered in the analysis. This difference results mainly from incomplete surveys. As all the questions had an obligated answer in order to continue with the questionnaire, the non-response rate was not significant.

3.6 Data analysis procedures

Since the data was automatically introduced by respondents, it was exported to SPSS 20 directly and analysed, this benefit reduced the potential associated error in this phase. All the answers were revised and checked for completion and consistency.

The analysis of the data was made based on the hypothesis built at the designed model. It was used parametric and non-parametric tests. It was verified in some cases if there were correlations between the variables and also compared some means.

Several tests were used in order to validate the research hypotheses that were presented in the previous chapter: descriptive statistics, frequencies, inductive statistics (Independent sample t-test, two independent samples and Correlations), and tests to validate assumptions (like homogeneity of variances). The test of homogeneity of variance performed was the Levene's test for its power strength.

In scale variables, where it was needed the use of a construct the reliability test to verify the internal consistency between the variables.

By applying the Central Limit Theorem, the distributions were considered as normal for almost all the cases. This Theorem assumes normal distribution approximation to the distribution of a variable metric where $n > 30$. This means that is compatible with the implementation of parametric tests on these variables.

4. RESULTS AND ANALYSIS

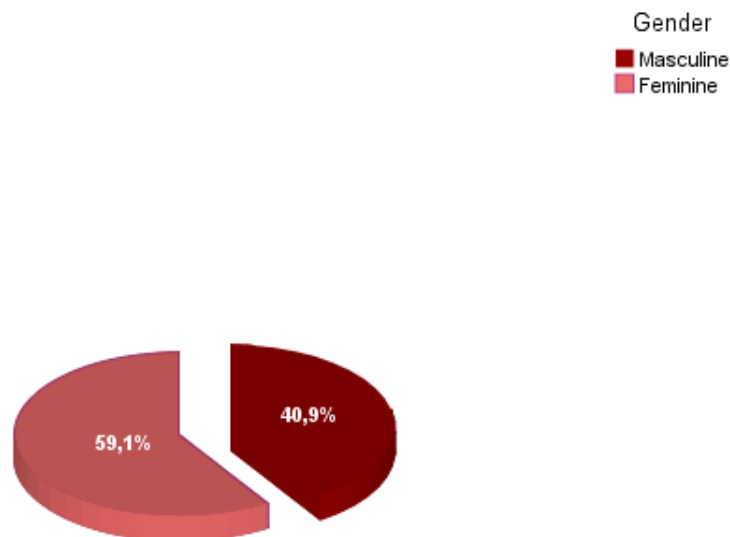
This section aims at present the results of the study done previously, regarding the analysis of the results in a critical and future based vision, as well as the validation of the research hypothesis. It is divided in:

- 4.1 Socio-demographic Characterization of the sample;
- 4.2 Medicine's habits usage;
- 4.3 Influencers Role;
- 4.4 Past experience with Medicines;
- 4.5 Reimbursement as an important purchase factor;
- 4.6 Future purchase intension
- 4.7 Hypothesis testing.

4.1 Socio-demographic Characterization of the sample

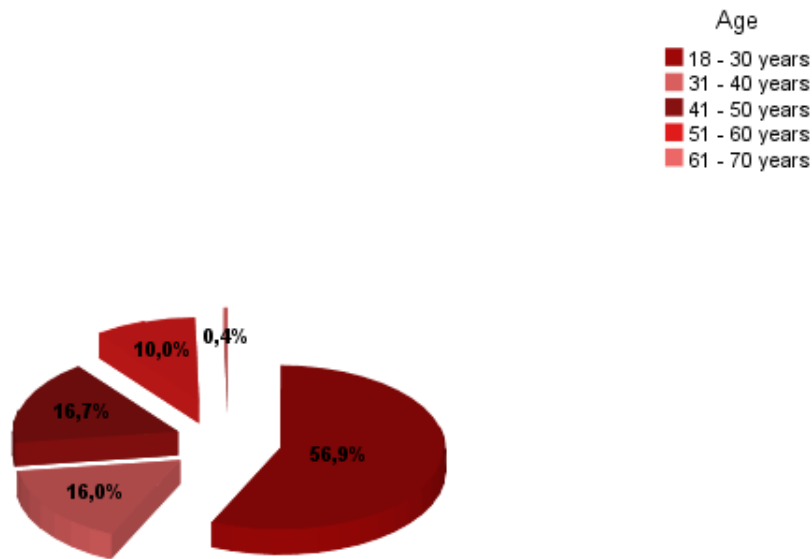
Regarding the socio-demographic factors it is important to analyse some distributions of the sample in order to better understand the rest of the analysis. In Figure 8 it is possible to see that in this sample there is a **small but not significant majority of the female gender**.

Figure 7: Distribution of the sample by gender (%)



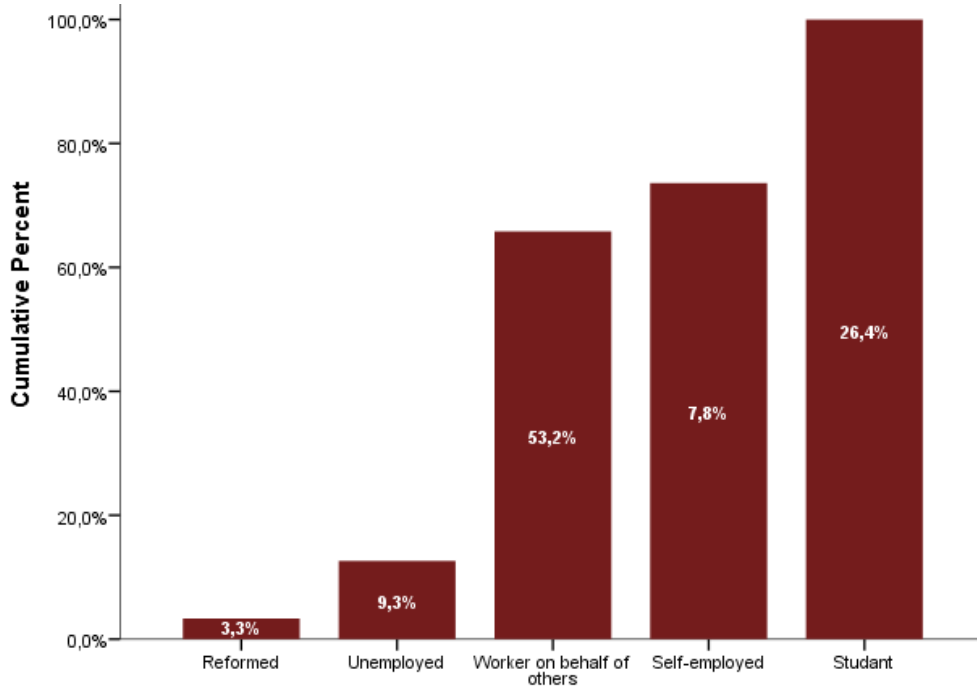
As it is possible to see below (Figure 9), **the majority of the sample has between 18 and 30 years**, which can be explained by the non-probabilistic sample process that was used to collect information, through researcher's professional and social networks. This attests the non-representativeness when we compare these results with the ones of the Portuguese population that has between 18 and 70 years.

Figure 8: Distribution of the sample by age (%)



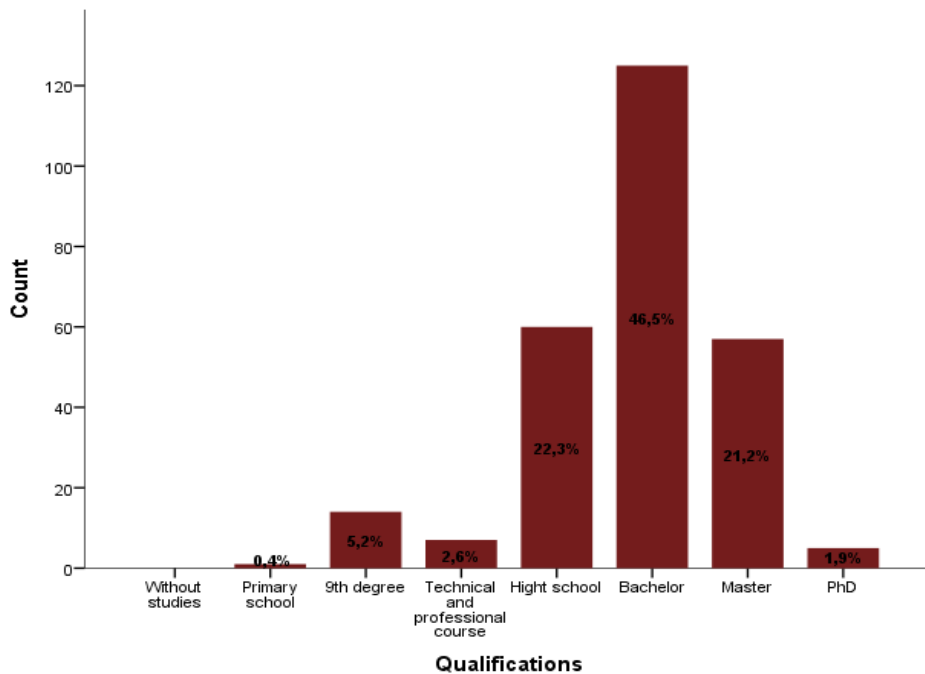
Through the observation of Figure 10 it is possible to see that **more than half of the sample is built by individuals who are working on behalf of others**, around 26% of this sample is still studying and 9% are unemployed. The entrepreneur attitude (self-employed) is present in 8% of the sample. Nevertheless it is still visible the presence of a group of reformed people, 3%.

Figure 9: Distribution of the sample by occupation (%)



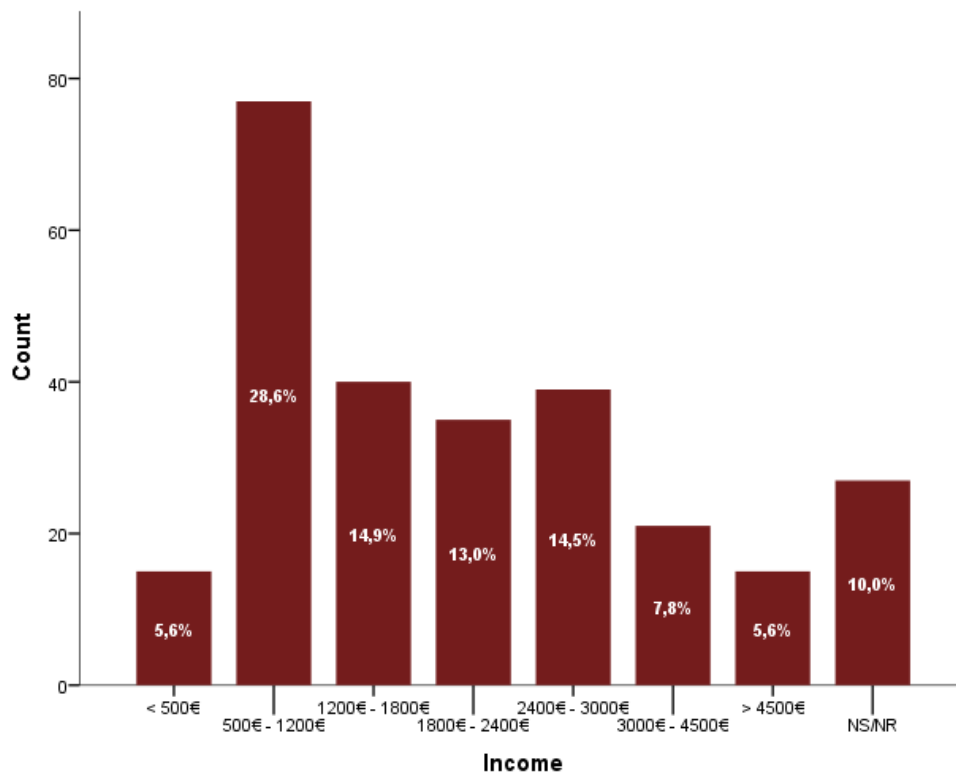
Below in Figure 12 it is possible to observe that this sample is highly qualified (69.25%), having 22.78% of them a Master Degree or even PhD. Although, there is still a part of the sample that has lower qualifications 22.30% only has the High School and 5.20% and 0.37% have respectively the 9th degree and primary school.

Figure 10: Distribution of the sample by Qualifications (%)



In Figure 12 it is possible to observe the distribution of the sample by income and the main conclusion is that the **majority of the inquiries have an income between 500€ and 1200€** (28.62%). In Portugal, the medium of income is 777€ (INE, 2010) , which means that in our sample at least 55.78% receive more than this medium Portuguese salary, from those 5.58% receive more than 4500€. In this question it is possible to observe an absence of response of 10.04%.

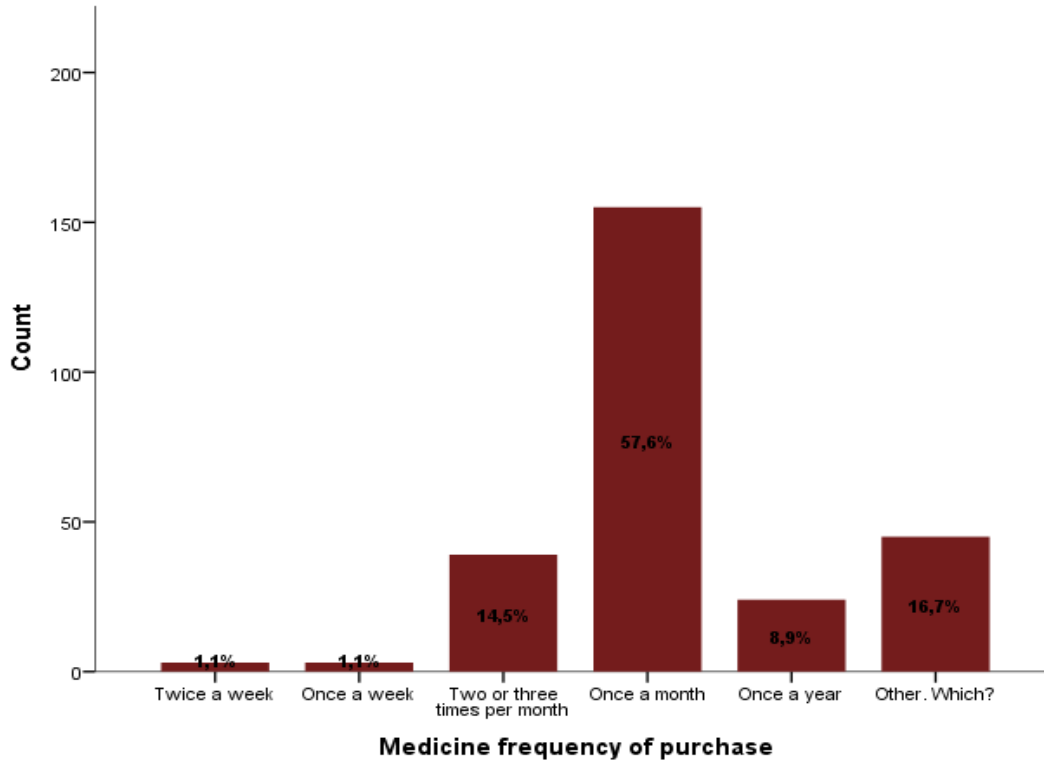
Figure 11: Distribution of the sample by income (%)



4.2 Medicine's habits usage

Figure 13, presents the medicine frequency of purchase in what concerns medicines. It is possible to observe that the majority of the inquiries in this **sample have a habit of purchase medicines once a month (57.62%)**, others affirm to buy medicines **two or three times per month (14.50%)**, a small amount claim to **buy medicines once or twice a week, both with 1.12%**. There is still an important part of the sample that only buy medicines once a year and others that have another reason to buy as: only when they are sick, less than one time per month, few times a year, in a daily basis or even rarely.

Figure 12: Distribution of the sample by frequency of purchase



Figures 14 and 15 represent the advice (or absence of it) by the medical entities for a Generic Medicine. In both figures it is possible to observe that **the majority of the inquiries affirm that they were advice by those entities to take a Generic**. In the case of the doctor advice, 68.40% confirm that they were advice to take a Generic pill while 31.60% say that they were never advised to take a Generic Medicine. In the second case, 72.86% affirm that they were advised by a Pharmaceutical to follow a treatment with a Generic Medicine, while 27.14% confirm that they were never advised to take a Generic Medicine in the Pharmacy.

