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Consumer behaviour regarding household medical waste disposal in Lithuania and Italy



Case study

Master thesis

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Annotation

Key words: consumer education, environmental consciousness, household decisions, household medical waste disposal, rules and regulations, waste management, educative social campaigns.

Because of the fact that recently, pharmaceutical products have been detected in surface, ground and drinking waters in Europe and worldwide, concerns about potential impacts on humans and organisms in the environment have raised. Naturally, the presence of pharmaceuticals in the environment has therefore moved public discussions on drinking water safety and research in to state and effects of active pharmaceutical ingredients and adjutants in water, soil, as well as of the related risks, undesirable effects on humans and organisms in the environment. Consumer daily-life behavior one of the factors that influence this problem, due to how a pharmaceutical is handled, contained and disposed. Medical waste volume at home continues to grow and poorly managed has high impacts on the environment, so it is important, that every part related to the problem (from producers of a product till the end users) have access to information about medical waste potential environmental impact.

This work is going to focus on the end users of pharmaceuticals at home – single consumers. It will be mainly concerned about understanding consumer behavior in handling proper household medical waste and their environmental consciousness, attitudes towards environmental friendly campaigns, educating programmes. In addition, consumers' accessibility to relevant information regarding safe household medical waste disposal and its working will be also examined. Revealing consumer perceptions about the relative health risks and social values would help to develop effective participatory programmes that are essential to ensure the public right and responsibility to be involved in the assessment and management of hazards in their communities. Understanding consumer behavior – a key to waste management improvement, so the aim of this study, regarding household medical waste disposal, is: a) to understand, to analyse and to emphasize the state of consumers': ability, motivation and opportunity to follow safe household medical waste disposal process; to explore effectiveness of safe household medical waste disposal initiatives and possible problems faced with the issue.

The research is going to analyse two different cases in two European Union countries that follow the same EU directives and regulations with specific commitments regarding waste management: Italy and Lithuania. This work is going to analyze, separately and in comparison, consumers' opinions about their personal household medical disposal habits in relation to many other additional factors, like political, social, local, drug take-back systems context ecc. The thesis is going to be interested mostly for the ones, who are focused on social marketing issues, special educative social campaigns, consumer targeting and their behaviour understanding.

I. Introduction:

Recently, pharmaceutical products have been detected in surface, ground and drinking waters in Europe and worldwide. This has raised concerns about potential impacts on humans and organisms in the environment, thus the need of various regulators in action on these concerns became much more required (B. Roig et al., 2010: 279). Naturally, the presence of pharmaceuticals in the environment has therefore moved public discussions on drinking water safety and research in to state and effects of active pharmaceutical ingredients and adjuvants in water, soil, as well as of the related risks, undesirable effects on humans and organisms in the environment (K. Kümmerer et al., 2010: 299). Actually, the presence of human and veterinary pharmaceuticals in the environment is a very relative and new issue, because the magnitude nor the size of the problem still is not well known or examined. There is a significant lack of knowledge of the issue, deeper research should still be done: *“it was a surprise to find pharmaceuticals in carcasses of dead livestock”* (J.P. Sumpter, 2010: 20). Thus, the medical waste disposal problem being threatening and at the same time still less explored, should instantly encourage for further relative data gathering, raising proper awareness and looking for improving solutions.

It is known that pharmaceuticals are produced and used in very large volumes, and their use and diversity are increasing every year (J.P. Bound et al., 2005: 1705). Moreover, it is significant that about two thirds of the packages eliminated from household waste contain more than half or two thirds of the original content and that about half of those packages are unbroken (S. Castensson et al., 2010: 186). This means that patients accumulate drugs without almost using them and after being disposed of, create the risk of improper disposal negative impact. The most popular route by which pharmaceuticals can enter the environment is by the disposal via the sink/toilet or in household waste bin that is then taken to landfill sites (*see p. 8*) These residues experienced recycling, from surface and ground waters may come back into the drinking water supply and various foods, where humans of all ages and health status can be chronically exposed, unfortunately risking to undergo unknown consequences regarding long-term health impacts. Consequently, it is clear that improper consumer behaviour regarding the disposal of pharmaceutical waste determines the impact on the environment and unfortunately this subject has not enough controlling. That is why relevant authorities emphasize that *“unused pharmaceuticals should never be discharged through the sink or toilet, but this behaviour is still common”* (G. Vollmer, 2010: 167), even when

recommendations to return unused or expired pharmaceuticals to a pharmacy or to a special collection centre is a key message for all consumers.

In fact, responsibility does not end at the point of sale, but continues to the end of pharmaceutical's life-cycle. Consumer behavior influence regarding how a pharmaceutical is handled, contained and disposed, does not finish in the main garbage bin. Medical waste volume at home continues to grow and poorly managed has high impacts on the environment (1 eur-lex.europa.eu). That is why the alarm from European Environment Agency about the need of better management of pharmaceutical waste from households came out too (EEA, G. Vollmer, 2010: 28): *“amounts of pharmaceutical waste collected, however, vary considerably and do not correlate with the amounts of pharmaceuticals sold. Awareness of citizens about the environmental effects and information on the best ways of disposal also seem to influence the amounts collected”*. So, to improve household medical waste disposal problem, a certain precautionary knowledge should be gathered first among consumers. Anyway, household medical waste disposal is not only an environmental issue: the waste and disposal problems start with the production and end with the final disposal of pharmaceutical products. Eventually, all citizens and professionals in different areas benefit from pharmaceuticals and are concomitantly co-causing the problem through their behaviours. Its solution should therefore follow in shared responsibility on the basis of precautionary thinking where deepening the knowledge is necessary (F. Keil, 2010: 239). Unfortunately, cross-sectional review of the pharmaceutical management situation in the EU and USA has shown that definitive and consistent guidance is not yet available (S. Castensson et al., 2010: 180). This fact even more encourages looking for proper solutions in resolving complex household medical waste disposal problematic. It is important, that every part related to the problem (from producers of a product till the end users) **have access to information** on medical waste potential environmental impact, particularly when pharmaceuticals are sort of waste that tend to be threatening to the environment and cannot be recycled or reused: *“If people receive a consistent message through what they observe as behavioral benchmarks, then the values and norms are cascaded across the entire organization, guiding people in their daily actions, then in this way culture change will be sustained”* (M. Läufer, 2010: 72).

This work is going to focus on **the end users of pharmaceuticals at home – single consumers**. It will be mainly concerned about understanding consumer behavior in handling proper household medical waste and their environmental consciousness, attitudes towards environmental friendly

campaigns, educating programmes. In addition, consumers' accessibility to relevant information regarding safe household medical waste disposal and its working will be also examined. Revealing consumer perceptions about the relative health risks and social values would help to develop effective participatory programmes that are essential to ensure the public right and responsibility to be involved in the assessment and management of hazards in their communities (L. Rushton, 2003: 195). Understanding consumer behavior – a key to waste management improvement, so the aim of this study, regarding household medical waste disposal, is:

1. to understand, to analyse and to emphasize the state of consumers':

- **ABILITY – having special knowledge and consumer education, problem awareness;**
- **MOTIVATION – willingness and effort to discard in an environment friendly way;**
- **OPPORTUNITY – conditions, alternatives, obstacles to act as a green consumer;**

2. to explore:

- **the state of precautionary initiatives to improve unsafe household medical waste disposal, the state of management of the release of pharmaceuticals in the environment and in the assessment of the associated risk. In other words - effectiveness of safe household medical waste disposal initiatives and possible problems faced with the issue.**

The research is going to analyse two different cases in two European Union countries that follow the same EU directives and regulations with specific commitments regarding waste management: Italy and Lithuania. Under the provisions of current EU legislation, all EU Member States must establish collection schemes to recover and safely dispose of unused and expired medicines. Article 13 about protection of human health and the environment claims that Member States have to take necessary measures to ensure waste management carried out without hazarding human health and environment (2 eur-lex.europa.eu). Apparently, waste disposal problem in European Countries is a very complex process, where legislation, in some cases, is poorly implemented and there are significant differences between national approaches that affect improvement of waste management (1 eur-lex.europa.eu). To resolve this problematic issue, European Union represents general directives for all state-members about medical waste disposal, but concrete management responsibility, regarding this kind of waste is left for local municipalities of each country, where pharmaceutical industries are very supportive of these initiatives: “*20 of the EU Member States had now established take-back schemes for pharmaceuticals*”, but unfortunately, “*many of the more recent schemes did not appear, as yet, to be very effective*” (D. Taylor, 2010: 119).

The waste producer and the waste holder should manage the waste in a way that guarantees a high level of protection of the environment and human health (2 eur-lex.europa.eu). For example, in Italy the right disposal of pharmaceuticals at home is an obligatory with certain local variations of every region, however, in Lithuania the situation, regarding household medical waste disposal is much different, even if this country is also in EU. People from Udine told me that household medical waste disposal precaution system was one of the first introduced to manage special waste disposal. In fact, you can easily see very often special bins outside houses or pharmacies to discard medical waste. On the contrary, it is extremely difficult to find places to dispose old pharmaceuticals in Lithuania. Pharmacists say that people almost do not bring medical waste at all, meanwhile people claim that they do not even know about such a possibility ("*Seni vaistai graso ekonomine bomba*", 2010).

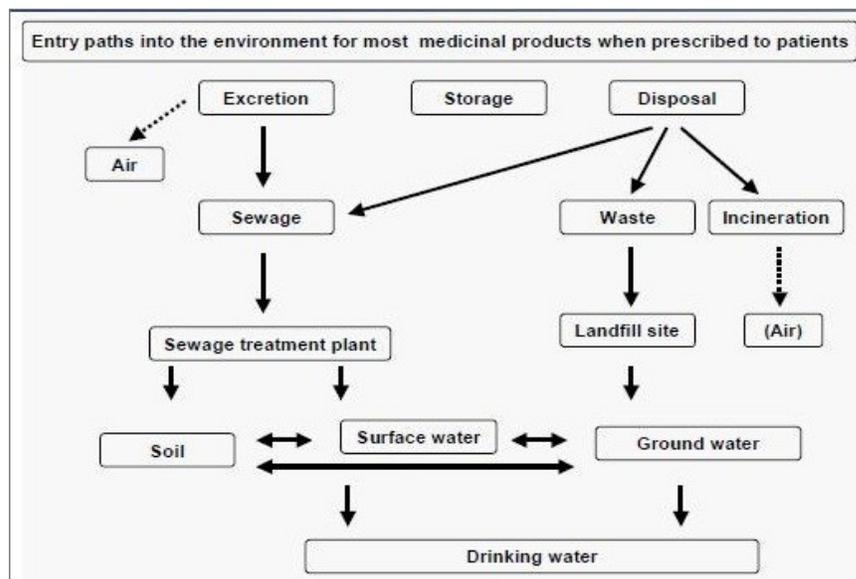
Avoiding too broad area of the research, confusion and inaccuracy I am going to focus on consumers, living in a specific town with its specific municipal regulations of both countries: Udine (Italy) and Šilalė (Lithuania). Considering of course that political, social and even pharmacy systems differ in each country, this work will compare consumer behavior situations and beliefs regarding household medical waste discard; in addition, the role of relative institutions and household medical waste disposal management situation. I will limit the analysis of the issue within two different towns in Italy and Lithuania also because in Udine and Šilalė I spent there most time and have a closer access to local people. A research of all EU countries in general would take much more time and special preparation for this kind of work. Thus, particular attention will be given to household medical waste disposal argument because even if there are important universal elements, equally important are local differences that govern consumer behaviors, which vary widely from place to place depending upon historical, macro-economical and cultural factors (E. Arnould et al., 2005: 23). Consumer behavior analysis is a source for a marketer to evaluate and create new marketing opportunities; also, studying consumers will help to become a better-informed consumer too. This social research will be particularly useful for those, who work with social marketing campaigns and seek to influence the public policies that affect consumer behavior in household medical waste disposal area and to improve medical waste management process.

II. Contextual information of a case:

Contextual information of the case analysed is an important background for further analysis, because research problem is understood as a complex one, where many factors and variables are connected. In this section, various positions are going to be looked through and certain currently existing statistical data regarding household medical waste disposal will be included, to have a general understanding about the problem and to get known various points of view in relation to the problem analysed further. Thus, the section will begin with an international position of EU and its legal regulations for all State-Members, as well certain statistical data is gathered, based on European Environmental Agency's (EEA) special surveys made in 2010. On a national level, current information taken from Italian and Lithuanian governmental institutions and pharmacies about household medical waste disposal issue is included too, for general and independent understanding about the research problem not only from a single consumer's position.

In short, current problematic issue in relation to unsafe pharmaceutical products disposal is that so far 100 different pharmaceuticals have been detected in the aquatic environment. Their pathways can start with urine and end with general household general waste: see Figure 2.1. about entry-paths of pharmaceuticals to the environment:), which cause:

- negative effects on wildlife and people;
- a fear drinking water to be contaminated with human pharmaceuticals exists (J. P. Sumpter, 2010:18). **Figure 2.1.:**



Therefore, it is clear that to unused or expired pharmaceuticals disposal management a particular interest should be given. To resolve this problem, the issue of “green pharmacy” to create active ingredients that deliver the desired therapeutic effect but have less environmental impact has started but is not yet very common and still needs much more research to be done (G. Vollmer, 2010: 165). For now, the priority remains to ensure safe disposal methods for expired and unused pharmaceuticals and currently the easiest way to reduce this environmental burden starts with legal orders and indications internationally and nationally wide, together with private and public sectors that are related to solve unsafe household medical waste disposal issue.

1. International position and current EEA surveys:

a) EU policy framework (G. Vollmer, 2010: 166):

- **European Commission Decision (2000)/532 (EC):** in part 2 there is a distinguishing between “pharmaceuticals” and “medicines”. Medicines are categorised under waste from health care or as part of the municipal waste (household and similar). For municipal waste, under category 20 01 31 cytotoxic and cytostatic medicines are listed, whereas category 20 01 32 lists all other medicines. Unused or expired cytotoxic and cytostatic medicines are defined as hazardous waste, other medicines not.
- **Directive 2004/27/EC (2004):** its article 54 (j), amending Directive 2001/83/EC on the Community code relating to medicinal products for human use requires that “*the following particulars shall appear on the outer packaging, specific precautions relating to the disposal of unused medicinal products, as well as a reference to any appropriate collection system in place*”. In addition, article 127b of this Directive refers to collection systems: “*Member States shall ensure that appropriate collection systems are in place for medicinal products that are unused or have expired*”.
- **Directive 2008/98/EC:** refers to waste collection schemes which are not conducted on a professional basis, should not be subject to registration as they present a lower risk and contribute to the separate collection of waste.
- **The Basel Convention list:** is about the Control of Movements of Hazardous Waste (1989) that lists “categories of wastes to be controlled”: waste pharmaceuticals, drugs and medicines.
- **Directive 2000/60/EC:** it requires reaching good status in all EU waters by 2015. Regarding pharmaceuticals, this process is currently only beginning and is being complicated by the fact that the presence of pharmaceutical products in the water is in

many cases difficult to detect with existing standard analytical methods (E. Kampa et al., 2010: 259-261).

- **Drug Take-Back Schemes**

This system protects: a) the entrance of pharmaceuticals into groundwater and b) the unsafe pharmaceutical storage practices that can result in accidental poisonings and drug abuse. EU medicinal legislation requires the set up of take-back schemes for unused and expired medicine in all Member States. These requirements are set out in Directive 2004/27/EC for human medicinal products (Article 127b). Reference to these collection systems is to be made on the labelling or package leaflet (*ibid*).

These systems had to be set up by the end of October 2005, but, according to EU, the extent of their establishment and the degree of effectiveness is quite different among European countries. This is because of different levels of public awareness and education on the environmental consequences of the disposal of unused/expired drugs, which seem to be essential for the success of such schemes (*ibid*, 2010: 259). Figure 2.2. shows data about the role of pharmacies in taking back household medical waste system (G. Vollmer, 2010: 175). According to EEA data, Lithuanian pharmacies are obliged to collect household medical waste, but Italian pharmacies collaborate voluntarily.