Figure 14: Generic Medicine advice by the Doctor

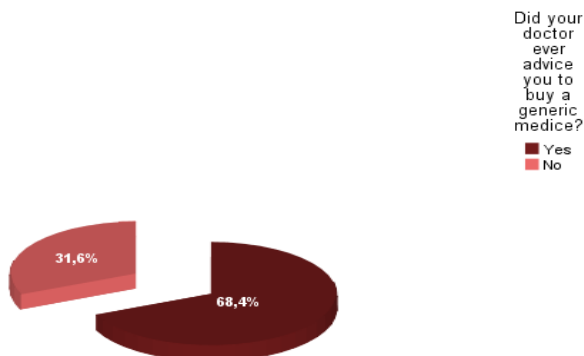
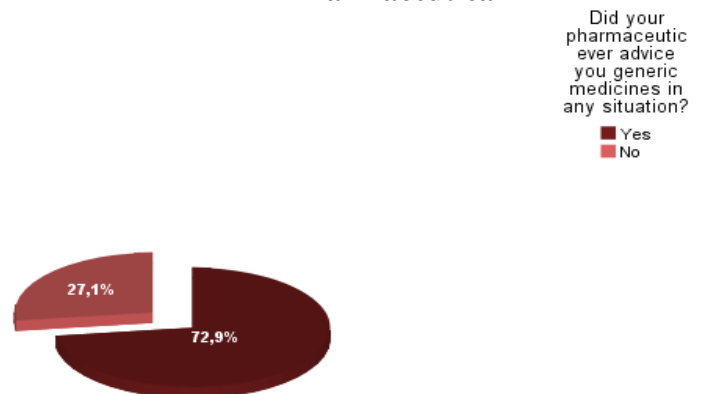


Figure 13: Generic Medicine advice by Pharmaceutical

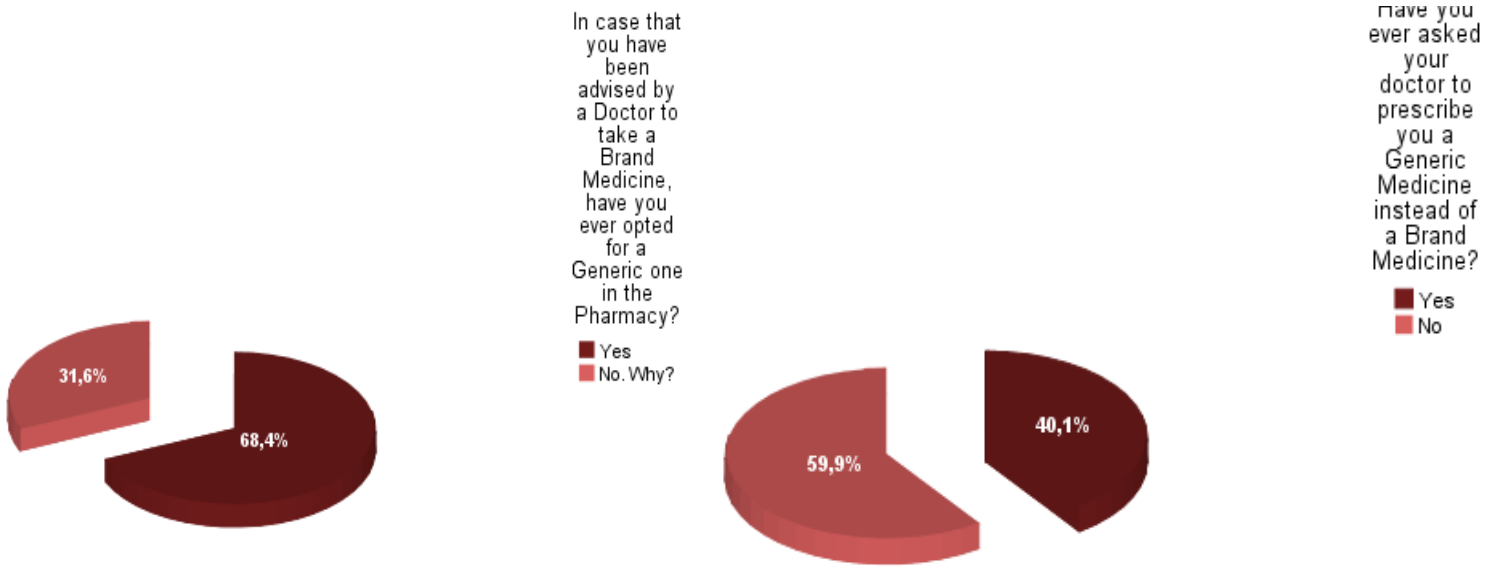


In Figure 16, it is possible to observe that a significant number of people had already changed their behaviour, by **asking for a Generic Medicine instead of following the prescription of the Doctor (68.40%)**. It shows that a considerable number of people is not afraid of changing into a Generic even if a Doctor has prescribe a Brand Medicine. On the other side it is also possible to see that the minority of 31.60% has never changed their behaviour.

In Figure 17, it can be seen that the inquiries where asked if they had ever asked their Doctor to prescribe a Generic Medicine instead of a Brand Medicine. As a result it is possible to see that a great percentage of people have already asked (40.15%), although the amount of people that has never asked is still bigger 59.85%. This shows that there are still lots of people that during consultation prefer to wait for the medical prescription without showing, before prescription, the willingness to have a Generic Medicine.

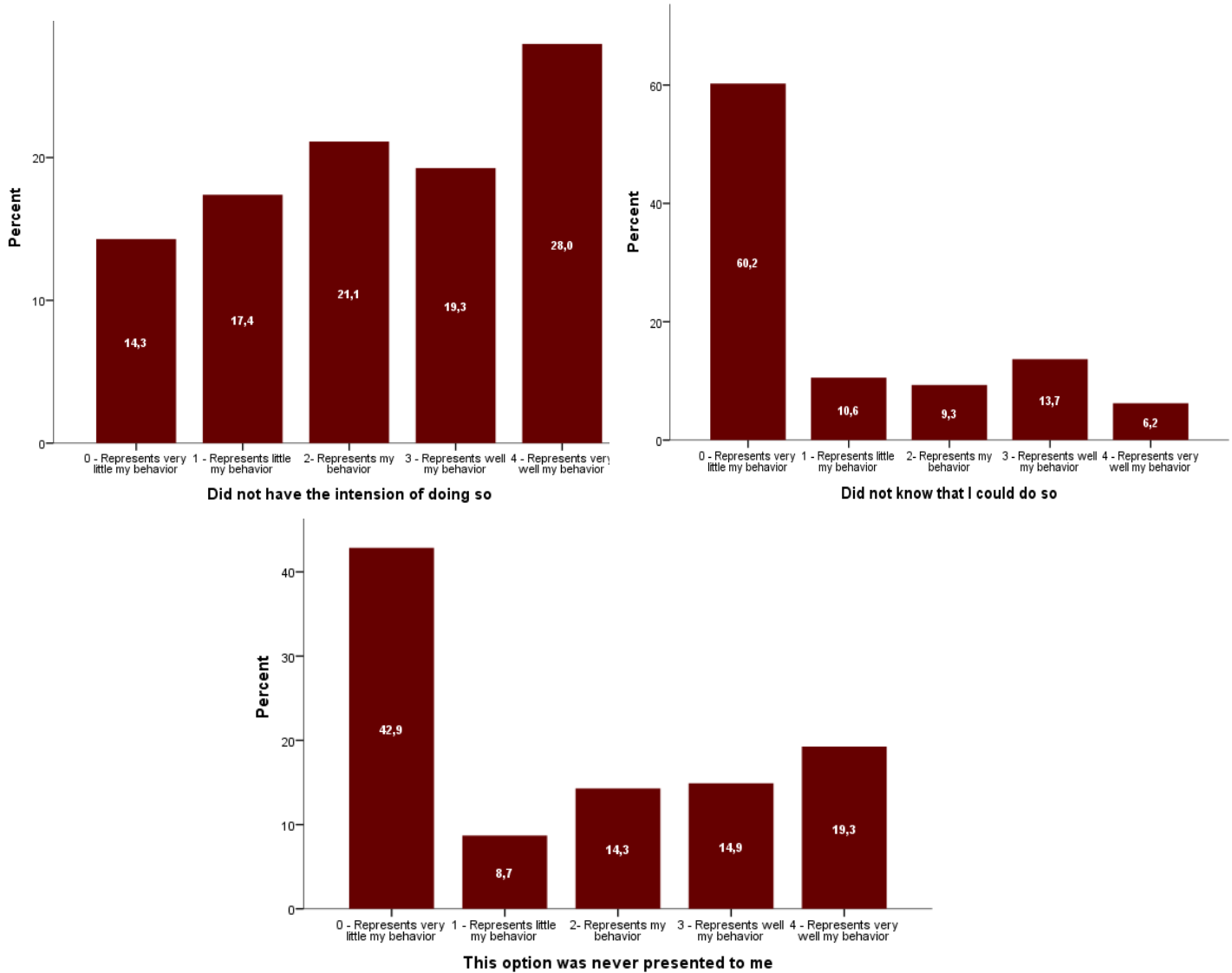
Figure 15: Generic Medicine instead of Brand Medicine

Figure 16: Brand Medicine changed for a Generic Medicine



In order to investigate the reason for not asking the doctor to prescribe Generic Medicines, inquiries were asked about 3 main reasons (Did not have the intension of doing so, did not know that I could do so, this option was never presented to me). This reasons had a scale, to measure how much it represents their behaviour. The graph that illustrates the results can be analysed in Figure 18.

Figure 17: Reason for not asking a Generic Medicine



From this figure it is possible to observe that the main reason for not asking the Doctor to change for a Generic Medicine is because they do not have the intension of doing so, this reason is representative of their behaviour in around 30%. Although it is also possible to see that 20% of the sample affirms that this option was never shown to them. Nevertheless, it can be seen that the inquiries knew that they could ask Generic Medicines to the Doctor,

due to the fact that in the variable “Did not know that I could do so”, the majority of the inquiries answer that this represents very little their behaviour.

Gender comparison

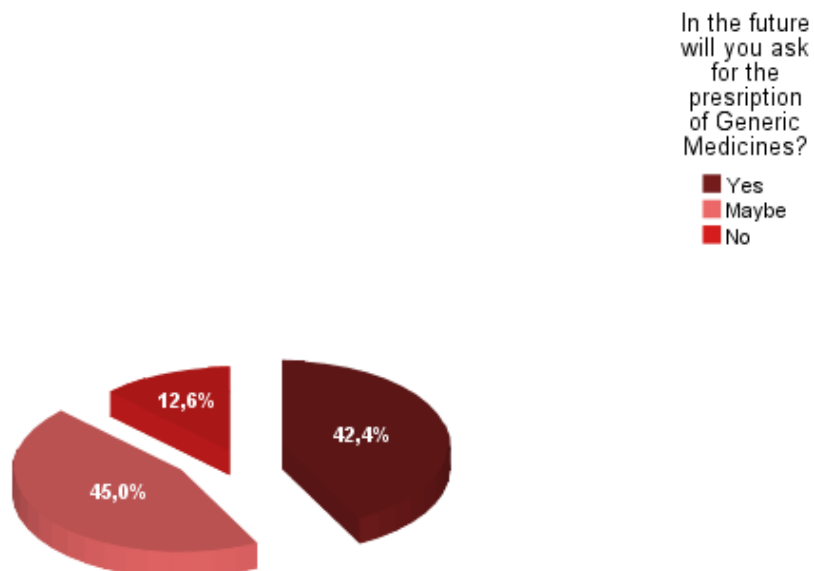
In order to conclude whether there were any differences between woman and men, an Independent Samples T-Test (**Appendix 7.5 a**)). was done between Gender and the reasons for not asking a Generic.

Firstly it was tested the equality of variances through Levene’s Test. As all the Sig were higher than 0.05 (“Did not have the intension of doing so” = 0.580; “Did not know that I could do so” = 0.052; “This option was never presented to me” = 0.053), the null hypothesis were accepted, this means that the variances were assumed equal.

The T-test evaluates the equality of means. By analysing the “*equal variances assumed*” line, it is possible to see that “Did not have the intension of doing so”, “Did not know that I could do so” and “This option was never presented to me” have the following Sig values respectively: 0.456, 0.364 and 0.122. This means that all the Sig values are higher than 0.05, providing that there is no statistical difference between woman and man

Figure 19, present the future interest in asking for a Generic Medicine. As it is possible to see below, very few people will not ask for a Generic Medicine in the future 12.64%. On the other side, 44.98% affirm that maybe they will ask for this type of Medicine, while 42.38% confirm that they will ask for this type of Medicine.

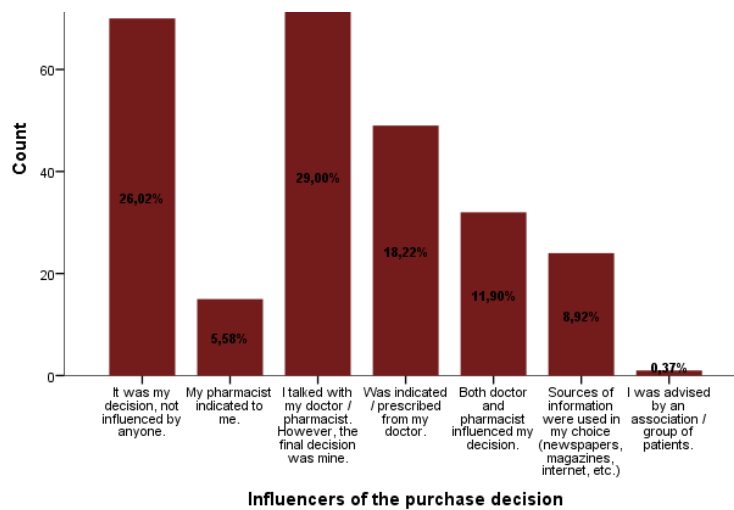
Figure 18: Future Behaviour



4.3 Influencers Role

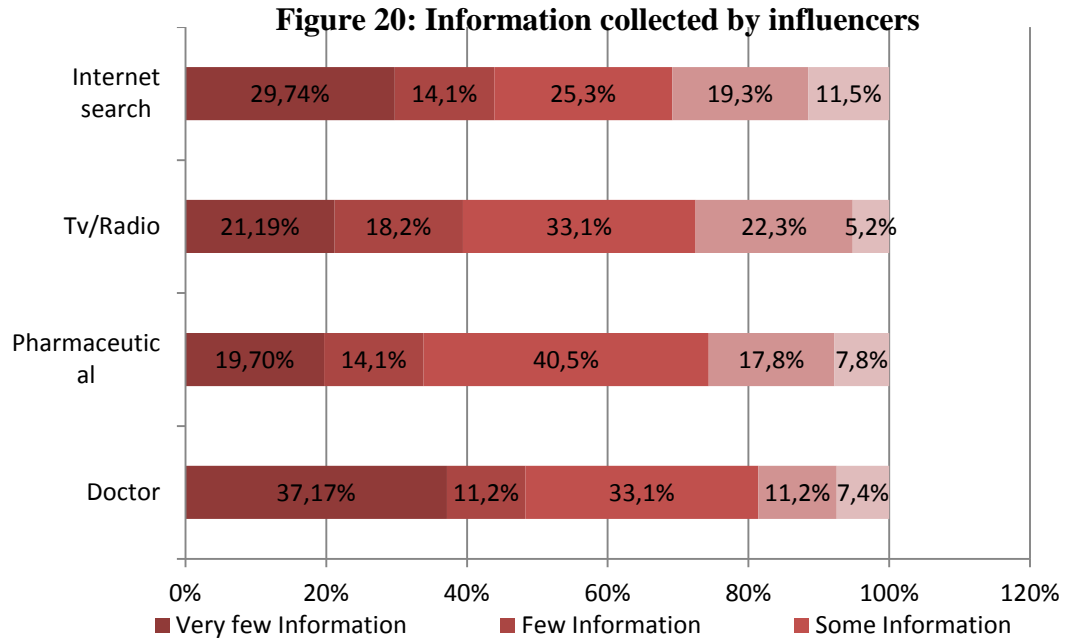
Figure 20, presents the influence or absence of it, in the purchase decision. It can be seen that the majority of the inquiries affirm that they talked with their pharmaceutical or doctor, although the final decision was made by their own (29%). Nevertheless, it does not mean that they were not influenced; it means the opposite, due to the fact that they actually had a conversation with a medical entity in order to arrive into a decision. From the figure below we can also conclude that, there are still 26.02% that were not influenced at all, which means that the final decision was just made, based on their willingness. It can also be seen that the sources of information such as newspapers, internet have an important weight (8.92%). This means that in this sample, people are looking for information, not only provided by medical entities but also external. Groups of patients, have very little importance here, which means that these groups are still not an important font of information for the patients (0.37%).

Figure 19: Distribtution of influences



In order to analyse the past experience in what concerns the transmission of information it is possible to observe two separate sources of influence: medical and external. As there isn't a single question that was able to describe the whole past experience with the transmission of information, two constructs need to be built. One for the information

transmitted by medical sources and other for the information transmitted by external source.



To be certain that these sentences form a good construct a Reliability test was done that analysis if the groups of sentences had adequate internal consistence. The result is expressed by the Cronbach's Alpha:

Table 8: Reliability test for quantity of information through medical sources

Reliability Statistics	
Cronbach's Alpha	N of Items
,712	2

Table 9: Reliability test for quantity of information through external sources

Reliability Statistics	
Cronbach's Alpha	N of Items
,467	2

According to Pestana & Gageiro (2008), if a Cronbach's Alpha is less than 0.6 it is not admissible, which means that, as it is possible to see for the Table 9, we can not build a construct for the quantity of information through external entities. Although observing the Figure 21 we can conclude that the majority of the inquiries say that they do not get any information in the internet (29.74%), while 11.52% said that they got all the information that they know about generic through this source. In what concerns TV/Radio, it is possible to conclude that the majority of the inquiries say that they knew "some information" about Generic Medicines in the TV/Radio, while 21.19% of this sample said that they did not receive any information through this source. It is also possible to observe that 5.20% of this sample received all information that they know about Generics through TV/Radio.

Nevertheless, the reliability test for quantity of information through medical entities has a reasonable internal consistency and can be used as a construct (Table 8). The frequencies of the quantity of information construct with the medical sources are present in figure 22. There is not a consensual response to this construct however, it is possible to observe that 16,72% affirm not receiving any information through medical sources, which means that the others, 83,28% receive at least few information.

Figure 21: Frequencies of the quantity of information through medical sources

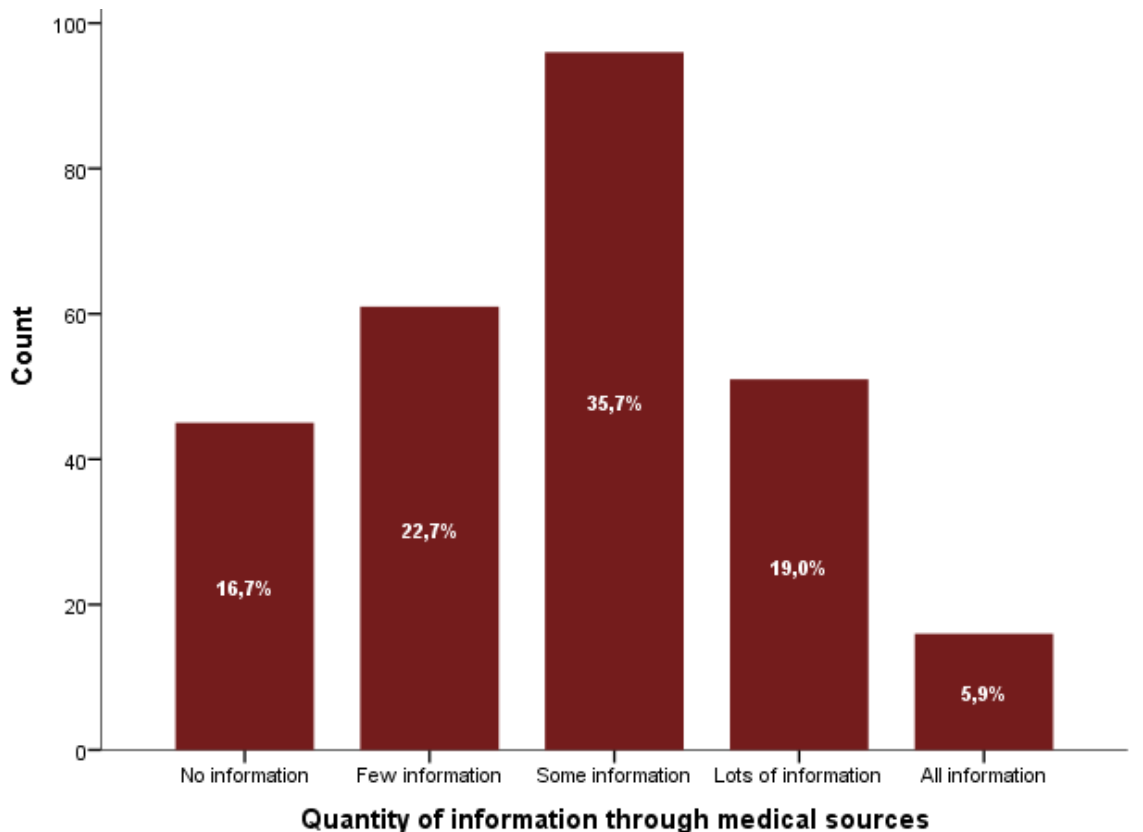
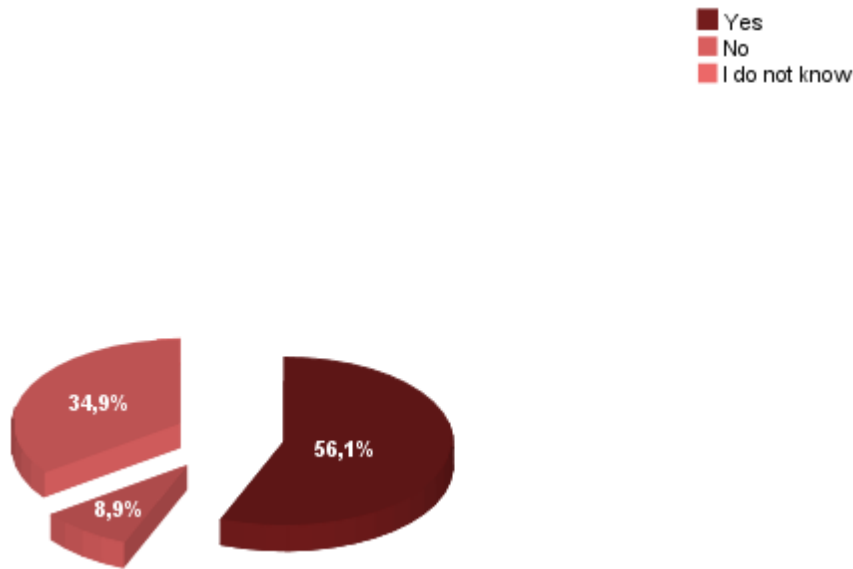


Figure 23 represents the knowledge of the existence of any Generic Medicine to substitute their Brand Medicine. It is possible to see that a great percentage of the inquiries know that there is a Generic substitution for their medication, although they still follow a Brand Medicine treatment. Although 34.94% said that there is no Generic substitution for their treatment, which can be a justification to keep using Brand Medicines.

It is also possible to observe that 8.92% do not know about the existence of a Generic pill to follow a treatment with that.

Figure 22: Percentage of inquiries that know that they have a Generic Medicine available

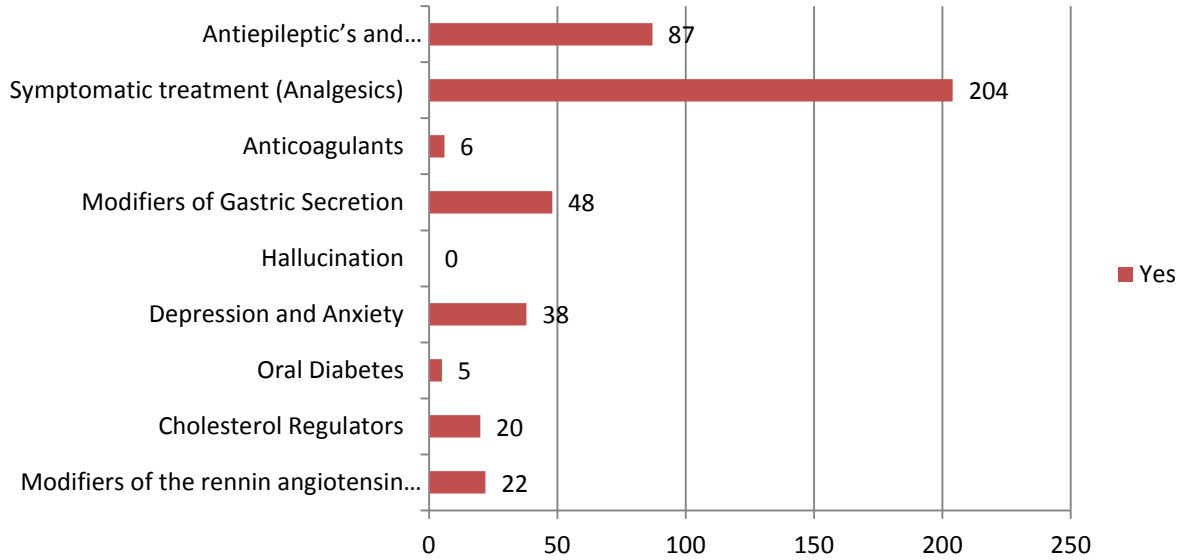


4.4 Past experience with Medicines

Figure 23 represents the medicines that this sample consumed more from the more consumed medicines in Portugal. As results it is possible to observe that the Analgesics are the ones that the majority of the inquiries consumed (264 out of 269). Other medicines that are consumed a lot by this sample are the Antiepileptic's and Anticonvulsionants (87), Modifiers of Gastric Secretion (48) and also medicines for Depression and Anxiety (38). From the more consumed medicines in Portugal it is possible to observe that this sample do

not consume medicines for Hallucination and has a very little consumption of medicines for Diabetes and Anticoagulants, 5 and 6 respondents respectively.

Figure 23: Frequency of Medicines consumption from the more consumed Medicines in Portugal



The inquiries were asked if this purchase was through Generic Medicines or Brand Medicines. In order to analyse their behavioural reason, it is possible to see below, Figure 24 and 25, representing respectively the reason for purchasing Generics and Brand Medicines.

Figure 25: Reasons to prefer Generics

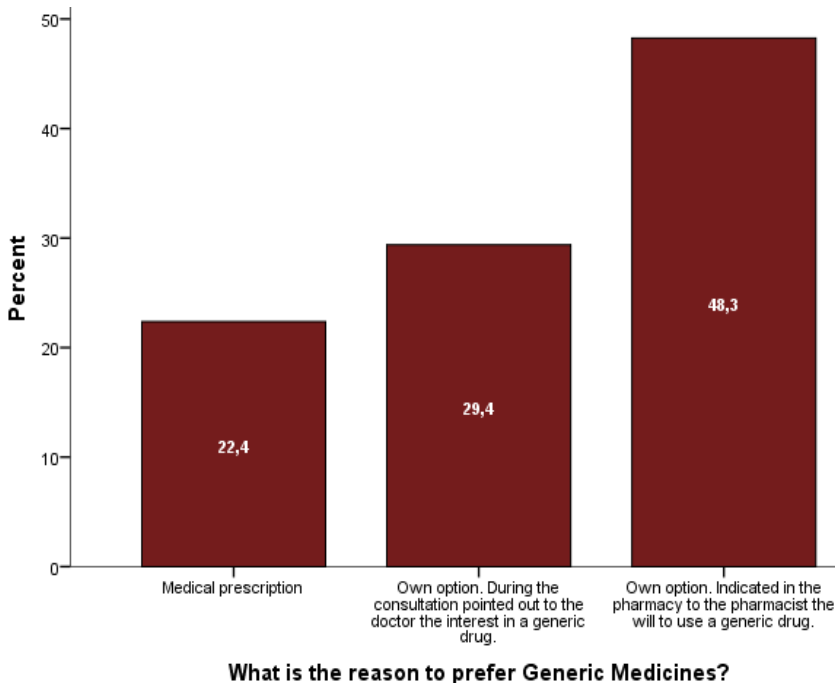
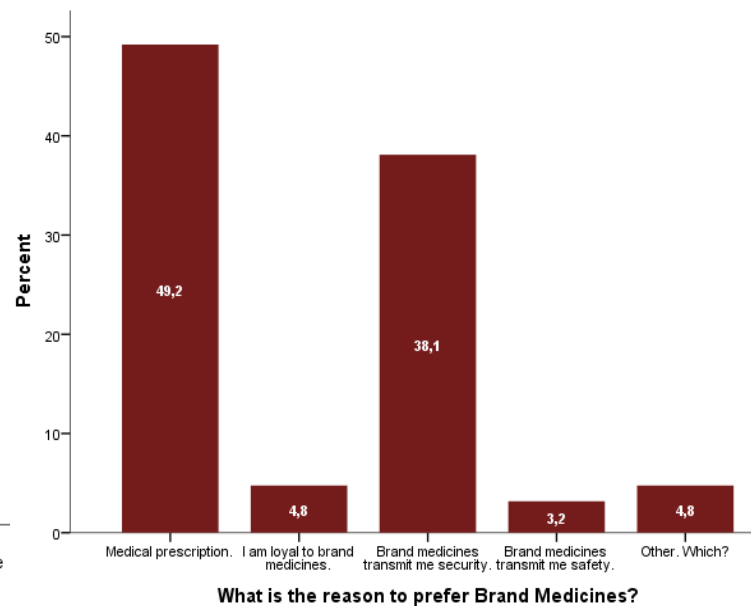


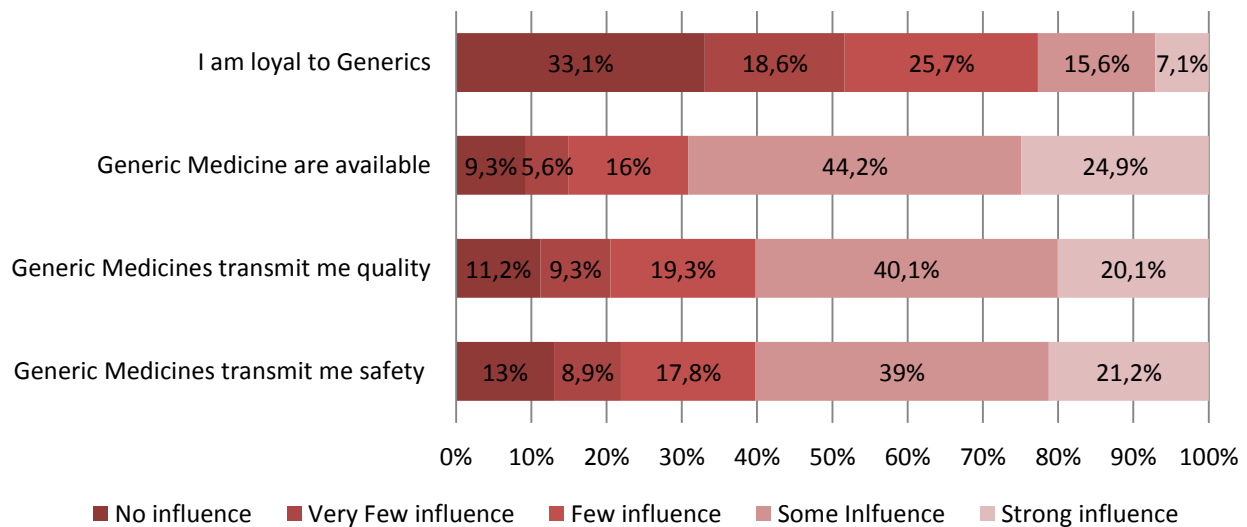
Figure 24: Reasons to prefer Brand Medicines



As it is possible to observe above Figure 26, the main reason pointed by the respondents to buy Generic Medicines is due to their own willingness, they indicated in the pharmacy that they wanted a Generic Medicine (48.25%). Other fact is that a huge percentage of the inquiries choose Generic because they indicated during consultation to the doctor that they wanted to follow a Generic treatment. It is still relevant to point out that 22.38% claim that the Generic treatment was prescribed by the doctor.

Medical prescription is pointed out as the main reason to follow a treatment with a Brand Medicine. It is also relevant to observe that 38.10% of the inquiries claim that the Brand Medicines are the ones that transmit them security. Around 5% say that they are loyal to this type of Medicine, and 4% affirm that they are safe, and that is why they choose them. There are other reasons such as the Medicines that are known by their Brand Medicine name (ex: Be-nu-ron), unconsciousness, habit, or the absence of knowledge of any Generics to follow a treatment.