Figure 2.2.:

Countries where pharmacies are obliged legally to participate in a take-back scheme:	Countries where pharmacies participate voluntarily in a take-back scheme:
Belgium	Albania
Croatia	Austria
Denmark	Czech Republic
Estonia	Finland
France	Germany
Iceland	Ireland
Lichtenstein	Italy
Lithuania	Latvia
Norway	Luxembourg
UK	Netherlands
	Poland
	Portugal
	Slovenia
	Spain
	Sweden
	Switzerland

Nevertheless, in terms of risk mitigation, seems really difficult to prohibit the authorisation of human pharmaceutical products on environmental grounds. Therefore, it is advisable to consider different alternatives to reduce environmental exposure, but apparently, at the moment, there is no concrete proposal and no binding regulations for mitigation measures relevant to human medicine (E. Kampa et al., 2010: 268). Furthermore, despite pharmaceutical products possible effect on wildlife and people, household medical waste is currently not defined as dangerous waste within EU legislation., but at the same time there is an opinion that *“defining waste as “not dangerous” does not necessarily mean that it is preferable to dispose it as normal household waste”* (G. Vollmer, 2010: 171). This is because there are still no substantiated results on how the consumption of drinking water with ultra-trace levels of contamination affects humans. As well as, there are no strategic considerations whether and how this incalculable risk should be handled in future, which precautionary measures would be capable to reduce/prevent the entry of active pharmaceutical substances into the water (K.Götz et al., 2010: 49). That is why the issue of household medical refuse is even more complicated and needs a special attention.

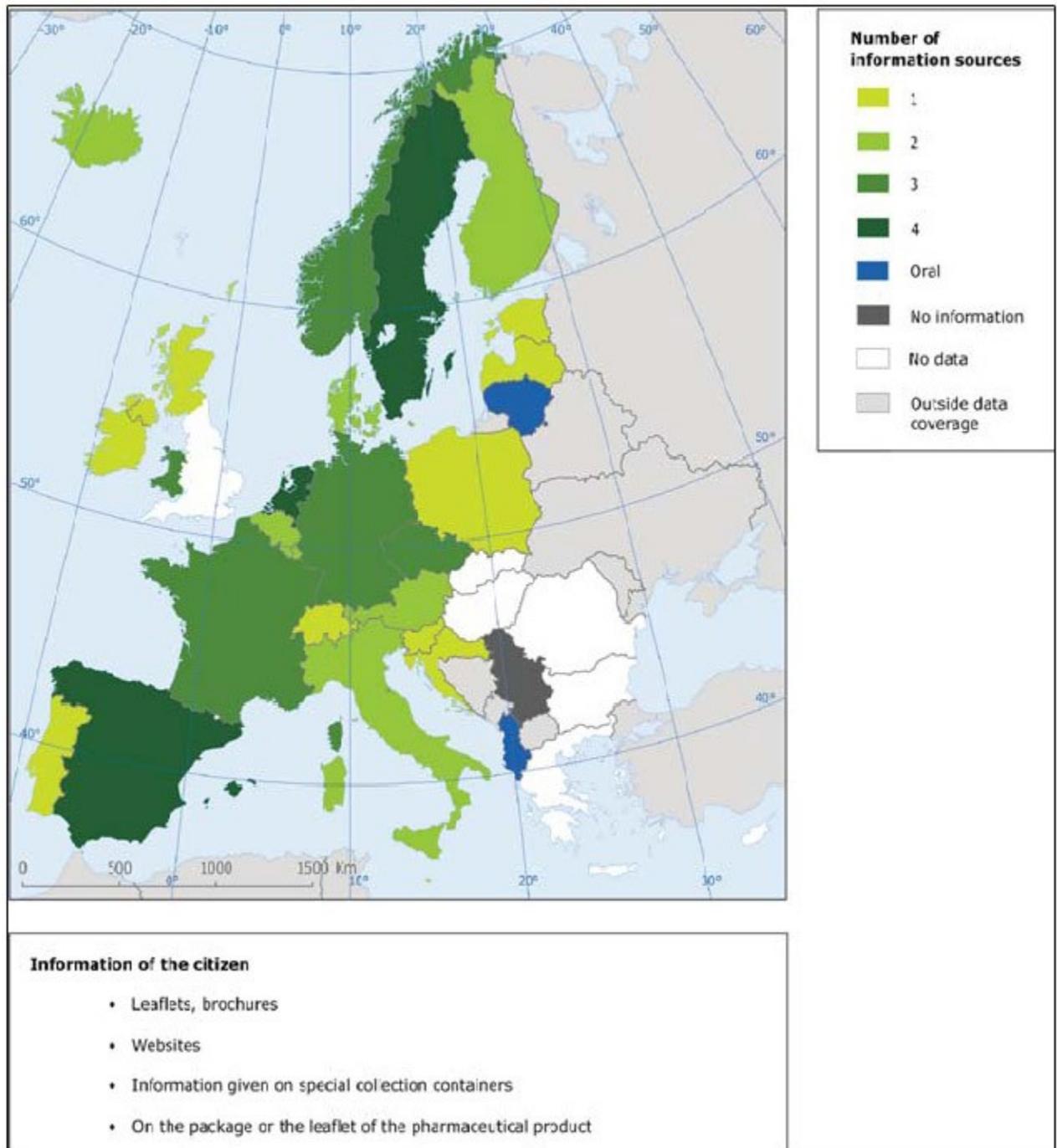
b) Educating and informing citizens in EU:

Another precautionary tool to reduce unsafe pharmaceuticals disposal is a special consumer education given and relative guidelines provided to citizens, but evidently, the means to inform citizens about the best way of disposal varies widely in Europe: due to cultural differences or national authorities’, because of different approaches being used or other (G. Vollmer, 2010: 167).

- Figure 2.3. illustrates how usually special information on disposal of pharmaceuticals as waste is provided to citizens in Europe. There you can see the correct way of disposal and the number of information sources used too. According to EEA (*ibid*, 2010: 172) information, usually, cities, countries and regions use their websites to disseminate information, as well as brochures and leaflets addressed to the consumer (to reach all citizens, the leaflet in Luxembourg for example is issued in five languages). In some countries there is information on the collection containers placed in a pharmacy or at other places. Other countries rely on direct oral information given by pharmacists or doctors to patients, as in Lithuania for example. Information is also given by associations of pharmacists and by the take back systems for unused or expired pharmaceuticals. A special collection system for unused pharmaceuticals exists in nearly all EU Member States, the recommendation to return unused or expired pharmaceuticals to a pharmacy or to a special

collection centre is a main safe disposal that should be used (*ibid*, 2010: 167).

Figure 2.3.:



- To have an overall understanding about the quantity of pharmaceutical waste per person during one year, general data has been collected by EEA too (*ibid*, 2010: 167). But, apparently, more detailed Europe-wide overview of amounts of unused pharmaceuticals and their return rate still does not exist. Figure 2.4. illustrates annual pharmaceutical sales and waste per capita (total waste including packages) (*ibid*, 2010: 170). In the table is

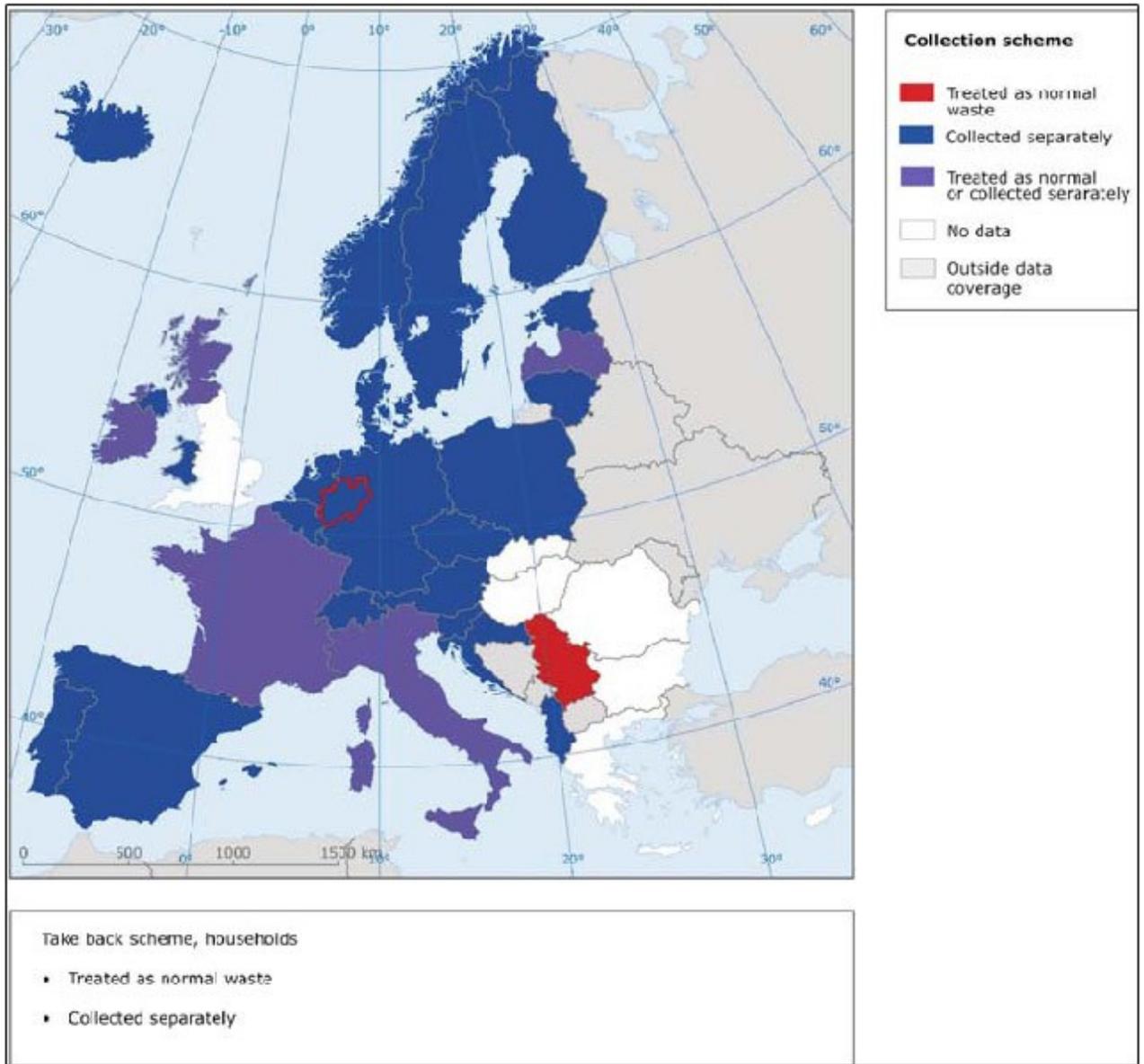
evident, that amounts of sold pharmaceutical packages in Lithuania and Italy is similar per capita, but the return as waste is extremely different: Italians return old pharmaceuticals five time more than Lithuanians.

Figure 2.4.:

Country	Sold packages (per capita annually)	Waste (g per capita annually)
Croatia	-	0.19
Estonia	19.46	3.4
Slovenia	16.91	4.5
Lithuania	27.12	10
Finland	16.64	11
Iceland	-	19
The Netherlands	14.34	30
Czech Republic	25.75	36
Liechtenstein	-	39
Belgium	21.83	46
Italy	28.87	54
Denmark	14.84	55
Spain	26.99	57
Portugal	25.12	58
Germany	18.34	73
Sweden	16.91	119
Ireland	22.86	142
Luxembourg	27.72	174
France	51.79	231
Switzerland	19.78	237
Styria	22.71 (Austria)	99

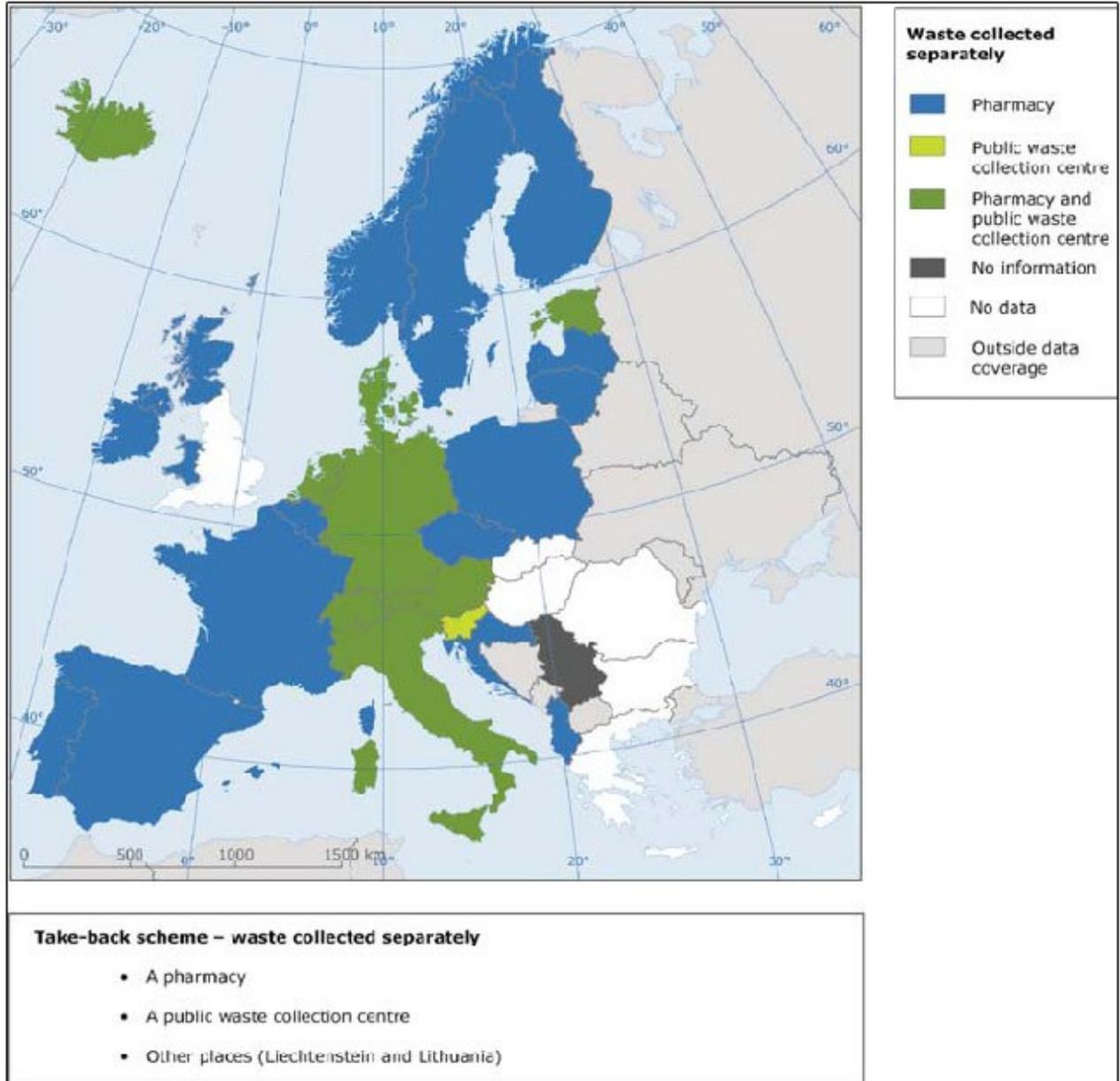
- It is also interesting to have a look into the scheme of collected waste classification, in terms of household medical waste. Figure 2.5. illustrates whether European countries collect pharmaceutical waste as normal household waste or as a special one. Of course, data is gathered by EEA and is quite general, but one of a few that exists so far. For my big surprise, an interesting and intriguing data was found, where according to EEA survey (2007) in Lithuania 8% of town residents and 6% of those in the suburbs and settlements flush medicines with the sewage and even 50% of countryside residents in Lithuania dispose of unused medicines by burning them (*ibid*, 2010: 174). These facts are going to be checked in my interviews done with consumers too, to see, how real these affirmations are.

Figure 2.5.:



- Talking about collection points of pharmaceutical waste in Europe, Figure 2.6. illustrates the results of EEA questionnaire. EU countries were asked to indicate whether pharmaceutical waste has to be collected separately and to identify who was responsible for collecting this special waste. It is evident, that nearly in all countries household medical waste must be given to a pharmacy, in Lithuania too, meanwhile in Italy pharmacies share the responsibility with municipal authorities. Actually, the fact seen in this table, that intrigues me, is that Lithuania has been also perceived as a country, which uses other places for household medical waste disposal.

Figure 2.6.:



In short, EU objective is: to create a national (and if possible, EU-wide) consensus that medicines from private households should be disposed of exclusively via pharmacies or sites where problematic waste is collected. In addition, according EU, pharmacies should continue to accept drugs voluntarily for disposal and free of charge. This measure has to be cost-neutral for pharmacies, and there should made it easier to integrate the relevant logistics into their daily work routine (K.Götz et al., 2010 158).