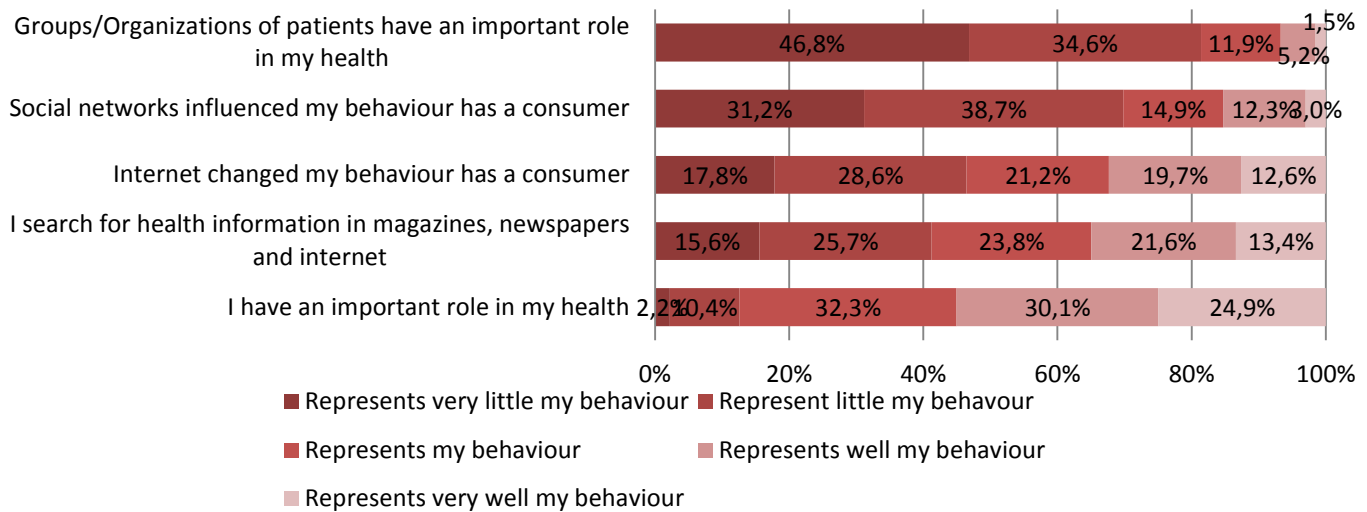
Figure 26: Generic purchase influence reasons



In order to better understand the reasons behind the purchase of generics in a general manner (not only within the main consumed therapeutic groups as before)it was asked a few questions with an influence scale to see how much each of the reason influence the

generic purchase. As it is possible to observe above the main the reason with bigger strong influence is the availability of Generics medicine (24.90%), this factor also has a huge percentage of “some influence” (44.20%). It can be seen that the loyalty to generics is not a fundamental reason for purchase as 33.10% of the inquiries stated that the loyalty has no influence in the purchase. Safety and quality have a great importance in what concerns the influence representing respectively 21% and 20% in “strong influence” and 39% and 44.20% in “some influence”.

Figure 27: Consumer behavioural profile



In order to analyse consumer profile in terms of health behaviour it is possible to see that the variable that less represents the behaviour of this sample is that groups/organizations of patients. This factor is stated as “represents very little my behaviour” in 46.80% of the sample and only 1.5% stated that this factor “represents very well my behaviour”. The search for information in internet, newspapers and magazines and social networks have an uniform behaviour, being the scales “represent very little my behaviour” and “represents my behaviour” the more relevant. In what concerns the role that the respondents have in their health, the majority stated that it “represents my behaviour”, 32.30%, then 30% stated that it “represents very well my behaviour” and a great part, 24.90%, say that it “represents

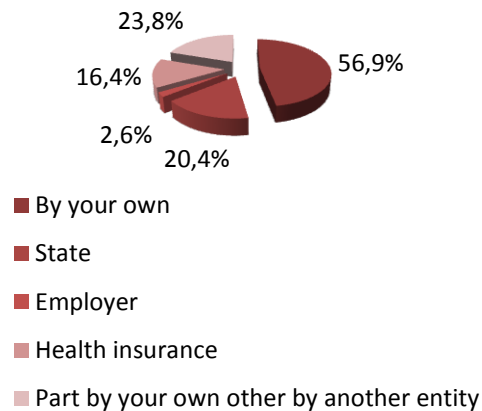
very well my behaviour”, only a very few percentage claim that this variable represent very little their behaviour (2.20%). To sum up, in this sample, the majority of the inquiries:

- Has an important role in their health;
- Search a little for information about health in internet, social networks, magazines and newspapers;
- Do not look for groups/organizations of health to get information about it.

4.5 Reimbursement has an important purchase factor

In order to analyse if the inquiries have any font of reimbursement it was asked them if they have any type of contribution to their medicines payment, any kind of health insurance, a reimbursement from the State, employer or other.

Figure 28: Distribution of sample reimbursement

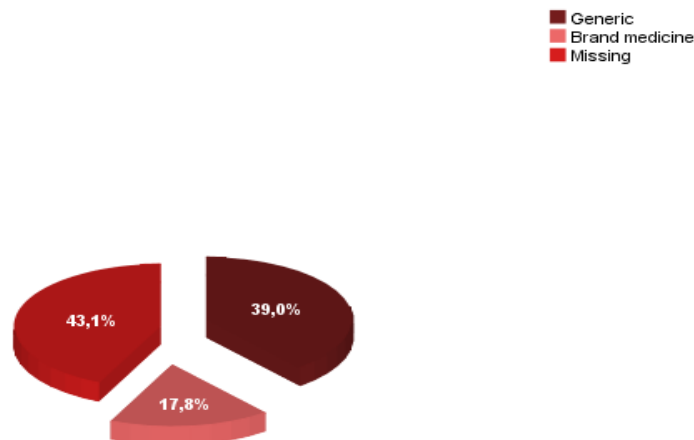


As it is possible to see above, the majority of the inquiries pay the medicines by their own (56.9%). Although it is also possible to see that a great part of this sample has reimbursement from the state in the purchase of medicines. Others, 23.8% affirm that they pay part by their own and the rest by another entity. It is still important to observe that there is a relevant amount of inquiries in this sample that have a health insurance to help paying

the medicines. A small percentage of this sample stated that their companies help in the reimbursement of the medicines (2.6%).

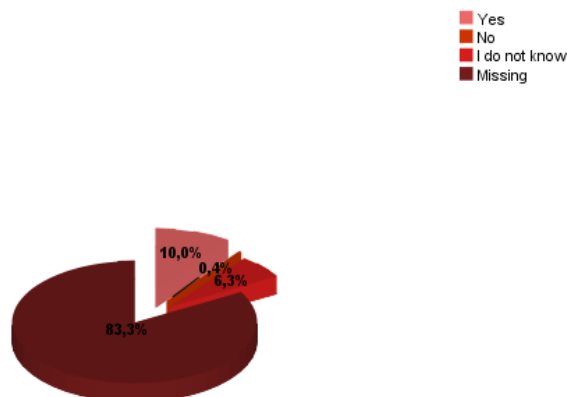
After knowing how this sample pay for their medicines it was asked them if the medicines were paid by their own, which type they would choose, and has a response we can observe in figure 29 that the majority stated they would prefer Brand Medicines 43.12%, although this percentage is very close to the percentage of inquiries that stated that they would prefer Generics (39.03%). It is also possible to observe a great number of missing values (17.84%), due to the fact that only the persons that answered that they pay the medicines by their own answered to this question. This distribution, due to this factors cannot be conclusive.

Figure 29: Distribution of Generic Vs Brand Medicines



In order to analyse if the respondents that have reimbursement could buy Brand Medicines and even though they will be reimbursed, it was asked them if their Health insurance company pay them, when they purchase Brand Medicines.

Figure 30: Health Insurance Reimbursement

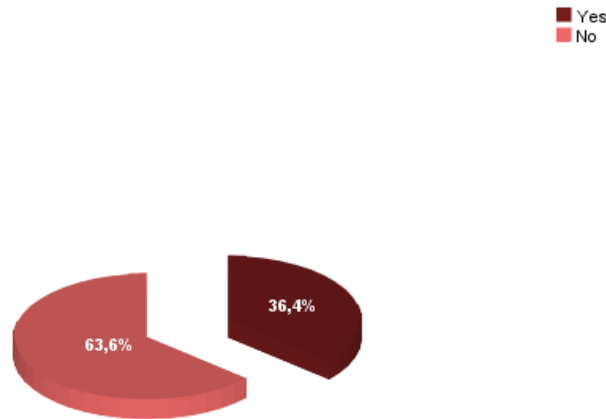


As it is possible to see, in this question there is also a huge presence of missing, as only the inquiries that had answered that they have an insurance answered to this. It can be seen that the majority people who have an health insurance can purchase Brand Medicines, because it will be supported by the insurance company. Although 6% do not know how to answer to this question.

4.6 Future purchase intension

In order to analyse the future purchase intension, first it was asked the inquiries if they have ever followed a Generic treatment after following a Brand Medicine treatment. It can be seen in Figure 32 that, to the majority of the inquiries this situation has never happen (63.57%). However it already happened to 36.43%.

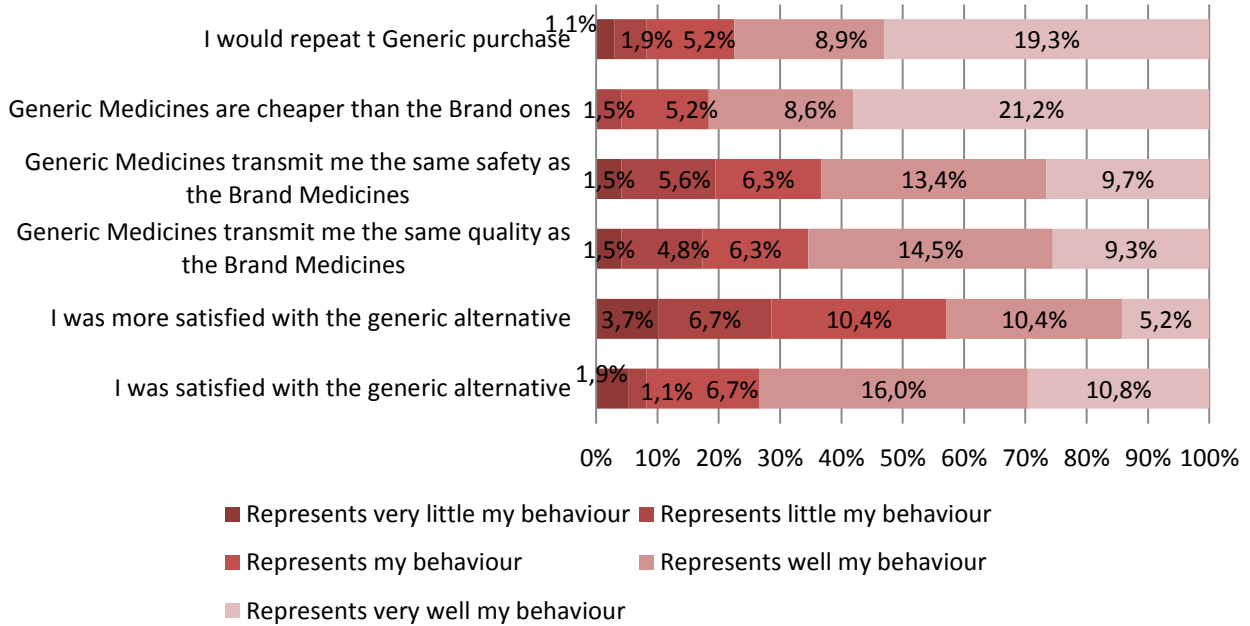
Figure 31: Percentage of inquiries that followed a Generic treatment after a Brand



Below in Figure 33 it is possible to observe the after consumption of generics behaviour and the post purchase intension based on this. It can be seen that from the respondents 16% stated the satisfaction with the generic alternative represents them well while 10.80% claim that this satisfaction represent them very well. An important percentage stated that they were more satisfied with the generic alternative, 10% said that this represents their behaviour and other 10% said that this represents well their behaviour, also 5% claim that this represents very well their behaviour. It means that in general the majority of the inquiries were more satisfied with the alternative Generic. In what concerns the safety and

quality of Generics, the percentages are uniform, across all behaviours, and it can be seen that within the respondents of this sample it represents very well their behaviour in 9% and well in 10%, only 1.5% think that this represents very little their behaviour. In what concerns the price 21% believe that they stop following a Brand Medicine treatment to start a Generic Medicine treatment due to that reason and it represents very well their behaviour, 8% also affirm that it represents well their treatment, and only 1.5% stated that it represents very little their behaviour. The majority of the inquiries affirm that they will repeat the generic purchase and that it represents very well their behaviour, while around 9% stated that it represents well their behaviour. Only 1.10% concluded that the repetition of the purchase represents very little their behaviour.

Figure 32: After Generic behaviour and Future purchase



4.7 Hypothesis testing

In order to analyse if there is an equal distribution of the population in what concerns the type of medicine it is necessary to test the hypothesis:

H1: *When buying the main therapeutic groups, the proportion of Portuguese's that prefer Generics is bigger than those that prefer Brand Medicines.*

In order to test this hypothesis, the binomial test was used. This test is used when there is an independent sample that has a variable with two characteristics, success and failure. In this specific case what the researcher wants to know is if the proportion of the people that buy Generics is bigger than the one that buy Brand Medicines. The hypotheses to test are:

$$H_0: p = 0,5$$

$$H_a: p \neq 0,5$$

As it is possible to see in **Appendix 7.4 a)** the sig value is **0.393**, although SPSS only gives the p-value for a 2-tailed binomial test. In order to convert this value into a one-tailed test, it is needed to divide this “sig (2-tailed)” value in half. One-tailed binomial tests are twice as powerful, because it is simply assumed that the results cannot be different in the direction opposite to our expectations. Dividing the sig value for two, the sig value for 1-tailed binomial test is **0.1965**, which is bigger than $\alpha = 0.05$. The null hypothesis is not rejected, so the proportion of the sample that buys Generics is equal to the one that buy Brand Medicines.

Concluding, although Generics consumption, within the most important therapeutic groups is much closed to Brand Medicines in this sample there is no difference in the proportion of both groups.

Gender comparison

In order to conclude whether there was any relation between gender and the type of medicine a Chi-square independence test was conducted (**Appendix 7.6 a)**).

To apply this test some assumptions have to be verified:

- The sampling method is simple random sampling,

- Each population is at least 10 times as large as its respective sample,
- The variables under study are each categorical,
- If sample data are displayed in a contingency table, the expected frequency count for each cell of the table is at least 5.

As the assumptions are verified it was possible to proceed with the test.

The hypotheses are:

H₀: Type of medicine and gender are independent.

H_a: Type of medicine and gender are not independent.

This test allows seeing if two variables are related, in this case it will be analysed if there is a relation between the nominal variable “Generic vs Brand Medicine” and the gender.

Since the P-value (0.446) is bigger than the significance level (0.05), it is not possible to reject the null hypothesis. Thus, we conclude that there is no relationship between gender and the type of medicine.

Working occupation status comparison

In order to conclude whether there was any relation between the different working occupation and the type of medicine a Chi-square independence test was conducted (**Appendix 7.6 b**). As the assumptions are verified it was possible to proceed with the test.

The hypotheses are:

H₀: Type of medicine and working occupation status are independent.

H_a: Type of medicine and working occupation status are not independent.

As it was explained before, this test allows seeing if two variables are related, in this case it will be analysed if there is a relation between the nominal variable “Generic vs Brand Medicine” and the working occupation status.

Since the P-value (0.572) is bigger than the significance level (0.05), it is not possible to reject the null hypothesis. Thus, we conclude that there is no relationship between the type of medicine and the working occupation status.

Age comparison

In order to understand if there were any dependence between the nominal variable, type of medicine and the ordinal age, a Bilateral test of K-S independence was conducted (**Appendix 7.7 a**)).

The Bilateral test of K-S independence, analyses the distribution of an ordinal variable in the categories of a dichotomous variable.

When applying this test the groups can differ in what concerns the measures of central tendency, although they should have similar bias, this means the same shape.

In order to analyse this, it is needed to observe the skewness (Appendix 4), as in both groups (Brand and Generic) the skewness/Std skewness is more closed to the maximum value of the distribution than to the minimum, it means that they have the same shape and that they have the same dispersions.

In this case, the objective is to see if there are similarities between the distribution of the age groups in the type of medicine (Brand and Generic).

The hypotheses are:

H₀: The variables are independent; the age groups do not distinguish themselves in the type of purchase;

H_a: The variables are not independent, the age groups distinguish themselves in the type of purchase;

As the significance value is bigger than $\alpha = 0.05$, and it is almost closed to 1, it is not possible to reject the null hypothesis, which means that there is no relationship between the age groups and the type of medicine purchased.

Income comparison

In order to understand if there were any dependence between the nominal variable, type of medicine and the ordinal income, a Bilateral test of K-S independence was conducted (**Appendix 7.7 b**)).

The Bilateral test of K-S independence, analyses the distribution of an ordinal variable in the categories of a dichotomous variable.

In this case, the objective is to see if there are similarities between the distribution of the income groups in the type of medicine (Brand and Generic).

The hypotheses are:

H₀: The variables are independent; the income groups do not distinguish themselves in the type of purchase;

H_a: The variables are not independent, the income groups distinguish themselves in the type of purchase;

As the significance value is less than $\alpha = 0.05$, the null hypothesis is rejected, which means that there is a relationship between the income groups and the type of medicine purchased.

To understand the differences between the income and the type of medicine it was done a crosstabs of Income and Type of medicine (**Appendix 7.8 a**)). It is possible to observe that the ones that receive more than 4500€ are the ones the prefer the most the Brand Medicines

(14 inquiries versus 1 in Generics), whereas in the category <500€ it is possible to observe that from the 14 respondents 13 buy Generics, while only 1 buys Brand Medicines.