2. Governmental institutions' position in Italy and Lithuania:

- In Italian town Udine the management of household medical disposal is governed by regulations, issued by the City Council and in collaboration is managed by a special waste collection firm NET SpA (see ref. *Regolamento comunale gestione rifiuto*). To run the solid waste collection system is mandatory in Italy, which also gives a possibility to a citizen to reduce disposal costs by saving 20% of T.I.A. (so called Environmental Health Fee) (see ref. *Rifiuti differenziati*). Citizens can find all necessary information in the web-pages of Udine municipality, under NET SpA. And special booklets with information and relevant instructions are being delivered to every home for free too. So, a citizen does not have to go out to get information about safe and proper household medical waste disposal (*ibid*). Consumers in Udine can use special medical waste collection bins out of their home and also in the pharmacies it is possible to give back this kind of waste freely. All necessary national regulations can be found online too (see ref. *Normativa*) . Thus, the conclusion would be that the system of household medical waste disposal works speaking in terms of public institutions and their role managing this waste problem.
- Meanwhile in Lithuania the present situation is quite different regarding the role of institutions in creating household medical waste disposal management system. Lithuanian Ministry of Health informed me that there are no particular and concrete regulations, in Lithuania regarding household medical waste disposal and no statistical data gathered about the state of this problem (Annex 1). Institution of State control made a research about ..and expressed lots of critiques to make the system work, because there is no absolutely any logical system introduced that would govern and manage household medical waste and it is not clear who has to do what, ho has to take responsibility (see ref. *Government audit*). For now, pharmacies are obliged to collect medical waste from people, but at the same time has to pay for its transportation to relevant institutions (*ibid*). City Council in Šilalė does not give any information about medical refuse from home and the firm that collects in general solid waste in the town, has answered me that they are not responsible to take back pharmaceutical waste and that this is the responsibility of local pharmacies (Annex 2). Clearly, Lithuania needs more work to be done in managing household medical waste problem.

3. Pharmacies' position in Italy and Lithuania: the role of pharmacies in Italy and Lithuania in taking-back household medical waste:

- Pharmacies in Italy are not obliged to collect medical refuse from households, but voluntarily give the space for special collection bins that are managed by municipality. In Udine, close to the entrance of pharmacies I have seen very often special medical refuse collection bins. Especially, when I talked with pharmacies of Udine and I was told, that they are responsible only of their own pharmaceutical waste internally and pay a fee for transportation and elimination of old, unused pharmaceuticals that were left in a pharmacy.
- Pharmacies in Lithuania are obliged to take-back pharmaceutical waste from citizens. I talked with most pharmacies in Šilalė and all of them were complaining to me that it is not convenient for them to take medicine from people because they have additional costs and work to manage it. This was the reason, that they do not spread necessary information among consumers because pharmacies feel left alone to resolve the problem, especially, when the responsibility is being left only for them and even by paying additional money. This fact does not illustrate the norms of EU where it was said that take-back schemes in pharmacies should have been cost-neutral (see page 9).

4. Consumers' position in Italy and Lithuania:

- separate citizens in Udine and in Šilalė are going to be interviewed, regarding household medical waste disposal to gather points of view from single consumers. In the analysis section where a deeper and particular attention is going to be dedicated to consumer behavior understanding, certain conclusions are going to be made regarding the role of a consumer in resolving household medical waste disposal problem.

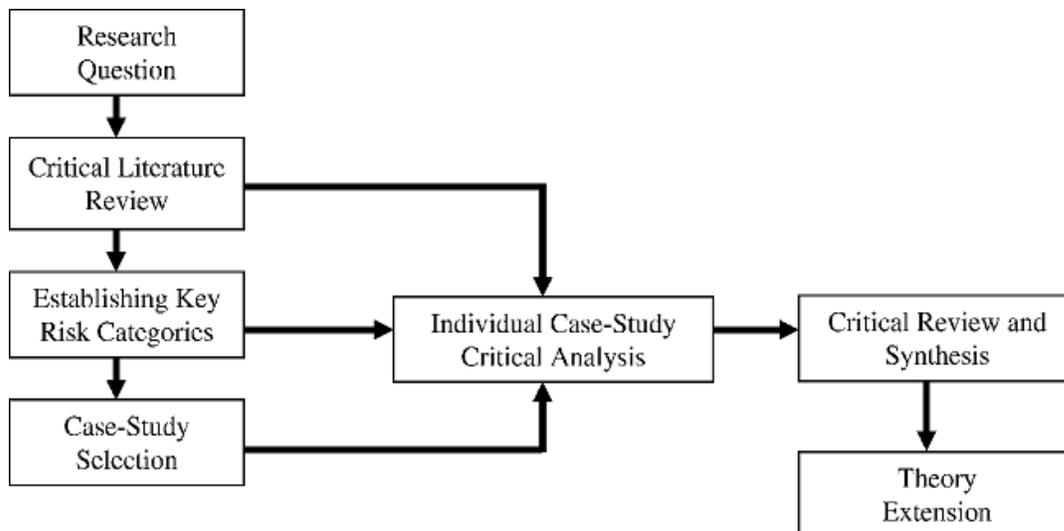
III. Methodology:

1. Relationship between theory and research:

This paper part is going to discuss about what form of theory is going to be applied in the research. Theory is important because it provides a framework within the social phenomena is analysed, interpreted and understood. It gives a rational and concrete back-up to the analysis; it also guides and influences the collection of empirical data and its analysis. Therefore, a method to define theory's role in the research is necessary.

According to A. Bryman an alternative to the relationship between the theory and the research is “to view theory as something that occurs after the collection and analysis of some or all of the data associated with the project” (Bryman, 2008: 9). In this work I am going to apply this alternative, called *Inductive* approach, because theory here is supposed to be an outcome of an investigation than something that precedes it. I will invoke A. Bryman's definition about Inductive approach, where theory and categorization emerge out of the collection and analysis of data (Bryman, 2008: 370). The research starts with a broad outline of concept, which is revised and narrowed during the course of data collection, in relation to different social contexts. In generating valuable research problem historical, political and contextual sensitivity will be followed. Figure 3.1. illustrates how inductive research approach functions in this research:

Figure 3.1.:



In practice, inductive type of study it is going to be used as a tool of achieving new theoretical considerations about consumers' household medical waste discard habits.

Epistemological position:

Epistemological assumptions claim about how what exist may be known and in this work I am going to apply *Interpretivism* position, because it focuses on understanding the social world through an examination of the interpretation of that world by its participants (Bryman, 2008: 366). I will focus on subjectivity and understanding about ‘how’ and ‘why’ certain issues work. According to Lofland and Lofland (Bryman, 2008: 385), there are two central issues that epistemology underlies: a) face-to-face interaction that is the fullest condition of participating in the mind of another human being, and b) “taking the role of the other” is necessary to acquire social knowledge. Thus, I am going to apply this epistemological strategy by interviewing people about the same issue in two different social contexts. In detail, I am going to analyse the household medical waste discard issue in Šilalė (Lithuania) with a comparison about the same issue’s situation in Udine (Italy) from a consumers’ point of view, because the social world is going to be examined through the eyes of the people that I will study with my personal mediation of language. I am interested in historically, politically and culturally situated truth. Actually, I do reject in this work *Positivism* and *Realism* approach because research social reality is not independent from an observer, uniformities cannot be just observed and explained and social world is not just a product of external forces. In this work social actors create a social reality with their interpretations and subjective considerations.

Ontological position:

In this research social reality examined is produced and reproduced by social actors. It is going to be pre-interpreted about inter-subjective world of cultural objects, meanings and social institutions all together. This kind of a position is called *Constructionism* and implies that social properties are outcomes of the interactions between individuals, rather than phenomena “out there” and separate from those involved in its construction (Bryman, 2008: 366). I am interested in how do people manage household medical waste disposal problem, what do they know in general about being an environmentally friendly consumer/recycling system/safe disposal and what other factors affect their decisions making? I am not applying *Objectivism* because this position represents social phenomena and their meanings as being independent from social actors, that the categories that we use in everyday discourse are beyond our reach or influence. In fact, all variables, that are relevant to the issue analysed by this research, inevitably have an influence to its nature.

2. Research strategy:

Qualitative research:

Qualitative research entails the examination of behavior in context. According to A. Bryman: „*Qualitative researchers often want to interpret people’s behavior in terms of the norms, values, and culture of the group community in question*“ (Bryman, 2008: 594). Qualitative methods were picked as the best way to deal with research questions because of general aims to gather an in-depth understanding of human behaviour and the reasons that govern such behaviour. It fits as a method, because qualitative methods investigate the 'why' and 'how' certain decisions are made. My attention is going to be dedicated to consumers' education and behavior understanding, regarding their household medical waste disposal habits. Thus, I am going to focus more on details about people behavior, values and their explanations, meanings, relations to the proper social context and qualitative method is essential to gain those answers.

Furthermore, in this research there is an emphasis on context. According to A. Bryman “*we cannot understand the behavior of members of a social group other than in terms of the specific environment in which they operate*” (Bryman, 2008: 387). That is why I am going to embrace private and institutional issues regarding household medical waste disposal social habits, as well as with legal regulations that will help to understand the proper context. Therefore, research is going to be more context and primary data driven, flexible, fluid and exploratory. The detailed plan about research’s main steps are needed. I will follow the nature of qualitative research and its plan explanation with details: Figure 3.2. will illustrate an outline of the main steps of qualitative research using the table model of A. Bryman (Bryman, 2008: 370):

Figure 3.2.:

Step 1. General research question(s)	What is consumer behavior regarding household medical waste disposal in Lithuania and Italy? What is the role of related institutions to the issue? What are the improvement possibilities of an examined issue? What is the state of waste management in promoting safe household medical disposal?
Step 2. Selection of relevant site(s) and subjects	Consumer education in household medical waste disposal; Institutional functionality, starting with general EU directives and ending with local government; Household medical waste disposal management problems and waste management situation.
Step 3.	Primary data: semi-structured interviews

Collection of relevant data	Secondary data: related papers, articles, e-mails, documents, additional interviews.
Step 4. Interpretation of data	Qualitative comparative psycho-grafical analysis of two different cases in Italy (Udine) and Lithuania (Šilalė)
Step 5. Conceptual and theoretical work	The knowledge gathered of EU directives and regulations regarding household medical waste disposal and local government position in communes of Udine and Šilalė regarding the issue; consumer behavior analysis and cultural comparative studies characteristics.
Step 5a. Tighter specification of the research question(s)	What types of problems emerge regarding household medical waste disposal? To whom they arise? Does anyone deal with the problems?
Step 5b. Collection of further data	Additional interviews to check the validity of certain data used in the research; looking for fresher data while writing the thesis, in case, main facts of the issue might change.
Step 6. Writing up findings/conclusions	Corresponding conclusions to the analysis are going to be accentuated with using also a psycho-graphical methodology.

To justify the choice of using a qualitative research form, I am going to point common contrasts between quantitative and qualitative research (Bryman, 2008: 393) with main key words of characteristics based on the nature of this investigation (see Figure 3.3.):

Figure 3.3.:

<u>Quantitative</u>	<u>Qualitative</u>	
Numbers	Words	Analytical Explanation
Point of view of researcher	Points of view of participants	Gather other opinions
Researcher distant	Researcher close	Talking with participants
Theory testing	Theory emergent	Gather new theoretical data
Static	Process	Changing social problem
Structured	Unstructured	Flexible phenomenon
Generalization	Contextual understanding	Subjective approach
Hard, reliable data	Rich, deep data	Broad and complex related issues
Macro	Micro	Concrete, detailed research area
Behavior	Meaning	Understanding 'how' and 'why'
Artificial settings	Natural settings	Daily-life issues

3. Method:

Method - a specific technique for data collection, process and analyse under certain philosophical assumptions (L. Rienecker et al., 2003: 186). Approach to data collection – semi-structured interviews. The scope of the research is not to gather general notions, but to reveal more specific issues about concrete problem, which is wrong and dangerous household medical waste disposal and its management problematic. Thus, I am going to focus on specific questions and topics that will be the same to all respondents, but of course every interviewee will have a great leeway in how to reply. The results of this research are going to be based on the interpretations made by analysing the interviews and additional contextual information. Empirical object of the research is mainly consumers from Udine and Šilalê, but there will be also gathered related articles, documents, statistical data regarding the examined issue and will be included into analysis too to have an overall understanding.

In addition, this kind of interview form has been also chosen because of its clear structure. A. Bryman's recommendations to use semi-structured interviews will be followed: *“all the questions will be asked and a similar wording will be used from interviewee to interviewee”* (Bryman, 2008: 438) but at the same it will be flexible, adaptable: *“questions may not follow on exactly in the way outlined on the schedule; questions that are not included in the guide may be asked as the interviewer picks up on things said by the interviewees”* (Bryman, 2008: 438). Finally, there is a need of structure in order to ensure cross-case comparability, so, semi-structured interview's have the same main questions for everyone that will make the analysing process simpler and more goal oriented. I will avoid statistical techniques to analyse the causes of social behavior, because the research is focused on a deeper picture than on the variable-based correlations.

Interviewing technique in this research could be defined as a constructivist paradigm when the interviewer taking the role of a befriended tries to make the interview more like real life, informal and conversational to make and interviewer open up and share views in a certain depth (*“Case study research”*: 93). I was inspired by Silverman's words about interviews that according to him, a central (and popular) feature of mass media products, from talk shows to celebrity questioning – an interview and that we all might live in an interviewing society in which interviews seem central to making sense of our lives (Silverman, 2005: 99).

Sampling in qualitative research:

Purposive sampling. This type of sampling has essentially to do with the selection of units (which may be people, organizations, documents, departments, etc.) with direct reference to the research questions being asked (Bryman, 2008: 375). For the research this kind of sampling method is about questioning people that are related to interview questions: participants that are adults, have their home and use household medicine, also people that are related with analysed problem's management and improvement processes. In addition, stratifying criteria of the interviewees as age, gender, education, occupation, having or not having a certain experience are not main variables of interviews but should be included for additional theoretical findings. I choose this kind of sampling because of it being strategic and it will help to establish a good correspondence between research questions and sampling.

Semi-structured interviews took place in Udine and Šilalė. Most of them were recorded and transcribed, but certain conversations were not allowed to be registered by the interviewees. Interviewees remain anonymous; open questions were given to them and there was no limit on the number and length of their answers; respondents were encouraged to give open answers that represented their attitude and behavior about household medical waste disposal. I did not request specific data about types and amounts of medication disposed, so the reported data is going to be less affected by numbers. Separate citizens are going to be questioned using Italian language in Udine and Lithuanian in Šilalė for the purpose of the researcher to be involved as much as possible in the local context. Interviews' questions are mainly about:

- Habits and classification of pharmaceutical waste disposal
- Means of informing citizens about the problem analysed
- Take-back schemes of medical waste in a proper town
- Estimation – as far as available – of the household medical waste disposal problematic.
- Self-identification as a consumer (*using the tables in page 28 and 41*).

4. Research design:

Case study research:

Research is going to analyse a collective case or in other words a multi-case, that means a certain issue selected from different settings to allow comparison; a strategy is going to be applied when 'how' and 'why' questions are being asked and when the emphasis is on a contemporary phenomenon within real-life context (“*Case study research*”: 91). This kind of study will help to understand why certain decisions were made by Italian and Lithuanian consumers and their daily-life actions’ consequences, the influence on the environment regarding household medical waste disposal. Attention will be given also to the behavior of all involved to the issue examined, individual development, organizational structures that facilitate or obstruct the interests of consumers. Looking for similar and contrasting patterns between the cases also will be included. I am going to follow the specific recommendations of *a case study* (“*Case study research*”: 89):

Figure 3.4.: Nature of a case study :

- a) it is conducted in natural settings (natural conversations with people)
- b) it pursues depth analysis (gaining a deep consumer behavior understanding)
- c) it studies whole units not aspects of units (many relevant issues to the problem are involved)
- d) it entails a single case or a few cases only (two cases examined in Udine and in Šilalė)
- e) it studies typical cases (a study of a daily-life issue)
- f) it perceives respondents as experts, not as sources of data (all participants opinions are valuable)
- g) it employs many and diverse methods (hermeneutic and psycho-graphic)
- h) it employs several sources of information (primary, secondary data used)

Multi-case study approach is going to be combined with a *comparative design*, together with the emphasis on a significance of context, its differences and similarities. **Comparative design** will be needed to combine the study of two contrasting cases, where same research methods are going to be applied. As A. Bryman defines, it embodies the logic of comparison in which we can understand social phenomena better when they are compared in relation to two or more meaningfully contrasting cases or situations (Bryman, 2008: 58). Comparative method will help to draw systematic data analysing of a problem, under more or less the same structure, methods and guidelines. The aim is to seek similarities and differences of a problem that is located in two different national contexts. Figure 3.5. illustrates how a confrontation of two cases works within the nature of comparative design (Bryman, 2008: 58):

Figure 3.5.:

Case 1	T1 Obs1 Obs2 Obs3 Obs4 ... Obsn
Case n	Obs1 Obs2 Obs3 Obs4 ... Obsn

The figure implies that there are at least two cases (which may be organizations, nations, communities, police forces, etc.) and that data are collected from each usually within cross-sectional design format. In this case there are going to be two countries compared in different socio-cultural settings, like institutions, traditions, values systems and life styles, using the same research instruments. The scope is to explain similarities and differences of cases and to gain a deeper understanding about social reality of different contexts about the same problem within both research area: in Šilalė (Lithuania) and Udine (Italy). This is because cases investigated are about cross-cultural research that entails the collection and analysis of data from two nations. According to A. Bryman, one of the forms of collecting data is when the researcher compares what is known in one country with new research in another country; the key to the comparative design is its ability to allow the distinguishing characteristics of two or more cases to act as a springboard for theoretical reflections about contrasting findings (Bryman, 2008: 59). The comparison of two cases' study will help to establish better the circumstances of a problem analysed and will help to reveal new concepts emerging from the proper confrontation.

5. Research quality criteria:

In the research I am going to apply an alternative criteria, suggested by Guba and Lincoln (Bryman, 2008: 377) where a major reason for their unease about the simple application of reliability and validity standards to qualitative research is that the criteria presuppose that a single absolute account of social reality is feasible. They are critical of the view that there are absolute truths about the social world and that it is the job of the social scientist to reveal deeply how the things really function. Instead, they argue that there can be more than one and possibly several accounts. Therefore, I am going to focus on *trustworthiness* that is compounded of:

a) credibility: ensuring that research is carried out according to the canons of good practice and submitting research findings to the members of the social world who were studied for confirmation that the investigator has correctly understood that social world. Triangulation technique is going to be applied to ensure this by looking for more and various data sources;

b) transferability: according to Geertz (Bryman, 2008: 378), qualitative research findings tend to provide thick description that are details about a culture; this, so called database, can be also transferred to other milieu. In this case, good practice data regarding safe and right household medical waste disposal is going to be transferred in examining cases in Udine and Šilalè;

c) dependability: means adopting an auditing approach, ensuring that complete records are kept of all phases of the research process – problem formulation, selection of research participants, fieldwork notes, interview transcripts, data analysis decisions, and so on – in an accessible manner (Bryman, 2008: 378);

d) confirmability: according to Guba and Lincoln (Bryman, 2008: 379), while recognizing that complete objectivity is impossible in social research, it should be apparent that the researcher has not overtly allowed personal values or theoretical inclinations manifestly to sway the conduct of the research and findings deriving from it. Šilalè is my home-town where household medical waste policy does not function as good as local people would like to, so it is important, having in mind the solidarity as of the one who grew up in Šilalè, not to show things in a better way than they really are.

Another important criteria applied in this research is *authenticity* that is compounded of:

- a) **fairness:** the presence of different viewpoints among members of the research (Bryman, 2008: 379). I am going to give various opinions about household medical waste discard habits comparing Italian and Lithuanian consumers' answers;
- b) **ontological authenticity:** when a researcher helps members to arrive at a better understanding of their social ambient (Bryman, 2008: 379). I will try to make understand the members about household medical waste discard situation being problematic, damaging and its need to be improved;
- c) **educative authenticity:** research should help members to appreciate better the perspectives of other members of their social setting (Bryman, 2008: 379). I will try to get opinions about household medical waste disposal perspectives and improving educative examples of the research area;
- d) **catalytic/tactical authenticity:** researcher should act as an impetus to members to engage in action to change their circumstances (Bryman, 2008: 379). I will try to engage research members to improve their recycling activities encouraging right and environmentally friendly household medical waste disposal (for example, by giving booklets of recommendations related to the problem, other relevant references).

7. Approach to analysis:

Psycho-graphics is going to be used as a tool to measure lifestyles of research participants. This kind of a tool is going to be applied more as a comprehensive than demographical. I am following the description of this method's authors, that say: „using psycho-graphic technique involves systematically linking individual psychological factors to characteristic patterns of overt consumer behavior to determine who the market segment is“ (E. Arnould et al., 2005: 444). The method is about cognitive processes and properties that include various consumer values, attitudes, beliefs and opinions that affect consumer behavior decisions; speaking in terms of consumption and consumer education, psycho-graphic explains the 'why' people behave in one way or another. To execute a psycho-graphic analysis, researcher choose actual segment of participants and, using standardized survey instruments, administer in person data collected, which comes analyzed in a general statistical sense to reveal various consumption typologies (*ibid*, 2005: 445). This analysis method helps marketers to pinpoint consumer characteristics. In this case, the research give possibility to social marketers to gain valuable information about participants household medical waste disposal behavior, the state of precautionary campaigns improving waste management, status of relevant means of information and regarding issue's problematic. Psycho-graphic method suggests to segment international consumers lifestyle and I am going to use one of their model that will help to draw viable consumer targets: **Figure 3.6.:**

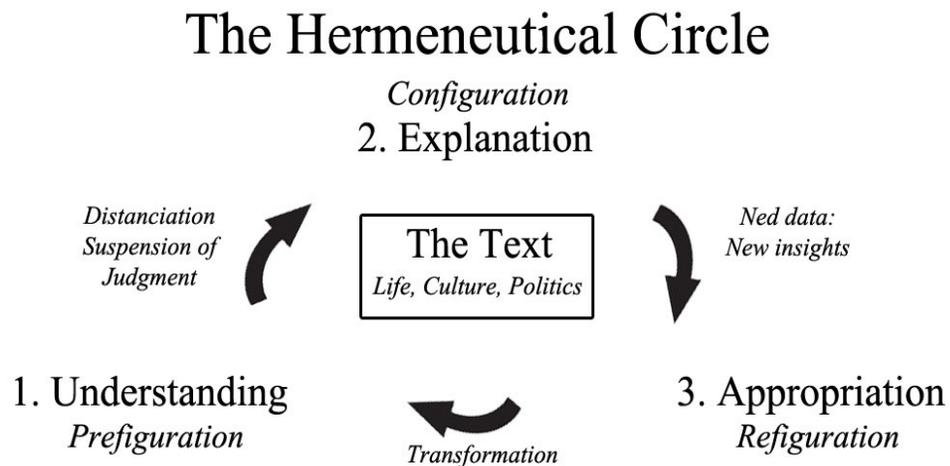
Segment name	Description
Active family values people	Family and community focus Traditional principals Positive outlook
Conservative quiet lifers	Homebodies Conservative views Reflective and nostalgic
Educated liberals	Socially concerned Progressive and egalitarian Enjoy variety and diversity
Accepting mid-lifers	Observe rather than partake Accepting of status quo Content
Success-driven extroverts	Self-oriented Value free enterprise Actively ambitious
Pragmatic strugglers	Family survival focus Politically conservative Determined
Social strivers	Outer directed Feel life is a struggle

Hermeneutics:

In this research I am also using *hermeneutics* method, where the analyst of the text must seek to bring out meanings of a text from the perspective of its author with attention to social and historical context within which the text was produced. Furthermore, this method emphasizes the relation between the text as a document and a social action or other non-documentary phenomena (Bryman, 2008: 533). This method is needed to gain the pre-understanding of the research topic and all data gathered before the actual participants interviewing. A pre-understanding analyses a broader field of household medical waste disposal, focusing not only on consumers' words, but on current and relevant activities related, fresh surveys and special national and international data, additional conversations with pharmacies or waste collection firms, for example.

Hermeneutic approach applied, helps to formulate further possible questions of actual interviews with participants for this social research. The method focuses on the location of interpretation within a specific social and historical context. It starts firstly with an understanding of phenomenon, passes to the configuration of the meanings phase in relation to a pre-understanding gathered, then comes data application in the research phase, considering always new insights and data transformation (see Figure 3.7.):

Figure 3.7.:



Turning the hermeneutical Circle into a Spiral

Therefore, for the analysis of consumer behavior regarding household medical waste disposal I am going to follow the scheme of the examination of the material gathered applying the special scheme of A. Bryman that puts in action hermeneutics method (*“Social research methods”*, 2008: 533):

- *“The social-historical moment, which involves an examination of the producer of the text, its intentional recipient, its referent in the world and the context in which the text is produced, transmitted, and received”*: international and national institutions rules and regulations, surveys and opinions regarding household medical waste current analysis and connection with the present problem analysed;
- *“The formal moment, where the texts must be examined in terms of constituent parts of each text and the writing conventions employed. This phase can involve the use of any of several techniques, such as semiotics or discourse analysis”*: the moment of application of knowledge, gathered from contextual documents and additional conversations explaining deeper the topic;
- *“The interpretation-reinterpretation moment, which involves the interpretation of the results of the first two moments; in other words, they are synthesized”*.

Gathering pre-understanding data:

Because of the fact that research analysis is going to be analysed in a broader social context, this work is going to analyse household medical disposal issue as a social problem, where consumer behavior become influenced by social, institutional and legal factors. The focus is going to be on exploring the relationship between the interviewees discourse and other related reality to the problem. Therefore it is important to gather various types of sources to have a better overall understanding. A. Bryman says: *“documents have to be interrogated and examined in the context of other sources of data”* (Bryman, 2008: 522). I am interested in various primary and secondary data that directly discuss about household medical waste disposal issue in international and national levels, especially when data derives from related institutions that are authorised to solve the current problem of unsafe and dangerous to the environment discard of medical refuse at home.

Sources of data:

- Official documents deriving from Europe Union and its other institutions, national Italian and Lithuanian government and their Ministries: public inquiries, surveys, statistical data, annual reports. Needed to have an overall understanding about the status of the issue

- analysed; they are useful for the research because of the biases revealed;
- Official documents deriving from private sources, like Pharmacies, waste collection firms: to understand the status of medical waste disposal at home of a local area in Udine and Šilalè: public domains, mission statements, press releases, advertisements, public relations material, external correspondence, other documents. These sources are authentic and meaningful, more detailed and concrete, closer to the problem, regarding the analysed issue;
 - Virtual outputs, such as internet resources: Websites and Internet postings to message boards or forums related to the research topic, but having in mind the criteria of authenticity and credibility. Internet helps to find fresh data and keeps on updating the issue.

Triangulation and analysis in action:

Data source triangulation – when the researcher looks at the phenomena where a broad variety of data will be going to be used, gathered from various sources and different places (*“Case study research”*: 98). This method used in the research will give a more holistic picture of a topic, will strengthen research’s validity and will give a more complex, perspective and multi-dimensional view. Therefore, a special and detailed plan of analysis approach in action is going to be followed:

1. gather information about the topic from various sources, getting to know two different cases better and in a broader social, legal and historical context;
2. interviews with Lithuanian and Italian consumers from Šilalè and Udine;
3. exploring the transcripts of two different cases about the same topic;
4. building analytic categories about household medical waste disposal situation in consumers’ every-day life in Šilalè and Udine;
5. further interviews to refine the analysis;
6. analysing the transcripts and looking for possible similar of different trends to emerge, using different diagrams, tables ecc.;
7. giving personal accounts about the cases analysed separately and then compared together, by distinguishing conclusive findings.

IV. Theoretical background:

Before the analysis research questions are theoretically informed. Applying to Silverman's definitions about theory's role in a research, it is going to be in this work as: a framework for critically understanding phenomena and a basis considering how what is unknown might be organized (Silverman, 2005: 9). So, theoretical background in this work is going to be as a tool of empirical analysing and discussing. The main focus is going to be on A. Andrijauskas theoretical considerations about cultural comparative studies (*"History and theory of cultural studies"*, 2003) and on E. Arnould, L. Price and G. Zinkhan theory about consumer behavior and consumption (*"Consumers"*, 2005). Theories are more formal than substantive and more of macro-level than of micro-level. They are not going to be tested, approved or denied, but more applied as an additional part that helps to examine with a hermeneutic approach the analysed issue. It is going to be, as Newman defined, *"a system of interconnected abstractions or ideas that condenses and organizes knowledge about the social world"* (*"Theory and research"*: 40). Theoretical choices were made regarding their relationships, the elements of the research content and do also incorporate methodological decisions.

1. Comparative cross-cultural study:

a) culture: I am going to examine Italian and Lithuanian consumers that represent two different cases about the same issue – household medical waste disposal. Thus, the role of a culture is very important in examining the household medical refuse discard habits in two different European towns. In this work I am going to apply the definition of a culture of A. Andrijauskas: according to him, *"culture is a specific and exceptional product of people activities that create material and spiritual products – called artefacts"* (Andrijauskas, 2003: 24). In addition, he argues, that Culture is not only objects made by human-being, it means also social norms, customs, ideas or symbols that are evident in all spiritual values, people relationship, attitudes to the nature, other cultures ecc. (*ibid*). It is important to emphasize that in this work culture is going to be understood as a behavior, motivated and regulated by social interests, needs, general social norms. That is why I am going to analyse consumer behavior not from a physical point of view, where you only consume and discard a product, but from a socially and culturally complex position. Cultural atmosphere has a huge influence on behavior norms, way of thinking and decision making, but at the same time, culture is capable of creating new cultural forms, learn new behavior (*ibid*, 2003:

25).

Every cultural object is unique and could be examined from a concrete and single point of view, but despite this, every cultural process, fact, element or symbol have certain common characteristics too (*ibid*, 2003: 36). Thus, I am going to apply A. Andrijauskas approach to describe the field of socio-cultural analysis: a) to draw clear components of analysis from which the whole socio-cultural system is made by; b) to define how system components are connected and what are their relations (*ibid*, 2003: 69). The most important thing in this research is to have an analytical approach as the whole system of various variables, but at the same time to have in mind typical issues to the proper culture.

b) comparative aspect: with this research I would like to emphasize the necessity of comparative studies because of globalization issue and cross-cultural collaboration (EU phenomenon, for example), the importance of information in general. A. Andrijauskas talks about the importance of comparative studies because within various global tendencies, cultures communicate more actively, gain new and common values, traditions: in Lithuania solid waste collection issue has started only after joining EU. The main scope of cultural comparative studies is: *“with a comparative aspect examine stable typological various Western and non-Western cultures’ similarities, differences, regional peculiarity, historical modifications, their openness or closeness respect to other cultures”* (*ibid*, 2003: 39). This research is going to focus on micro-comparative study, which means the examination of a single problem with its small cultural elements. In addition, it will be analysed synchronically because I am interested in a present situation of the problem. The research refers to main A. Andrijauskas considerations about comparative study conditions: a) there have to be at least two single and independent elements to compare, that each have a proper history; b) examined elements are not from the same civil process, the same culture or from the same cultural tradition stage; c) the analysis embrace the case of the same typology (*ibid*, 2003: 60).

Because of the fact discussed above, that each culture is a one-to-many phenomenon, this work is going to focus on social, cultural and legal influence to a consumer behavior. So, for a research analysis I will use a complex strategy, where the scope is not to describe the examined issue, but to perceive its functions, differences, similarities, alternation, motives and tendencies. The focus of this work is to examine why the analysed issue functions in one way, and not in another? Thus,

hermeneutic approach is getting more favourable for getting the answers, because the importance of a context and various circumstances emerge as significant issues to the problem analysed too.

According to G. P. Murdock (*"History and theory of cultural studies"*: 113), comparative cultural analysis appeals to propositions that culture:

- a) is conveyed by teaching;
- b) is introduced by education;
- c) is social: it functions in social formations with its sectional habits;
- d) gives satisfaction;
- e) is adaptable: it can change regarding certain needs and conditions;
- f) is integrated: its all elements have a tendency to unite, connect to other systems.