H2a): *Final purchase is influenced by industry prescribers or other advisers/influencers.*

Figure 20 showed the distribution of external entities influences, and it was possible to see that only 26% said that they do not suffer any kind of influence.

In order to analyse the relation between the influence and the final purchase (type of medicine within the more consumed therapeutic groups) a Chi-square independence test was conducted (**Appendix 7.6 c**)).

As the research did not have a single question about the influence, a new variable was created “Inf_ñinfl”. It was given the number 1 to those who never suffered any influence, that means, to those who answered yes to: “It was my decision, not influenced by anyone.”, and the number 2 two those who said yes to all other hypothesis from Q13.

As the assumptions for this test, stated before, are all verified it was possible to proceed with the test.

The hypotheses are:

H₀: Type of medicine and external entities influence, are independent;

H_a: Type of medicine and external entities influence, are not independent.

Since the P-value (0.017) which is less than the significance level ($\alpha = 0.05$), the null hypothesis is rejected. Thus, we conclude that there is a relationship between the type of medicine purchased and the influence from external entities.

To understand the differences between the people that suffer influence and those that do not suffer any influence, a crosstabs was done and as it is possible to see in the **Appendix 7.8 a**), when the inquiries suffer influence, the majority buys Brand Medicines (although it is

not a big difference to the number of inquiries that buy Generics). On the other side, when the respondent stated that he is not influenced, it is possible to observe that the majority prefer to buy Generics than Brand Medicines. This second factor is the one that is contributing more for this dependence relation.

H2b): *The information medical entities transmit about generics, influences positively the knowledge consumers have about it.*

The information about medical entities is a construct based on the quantity of information that Doctors and Pharmaceutics transmit to their patients.

In order to verify if this construct has internal consistency, a Reliability test was done, and as the result is 0.712, it is possible to conclude, according to Pestana & Gageiro (2008), that it has a reasonable internal consistency, which means that it can be used as a construct.

Figure 33: Reliability test for Medical entities information transmission

Reliability Statistics	
Cronbach's Alpha	N of Items
,712	2

To understand if the information medical entities transmit about generics impact positively in the quantity of the information that consumer receives, it is necessary to know if due to that relation, consumers classified that relationship as positive, which means higher than the midpoint of the scale: 3.

H02b): *The mean value for the quantity of information consumer receives about generics from medical entities is higher than the midpoint of the scale, 3.*

The hypotheses are:

$$H_0: \mu_I \geq \mu$$

$$H_0: \mu_I \leq \mu$$

To test the hypothesis it was used the parametric test t- Student for one population mean. The assumption was validated: the distribution of the variable is near to the normal distribution due to the Central Limit Theorem ($n = 269$) (Maroco, 2003).

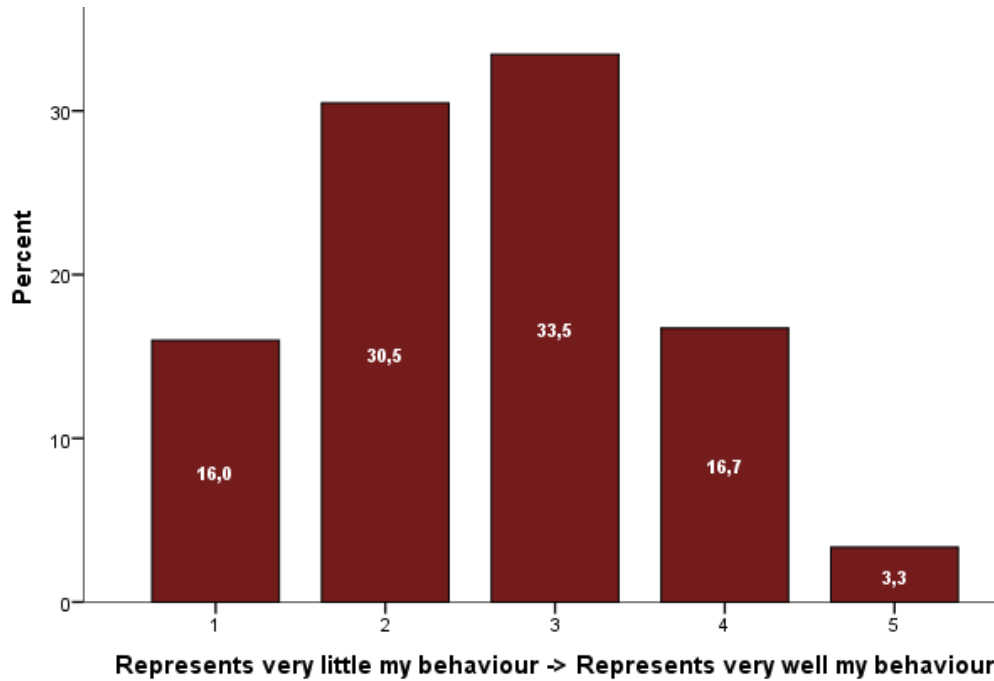
The output in **Appendix 7.9 a)**, shows that the p -value is 0.00 (two tailed), in order to verify the acceptance or rejection of the null hypothesis the p -value has to be divided by two as it is being considered the one tailed test.

Being the p -value is $0.00 < \alpha = 0.05$, the analysis of the values given by the test reject the existence of a statistically significant positive difference between the mean of the quantity of information and the midpoint of the scale. The research hypothesis is rejected. The mean value of the sum of the scale is 2.60, so it is possible to conclude that information medical entities transmit about generics does not impact positively in the quantity of the information that consumer receives. It is also possible to conclude that they receive few information about Generics from Medical entities.

H3: *Consumers experience with internet has influence in the purchase decision.*

In order to test the consumer experience with internet, it was created a construct that is based on two axes: the experience with internet and the influence that it had in the behaviour. The need for creating a construct emerged from the non-existence of a single question that was able to describe the whole internet experience behaviour.

Figure 34: Internet influence behaviour



The percentages of the behavioural construct are presented in Figure 35. There is not a consensual response to this construct; however the majority of the respondents consider that it represents their behaviour.

To be certain that these variables form a good construct a Reliability test was done that analyses if this groups of sentences had adequate internal consistency. The result is expressed by the Cronbach's Alpha that in this case is 0.721, according to Pestana & Gageiro (2008) has a reasonable internal consistency, which means that it can be used as a construct.

Table 10: Reliability test for Internet behaviour

Reliability Statistics	
Cronbach's Alpha	N of Items
,721	3

In order to see if there is any difference between Generics and Brand Medicines, it was done an independent sample T-test, between internet and the type of Medicine (**Appendix 7.5 b**). The assumption of normality was assumed by the Limit Central Theorem ($n > 30$) and the equality of variances by Levene's test was also assumed (**Appendix 7.5 b**).

The hypotheses are (1= Generics, 2= Brand Medicines):

$$H_0: \mu_1 - \mu_2 = 0 (\mu_1 = \mu_2)$$

$$H_a: \mu_1 - \mu_2 \neq 0 (\mu_1 \neq \mu_2)$$

As the p-value is 0.474, which is higher than $\alpha = 0.05$, the null hypothesis is not rejected, which means that there is no statistical difference between the internet behavioral habits and the type of medicine.

H4: *The majority of the inquiries do not change their behaviour after medical advice for a Brand Medicine.*

In order to test this hypothesis, the binomial test was used. As it was explained before this test is used when there is an independent sample that has a variable with two characteristics, success and failure. In this specific case what the researcher wants to know if the proportion of the people that change the behaviour although medical advice for Brand Medicine is bigger than the proportion of people that do not change.

The hypotheses to test are:

$$H_0: p = 0,5$$

$$H_a: p \neq 0,5$$

As it is possible to see in **Appendix 7.4 b)** the sig value is **0.00**, although SPSS only gives the p-value for a 2-tailed binomial test the value for the one-tailed test, will remain the same, which is less than $\alpha = 0.05$. The null hypothesis rejected, so the proportion of the sample change the behaviour although medical advice for a Brand Medicine is different than the proportion of people that do not change.

It is possible to observe that the majority of the inquiries 68% had already changed their behaviour although the medical advice for a Brand Medicine, only 32% stated that their have never changed their behaviour.

Age comparison

In order to understand if there were any dependence between the nominal variable, change behaviour after medical prescription for a Brand Medicine, a Bilateral test of K-S independence was conducted (**Appendix 7.7 c**).

The Bilateral test of K-S independence, as it was explained before, analyses the distribution of an ordinal variable in the categories of a dichotomous variable.

When applying this test the groups can differ in what concerns the measures of central tendency, although they should have similar bias, this means the same shape.

In order to analyse this, it is needed to observe the skewness (**Appendix 7.7 c**), as in both groups (Yes and No) the skewness/Std skewness is more closed to the maximum value of the distribution than to the minimum, it means that they have the same shape and that they have the same dispersions.

In this case, the objective is to see if there are similarities between the distribution of the age groups in the behavioural change after medical prescription..

The hypotheses are:

H₀: The variables are independent; the age groups do not distinguish themselves in the behavioural change after medical prescription;

H_a: The variables are not independent, the age groups distinguish themselves in the behavioural change after medical prescription;

As the sig = 0.091 (one tailed), which is bigger than $\alpha = 0.05$, it is not possible to reject the null hypothesis, which means that there is no relationship between the age groups and the behavioural change after medical prescription.

Income comparison

In order to understand if there were any dependence between the nominal variable, type of medicine and the ordinal income, a Bilateral test of K-S independence was conducted (**Appendix 7.7 d**).

As it was already explained, this test, analyses the distribution of an ordinal variable in the categories of a dichotomous variable.

In order to analyse this, it is needed to observe the skewness (Appendix 4), as in both groups (Yes and No) the skewness/Std skewness is more closed to the maximum value of the distribution than to the minimum, it means that they have the same shape and that they have the same dispersions.

In this case, the objective is to see if there are similarities between the distributions of the income groups in the behavioural change after medical prescription.

The hypotheses are:

H₀: The variables are independent; the income groups do not distinguish themselves in behavioural changes after medical prescription;

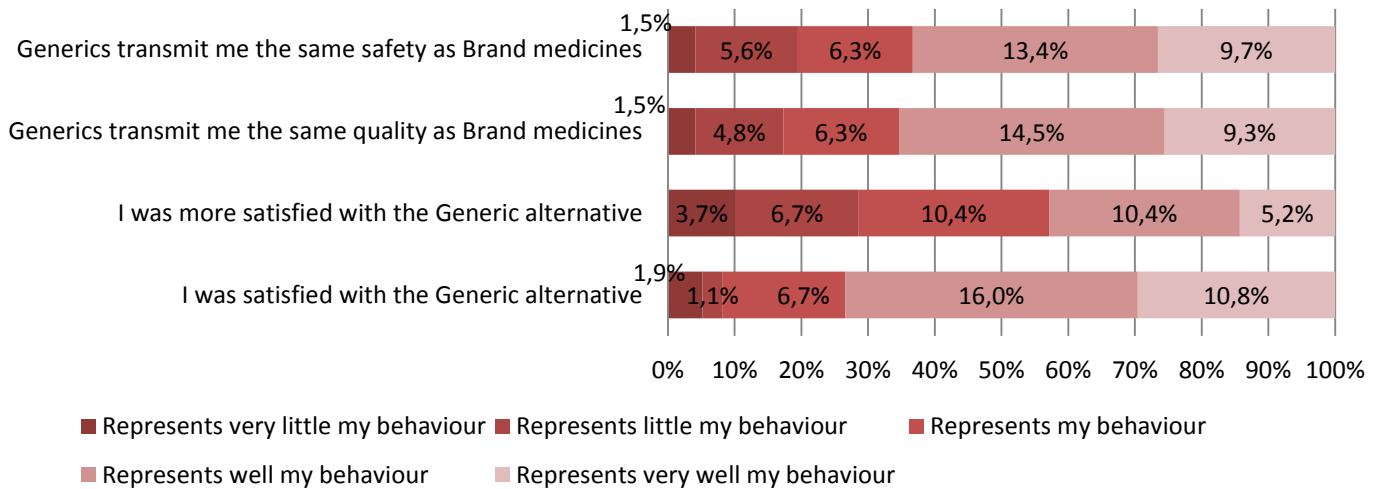
H_a: The variables are not independent, the income groups distinguish themselves in behavioural changes after medical prescription;

As the significance value is more than $\alpha = 0.05$, sig = 0.058 (one tailed), the null hypothesis is not rejected, which means that there is no relationship between the income groups and the behavioural change after medical prescription.

H5: *Quality and safety perceived by the past experience with generics have a positive influence in future Generic consumption.*

The hypothesis 5 evaluates if the past experience in terms of quality and safety perceived of Generic medicines have a positive influence in Generic consumption. The past experience is a construct that emerges from the non-existence of a single question that was able to describe as whole the characteristics of the past experience with generics.

Figure 35: Past experience with Generics



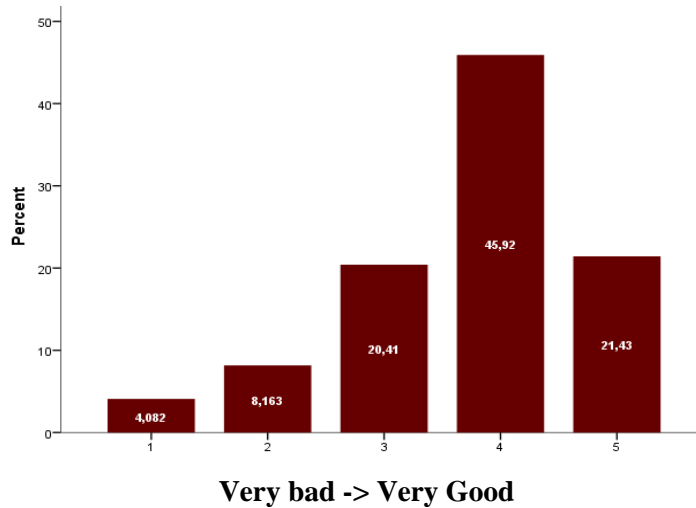
To be certain that this sentences form a good construct a Reliability test was done that analyses if this group of sentences had adequate internal consistence. The result is expressed by the the Cronbach’s Alpha that is this case is 0.921 (Table 11) and according to Pestana & Gageiro (2008), this means that it has a “*very good internal consistency*”and can be used as a construct.

Table 11: Reliability for Generics past experience

Reliability Statistics	
Cronbach's Alpha	N of Items
,921	4

The frequencies of the past experience with quality, satisfaction and safety are expressed in Figure 36. There is not a consensual response to this construct; however 46% of the respondents stated that their past experience with Generics was good, and 21% considered it even very good.

Figure 36: Past experience with Generics: quality satisfaction and safety



The table below shows that the significance value is 0.000, the hypothesis $\rho = 0$ is rejected. It also shows a positive but moderate correlation between the variables with a Pearson value of 0.809. This means that the research hypothesis is accepted.

		Future Generic purchase
Pastgenexp	Pearson Correlation	,809
	Sig. (1-tailed)	,000
Future Generic purchase	Pearson Correlation	1

a. Listwise N=98

H6: *The existence of reimbursement has influence in the type of medicine purchased.*

As in this research there are many types of reimbursement this hypothesis will be divided by type in:

- **H6_a):** *The existence of company reimbursement has influence in the type of medicine purchased;*

In order to conclude whether there was any relation between the reimbursement from the company and the type of medicine a Chi-square independence test was conducted (**Appendix 7.6 d**). As the assumptions are verified it was possible to proceed with the test.

The hypotheses are:

H₀: Type of medicine and company reimbursement are independent.

H_a: Type of medicine and company reimbursement are not independent.

It will be analysed if there is a relation between the nominal variable “Generic vs Brand Medicine” and the company reimbursement.

Since the P-value = 0.0965 (one tailed) is bigger than the significance level (0.05), it is not possible to reject the null hypothesis. Thus, we conclude that there is no relationship between the type of medicine and the reimbursement from the company.

Thus, the decree-law n. 205/00, 1st September, introduced an increase of 10% in the reimbursement from the State in the price of generic drugs. This has been one of the factors determining the start of the development in the generics market.

- **H_{6b}**: *The existence of health insurance reimbursement has influence in the type of medicine purchased;*

To verify whether there was any relation between the reimbursement from an health insurance company and the type of medicine a Chi-square independence test was conducted (**Appendix 7.6 e**). As the assumptions are verified it was possible to proceed with the test.

The hypotheses are:

H₀: Type of medicine and health insurance company reimbursement are independent.

H_a: Type of medicine and health insurance company reimbursement are not independent.

It will be analysed if there is a relation between the nominal variable “Generic vs Brand Medicine” and the health insurance company reimbursement.

Since the P-value = 0.1435 (one tailed) is bigger than the significance level (0.05), it is not possible to reject the null hypothesis. Thus, we conclude that there is no relationship between the type of medicine and the reimbursement from the health insurance company.