These affirmations will guide the analysis of the research in comparing the household medical waste discard issue's situation. I am going to examine, if Murdock's propositions play a role in a case and how do they display in each analysed context. Murdock's theoretical considerations will help to check homogeneity and synchronisation of the research problem and also to draw authentically certain conclusions of each case. Analysis made in a broader theoretical and practical context will help to draw more reliable conclusions.

c) meta-culture and meta-civilization: talking about civilization, I would like to mention also so called meta-civilization and meta-culture concepts. These terms come to be emphasized in a context of globalization and cross-cultural collaboration tendencies. In this research analysis I am going to apply A. Andrijauskas definition of meta-civilization culture, which is: *"creation of new integral cultural type and pluralistic values system, which is impossible without contexture of opposite, different traditions of civilizations, competition, looking for a mutual understanding"* (Andrijauskas, 2003: 153). European Union is one example of this international collaboration of various countries and each member-state country, in my opinion, represent a unique and specific meta-civilization and meta-culture characteristics, followed by general EU rules, regulations, recommendations or other common influence for all State Members. Thus, Italy and Lithuania, being two separate countries with their specific differences, at the same moment, represent a common community – EU state-membership phenomena that is composed by the experience of various cultures. Established globalization in a social and cultural life puts on first place common

tendencies that unify various countries where meta-civilization main characteristics emerge: a) new liberal space of information, economics and culture; b) fastening transmission of information, culture, goods and other; c) cultural forms of different civilizations confluent and other (*ibid*, 2003: 154).

d) mentality: interviewing people from different countries also gives a picture of how do interviewees think, on what assumptions their answers are based, what is their mentality. This is another term that I am going to apply in this research because it talks about people's way of thinking, individual psychology in a context of collective consciousness. Term mentality is going to be defined as: "*sum of historically formed individual or social group psychological attitudes, mindset, feelings, and world's perception principles, which emerge out of concrete cultural traditions, social and natural atmosphere and later become conditionally stable psychological factor accelerating cultural dynamics*" (*ibid*, 2003: 166). I am going to analyse Italian and Lithuanian consumers' ways of perceiving household medical waste disposal issue, factors that influence their decisions, feelings and practice, regarding the analysed problem. I will also focus on subjective perception influenced by cultural traditions of a society and other related factors that could affect personal attitudes in a context of consumers from two different areas.

C. Levi Strauss claims that no culture is lonely, because it always exists influenced by other cultures ("*History and theory of cultural studies*", 2003: 173). This means that inter-cultural communication has been always existed and is an inseparable part of civilization process and referring to A. Andrijauskas, inter-cultural relations grow mainly through information, economics, religion and science (Andrijauskas, 2003: 173). It is also important to emphasize the ability of socio-cultural elements to learn from inter-cultural communication and absorb certain influences that usually determine further civilization development directions (*ibid*, 2003: 173). This research is going to focus mainly on cross-cultural informational influence about consumer education, the ability to learn from other cultures and examines these phenomena relations to consumer decision making regarding household medical waste disposal. As it was mentioned before, in Lithuania there were no garbage recycling traditions in general, and of course no regulations about medical waste disposal system. Only after becoming a EU state-member, Lithuania started to learn new consumer behavior tactics. So, these theoretical considerations will help to have an overall understanding about the ability to learn from certain experiences of other cultures.

d) innovation's absorption and naturalization: to absorb new element in a socio-cultural context, first of all, civilization has to feel the social need of a change, to understand it and evaluate, because not every change comes established; this depends on maturity level of a culture (*ibid*, 2003: 176). A. Andrijauskas distinguishes three reactions of innovation absorption during inter-cultural collaboration that is going to be used as help to draw research conclusions (*ibid*, 2003: 177):

- **positive or open:** positive values are found in another culture that come introduced in a local one enriching intellect of people; in this phase it is not necessary to disassociate from local traditions, but hermeneutically analyse the significance of a change in relation to other culture ;
- **negative:** a phase when primitively other cultural phenomena come rejected with a fear of unknown elements in a context of local system; logical rejection comes when there is a wish to keep old traditions;
- **cautious:** a form of compromising expectations to dialogue with other cultures, but in a slow and specifying rhythm for long hermeneutic interpretations and empathy about a new phenomena.

To assort household medical refuse could be called an innovation, the difference is that in Italy it came earlier and in Lithuania has been started to function few years ago. According to B. de Juvenal, for the development of a civilization it is more important innovations – new ideas and inventions - than the production because it gives new knowledge about the world, encourages improving, looking for new cognitive areas (*“History and theory of cultural studies”*, 2003: 182). Innovations come influenced by diplomacy, international institutions and their collaboration, informational technologies and ecc. Research analysis is going to examine the level of establishment of EU household medical waste regulations in a daily-life of Italian and Lithuanian consumers. Interviewees will reveal the extent of cross-cultural dialogues and its positive or negative contribution to their cultural and social values. According to Andrijauskas, in a post-modern period where people make new – meta-civilizations, the concept of cross-cultural communication becomes extremely evident and its results are different (Andrijauskas, 2003: 180). The research is going to analyse results of a new household medical waste policy in socio-cultural formations and will examine the dialogue between liberal ideology that embraces all EU countries and real local living cultural conditions and principals.

e) cultural functions:

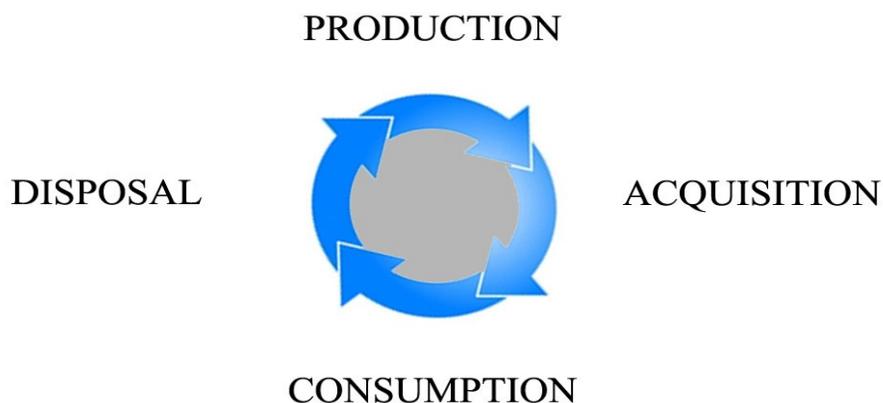
- **Informative:** the function of information in a cultural life during present information revolution plays a significant role, because it guarantees continuity of cultural values, symbols and their spread (*ibid*, 2003: 346), but AT the same time free huge information accessibility brings anti-motivation to be informed and more people are satisfied with information that is fragmentary, without a context (*ibid*, 2003: 348). Research is going to examine the role of information naturalization regarding household medical waste disposal and its relation to real daily-life consumer behavior in separating safely medical refuse. Theoretical considerations about information emphasize its capacity to form new cultural values, types of cultural symbols and present civilizations, so called “*information meta-civilization*” (*ibid*, 2003: 346). Interviewees are expected to reveal the role of information in forming personal values of a citizen, understanding consumer education and consumer behavior, proper decisions making.
- **Normative:** the one, which is not inherited but learned during the socialization and comes from a necessity to keep social balance and order that usually is controlled by traditions, norms, regulations, legislation systems; it is necessary to follow those regulations to make function well a socio-cultural formation (*ibid*, 2003: 350). Research is going to analyse culture of a consumer and its relation to norms and regulations regarding household medical waste disposal issue.
- **Recoverable:** which also plays a significant part in a culture, because technological, urban, modern society causes destructive invasion to the nature and this problem encourages creation of new adaptive, recoverable cultural mechanisms to regenerate physical and spiritual people’s strength (*ibid*, 2003: 351). In other words, recoverable function helps to resolve complicated energetic, ecological, waste, freshwater, environment degradation that brings a negative effect on people and nature. Technological progress helps to resolve lots of problems but at the same time creates new ones. For instance, medicine heals people but medical waste disposed improperly, causes damages to our health and to our surroundings. Therefore, this is like a close circle that has to be managed with responsibility. People are always in a contact with nature, thus, it important to be a responsible consumer, who avoids damaging activities and follows following a recovering, educating consumer behavior rules.

2. Consumer behavior and consumption:

a) circle of consumption and disposal:

Individuals that are going to be questioned in this work are perceived as *consumers*. For understanding their household medical waste disposal habits, a theory of consumer behavior will help to draw some main guidelines for consumer behavior analysis. Authors, mentioned above, Consumer behavior define as “*individuals or groups acquiring, using and disposing of products, services, ideas or experiences*” (E. Arnould et al., 2005: 9). Of course, here are lots of consumer activities, but this research is going to focus mainly on a particular consumer behavior phase – disposing of products: giving, throwing away or recycling products that are defined as household medical waste. Disposal activity is the last phase of Circle of consumption, presented by authors, mentioned above, provides an approach to the study of consumption activities (see Figure 4.1.). It will help to understand the relation between the consumer and the product, because it is based on the fact that: “*the production and acquisition of goods and services, their consumption, and the disposal of used goods are part of a cycle of managerial and socio-economic activities*” (*ibid.*, 2005: 11). Every phase is related to each other, so, if any of them changes, others change too. Disposal moment in a consumer daily life is at the centre of this research. Consumers’ habits about their medical waste refuse discard undoubtedly influence product acquisition, consumption and of course production. So, for a marketer it is essential to reveal possible marketing opportunities and safe household medical waste disposal promoting characteristics.

Figure 4.1. Circle of consumption (*ibid.*, 2005: 11):



In addition, according to the authors (*“Consumers”*, 2005: 13), understanding the circle of consumption and its associated consumption behaviors presents business with entrepreneurial opportunities to manage the movement, use, and disposition of the goods. Moreover, all phases of the circle affect consumers’ beliefs, values and attitudes, so, understanding these phases, managers can implement various marketing strategies and affect the demand of the product. In this marketing opportunities will also be examined, depending on the answers of Italian and Lithuanian consumers. For example, disposition *“refers to those processes by which consumers divest themselves of consumers goods”* (*ibid*, 2005: 14) and usually references about thinking green come up and the background information for developing sustainable marketing practices.

Circle of consumption is a universal model that can be applied in every society consumption context and organize behavioral systems but, having in mind, that the order in which the processes occur and the participants behave vary widely within and across social systems (*ibid*, 2005: 11). This theoretical model is very suitable, because the disposal activity is an inevitable part in consumption process and all types of consumers dispose their waste in one way or another. Thus, it will help us to examine *how* different Lithuanian and Italian consumers dispose their generated medical waste at home, especially, when medical/pharmaceutical leftovers are not reused, but should be discarded safely. In fact, Circle of consumption studies how consumers *“gather information, evaluate it, and make their behavioral decisions”* (*ibid*, 2005: 12), by solving particular consumption problems. Therefore, this work is going to examine, how people resolve/do not resolve their disposal problems of medical waste in two different geographical, economical, social contexts: Italians from Udine and Lithuanians from Šilalė. That means that the research will examine two cases in quite different European countries – Italy and Lithuania – and is going to examine local people behavior as consumers: their interpretations, motivations, experiences, learning and knowledge about proper home medical waste discard. The theory of consumer behavior includes a focus on relationships between what people think, feel and do (*ibid*, 2005: 21). In addition, according to the theory, government regulations are related to consumer behavior too thus, the connection between people lifestyle, habits and local government regulations is also going to be examined. Policy remedies usually do three things: inform consumers, mandate certain consumption choices also constrain or limit consumer choices (*ibid*, 2005: 22). Consumer behavior is going to be analysed also with estimating the role of relative local policy to household medical waste disposal.

b) targeting marketing opportunities:

As it was mentioned before, learning about consumers is the key to successful marketing. Disposition is a growth industry that provides many marketing opportunities in business and customer markets and that waste prevention is profitable (*ibid* 2005: 802). This work is also going to examine marketing situation in managing household medical waste area in both towns analysed. The theory says that product disposition is an important area of policy activity that could encourage sustainable consumption activities and save lots of time and money (*ibid*, 2005: 802). That is why the research is also going to include the role of institutions related and their present or possible influence on household medical waste disposal. Furthermore, to be interested in disposition provides insight into consumption behaviors, because it can furnish the information about product preferences, repeat purchase behavior and brand loyalty (*ibid*, 2005: 805). Marketing concept talks about an attempt to satisfy customer needs, to achieve organizational goals (shareholder, market share, sales levels) and in this case a Sustainable marketing plays the main role – “*marketing plans that should be constructed so that they are compatible with ecosystems and finding ways to reduce costs and serve the long term well-being of society*” (*ibid*, 2005: 827). But to follow sustainable marketing there has to be special data gathered about consumers, their habits, believes ecc. Thus, the issue analysed of the research is very broad, topical and relevant today, when social responsibilities in a consumption era are encouraged very strongly and especially marketers can profit from this kind of knowledge gathered.

Actually, a model of disposition - household medical waste disposition - is going to be perceived as more a physical than emotional disposition process in this work, when medical waste represents a physical or spatial detachment from a possession object. Disposition process starts when “*raw materials enter the manufacture process and are distributed to households X and Y that acquire, use and dispose of them. After usage, some used-up products or their residuals are returned to the environment directly in the form of litter or waste*” (*ibid*, 2005: 809). In addition, a special attention to medical waste should be given, because it is hazardous and damaging waste, so a certain special treatment should be introduced by putting disposal processes under controlled conditions. When special treatment is not employed, serious problems may ensure: research is going to examine the situation of controlled or uncontrolled conditions regarding safe and environmentally friendly medical waste discard.

Segmentation: markets can be segmented on the basis of consumers' **green orientation**. Specifically, green segments are consumers whose acquisition behavior is affected by pro-environmental attitudes and behaviors; a green orientation is a variable one (*ibid*, 2005: 827) and all interviewed participants are going to be classified into concrete segments based on their opinion about being a responsible consumer. I will apply a special segmentation profile (Figure 4.2.) that assumes that there is a relationship between the propensity to reuse, recycle, and consider the environmental impacts of waste disposal and a green psychographic profile (*ibid*, 2005: 827):

Figure 4.2.: Green consumer segments:

Segment	Characteristics
True-blue greens	Actual behavior is consistent with strong concerns about the environment.
Greenback greens	Commitment to the environment mainly manifested by willingness to pay substantially higher prices for green products.
Sprouts	Show middling levels of concern about the environment and equally middling levels of behavioral response.
Grouzers	Consistently rationalize their lack of pro-environmental behavior by offering all kinds of excuses and criticizing the poor performance of others.
Basic browns	Do not believe individuals can make a difference in solving environmental problems, and do not want to make a difference.
Visionary greens	Have embraced the paradigm shift. Green is a way of life for this group, not a shopping style. Passionately committed to environmental change.
Maybe-greens	Express high degree of environmental concern but act on those concerns only irregularly.
Hard-core browns	Indifferent or implacably anti-environmentalist. Tend to have lower incomes and educational levels.
Premium green	Sophisticates, totally committed, in word and deed, to protecting planet Earth. Willing to spend more, do more, vote more.
Red, white and green	Traditionalists, equally committed to the environment, but think more in terms of their own turf and their beloved outdoors.
No-costs ecologists	Sound like dedicated ecologists, but less likely to commit actions and money, unless it's the government's.
Convenient greens	Environmental attitudes strong, but actions are motivated by convenience in lifestyle.
Unconcerneds	The name says it all.

c) demographic and psycho-graphic factors:

at the individual level, the decision maker's psychological characteristics play a role in determining disposition decisions. As with other consumption decisions, differences in motivation, knowledge, affect, experience, and involvement play a role in explaining disposition behaviors (*ibid*, 2005: 830). Green consumers are motivated by a concern for social well-being. They think that their daily behavior can have a positive environmental impact. Several psycho-graphic indicators: perceived consumer effectiveness (belief that what we do as individuals makes a

difference), altruism (a concern for others; welfare) (*ibid*, 2005: 830). The research will examine the relation between participants' willingness to act as a green consumer and safe and proper household medical waste disposal. Moreover, I am applying also to consumer behavior arguing that different pro-environmental disposition behaviors such as reuse, waste reduction, garbage sorting, or recycling might be linked to different values or motives. Hence, to stimulate different pro-environmental disposition behaviors, marketers may have to appeal to different values too.

Achieving environmental goals (eg. sorting household medical waste), depends on the participation of many consumers. But individual consumers cannot be sure that most others will cooperate. Belief that others may not comply reduces compliance levels overall. Consumer theory gives as an example a classic prisoner's dilemma to this kind of situation: "*everyone benefits if all comply but if one person doesn't comply, his or her immediate benefits may outweigh the general good*" (*ibid*, 2005: 832). Thus, mistrust of others may reduce the likelihood of green behavior. Marketing communications must address issues such as reactance and concerns about prisoner's dilemma if firms hope to increase the responsiveness of green marketing campaigns. Research is going to ask participants if their decisions are affected by other people disposal habits. Consumer behavior theory also talks about that consumers often sidestep the market in their disposition behaviors and from a marketing perspective managing disposition can be viewed as a backward-channel-of-distribution problem and that disposition should be thought of as a recurring social and psychological process too (*ibid*, 2005: 833). That is why I am going to analyse also a question of a role of pharmacies that provide most part of medicine and are not too much willing to take unused medicine back, like in Lithuania for example. I am going to put a question if taking back inappropriate household medicine waste in pharmacies could become a profitable marketing move for pharmacies in this broad and competitive pharmacy business world. Therefore, the relation between pharmacies being socially responsible and rising profits by keeping the proper clients that know they can bring their household medicine waste to them will be considered in the analysis too.

V. Analysis:

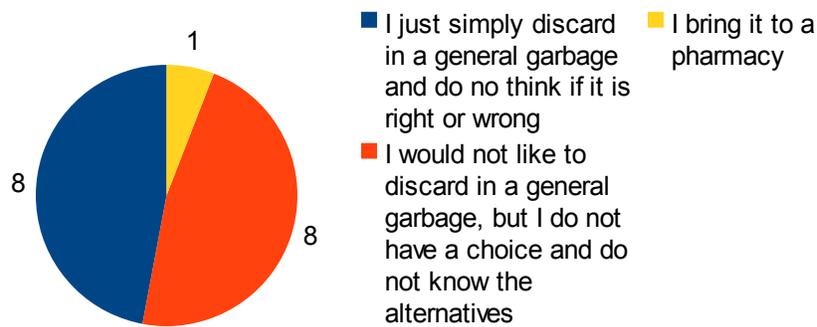
For consumer behavior understanding semi-structured interviews were made with 14 people in Udine (Italy) in Italian language and with 17 people in Šilalė (Lithuania) in Lithuanian language. Among Italian participants, 4 women and 10 men, their age differed from 24 till 71; meanwhile among Lithuanian participants there were 8 women and 9 men, their age differed from 18 till 32 years old. All participants had a University education of different levels and professions, except one, who was still going to high-school. Interview questions were mainly the same to all participants, who were asked to express their personal opinion and considerations (the summary of semi-structured interview questions given you can find in Annex 3).

First of all, I asked participants about their way to discard household medical waste and what kind of refuse do they usually throw away. An overall impression was that most of Lithuanian consumers interviewed remained in a fluster because the only and main way was just simply to throw away in a general garbage bin. One of the participants even asked me: *“I do not know what to tell you, because there is nothing to tell – you just throw away as a normal waste and do not think about it”*. After being questioned, a certain curiosity followed by doubting, like one said: *“so, I guess, I am doing something wrong...If you ask me about this”*. Certain people, did not even understand the issue being problematic: *“I do not believe that medical waste, which I produce would make any harm to the environment, therefore I do not distinguish them”*, *“of course I throw it to the general waste bin, because I throw there everything”*. Nevertheless, there were people who, being environmental conscious, used to discard medicine in a general garbage, but only because they did not know other alternatives and felt limited: *“I throw it in a general garbage, because there is no opportunity to behave differently”*, *“to the general waste bin, because there is no other possible way”*. Only one person among interviewees informed about bringing old-pharmaceuticals to the pharmacy.

Meanwhile, Italians were very concrete and clear – ALL of them told me that they are used to collect separately all household medical waste and throw in a special garbage bin for pharmaceuticals that can be found in various places of Udine, like the entrance of pharmacies, city center streets or even outside their home together with other special garbage bins. Even more, most of them talked about separating pharmaceutical package parts, like paper boxes, glass bottles, plastic packing and throwing them with other special garbage before the disposal of a proper

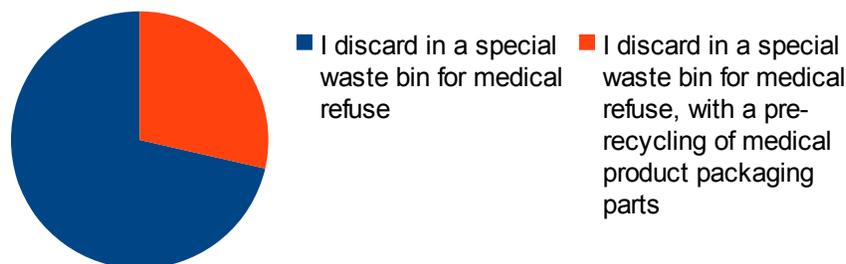
pharmaceutical: “packages of paper are collected to put in the normal differentiated waste for paper”, “I do storage packaging of the drugs to put it later to a special waste bins, like paper sheets of use instructions I put to other paper waste. It is because of waste differentiation for a proper waste disposal”. Most of Italian participants justified their behavior because of conviction that the proper special waste disposal is extremely needed and they do respect that. To have an impression of general characteristics about participants behavior from both countries, see Figures 5.1 and 5.2. that illustrate general answers about the way of disposing special medical waste at home:

Figure 5.1.:



Ways of household medical waste disposal of participants from Šilalė

Figure 5.2.:



Ways of household medical waste disposal of participants from Udine

It was evident, that almost all Lithuanian participants were not informed about proper medical waste disposal and felt limited, unfortunately, others were not even thinking about their daily habits might be different. Italians showed their great possibility to discard in a proper way, so, the

main difference between Udine and Šilalė is that for an Italian consumer it is just enough to show an effort to recycle and to use special medical waste bins, because you can find a solution if you want to. For a Lithuanian consumer it not enough to care about the environment, because or there is no relative information provided, or there are no special bins for medical waste placed in public, or even in pharmacies no one talks about this problem. Lots of Lithuanian consumers were complaining that have never heard about other way to discard than the one of general waste at home, and are completely in a fluster about the issue. What are the reasons and consequences I am going to analyze further.

Secondly, I was informed by Italian and Lithuanian pharmacies that to avoid improper pharmaceuticals disposal, almost in every medication package there are special safe disposal instructions. Talking about those instructions with participants, various answers came out. Most of Lithuanians did not even know about the existence of such instructions and usually were not even used to look for the information about special medication's disposal. Their responses were like: *“I have never heard about their existence”*, one of them was sure about the absence of these instructions *“in Lithuania instructions about proper medications disposal are not available”* (the example of Lithuanian medication disposal instruction you can find in Annex 4). Several felt curious about it after the interview with me and wanted to check this info among their home medications: *“I do not remember to have read such instructions, thought about it only during this interview”*, *“I have never read such things, never heard about them till now”*. Only one person was aware about disposal instructions: *“Yes, I do read medication instructions, but not in every is indicated the proper its disposal. If I do remember correctly, in case of pharmaceutical date expiry, you can bring it to the pharmacy”*. Inevitably, with low participation in safe and proper pharmaceuticals disposal, Lithuanian participants are not also very aware about special instructions too. See Figures 5.3 about Lithuanian participants and 5.4. about Italian ones: **Figure 5.3.:**

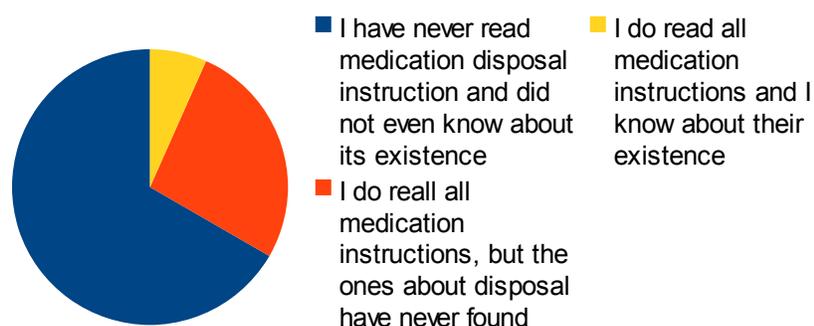
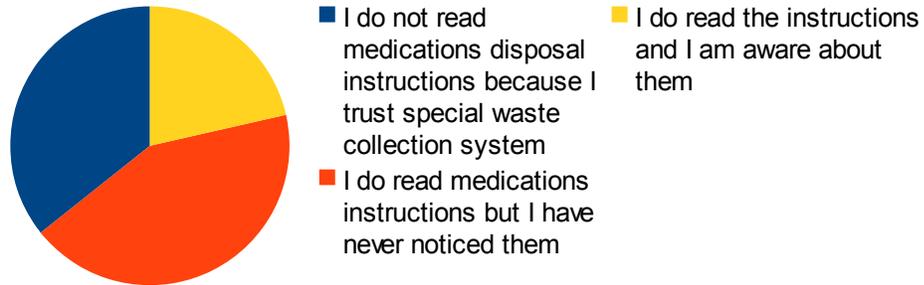
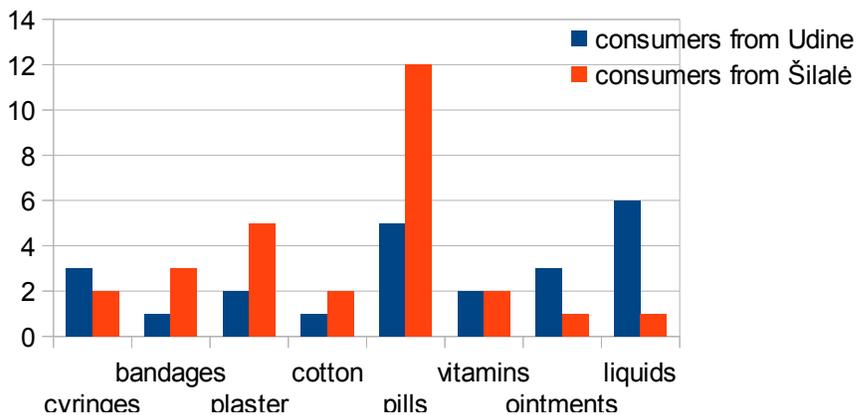


Figure 5.4.:



Italians from Udine also usually do not read medication disposal instructions but because by discarding medical waste in special bins they do feel secure about their disposal and trust waste collection firms that handle them after collecting from waste collectors: *“Knowing that there are special bins I have never raised the issue”*, *“I do never read disposal instructions. External paper packaging put into paper waste and the proper medication to the related waste collector”*. Italian pharmacies informed, that most medications have disposal instructions and other relative information about its elimination. To see what kind of pharmaceuticals were nominated as usually being discarded by both, consumers from Udine and the ones from Šilalè, see Figure 5.5. :

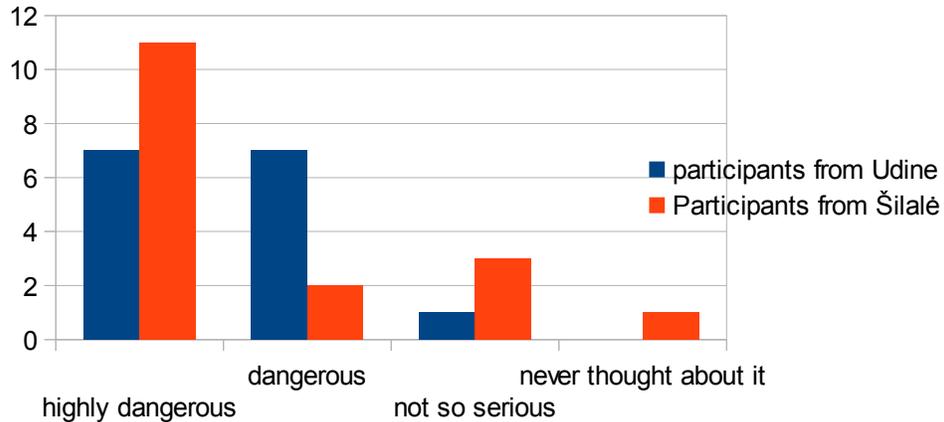
Figure 5.5. :



The common issue among all participants answers is that, fortunately, pharmaceutical disposal is quite a rare daily-life behavior and most of the participants claimed using very little medications and even trying to avoid using them or buying only when it is really needed: *“in my family we try to buy medications for a concrete reason on that time and usually finish them before the expiry date”*. Therefore, even if there is improper medical waste disposal, at least it is a rare issue.

Generally, participants throw away this kind of waste twice a year during general house cleaning. To discard medical waste in an environmentally safe way there should be an overall understanding about pharmaceuticals impact on the environment, therefore on people, animals, plants, food ecc. A special consumer education should be gained that guides every responsible person to consume with an environmental consciousness. I discussed with participants about their awareness of pharmaceuticals' impact to the environment, in general, I was curious, what they were thinking about unsafe-pharmaceuticals disposal being problematic and dangerous. Almost all Lithuanian participants thought unsafe-pharmaceuticals disposal is a dangerous and threatening problem of a society and could explain quite specifically why: *“it is a problem...people in Lithuania are not familiar with specific waste recycling information, so what can we say about special medical waste disposal issue...I guess, that this kind of waste is a risky type of waste and should be handled with accuracy to avoid potential danger to everyone”*. Some of them were really informative: *“I think in Lithuania unsafe household medical waste problem exists and is very high...it threatens to all: people, animals and environment. Probably in Lithuania 80% of waste is going to landfill. Thus, medical waste occurs in conjunction with the municipal waste landfill (almost directly into the soil water), or in cases of illegal waste disposal in the forest or anywhere else in nature. In this way, harmful substances reach the groundwater through them into the plants and up the chain of culture in animals or humans”*. Only one person told that had never thought about it before and several other participants thought it was not so serious as being a dangerous and threatening problem. In general, interviewees from Šilalė are aware that unsafe-pharmaceuticals disposal might be dangerous and the negative impact nominated by them was mostly felt by people: various injuries, diseases with immune microbes provoked by chemicals, food poisoning; nature: soil, ground water contamination ecc, but one of them was sure that *“negative impact on the environment could be maybe just an esthetic change”*. Also certain preoccupations were expressed: *“the negative consequences of this issue, unfortunately might be also unknown for us....”*, *“there is a great lack of information about the problem, I did not really know anything about it...”*. General tendency of the answers was the fact that the awareness of unsafe-pharmaceuticals disposal is present among Lithuanian participants, but not enough profound current data and risks were considered. Of course they themselves felt the lack of such information and especially, talking about the problem in public through mass-media in Lithuania ecc. See Figure 5.6.

Figure 5.6.:

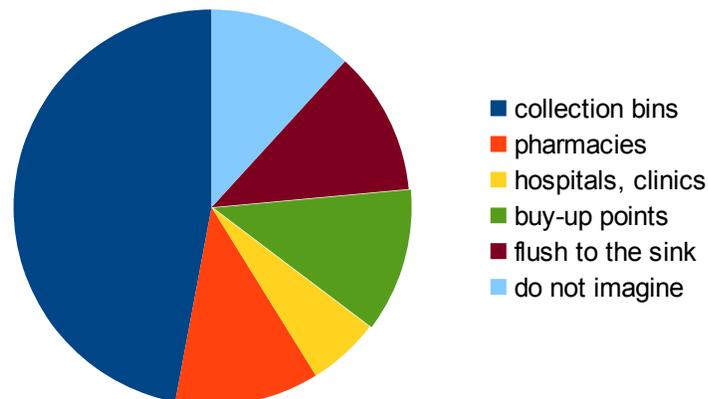


Italian participants answers were very similar to Lithuanians but more people could explain in detail the negative impact of unsafe household medical waste disposal: *“To me to throw expired drugs in an unsafe manner in the long run can be dangerous to public health, causes an increase in pollution-derived chemical products and increases the resistance of viruses and bacterial agents to the use of antibiotics and other medicines. The effects, however, remain difficult to predict and diluted over time, making it difficult to perceive the danger posed by inappropriate disposal”*, or *“Definitely do not throw them away safely is dangerous because sooner or later they are again ingested by humans through meat or vegetables”* and *“It is definitely a problem: the improper disposal of hazardous wastes and toxic damage the nature, the environment and has harmful consequences on people's health. The effect is especially felt by pregnant women, children and the elderly”*. Several told that negative impact depends on a medication, nominated also other special waste to be treated with accuracy, like used engine oil, batteries; one was sure that this is not such a serious problem. In general Italian participants were informed about the negative impact of pharmaceuticals on the environment because their municipality used to prepare various booklets and little informative books about the recycling in general and the need to separate special waste, as well as the way to to that, which was organized by the municipality too. Italians were happy to have the possibility to use special waste collectors and confirmed using them due to thinking about safer and cleaner environment, preoccupations about people's health and unknown chemical products reactions with other waste products.

Because of the reason that almost all Lithuanian participants were not separating household medical waste for a proper disposal and did not really know how to behave differently, I asked them to imagine a proper and safe way of the disposal system that should work in their territory.