- **H_{6c}**: *The existence of state reimbursement has influence in the type of medicine purchased;*

To analyse whether there was any relation between the reimbursement from the state and the type of medicine a Chi-square independence test was conducted (**Appendix 7.6 f**). As the assumptions are verified it was possible to proceed with the test.

The hypotheses are:

H₀: Type of medicine and state reimbursement are independent.

H_a: Type of medicine and state reimbursement are not independent.

It will be analysed if there is a relation between the nominal variable “Generic vs Brand Medicine” and the state reimbursement.

Since the P-value = 0.02755 (one tailed) is bigger than the significance level (0.05), it is not possible to reject the null hypothesis. Thus, we conclude that there is no relationship between the type of medicine and the reimbursement from the state.

- **H_{6d}**: *The existence of other entities reimbursement has influence in the type of medicine purchased;*

In order to see whether there was any relation between the reimbursement from other entities and the type of medicine a Chi-square independence test was conducted (**Appendix 7.6 g**). It was possible to proceed with the test as the assumptions were verified.

The hypotheses are:

H₀: Type of medicine and other entities reimbursement are independent.

H_a: Type of medicine and other entities reimbursement are not independent.

Here, it will be analysed if there is a relation between the nominal variable “Generic vs Brand Medicine” and other entities reimbursement.

The p value is 0.2625 (one tailed), which is bigger than the significance level (0.05), so it is not possible to reject the null hypothesis. It is possible to conclude that there is no relationship between the type of medicine and the reimbursement from the other entities.

In conclusion the entire reimbursement types do not reject the null hypothesis which means that there is no relationship between the existence of reimbursement from any type and the type of medicine that is purchased.

4.8 Hypothesis validation summary

In order to conclude this chapter of results and analysis, below it is possible to observe a table what summarizes the hypothesis that were validated and the ones that were not.

Hypothesis	H0
H1: <i>When buying the main therapeutic groups, the proportion of Portuguese’s that prefer Generics is bigger than those that prefer Brand Medicines.</i>	Accepted
H2a): <i>Final purchase is influenced by industry prescribers or other advisers/influencers.</i>	Rejected
H2b): <i>The information medical entities transmit about generics, influences positively the knowledge consumers have about it.</i>	Rejected
H3: <i>Consumers experience with internet has influence in the purchase decision.</i>	Accepted
H4: <i>The majority of the inquiries do not change their behaviour after medical advice for a Brand Medicine.</i>	Rejected
H5: <i>Quality and safety perceived by the past experience with generics have a positive influence in future Generic consumption.</i>	Accepted
H6: <i>The existence of reimbursement has influence in the type of medicine purchased.</i>	Rejected

5. DISCUSSION AND CONCLUSIONS

This chapter aims at presenting a summary and discussion of the main conclusions that were reached through the research. Through the achievement of those conclusions it will be possible to understand the scope of the research in the literature, its contributions and also the theoretical and practical implications for both, marketing and management. Finally, the contributions and potential paths for future research will also be discussed.

5.1 Conclusion

Pharmaceutical market is following the general poor performance of the European economy, which presents very low growth rates. Nevertheless it is still one of the most important and competitive sectors in Europe. In what concerns the Portuguese pharmaceutical industry, it reveals persistence in terms of maintaining a reasonable production capacity.

This is a sector that is facing huge changes, due to the preoccupation with drug safety, intellectual property and industry image.

In Pharmaceutical market, there are two main important types of products: Brand Medicines and Generic Medicines. The second type presents a very recent history in Portugal, when comparing with other countries, although it can be considered a huge successful case in this country.

As it was tested in this research, the proportion of inquiries consuming Generics is the same as those that are consuming Brand Medicines. From 269 respondents, 142 stated that they purchase Generics, while 127 indicated that they prefer to purchase Brand Medicines, within the main therapeutic groups presented at the study. This can be translated in a huge increase of Generic competitiveness.

This market is based on three main players: state, doctor and patient. Some of the major concerns in this industry are: government price controls, cost of new launchings and the increasing number of people influencing product choice, which means that it is no more just about the physician. Other fonts of information are also important: pharmacist, groups

of patients and mainly the internet. Around 9% of the respondents search for information about medicines in this source. According to the researcher conclusions, only 26% of the inquiries were not influenced at all about the medicine purchased.

In what concerns the advice by medical entities, it can be concluded that those (doctors and pharmacists) are already advising their patients to follow a generic treatment. In the case of doctors, 68.4% of the inquiries affirm that they were advise to take a Generic, while in the pharmacist case, 74% confirm the same. It can be concluded that there have been a contribution of those entities to the Generic consumption spread. Nevertheless, as it was concluded in the hypothesis, those entities are not transmitting that much information about this type of medicine, as the mean of information transmitted is 2.60, which means that few information is being diffused through medical entities.

In order to analyse the perspective of the patient, in what concerns their behaviour, it can be concluded that the majority of the respondents are more engaged with Generics and are starting to substitute the Brand Medicines for this type. It can be concluded that 68% of the inquiries have already asked a Generic Medicine in the pharmacy although medical advice for a Brand Medicine. Another important factor contributing to this engage is the fact that consumers are aware of Generics availability, so they are starting to ask doctor during consultation to prescribe a Generic (40%). Even though, it can be concluded that from the three main reasons for not buying Generic Medicines, the one that characterizes more this sample is “not having the intension of doing so”, this means that the respondents are so used to just follow what doctor says that they do not even have the intension of asking for a Generic alternative.

Another reason that can explain why some people do not follow a Generic treatment is the fact that they do not know that there is a Generic alternative (9%) and aslo because there is no alternative at all (35%).

It can be concluded that the two main reasons for buying Brand Medicines is due to doctor prescription and due to the security that those medicines transmit. On the other side it can also be concluded that the three main reasons to buy Generics are its availability at the pharmacy, the quality and also the safety that medicines transmit.

In this industry, there is a particular issue that characterises the product, which is the opportunity for reimbursement, not only by health insurance companies, but also through state or the employer company. It can be concluded that the state represents the major font of reimbursement (20%), although health insurance and the employer company also have their representation, 16% and 3% respectively. Nevertheless, it can be concluded that all the reimbursement types are not related with the medicine type purchased, which means that it is not because a person benefits of reimbursement that will prefer a Generic over a Brand Medicine.

Finally in what concerns future purchase intension, the majority 20%, will repeat for sure this purchase, but also 5% stated that the future purchase of Generics represents their behaviour and 9% stated that it represents well their behaviour. An important conclusion of this research is that future purchase intension may be due to quality and safety transmitted by the past experience with Generics.

5.2 Limitations

As it was already expected this research had some a priori limitations, assumed when the methodologies and search options were defined:

Analysis of results for the population: impossibility of results extension to the population due to the non-probabilistic methods used. Nevertheless, the statistical techniques used and the sample size, ensure empirical evidence in order to answer research hypothesis;

Sample composition and recruitment: Not only demographic data not match the population but also the tools that were used to collect and incentive the participation in the study might also skew the sample;

Absence of qualitative preliminary studies: direct and immediate application of constructions, missing a quantitative exploratory phase;

Control under respondents: this study evaluates in all perspectives measures the perceptions of individuals in respect to the specific topics, which can originate deviations in

what concerns the reality, due to the fact the respondents can understand incorrectly what is being asked;

5.3 Implications for Marketing and Management

The main implications for Marketing and management are:

- Information about consumer behavior, in this way the different agents (doctors, pharmacies, hospitals, pharmaceuticals etc.) can develop measures in order to increase the Generics market share;
- It will be interesting to transmit information through health organizations not only with the objective of increasing and improving the knowledge of the prescribers, but also that this information should clarify patients worries with safety and quality;
- It would be interesting to develop institutional campaigns about both medicines types in order to create awareness in patients, those actions should serve as a support for doctors and pharmaceuticals (as pharmaceutical companies can not communicate to final consumer);
- As it was understood there is still a lack of information from specialists, those entities should communicate in an easy way, technical information when not well understood by patients can provoke the opposite of the objective, consumer can have the wrong perception of Generic benefits.

5.4 Directions for future research

There is a huge potential of research under the Pharmaceutical market, especially in what concerns Generic Medicines, as it is a relatively new topic with very few research on the impact of consumer behaviour, as so it could be interesting in future research to:

- Make a regional analysis to understand differences within a country and its different regions;

- Include a new investigation variable, for example classifying by patients and divide in groups that are following a generic, brand or no medicine treatment, this will lead to understand the difference between different groups of patients;
- Analyse through other methods: interviews to specialists, investigation panel¹⁰, in order to obtain a real investigation about the real consumption of medicines;
- Focus on prescribes by analysing the evaluation of those specialists;
- Comparative study between other countries that have other evolution in this market, it will allowed to understand the attitudes by patients in other cultural environments;
- Apply this study to a specific brand of medicines, comparing for example a brand of a branded product with the correspondent Generic medicine;
- Optimize the sampling process – using a probabilistic method in order to allow the extrapolation of the results for the population.

¹⁰ A panel is a market research technique about quantitative information obtains through a population sample, during a certain period of time. The sample is built by a group of persons that collaborate in a free and voluntary in the study way, who undertake to remain in the group for a minimum period of time (variable depending on the type of panel in question).

6. BIBLIOGRAPHY

- ACNielsen. (2002). *8th Annual Study on Private Labels*.
- Aguiar, A. H. (2008). Medicamentos Genéricos, Hipocrisia ou Competência? *Infarmed*.
- al., C. e. (2000). Assessing the competitive interaction between private labels and national brands. *Journal of Business*, 109-137.
- Anderson, G., Juurlink, D., & Detsky, A. S. (2008). Newly approved does not always mean new and improved. *The Journal of the American Medical Association*, 1598.
- APIFARMA. (2003). *Código de Boas Práticas de Comunicação*. Obtido em August de 2013, de <http://www.apifarma.pt/deontologia/paginas/codboaspratcom.aspx>
- APIFARMA. (2008). *Código Deontológico das Práticas de Comercialização de Produtos Farmacêuticos*. Obtido em August de 2013, de <http://www.apifarma.pt/deontologia/paginas/coddeontif.aspx>
- Apifarma. (2012). *A Indústria Farmacêutica em Números*. Associação Portuguesa da Indústria Farmacêutica.
- Apogen. (2010). Medicamentos Genéricos Mais Acessíveis Reduzem Custos e Aumentam o Acesso aos Medicamentos. *Factsheet sobre Medicamentos Genéricos*.
- Aroso, I. (2013). As estratégias de comunicação da indústria Farmacêutica em Portugal.
- Baden-Fuller, C. W. (1984). The changing market share of retail brands in UK grocery trade 1960-1980. *The Economics of Distribution*, 513-526.
- Barros, P. P., & Nunes, L. C. (2011). 10 Anos de Política de Medicamento em Portugal.
- Batista, M., & Mendes, J. (2009). The Portuguese pharmaceutical market in the future - A time series exploration approach. *Journal of Medical Marketing*, 329-341.
- Bica, A. .. (2006). *Inovação e competitividade da Industria farmacêutica*. Lisboa.
- Bihari, M. (2010). Generic drugs - Are they as safe and effective as brand-name drugs? *Health Insurance*.
- Bonfrer, A., & Chintagunta, P. (2003). Store Brands: who buys them and what happens to retail prices when they are introduced? *Review of industrial Organization*. pp. 195-218.

- Cabrita, A. M. (2012). *Os 4 P's na Indústria Farmacêutica - o caso da Genéricos Portugueses*. Lisboa: Projecto de Mestrado em gestão - ISCTE-IUL.
- Cardoso, A., & Alves, P. (2008). Atitude dos consumidores relativamente à marca dos distribuidores. *Revista da faculdade de ciências Humanas e Sociais –UFP*, 38-55.
- Channel, B. (2013). Obtido em September de 2013, de http://www.brandchannel.com/education_glossary.asp#B
- Chimhundu, R. (2010). Impact of manufacturer brand innovation on retailer brands. *International Journal of Marketing*, 10.
- Costa, J. R. (2007). Publicidade de Medicamentos e Saúde Pública:algumas reflexões a partir do novo estatuto do medicamento. *Sub Judice n°38*, 77-85.
- David, C. (2001). Marketing to the Consumer: Perspectives from the Pharmaceutical Industry. *Marketing Health Services*, 5-11.
- de Chernatony, L., & McDonald, M. (2003). Creating powerful brands in consumer service and industrial markets. *Oxford: Butterworth Heinemann*.
- DiMasi, J. A., & Grabowski, H. G. (2007). The cost of biopharmaceutical R&D: is biotechnology different?
- DiMasi, J. A., Hansen, R. W., & Grabowski, H. G. (2003). The price of innovation: new estimates of drug development costs. *Journal of Health Economics*, 151-85.
- Dolgui, A., & Proth, J.-M. (2010). Pricing Strategies and models. *Elsevier - Annual Reviews in Control*.
- EGA. (2013). *European Generics Association*. Obtido de <http://www.egagenerics.com/index.php/biosimilar-medicines/introduction>
- Euromonitor. (1998). Global market information database. Private label in Europe: private label strategies.
- Gardner, B. B., & Levy, S. J. (1955). The product and the brand. *Harvard Business Review*, pp. 33-39.
- Godinho, M., Bica, A., & Rodrigues, R. (2006). *Inovação e Competitividade da Indústria Farmacêutica Portuguesa: Que Perspectivas?* Lisbon: Associação Nacional de Farmácias.
- Gonçalves, C. S. (2009). Posicionamento do Mercado Nacional de Medicamentos no Contexto Europeu. *Mestrado em Gestão dos Serviços de Saúde, ISCTE*.

- Gordon, W. (March de 2006). *What do consumers do emotionally with advertising?*, *Journal of Advertising Research*, 2-10.
- Gutwilig, R. (2000). A Household Name. *Supermarket Business*, 95-98.
- Hassan, D., & Dilhan, S. (2004). National brands and store brands competition throught public quality labels.
- Hill, M. H. (2008). *Investigação por questionário* (2ª Edição ed.). Lisboa: Sílabo.
- INE. (2010). Obtido de http://www.dn.pt/inicio/economia/interior.aspx?content_id=1688898.
- Infarmed. (2005). Medicamentos genéricos: conceitos, avaliação e controlo. *Ministério da Saúde*.
- Infarmed. (2012). Obtido em September de 2013, de http://www.infarmed.pt/portal/page/portal/INFARMED/MEDICAMENTOS_USO_HUMANO/PRESCRICAO_DISPENSA_E_UTILIZACAO/20121206_FAQs_30_INFARMED_ACSS.pdf
- Infarmed. (2013). Obtido em 2013, de http://www.infarmed.pt/portal/page/portal/INFARMED/PERGUNTAS_FREQUENTES/MEDICAMENTOS_USO_HUMANO/MUH_MEDICAMENTOS_GENERICOS/#P2
- Infarmed. (2013). Obtido em September de 2013, de http://www.infarmed.pt/portal/page/portal/INFARMED/MEDICAMENTOS_USO_HUMANO/AVALIACAO_ECONOMICA_E_COMPARTICIPACAO/MEDICAMENTOS_USO_AMBULATORIO/SISTEMA_DE_PRECOS_DE_REFERENCIA
- INFARMED. (2013). Obtido em August de 2013, de http://www.infarmed.pt/portal/page/portal/SOBRE_O_INFARMED/APRESENTACAO
- Information, C. E. (2013). Obtido em September de 2013, de <http://www.cuttingedgeinfo.com/research/market-access/pricing-reimbursement/>
- Initiative, G. a. (October de 2010). Obtido em September de 2013, de <http://gabionline.net/Generics/Research/Pricing-strategies-in-generic-medicines>
- Jolly, A., Nicol, L., Water, J., & Wight, C. (2005). Drivers Affecting the Pharmaceutical Industry: How Much is Changing? *Journal of Medical Marketing: Device, Diagnostic and Pharmaceutical Marketing*, 146-157.