Therefore, the answers about the imaginary solutions to collect special household medical waste were (see Figure 5.7.):

Figure 5.7.:

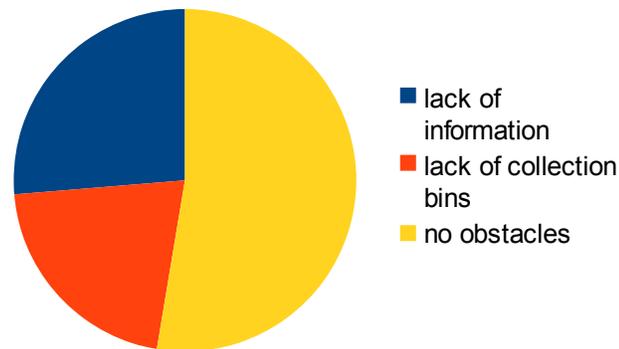


Participants first of all imagined special collection bins near their home (like already exist in Udine), because disposal process in their opinion should not cause additional problems by looking special places somewhere in the town. Therefore, the commodity of a service should go first. Another imagined solution was the presence of social campaigns, special informational publicity about the issue analyzed, because people could know about the need and ways to discard in a proper way home medication's waste: *“Only in this study, I learned that the drugs that have already expired must be delivered to the pharmacies. I think I am an active user, so very surprised that people are not informed about the arrangements for the disposal of waste. I visit pharmacies often, but I was not informed and did not see any alert about a specific medical waste disposal procedures”*, *“Of course people should be a convenient medical waste collection and information system”*. Most participants talked about special collection bins near home as a best solution to collect medical waste, several of them thought it would be better to bring directly back to the sellers and producers: *“For not endanger the environment or people with medical waste must this kind of waste must be sorted and given to special points of pharmaceutical company, which produces or sells medications”*, *“Manufacturers, importers and distributors should be obliged to inform customers about their medical waste discharge arrangements to have special containers for the collection, to run collected waste accounting, which should be transferred to waste managing companies”*. A couple of people told me that the best way to dispose medication waste is to flush down in a sink, several could hardly imagine, because have never thought about it. There were suggestions to use special buy-up points, where you bring medical waste and get some

special remuneration. Only two of participants were aware about medical waste take-back systems in pharmacies in Lithuania, that officially are occupied with the issue.

Talking about the obstacles to discard in a safe household medical waste, Lithuanian participants also emphasized different answers (see Figure 5.8.):

Figure 5.8.:



For the big half of respondents there are no obstacles to discard in a safe way, because they have never tried to do that and could not even imagine what it would be. Other half mentioned the big problem about being constrained to throw everything in a general garbage bin, because: a) there is not enough information and agitation about what to do with that kind of waste: *“...lack of information. It is not clear where to throw medical waste. If the pharmacy is obliged to accept medical waste, there also should be more about information and its initiatives”*, *“a major obstacle - lack of information. Also, I think (though I hope that I am wrong) that if I would bring medical waste to the pharmacy, I would be welcomed strangely, I mean, a pharmacist would think I am strange”*; b) there are no collection bins that are specially adapted for pharmaceutical waste from households.

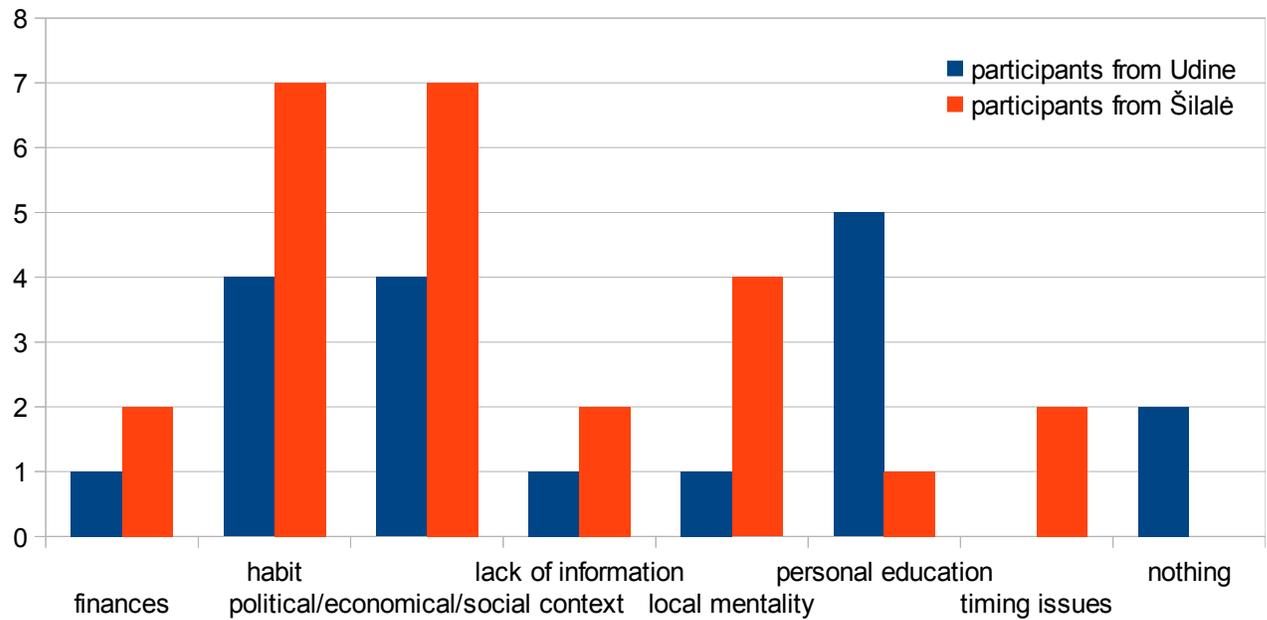
Italians asked about their imagination of safe and proper household medical waste disposal were talking first of all about special collection bins that were already used by them for a long time and this seemed the safe and the only way. But their discussions haven't finished there, because they were talking about further disposal cycle procedures, already after taking the waste from special collection bins: *“I think that expired drugs should be collected separately, divided into their essential parts and treated to render them harmless from the standpoint of environmental impact, with a technological effort by the scientific research and companies that deal with special waste*

disposal” or “We just throw the pharmaceutical waste in special containers. I hope that companies that are involved in the disposal are be able to treat them in a way that is as environmentally friendly as much as possible, and invest in ongoing research to continue improvement of their processes”, “My personal behavior is certainly safe, later separately collected waste can be processed by qualified personnel in an appropriate and environmentally friendly way”. As you can see, for Italians from Udine special collectors for medical waste are a normal and doubtless issue that already functions. Starting with personal safe discard moment, discussions continues to further medical waste treatment, already after taking them from the collection bins. As it was mentioned above, the responsibility does not end only with a simple disposal at home of a pharmaceutical. According to Italian participants, rules should be respected and the system will function. There was also another interesting opinion: “I think it would be better to collect them and differentiate them according to the packaging materials and chemicals. Maybe apply a chemical process (albeit expensive) to recover most of the components. To apply something like this, it should be done carefully, with an extensive collection...the best thing would be to returned to pharmacies publicly, forcing consumers through a bond return (punishable if not done) on the ticket”.

Talking about safe discard obstacles for a consumer in Udine, participants were sure not having them: *“I consider myself to be a lucky person because I live in a city that has produced a good plan for the collection of waste. I personally am very careful to respect of the environment around me”, “It 's all arranged. There are factors that influence negatively”.* Several tried to imagine the possible obstacles to discard medical waste in a safe way and on of them told me: *“unavailability of collection points, the lack of information on hazardous waste and their disposal, an underestimation of the consequences of improper behavior”.* These considerations show main problems in Lithuania, where a special education and instruction regarding the issue should be created, because only having rules, apparently, it is not enough.

Talking about the factors influencing household decisions in disposing medical waste, participants gave me various responses that can be also compared in Figure 5.9.:

Figure 5.9.:



Lithuanian participants put an accent about their household decisions influential factors on the lack of good examples, relative information available, people environmental consciousness. Most of them told me that daily habit strongly influences their decisions, one participants expressed a broader opinion: *“Habit, parental influence are critical, as well as finance and time dimension (if I would have to bring waste for long distances, it would very inconvenient, so, I would a more convenient and faster way, but not necessarily the one that is environmentally friendly)...from an early age there should be educated the awareness of environmentally friendly behaviour; safe waste disposal, informed about the potential hazards and with the political encouragement, local government's contribution - I think everyone would dispose the waste safely”*. Meanwhile an Italian participant says: *“Even as a child I remember seeing at home certain types of special waste being separated (batteries and medicines) to dispose in a differentiated way. I think I remember that at school, even in elementary there were already spread relative informations. While growing up I came closer to environmental issues and my perspective has crystallized over time”*. Therefore, it is important to have a special education even at the beginning of school, because the mentality, habits and good examples, start with education and learning. What is missing in Šilalė, already starts is functioning in Udine. Of course, certain problematic issues regarding the topic arise also among Italian respondents too: *“The containers of drugs are few and not well worn marked. Once again, I believe in the separate door to door waste management system, or with heavy fines for those who fall in contravention. Mental context, and especially culture are critical”*.

That is why I wanted to talk with participants also about their motivations to behave as green consumers to improve the situation.

Lithuanian participants named several main “motivations” that would encourage them to discard. So, most popular issue would be relative information available, education, especially about negative impact of pharmaceuticals in the environment: *“giving knowledge about the risks of unsafe disposal and information dissemination about safe methods to discard”*, *“more safe disposal examples”*, *“raising environmental consciousness”*. Several suggested certain remuneration encouragement: *“the symbolic bonus’ – added on a medical waste when collected to a special point and can get 25ct (as a beer bottle) or a small packet of vitamins (and other ordinary people still could go through the apartments and collect medical waste). But here, would be more utopian view...and anyway, would motivate enough education and access to information (about the safe disposal of medical waste , I have never thought about it before)”*. Some people were against remuneration system: *“Motivation is an internal affair of each individual. In my opinion the best motivation – the need to be friendly to the environment, to ourselves, to others”*. Other significant motivation to discard medical waste safely would be conditions to do that: *“interest of municipalities/state to do act, if I would see that there are special collection bins, I am sure I would act respectively”*. To sum up, the main need to the motivation is having more informative means that educate, guide and motivate, so I have distinguished several types of information and conditions missing, asked by participants of Šilalė:

- pharmaceuticals impact on the environmental, gaining awareness of the issues' problematic
- green consuming and green orientation knowledge
- guidelines and examples of safe disposal
- special waste collection bins system introduced that would be convenient and informative
- being informed about further procedures after taking the waste from collection bins

Italian participants felt already mostly motivated because there have been special bins to collect medical waste and their consumer education was quite convincing: *“I am already motivated. For the people that still are not, I can advice to follow social campaigns about respect to the environment...it would important to explain even to little kids the importance about saving the nature...we have to be educated also in this area too”*, *“I am already doing it – using separate*

waste collectors”, “I am already trying to behave well as much as I can ”. Even if participants were happy about the system introduced, there are always issues to be improved, thus, motivational factors mostly named by Italians from Udine:

- more relative information through mass-media
- awareness about the negative pharmaceuticals impact on the environment
- ensuring that the disposal system is safe and treated well in further extermination procedures
- social and education campaigns, especially starting from an early age
- special approbation with certain sanctions for not treating waste in a safe way
- more waste collection bins
- remunerations for bringing back pharmaceutical waste
- no need of any motivation – everything works well

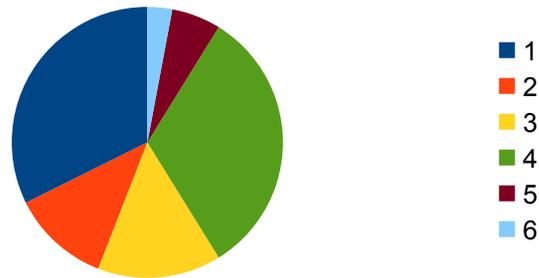
Because of the fact, that the main problem of unsafe-pharmaceuticals discard was the lack of information, I wanted to talk more about this issue, how much important it was and were they interested in it all. In addition we talked about the role of possible responsible institutions in their country to resolve and improve unsafe pharmaceuticals disposal problem.

No one among Lithuanian participants could know special official rules and regulations regarding household medical waste treatment and disposal. The Lithuania Ministry of Health has a special recommendation booklet available, but, as it seems from the interviews, no one has ever heard about it or something similar: “I am not aware about special rules and regulations, but I am trying not to harm the environment and people around me...the more information I get, the better is...I know very little about this problem..”, “Even if I do have a diploma of Environment security, I am not informed about safe medical waste disposal ways. I would like to know more, because I do understand the danger of disposal activities in lay-stalls”. Lithuanians responses can be distinguished generally in such groups (see Figure 6.0.):

- 1- I am not aware of any rules and regulations about safe household medical waste disposal
- 2- I have never search to such an information
- 3- I am interested now; before this interview, I have never thought about it
- 4- I feel the need to know more
- 5- If I want to know more about the issue, I need to look it for myself

- 6- I am not interested in information about safe household medical waste disposal

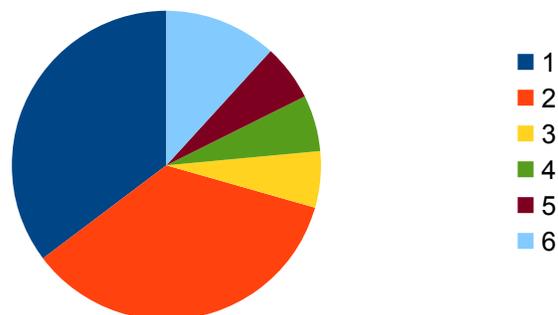
Figure 6.0.:



Italian participants mostly felt having enough information about the topic and were trustful about collecting firms work. They told me that there are lots of information points to deepening the issue, starting from various websites of the region, like the one of the municipality and of the firm that occupies the collection of region's waste in general, there are special “green” associations that very often spreads information in local journals, magazines ecc.: *“I am doing what I have to do and others do what they have to do, I do not think I do not know something more about the issue”, “I think, it is an interesting topic, but do not really understand what do you mean by saying “special rules”, because I just use special collection bins and feel sufficiently informed”, “I know the topic because of my work”*. Generally. Italian answers could be distinguished into such groups (see Figure 6.1.):

- 1- I know enough rules and regulations regarding safe household medical waste disposal
- 2- I know a lot, but of course, I would like to know more
- 3- I am not interested on the process of the issue, but on the results
- 4- Other types of garbage issues are more important, like plastic, glass and paper
- 5- I do not believe in waste collection system
- 6- More informational booklets would be advisable

Figure 6.1.:

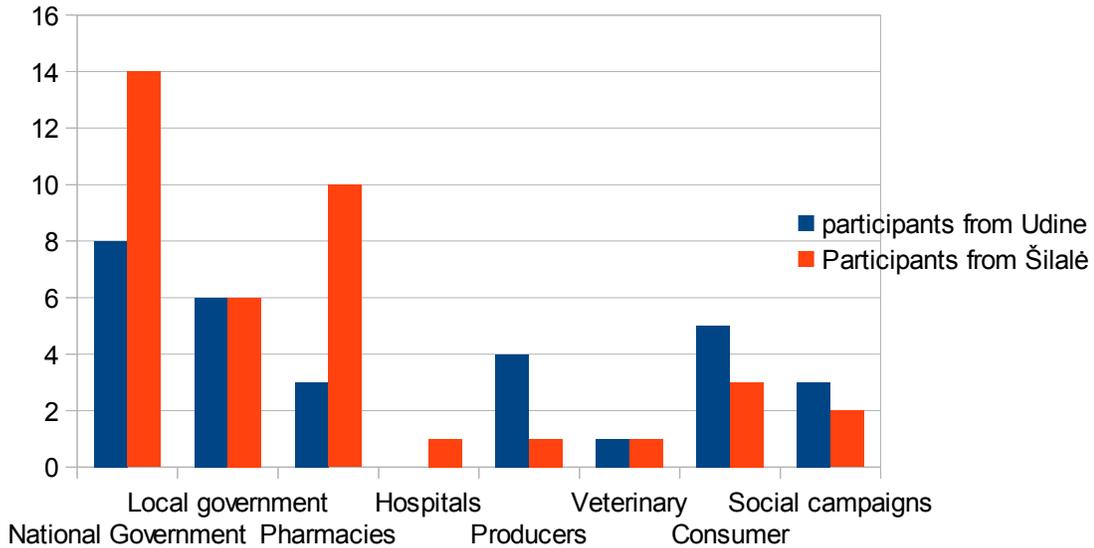


Before I was talking about factors that do not let and/or would let to follow safe household medical waste process. Behind these factors there lots of public and private institutions that act/should act in the area together with consumers. I was interested in participants opinions about who should be responsible for the problems that occur in household medications refuse safe discard? All Lithuanian participants were convinced that their countries public and private institutions were very passive and do not practically nothing to improve special waste system in general, and then, of course special medical waste at home issue. They totally agree all together that this is an area, where no one does nothing regarding the thesis topic, or at least they did not feel the initiatives. One participant was really precise: *“So far, all referred to the role are passive enough. Responsible are both private and public sectors. I think this problem is absolutely necessary of vertical adjustment. Legislative bodies must ensure that legislation involves both the private and public sector bodies to allow for proper medical waste disposal procedures, mandatory information desks, special drugstores containers, special records have to carried out and interim review and controlling. Regulatory specification should be available at both national and municipal levels”*. Anyway, most of the respondents talked about the absence of publications about the problem and spreading it among all consumers, as well as the lack of controlling system too. According to them, complex solutions should be found with possible alternatives: *“Ministry of Environment and the Ministry of Health...and they should organized disposal system...through public or private company”*; *“This must be a complex solution, but firstly starting with the responsibility of the population, then with the pharmaceutical one, and garbage collection firms in collaborations with public institutions... if not – sanctions applicative. In particular, pharmaceutical and transportation companies refuse to comply with its requirements (to publicize where and how to dispose in waste containers, which are missing). I think all the ingredients mentioned have a very passive role”*, *“Pharmacies should be in parallel collaboration with National authorities”*, *“Responsible for the safe disposal of pharmaceuticals operational system should be everyone, conscious consumer, caring private sector, as well as responsible public institutions”*. Answers about who should take main responsibility to improve the special waste management, can be generally distinguished in such categories (see Figure 6.2.):