- Kapferer, J. (2008). *The new strategic brand management*. Philadelphia: Kogan Page.
- Keyhani, S. (2008). FDA drug review deadlines: a safety concern? *Journal of Clinical Outcomes Management*, 224.
- Klein, L. (2008). Navigating restricted waters. *Medical Marketing and Media*, 49-53.
- Kotler, P. (1997). *Marketing Management* (9th ed.). (P. Hall, Ed.)
- Kotler, P., Armstrong, G., Wong, V., & Saunders, J. A. (2008). *Principles of Marketing*. Pearson Education.
- Leiden, J. M. (2008). Canaries, coal mines and the drug supply. *Nature Biotechnology*, 624-6.
- Lilaia, P. (2008). *Revista Ordem dos Farmacêuticos* <http://www.ordemfarmaceuticos.pt>, 30-35.
- Lilaia, P. (2009). *Revista Vida Económica*.
- Lilaia, P. (2010). Plano de Negócios: "Absolutis" Empresa Farmacêutica de Medicamentos Genéricos".
- Lopert, R., & Moon, M. (2007). Toward a rational, value-based drug benefit for medicare. *Health Affairs*, 1666-73.
- Lopes, I. (2008). *Comportamento de utilização de fontes de informação médica pelos médicos de Clínica Geral portugueses*. Lisboa: Tese mestrado ISCTE.
- Loudon, D. D., & et al. (1993). *Consumer Behaviour Concepts and Applications*. McGraw Hill.
- Malhotra, N. (2007). *Marketing Research - An applied Orientation*. Pearson International Edition.
- Malhotra, N., & Birks, D. (2006). *Marketing Research - An applied approach*. Harlow: Pearson Education.
- Maria, V. (2007). A importância do medicamento genérico. *Cadernos de Economia*.
- Marketeer. (Dezembro de 2009). *Suplemento Marketeer Farmacêutico*, 152-162.
- Marketing, L. (2013). Obtido em September de 2013, de <http://www.learnmarketing.net/price.htm>

- Marques, B. (2006). O mercado dos genéricos em Portugal Medicamentos e Farmacêuticos Lisboa: Campo da Comunicação,. *Medicamentos e Farmacêuticos Lisboa: Campo da Comunicação*, 55-57.
- MobiFarm. (September de 2013). Obtido em September de 2013, de <http://www.mobifarm.com.pt/index.php/login/133-ordem-dos-farmaceuticos-despacho-repoe-opcao-por-medicamento-mais-barato-na-farmacia>
- Moriarty, S., & Duncan, T. (1998). A communication-based marketing model for managing relationships . pp. 1-13.
- Morton, F., & Zettelmeyer, F. (2004). The strategic positioning of store brands in retailer-manufacturer negotiations. *Review of Industrial organization*, 161-194.
- Morton, R. (2003). Doctors of Speed Distribution Management.
- Narciso, S. (2005). Retailing Policies for Generic Medicines. *International Journal of Health Care Finance and Economics*, 165-190.
- Neto, C. (2001). Marcas próprias em supermercados: uma nova oportunidade para a criação de vantagem competitiva. *Caderno de Pesquisa em Administração*, 55-64.
- Noel, H. (2009). *Basics Marketing 01: Consumer Behaviour*. AVA Publishing SA.
- Onlamai, C. (2012). Obtido em September de 2013, de <http://www.slideshare.net/khunchao/types-of-brand>
- Oswald , S. L., & Boulton, W. R. (1995). Obtaining the Industry Control. *California Management Review*, 138-162.
- Patterson, J. (2008). Can big Pharma produce the next generation of medicines? *Pharmaceutical Technology*, 114-5.
- Perehudoff, K. (2009). Access for all - Making medicines affordable in Portugal. *Hai Europe*.
- Pereira, I. (2001). Marcas de supermercado. *Revista de administração de empresas*, 16-27.
- Pestana, M. H., & Gageiro, J. N. (2008). *Análise de dados para Ciências Sociais - A complementaridade do SPSS*. Lisboa: Edições Sílabo.
- Pinto, J. C. (2002). *O conceito de configuração organizacional como contributo para a explicação do desempenho - o caso da indústria farmacêutica em Portugal*. Lisboa: Tese de Doutoramento em gestão - ISCTE.

- Pinto, J. C., Silva, A., & Couto, J. D. (2010). Determinant values in the medical act of prescribing in the Portuguese context. *Journal of Medical Marketing*, 213-230.
- Poli, L. G., & Glass, H. E. (2009). "Pressure Points" on pharmaceutical industry executives: what lies ahead? *International Journal of Pharmaceutical and Healthcare*, 74-83.
- PricewaterhouseCoopers. (1998). *Pharma 2005: An Industrial Revolution in R&D*.
- Proença, R. (1993). Posicionamento de Produtos Ético-Farmacêuticos: do Conceito ao Modelo. *Revista Portuguesa de Gestão*, 15-32.
- Rajamäki, J. (2008). Anticipating and managing the challenges of biotechnology marketing. *Journal of Commercial Biotechnology*, 225-31.
- RCM Pharma. (2012). Obtido em September de 2013, de <http://www.rcmpharma.com/actualidade/direito-na-saude/11-12-12/novos-modelos-de-receita-medica-electronica-para-2013>
- RCMPHARMA. (2010). Obtido em 25 de 8 de 2013, de <http://www.rcmpharma.com/actualidade/arquivo/sector-farmaceutico-foi-o-que-mais-reforcou-aposta-em-publicidade-em-2009>
- Richarme, M. (2005). Consumer Decision-Making Models, Strategies, and Theories, Oh My! *Decision Analyst*.
- Riley, J. (2013). Obtido em September de 2013, de www.tutor2u.net/business/marketing/brands_types.asp
- Run, E., & Felix, M. (2006). Patented and Generic Pharmaceutical Drugs - perception and prescription. *International Journal of Business and Society*, 55-78.
- Saúde, P. d. (2013). Obtido de <http://www.portaldasaude.pt/portal/conteudos/informacoes+uteis/medicamentos/comparticipacaomedicamentos.htm>
- Sayman. (2002). Positioning of store brands. *Marketing Science*, 1-35.
- Schiffman, L. G., & Kanuk, L. L. (2007). *Consumer behavior*. Upper Saddle River: Prentice Hall.
- Semeijn. (2004). Consumer Evaluation of store brands: effects of image and product attribute. *Journal of Retailing and consumer services*, 247-258.
- Shannon, & Lockshin, L. (2001). Exploring consumer label brands in Thailand.

- Simoens, S. (2010). Sustaining Generic Medicines Market in Europe. *Research Centre for Pharmaceutical Care and Pharmaco-economics*.
- Simoens, S., & Coster, S. d. (2006). Sustaining Generic Medicines Markets in Europe. *Research Centre for Pharmaceutical Care and Pharmaco-economics. Katholieke Universiteit Leuven. Belgium*.
- Solomon, M. (2010). *Consumer behavior : a european perspective*. Essex: Prentice Hall .
- Srinivasan , S., & Pauwels, K. (2004). Who benefits from brand entry? *Marketing Science*, 364-390.
- Stoppler, M. M., & Hecht, B. P. (2009). *MedicineNet.com*. Obtido em 2013, de <http://www.medicinenet.com/script/main/art.asp?articlekey=46204>
- T., G., & L., S. ((2002)). Private labels, price rivalry, and public policy. pp. 403-424.
- Talluri, K., & Van Ryzin, G. (2004). Revenue management under a general discrete dedicated choice model of consumer behaviour. *Management Science*, 50(1), 15-33.
- Times, E. (2013). Obtido em September de 2013, de <http://economictimes.indiatimes.com/definition/pricing-strategies>
- Truelove, C. (2006). Necessary steps. *Med Ad News*, 18.
- Tsang, W. (2010). Types of Pharmaceutical Products. *Ezine Articles*.
- Weber, C. M. (2008). What are generic drugs? *Medical Review Board*.
- Zinkham, G. M. (1992). Human Nature and Models of Consumer Decision Making. *Journal of Advertising*, 21.

7. APPENDIX

7.1 Historical evolution of Generics

The first statute to regulate the production, market authorization, distribution, pricing and reimbursement of generic medicines in Portugal, was the Decree-Law no. ° 81/90 of 12th March. Subsequently, the decree-law n. ° 72/91 of 8th February came initiating the development of generic and establishing conditions for prescribing and dispensing.

The ordinance 623/92 of 1st July changed the pricing scheme of generic drugs, stating that they should be 20% below the RRP reference drug. Later on, the decree-law n. 249/93, of 9 July, changes the conditions for market authorization (bioequivalence demonstration and when necessary permission to pass to generic).

Some years after, the Decree-Law n. 291/98 of 17th September came to change the identification of the generic drug, allowing using the name of the holder or an invented name associated with the common name of the drug.

Despite legislation and sporadic demonstrations from governments to promote these drugs until 2000 the generic market in Portugal remained stagnant, with market shares practically residual (below 0.5%).

Since 2000, the Ministry of Health, through INFARMED defined an Integrated Program for Promotion of Generic Drugs involving interventions essentially directed at three target populations: i) industry pharmaceutical ii) health professionals, and iii) the general public.

Legislative changes that occurred as a result of this program aimed to give a significant boost and consistent generics market in Portugal.

Thus, the decree-law n. 205/00, 1st September, introduced an increase of 10% in the reimbursement from the State in the price of generic drugs. This has been one of the factors determining the start of the development in the generics market.

The decree-law n. 242/00 of 26th September, introduced changes in the definition, identification and way of prescription and dispensing of generic medicines. For the first time it was used the initials "MG" to identify these drugs. The decree n. 577/01, of 7th June, changed the regime price formation, establishing by 35% minimal difference in price (RRP) between the generic and reference drug.

The Law n. ° 84/01 of 3 August allowed and encourages the passage of pharmaceuticals that are already on the generics market.

The System of Reference Prices (SPR) was created by Decree-Law n. ° 270/02 of 2nd December. The Reference Price (PR) is determined by the existence of generic medicines available in the market, being the PR set from the generic that has the highest price in the respective homogeneous group.

Finally, the Decree-Law n. ° 271/02 of 2 December, has implemented a mandatory requirement by International Nonproprietary Name (INN) for active substances authorized generics.

Until mid-2001, generics market in Portugal was practically zero. Thereafter began to develop at a slow pace accelerating in the middle of the decade. In 2008, after the pace of growth has already slowed, came to a point closed to zero (Barros & Nunes, 2011).

This positive evolution in 2001 may be due to the Integrated Program for Promotion of Generic Drugs set in 2000, which began to be implemented in 2001, along with the aforementioned legislation represented a clear signal to economic agents of the will of the Government in the promotion of generic drugs in Portugal (Maria, 2007).

In the year of 2012 it was approved the prescription of medicines with the international common denomination, that means with the name of the active substance. The prescription with a brand name medicine is limited to some situations: in case of allergies or adverse

reactions previously reported to INFARMED, drugs with narrow therapeutic index or medications that do not have generic equivalents (Infarmed, 2012).

Latter, in April of 2013, a new way of prescribing was announced, when the prescription is made with the international common denomination, it should be mentioned that it will cost maximum X Euros, unless the patient choose an expensive medicine. In the case of prescription to ensure continuity of treatment more than 28 days, treatment guide has to indicate that the drug costs a maximum of X Euros and one can choose for a cheaper one. In other situations the recipe will say that the drug will cost no more than X Euros (RCM Pharma, 2012).

Until this moment the patient had to choose the medicine during the medical consultation in presence of the doctor. Although in the current month (September 2013) a new legislation was approved, the patient can choose in the pharmacy the cheaper medicine that he/she wants, and it was introduced as a response to the absence of right from the patient. From now on the patient can choose based on his/her economic capacity (MobiFarm, 2013).

7.2 Portuguese legislation

Pharmaceutical industry is one of the industries more expose to governmental control (Proença, 1993). Due to its importance and risks, it is an activity that requires special attention from the state in terms of regulation and supervision, guaranteeing the protection of public health (Costa, 2007).

The new medicine status, approved by decree-law in 2006, defends the principle of the primary of public health protection and the principle of primacy of public health protection and the principle of promoting rational use of medicines (Costa, 2007). In this new decree, medicines publicity is seen in a much more embracing way than the publicity to any other product, and it is defined as “any form of information or incentive that has the purpose or effect exploration of promoting its prescription, dispensing, sale, purchase or consumption (Costa, 2007).

In Portugal, as already stated, INFARMED is the National Authority of medicines and health products as it is a public institute integrated in the indirect administration of the state, endowed with administrative and financial autonomy and its own assets. INFARMED mission is to regulate and supervise the industries of medicines, medical devices and cosmetics and body care, ensuring their quality, efficacy and safety (INFARMED, 2013).

Infarmed has the obligation of monitoring the market, by consulting different advertising media (television, radio, print, and internet) and also through complaints and/or denunciations. In either situation, Infarmed makes an assessment of the advertising directed either to general public or health professionals, taking into account its effects and benefits, to promote the rational use of medicines. The holders of the Marketing Authorization should submit the advertisements and appropriate assessment (Aroso, 2013).

Regarding the ethical framework of ethics and communication strategies of pharmaceutical industry in Portugal, stands the code of practice of communication of Portuguese Association of Pharmaceutical Industries (APIFARMA, Código de Boas Práticas de Comunicação, 2003).

The code of Good Practices from Apifarma, published in 2003, has internal and external goals (APIFARMA, Código de Boas Práticas de Comunicação, 2003).

Internally, it has the aim of “maintaining and enhance the efficacy of the institutional link between the various associated companies in Apifarma” (APIFARMA, Código de Boas Práticas de Comunicação, 2003), and “harmonizing techniques, concepts and forms of communication to be used during the activity of communication and public relations of Pharmaceutical Industry, in order to ensure compliance with competition between different companies through ethical and deontological excellence” (APIFARMA, Código de Boas Práticas de Comunicação, 2003).

Externally, some of the objectives are: certification of communication professionals in the pharmaceutical industry, ensure full transparency of pharmaceutical industry in the

eyes of various that all communication processes are in harmony with the provisions of this code and the documents of deontological health, media, marketing and advertising as well as legislation (APIFARMA, Código de Boas Práticas de Comunicação, 2003).

During the year of 2008, Apifarma published a new deontological code, to regulate specifically the promotional practices of Pharmaceutical Industry and its interaction with health professionals. The aim of this code was to provide an ambience where the public in general could be safe of the choices in relation to the medicines that was made based on the merit of each product and patient clinical necessities (APIFARMA, Código Deontológico das Práticas de Comercialização de Produtos Farmacêuticos, 2008)

To this end, specific rules were established at various levels: the overall promotion and information to be provided; advertising, sponsorship of events with promotional nature, professional and scientific respective hospitality (accommodation, travel, meals, etc), offers and incentives, free samples of medicines, subsidies for research, contract with institutions, organizations or associations of health professionals; hiring medical consultants; activities of medical representatives; relationship with patient associations (APIFARMA, Código Deontológico das Práticas de Comercialização de Produtos Farmacêuticos, 2008)

7.3 Questionnaire

Seja Bem-Vindo!

No âmbito da minha tese de mestrado no ISCTE-IUL estou a realizar um estudo sobre a atitude e percepção do consumidor português, com mais de 18 anos, face aos medicamentos genéricos *versus* medicamentos de marca.

Venho desta forma pedir a sua ajuda para conseguir terminar a minha tese mais rapidamente.

Para tal basta responder a algumas perguntas que não demoram mais de 10 minutos. As respostas serão sempre anónimas e apenas utilizadas neste estudo, Desde já agradeço a sua disponibilidade e colaboração.

Qual o seu género?

- Masculino
 Feminino

Qual o seu escalão etário?

- 18 - 30 anos
- 31 - 40 anos
- 41 - 50 anos
- 51 - 60 anos
- 61 - 70 anos
- > 70 anos

Qual é a sua profissão?

- Reformado
- Desempregado
- Trabalhador por conta de outrém
- Trabalhador por conta própria
- Estudante

Qual o seu estado civil?

- Solteira/o
- Casada/o ou União de facto
- Divorciada/o Viúva/o

Qual a sua formação académica?

- Sem estudos
- Ensino primário
- 9º ano
- Curso técnico-profissional
- Ensino secundário
- Licenciatura
- Mestrado
- Doutoramento

Qual o rendimento médio líquido mensal do seu agregado familiar?

- < 500€
- 500€ - 1200€
- 1200€ - 1800€
- 1800€ - 2400€
- 2400€ - 3000€
- 3000€ - 4500€
- > 4500€
- NS/NR

Uma vez que esta tese se trata de um estudo sobre a atitude e percepção do consumidor português relativamente aos dois tipos de medicamentos, deixo uma breve explicação de ambos os conceitos antes de prosseguir com as seguintes perguntas.

Um **Medicamento de marca** é um medicamento inovador que possui marca registada.

Um **Medicamento genérico** é um medicamento com a mesma substância ativa, forma farmacêutica, dosagem e com a mesma indicação terapêutica que o medicamento original, de **marca**.

Com que frequência compra **medicamentos**?

- Duas vezes por semana
- Uma vez por semana
- Duas ou três vezes por mês
- Uma vez por mês
- Uma vez por ano
- Outro. Qual?

Hoje em dia a prescrição médica é feita pela denominação internacional comum, ou seja, pelo nome da substância activa. Em alguma situação lhe foi aconselhado pelo seu **médico** a compra de um **medicamento genérico**?

- Sim
- Não

O seu **farmacêutico** em alguma situação lhe recomendou **medicamentos genéricos**?

- Sim
- Não

No caso de lhe ter sido aconselhado um **medicamento de marca**, alguma vez optou na **farmácia** por um **medicamento genérico**?

- Sim
- Não. Porquê?

Alguma vez solicitou ao seu **médico** que lhe receitasse **medicamentos genéricos** em alternativa a um **medicamento de marca** aconselhado?