- National government – ministries:
- Local government – municipality
- Pharmacies:
- Hospitals

- Pharmaceutical producers
- Veterinary institutions
- Consumer

Figure 6.2.:



Meanwhile Italian respondents were quite happy with their municipality and its decisions regarding households special waste: *“the system for the moment is the best”*. Most of them emphasized firstly the need of consumer education and special habits formation, especially with children, families, about the issue that would be the main point from where to start to: *“I think the drug companies and pharmacies in collaboration with public authorities should deal with this topic at the forefront of providing more education and environmental consciousness about it”*, or another opinion: *“in my town the problem is adequately addressed, the same can not be said for the rest of Italy. Unfortunately it's a cultural thing: people must be responsible, must understand the importance of correct individual behavior, the disastrous consequences of individual misconduct. If a consumer behaves well it benefits the entire community”*. Another interesting opinion: *“what matters is that there is a control system that avoids the creation of loopholes in of the system, which contains the cost to the public and ensures adequate results. People's health should not be the subject of speculation and business”*. The answers can be generally distinguished into groups regarding the responsibilities taken in improving special waste management:

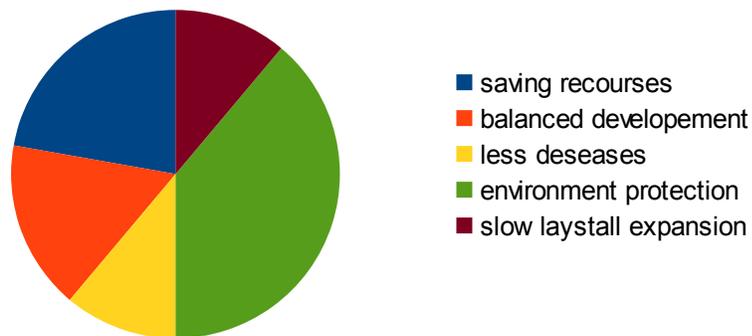
- National government

- Local government
- Social publicity campaigns
- Pharmacies
- Consumer

Italian participants were much more specific and detailed. Also like Lithuanians were talking about a complex decisions of all, public and private sectors, but respondents from Udine were more informed and talked not only about the present situation, that was quite good in their area, but also about future perspectives and further improving practices. Lithuanians were aware that public and private sector were not very present in decision making regarding the topic, but little part of them could really imagine in detail, how they should participate in special waste management.

In general all Lithuanian participants think that special waste recycling system is very necessary and they are really positive to have one in they region and country. Someone suggested it to be an obligatory, but according to respondents, *“in Lithuania there is a lack of systematics”*, *“the system is not elaborated and not fitted”*. The reasons named by participants why the system should work (see Figure 6.3.):

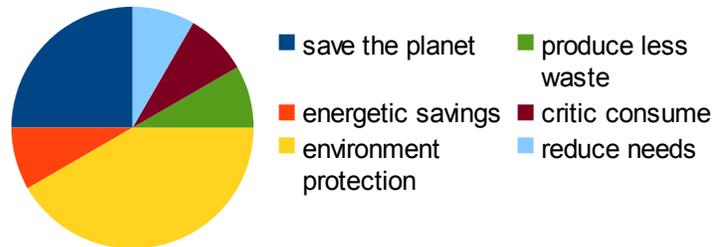
Figure 6.3.:



Italian respondents were more philosophical and metaphorical: *“In short terms, costs of the finished product are increased, but considering the environment a resource becomes acceptable when compared to the cost of recovery of natural environment and the importance of reducing the pollution produced by man...the world's population is growing, and each individual produces waste disposal and recycling must be optimized for the protection of the planet...As mentioned above, unfortunately the money affects our moral decisions, then brings into play a discourse of balance between cost and efficiency of resources difficult to manage and you can see and enjoy the*

benefits only in the long run, and not as increase, but as a safeguard of wealth and welfare of the planet...if the earth was a gold bar we would all have the interest to clean it and preserve it". Another opinion: *"I find it absurd to have to waste a valuable resource like water to clean waste and then recycle"*. General reasons by Italian respondents to recycle and separate special waste (see Figure 6.4.):

Figure 6.4.:



Therefore, the following actors can play a role in various ways: a) the industry by better communication of the environmental risk of drugs via environmental classification systems or by introducing environmental criteria in the early steps of product development; b) the public domain by promoting and ensuring safe waste disposal with incineration; c) the health care system, doctors as well as patients by responding to communication efforts on the environmental risk of pharmaceuticals and making better use of drug take-back schemes.

During the interviews, participants were asked to choose from two tables one term that would define his/her closely as a consumer. This is needed to draw special consumer-oriented marketing segments for further possible social marketing campaigns. Coloured spaces emphasize most popular choice among participants from both towns, Udine and Šilalê. The results you can see in Figures 6.5 and 6.6.

Figure 6.5.: Green consumer segments after the interviews:

Segment	Characteristics	Udi ne	Šila lé
True-blue greens	Actual behavior is consistent with strong concerns about the environment.		
Greenback greens	Commitment to the environment mainly manifested by willingness to pay substantially higher prices for green products.		
Sprouts	Show middling levels of concern about the environment and equally middling levels of behavioral response.	1	3
Grouzers	Consistently rationalize their lack of pro-environmental behavior by offering all kinds of excuses and criticizing the poor performance of others.		
Basic browns	Do not believe individuals can make a difference in solving environmental problems, and do not want to make a difference.		1
Visionary greens	Have embraced the paradigm shift. Green is a way of life for this group, not a shopping style. Passionately committed to environmental change.	9	3
Maybe-greens	Express high degree of environmental concern but act on those concerns only irregularly.	1	6
Hard-core browns	Indifferent or implacably anti-environmentalist. Tend to have lower incomes and educational levels.		
Premium green	Sophisticates, totally committed, in word and deed, to protecting planet Earth. Willing to spend more, do more, vote more.	1	1
Red, white and green	Traditionalists, equally committed to the environment, but think more in terms of their own turf and their beloved outdoors.		
No-costs ecologists	Sound like dedicated ecologists, but less likely to commit actions and money, unless it's the government's.		
Convenient greens	Environmental attitudes strong, but actions are motivated by convenience in lifestyle.	1	2
Unconcerneds	The name says it all.	1	1

Figure 6.6.: Consumer targets after the analysis:

Segment name	Description	Udine	Šilalé
Active family values people	Family and community focus Traditional principals Positive outlook	3	6
Conservative quiet lifers	Homebodies Conservative views Reflective and nostalgic	1	2
Educated liberals	Socially concerned Progressive and egalitarian Enjoy variety and diversity	4	5
Accepting mid-lifers	Observe rather than partake Accepting of status quo Content	2	1
Success-driven extroverts	Self-oriented Value free enterprise Actively ambitious	3	
Pragmatic strugglers	Family survival focus		2

	Politically conservative Determined		
Social strivers	Outer directed Feel life is a struggle	1	1

VI. Conclusions:

1. Consumer ability:

Most of Lithuanian consumers interviewed remained in a fluster because of the question about safe household medical waste disposal because the only and main way was just simply to throw away in a general garbage bin. People who considered themselves as environmental conscious, used to discard medicine in a general garbage, but only because they did not know other alternatives and felt limited about it. Meanwhile, Italians were very concrete and clear – ALL of them told me that they are used to collect separately all household medical waste and throw in a special garbage bin for pharmaceuticals that can be found in various places of Udine, like the entrance of pharmacies, city center streets or even outside their home together with other special garbage bins. Even more, most of them talked about separating pharmaceutical package parts, like paper boxes, glass bottles, plastic packing and throwing them with other special garbage before the disposal of a proper pharmaceutical. Inevitably, with low participation in safe and proper pharmaceuticals disposal, Lithuanian participants were not also very aware about special medication instructions that are usually indicated in an informational paper inside the pharmaceutical package. The common issue among all participants answers was that, fortunately, pharmaceutical disposal was quite a rare daily-life behavior and most of the participants claimed using very little medications and even trying to avoid using them or buying only when it is really needed. The biggest number of pharmaceuticals discarded – old pills.

It was evident, that almost all Lithuanian participants were not informed about proper medical waste disposal and felt limited, unfortunately, certain were not even thinking about their daily habits might be different. Italians showed their great possibility to discard in a proper way, so, the main difference between Udine and Šilalė is that for an Italian consumer it is just enough to show an effort to recycle and to use special medical waste bins, because you can find a solution if you want to. For a Lithuanian consumer it not enough to care about the environment, because or there is no relative information provided, or there are no special bins for medical waste placed in public, or even in pharmacies no one talks about this problem. Lots of Lithuanian consumers were

complaining that had never heard about other way to discard than the one of general waste at home, and are completely disorientated about the issue. General tendency of the answers was the fact that the awareness of unsafe-pharmaceuticals disposal is present among Lithuanian participants, but not enough profound current data and risks were considered. Of course they themselves felt the lack of such information and especially, talking about the problem in public through mass-media in Lithuania and other. In general Italian participants were informed about the negative impact of pharmaceuticals on the environment because their municipality used to prepare various booklets and little informative books about the recycling in general and the need to separate special waste, as well as the way to to that, which was organized by the municipality too. Italians were happy to have the possibility to use special waste collectors and confirmed using them due to thinking about safer and cleaner environment, preoccupations about people's health and unknown chemical products reactions with other waste products.

No one among Lithuanian participants could know special official rules and regulations regarding household medical waste treatment and disposal. The Lithuania Ministry of Health has a special recommendation booklet available, but, as it seems from the interviews, no one has ever heard about it or something similar, but after the interviews, most participants were really willing to be informed more and have a proper instructional knowledge about the issue.

2. Consumer motivation

Lithuanian participants first of all imagined special collection bins near their home (like already exist in Udine), because disposal process in their opinion should not cause additional problems by looking special places somewhere in the town. Therefore, the commodity of a service should go first. Another imagined solution was the presence of social campaigns, special informational publicity about the issue analyzed, because people could know about the need and ways to discard in a proper way home medication's waste. To sum up, the main need to the motivation is having more informative means that educate, guide and motivate regarding the thematics of:

- pharmaceuticals impact on the environmental, gaining awareness of the issues' problematic
- green consuming and green orientation knowledge
- guidelines and examples of safe disposal
- special waste collection bins system introduced that would be convenient and informative
- being informed about further procedures after taking the waste from collection bins

Even if participants from Udine were happy about the special waste collection system introduced, there are always issues to be improved, thus, motivational factors to separate special waste mostly named by Italians from Udine:

- more relative information through mass-media
- awareness about the negative pharmaceuticals impact on the environment
- ensuring that the disposal system is safe and treated well in further extermination procedures
- social and education campaigns, especially starting from an early age
- special approbation with certain sanctions for not treating waste in a safe way
- more waste collection bins
- remunerations for bringing back pharmaceutical waste
- no need of any motivation – everything works well

In general all Lithuanian participants think that special waste recycling system is very necessary and they are really positive to have one in they region and country. Meanwhile Italian respondents were quite happy with their municipality and its decisions regarding households special waste. Most of them emphasized firstly the need of consumer education and special habits formation, especially with children, families, about the issue that would be the main point from where to start to.

3. Consumer opportunity

For the big half of respondents there are no obstacles to discard in a safe way, because they have never tried to do that and could not even imagine what it would be. Other half mentioned the big problem about being constrained to throw everything in a general garbage bin, because: a) there is not enough information and agitation about what to do with that kind of waste; b) there are no collection bins that are specially adapted for pharmaceutical waste from households. Italians asked about their imagination of safe and proper household medical waste disposal were talking first of all about special collection bins that were already used by them for a long time and this seemed the safe and the only way. But their discussions haven't finished there, because they were talking about further disposal cycle procedures, already after taking the waste from special collection bins. Talking about safe discard obstacles for a consumer in Udine, participants were sure not having them. These considerations show main problems in Lithuania, where a special education and instruction regarding the issue should be created, because only having rules, apparently, it is not

enough. Evidently, problems in the implementation of take-back schemes are largely related to lack of awareness, leading to erroneous consumer behaviour. There is thus a need to improve the labelling of pharmaceuticals and consumer information, so as to assure the return of unused pharmaceuticals to pharmacies. Therefore, the following actors can play a role in various ways: a) the industry by better communication of the environmental risk of drugs via environmental classification systems or by introducing environmental criteria in the early steps of product development; b) the public domain by promoting and ensuring safe waste disposal; c) the health care system, doctors as well as patients by responding to communication efforts on the environmental risk of pharmaceuticals and making better use of drug take-back schemes.

4. State of special waste management

State of special waste management is really problematic in a Lithuanian case. Consumers are provided with relevant information, environmental consciousness remains only as an idea, but not as a normal daily-life action. This should be backed up by a wide-ranging, professionally planned and designed campaign to educate the population about the appropriate disposal of unused medicines. Positive arguments should be used first to motivate people to handle them correctly, as it was done first in Udine's case, but consumers should also be warned about incorrect disposal in the sewage system. A wide variety of communication routes are necessary for a campaign of this kind, because it must be matched to different target groups and their media. In addition, drug manufacturers should print information about the correct disposal of medicines on both their packaging and instructions and talk about it, inform patients about special waste disposal availabilities. In Lithuania most of the participants could even remember the existence of such instructions about the safe disposal. After having analyzed Lithuanian participants answers it was clear that still lots in waste management area has to be done, considering: political measures: to alter general conditions for environmental objectives; communication measures: to create an awareness of the problem amongst professional area and then of course to create mass-audience education campaigns about the disposal of medicines; measures to support and facilitate changes in consumer behaviour: uniform standards for disposal, along with the development of a basic system for pharmacies to take back unused drugs, as officially pharmacies in Lithuania already should handle it. The participation in a recycling programme for household waste, apparently depends on social norms, but in the introductory phase, after a while typically depend on personal norms only, that was evident in case in Udine. Therefore, social marketers should focus on promoting:

1. EDUCATING CAMPAIGNS AMONG PRIVATE AND PUBLIC AREA,
2. CONVENIENT DRUG TAKE-BACK SHMEMES,
3. CLEAR MEDICINE DISPOSAL LABELLING.

VII. Epilogue and future perspectives:

The example of conflicting information about how one should dispose of old medicines makes it clear that there is an immediate need for an action here, and corresponding PR campaigns could be interested to tell consumers that drugs should never be disposed unsafely. These PR activities in Lithuania are really quite invisible, but the demand is high, according to the research. This work has tried to examine consumers to understand their behavior and to provide main data base for creating social educating campaigns about safe household medical disposal. If unused pharmaceuticals will be merely considered as “normal household waste”, some consumers will have little understanding of why pharmaceuticals, notably syrups, suspensions or drops, should not be discharged through sink or toilet. An unambiguous policy on pharmaceutical waste disposal is required to clarify consumer uncertainties. In Udine it seems to have a successful beginning, when local people considered special medical waste a risky one. Meanwhile in Lithuania, still a proper consumer education needs to grow, but having in mind successful examples on other countries, following special rules and regulations, Lithuanian situation will improve, starting with single consumer's environmental education.

Nevertheless, it will be difficult to control drug disposal in every consumer's home, thus, the main future possible solution would be greener sustainable pharmaceuticals. “Green pharmacy” means creating active ingredients that deliver the desired therapeutic effect but have less environmental impact. It has already started but is not yet very common. The priority remains to ensure safe disposal methods for expired and unused pharmaceuticals as this is currently the easiest way to reduce their environmental burden. Therefore, social marketers can start giving their professional merit too.

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