- Sim
- Não

Em caso de resposta negativa à questão anterior ("Alguma vez solicitou ao seu médico que lhe receitasse **medicamentos genéricos** em alternativa a um **medicamento de marca** aconselhado?"), como descreve as seguintes afirmações:

	Comportamento				
	Representa muito pouco o meu comportamento	Representa pouco o meu comportamento	Representa o meu comportamento	Representa bem o meu comportamento	Representa muito bem o meu comportamento
Não tinha interesse em fazê-lo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Não sabia que o podia fazer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Não me foi apresentada essa opção	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Em alguma ocasião pediu ao seu farmacêutico que lhe aconselhasse um **medicamento genérico** em alternativa a um **medicamento de marca** receitado?

- Sim
- Não. Porquê?

Numa situação futura, irá solicitar a prescrição de **medicamentos genéricos**?

- Sim
- Talvez
- Não. Porquê?

A compra de medicamentos é um processo que pode ser influenciado por várias entidades, nomeadamente médicos, farmacêuticos, amigos, internet, jornais ou revistas, ou até mesmo associações/grupos de doentes. Relativamente às pessoas que o influenciam na escolha de **medicamentos genéricos**, indique qual das seguintes opções o representa melhor.

- Foi uma decisão minha, sem influência de ninguém.
- O meu farmacêutico indicou-me.
- Conversei com o meu médico/farmacêutico. Contudo, a decisão final foi minha.
- Foi indicação/prescrição do meu médico.
- Ambos médico e farmacêutico influenciaram a minha decisão.
- Foram utilizadas fontes de informação na minha escolha (jornais, revistas, internet, etc)
- Fui aconselhado por uma associação/ grupo de doentes.

Indique que informação lhe chegou sobre os **medicamentos genéricos** proveniente de:

	Quantidade de Informação				
	Nenhuma informação	Pouca informação	Alguma informação	Muita informação	Toda a informação
Médico	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Farmacêutico	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TV/Rádio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pesquisa na internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Tendo em conta o seu **último ano** enquanto **consumidor de medicamentos** e, sabendo que as categorias mais consumidas em Portugal encontram-se listadas abaixo, indique-nos quais dos seguintes consumiu:

- | | |
|--|--|
| <input type="checkbox"/> Medicamentos para a Hipertensão | <input type="checkbox"/> Medicamentos Gástricos |
| <input type="checkbox"/> Medicamentos para o Colesterol | <input type="checkbox"/> Anticoagulantes |
| <input type="checkbox"/> Medicamentos orais para a Diabetes | <input type="checkbox"/> Analgésicos |
| <input type="checkbox"/> Medicamentos para a Depressão/Ansiedade | <input type="checkbox"/> Antipiréticos |
| <input type="checkbox"/> Medicamentos para Alucinações | <input type="checkbox"/> Outros. Quais? <input type="text"/> |

Ao efectuar a compra dos medicamentos assinalados na resposta anterior, optou por:

- Genéricos
- Medicamentos de Marca
- Maioritariamente Genéricos
- Maioritariamente de Marca

Qual a razão subjacente à sua compra?

- Prescrição médica.
- Opção própria. Durante a consulta indiquei ao médico o interesse por um medicamento genérico.
- Opção própria. Na farmácia indiquei ao farmacêutico a vontade de utilização de um medicamento genérico.

Qual a razão subjacente à sua compra?

- Prescrição médica.
- Sou leal aos medicamentos de marca.
- Os medicamentos de marca transmitem-me segurança.
- Os medicamentos de marca transmitem-me qualidade.
- Outra. Qual?

De acordo com a escala apresentada, classifique a influência de cada um dos factores para a compra de **medicamentos genéricos**:

	Influência				
	0 - Nenhuma influência	1 - Muito fraca influência	2 - Fraca influência	3 - Alguma influência	4 - Forte influência
Os medicamentos genéricos transmitem-me segurança	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Os medicamentos genéricos transmitem-me qualidade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Os medicamentos genéricos estão disponíveis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sou leal aos medicamentos genéricos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

De acordo com os seguintes comportamentos, indique qual/quais se adequa/adequam mais a si:

	Comportamento				
	Representa muito pouco o meu comportamento	Representa pouco o meu comportamento	Representa o meu comportamento	Representa bem o meu comportamento	Representa muito bem o meu comportamento
Tenho um papel activo na minha saúde	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Costumo procurar informação em revistas, jornais e internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A internet revolucionou o meu comportamento enquanto consumidor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As redes sociais influenciam o meu comportamento enquanto consumidor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Os grupos/associações de doentes têm um papel importante na minha saúde	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Ao efectuar a **compra de medicamentos**, o pagamento pode ter diversos tipos de participação: Estatal, Seguro de Saúde, Entidade empregadora, entre outros. Como efectua normalmente o pagamento dos seus medicamentos?

- Seguro de saúde
- Conta Própria
- Empresa
- Estado
- Pago em parte por mim e restante por outra entidade
- Outro. Qual?

Em caso de serem pagos por si, qual escolheria, se pudesse optar?

- Genérico
- Marca

O seu seguro de saúde paga-lhe quando opta por um medicamento de marca?

- Sim
- Não
- Não sei

Estaria disposto a pagar o diferencial para comprar um **medicamento de marca**?

- Sim
- Não. Porquê?

Quanto mais estaria disposto a pagar para obter um **medicamento de marca**?

- 1-5€
- 5-10€
- 10-15€
- 15-20€
- > 20€

Algum dos **medicamentos de marca** que toma tem um **medicamento genérico** mais barato disponível?

- Sim
- Não
- Não sei

Qual o motivo de de não ter comprado um **medicamento genérico**?

- Não tem conhecimento.
- Não estava disponível.
- Opção própria.

Se estivesse disponível uma **alternativa genérica** para o seu **medicamento de marca**, estaria disposto a mudar?

- Sim
- Não. Porquê?

Já alguma vez seguiu um **tratamento** com um **medicamento genérico**, após ter estado a realizar um **tratamento** com um **medicamento de marca**?

- Sim
- Não

Em caso de resposta afirmativa à questão anterior, com qual/quais dos seguintes comportamentos se identifica mais?

	Comportamento				
	Representa muito pouco o meu comportamento	Representa pouco o meu comportamento	Representa de alguma forma o meu comportamento	Representa bem o meu comportamento	Representa muito bem o meu comportamento
Fiquei satisfeito/a com a alternativa genérica	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fiquei mais satisfeito/a com a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

alternativa genérica Os medicamentos genéricos transmitem-me a mesma qualidade que os medicamentos de marca	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Os medicamentos genéricos transmitem-me a mesma segurança que os medicamentos de marca	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Os medicamentos genéricos são mais baratos que os medicamentos de marca	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Voltaria a repetir a compra de um medicamento genérico	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Alguma vez foi aconselhado pelo seu **médico** a deixar de seguir um **tratamento** com um **medicamento genérico** para realizar um **tratamento** com um **medicamento de marca**?

- Sim
- Não
- Não sabe

Seguiu o seu conselho?

- Sim
- Não. Porquê?
- Às vezes. Porquê?

7.4 Binominal test

a) Propotion: Generics vs Brand Medicines

Binomial Test							
		Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)	Exact Sig. (2-tailed)
Generic vs Brand Medicine	Group 1	Generic	142	,53	,50	,393	,393
	Group 2	Brand Medicine	127	,47			
	Total			269	1,00		

b) Behaviour change after prescription

Binomial Test								
	Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)	Exact Sig. (2-tailed)		
No caso de lhe ter sido aconselhado um medicamento de marca, alguma vez optou na farmácia por um med...	Group 1 No. Why?	85	,32	,50	,000	,000		
	Group 2 Yes	184	,68					
	Total	269	1,00					

7.5 Independent Sample T-Test

a) Gender Comparison

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Did not have the intension of doing so	Equal variances assumed	,308	,580	,730	159	,466	,165	,225	-,281	,610
	Equal variances not assumed			,727	139,667	,469	,165	,227	-,283	,613
Did not know that I could do so	Equal variances assumed	3,843	,052	-,911	159	,364	-,196	,215	-,621	,229
	Equal variances not assumed			-,946	157,056	,345	-,196	,207	-,605	,213
This option was never presented to me	Equal variances assumed	3,802	,053	-,1557	159	,122	-,397	,255	-,901	,107
	Equal variances not assumed			-,1588	151,376	,114	-,397	,250	-,891	,097

b) Type of Medicine and Internet Behaviour

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Internet	Equal variances assumed	1,218	,271	,718	267	,474	,086	,120	-,150	,322
	Equal variances not assumed			,715	258,720	,475	,086	,120	-,151	,323

7.6 Chi-square test of independence

a) Gender Comparison

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,580^a	1	,446		
Continuity Correction ^b	,407	1	,524		
Likelihood Ratio	,580	1	,446		
Fisher's Exact Test				,459	,262
Linear-by-Linear Association	,578	1	,447		
N of Valid Cases	269				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 51,93.

b. Computed only for a 2x2 table

b) Occupation

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,918^a	4	,572
Likelihood Ratio	2,956	4	,565
Linear-by-Linear Association	,023	1	,879
N of Valid Cases	269		

a. 2 cells (20,0%) have expected count less than 5. The minimum expected count is 4,25.

c) Industry prescriber

Chi-Square Tests						
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	5,019^a	1	,025	,027	,017	
Continuity Correction ^b	4,415	1	,036			
Likelihood Ratio	5,083	1	,024	,027	,017	
Fisher's Exact Test				,027	,017	
Linear-by-Linear Association	5,000 ^c	1	,025	,027	,017	,009
N of Valid Cases	269					

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 33,05.

b. Computed only for a 2x2 table

c. The standardized statistic is -2,236.

d) Enterprise reimbursement

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)
Pearson Chi-Square	1,135 ^a	1	,287		
Continuity Correction ^b	,811	1	,368		
Likelihood Ratio	1,134	1	,287		
Fisher's Exact Test				,324	,184
Linear-by-Linear Association	1,131	1	,288		
N of Valid Cases	269				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 20,77.

b. Computed only for a 2x2 table

e) Insurance company reimbursement

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)
Pearson Chi-Square	1,135 ^a	1	,287		
Continuity Correction ^b	,811	1	,368		
Likelihood Ratio	1,134	1	,287		
Fisher's Exact Test				,324	,184
Linear-by-Linear Association	1,131	1	,288		
N of Valid Cases	269				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 20,77.

b. Computed only for a 2x2 table

f) State reimbursement

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,355 ^a	1	,551		
Continuity Correction ^b	,197	1	,657		
Likelihood Ratio	,356	1	,551		
Fisher's Exact Test				,650	,329
Linear-by-Linear Association	,353	1	,552		
N of Valid Cases	269				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 25,97.

b. Computed only for a 2x2 table

g) Other entity reimbursement

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,404 ^a	1	,525		
Continuity Correction ^b	,242	1	,623		
Likelihood Ratio	,405	1	,525		
Fisher's Exact Test				,568	,312
Linear-by-Linear Association	,402	1	,526		
N of Valid Cases	269				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 30,22.

b. Computed only for a 2x2 table

7.7 Bilateral test of K-S Independence

a) Age comparison

Test Statistics^a

		Qual o seu escalão etário?
Most Extreme Differences	Absolute	,048
	Positive	,048
	Negative	,000
Kolmogorov-Smirnov Z		,395
Asymp. Sig. (2-tailed)		,998

a. Grouping Variable: Generic vs Brand Medicine

Descriptives					
Generic vs Brand Medicine		Statistic	Std. Error		
Qual o seu escalão etário?	Generic	Mean	1,75	,086	
		95% Confidence Interval for Mean	Lower Bound	1,58	
			Upper Bound	1,92	
		5% Trimmed Mean	1,66		
		Median	1,00		
		Variance	1,042		
		Std. Deviation	1,021		
		Minimum	1		
		Maximum	4		
		Range	3		
		Interquartile Range	2		
		Skewness	1,015	,203	
		Kurtosis	-,371	,404	
		Brand Medicine	Mean	1,88	,099
	95% Confidence Interval for Mean		Lower Bound	1,69	
			Upper Bound	2,08	
5% Trimmed Mean	1,80				
Median	1,00				
Variance	1,248				
Std. Deviation	1,117				
Minimum	1				
Maximum	5				
Range	4				
Interquartile Range	2				
Skewness	,896		,215		
Kurtosis	-,555	,427			

b) Income comparison

Test Statistics ^a		
		Qual o rendimento médio líquido mensal do seu agregado familiar?
Most Extreme Differences	Absolute	,204
	Positive	,204
	Negative	,000
Kolmogorov-Smirnov Z		1,648
Asymp. Sig. (2-tailed)		,009

a. Grouping Variable: Gender

c) Age comparison

Test Statistics ^a		
		Qual o seu escalão etário?
Most Extreme Differences	Absolute	,144
	Positive	,144
	Negative	-,032
Kolmogorov-Smirnov Z		1,095
Asymp. Sig. (2-tailed)		,182

a. Grouping Variable: No caso de lhe ter sido aconselhado um medicamento de marca, alguma vez optou na farmácia por um med...

Descriptives					
		No caso de lhe ter sido aconselhado um medicamento de marca, alguma vez optou na farmácia por um med...			
Qual o seu escalão etário?			Statistic	Std. Error	
Yes	Mean		1,76	,080	
	95% Confidence Interval for Mean	Lower Bound	1,60		
		Upper Bound	1,92		
	5% Trimmed Mean		1,68		
	Median		1,00		
	Variance		1,167		
	Std. Deviation		1,080		
	Minimum		1		
	Maximum		4		
	Range		3		
	Interquartile Range		2		
	Skewness		1,042	,179	
	Kurtosis		-,438	,356	
	No. Why?	Mean		1,92	,113
		95% Confidence Interval for Mean	Lower Bound	1,69	
Upper Bound			2,14		
5% Trimmed Mean			1,84		
Median			2,00		
Variance			1,076		
Std. Deviation			1,038		
Minimum			1		
Maximum			5		
Range			4		
Interquartile Range			2		
Skewness			,823	,261	
Kurtosis			-,284	,517	

d) Income comparison

Test Statistics ^a		
Qual o rendimento médio líquido mensal do seu agregado familiar?		
Most Extreme Differences	Absolute	,156
	Positive	,156
	Negative	,000
Kolmogorov-Smirnov Z		1,193
Asymp. Sig. (2-tailed)		,116

a. Grouping Variable: No caso de lhe ter sido aconselhado um medicamento de marca, alguma vez optou na farmácia por um med...

Descriptives				
No caso de lhe ter sido aconselhado um medicamento de marca, alguma vez optou na farmácia por um med...				
			Statistic	Std. Error
Qual o rendimento médio líquido mensal do seu agregado familiar?	Yes	Mean	3,74	,149
		95% Confidence Interval for Mean	Lower Bound	3,45
			Upper Bound	4,04
		5% Trimmed Mean	3,66	
		Median	3,00	
		Variance	4,104	
		Std. Deviation	2,026	
		Minimum	1	
		Maximum	8	
		Range	7	
		Interquartile Range	3	
		Skewness	,732	,179
		Kurtosis	-,451	,356
	No. Why?		Mean	4,49
95% Confidence Interval for Mean			Lower Bound	4,03
			Upper Bound	4,96
		5% Trimmed Mean	4,48	
		Median	4,00	
		Variance	4,634	
		Std. Deviation	2,153	
		Minimum	1	
		Maximum	8	
		Range	7	
		Interquartile Range	4	
		Skewness	,206	,261
		Kurtosis	-1,228	,517

7.8 Crosstabs

a) Type of medicine vs income

Generic vs Brand Medicine * Qual o rendimento médio líquido mensal do seu agregado familiar? Crosstabulation

		Qual o rendimento médio líquido mensal do seu agregado familiar?									
		< 500€	500€ - 1200€	1200€ - 1800 €	1800€ - 2400 €	2400€ - 3000 €	3000€ - 4500 €	> 4500€	NS/NR	Total	
Generic vs Brand Medicine	Generic	Count	13	45	18	25	17	8	1	15	142
		Expected Count	7,9	40,6	21,1	18,5	20,6	11,1	7,9	14,3	142,0
		Residual	5,1	4,4	-3,1	6,5	-3,6	-3,1	-6,9	,7	
	Brand Medicine	Count	2	32	22	10	22	13	14	12	127
		Expected Count	7,1	36,4	18,9	16,5	18,4	9,9	7,1	12,7	127,0
		Residual	-5,1	-4,4	3,1	-6,5	3,6	3,1	6,9	-,7	
Total	Count	15	77	40	35	39	21	15	27	269	
	Expected Count	15,0	77,0	40,0	35,0	39,0	21,0	15,0	27,0	269,0	

7.9 One sample t-test

a) Information from medical entities

One-Sample Test

Test Value = 3						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Information from medical entities	-5,965	268	,000	-,396	-,53	-,27