

## Louvain School of Management

# How to motivate the consumers to bring back their end-of-use clothes in-store?

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## Introduction

On August 1<sup>st</sup>, 2018 we have celebrated 'Earth Overshoot Day'. This theoretical day corresponds to the moment of the year where humans have consumed more resource than the Earth can generate in one year. This date is not fixed and occurs earlier every year. As a comparison, this date was on October 2<sup>nd</sup> in 1996 and on December 20<sup>th</sup> in 1971 ("Past Earth overshoot days," 2018). This is to say that the world population over-consumes the natural resources at an increasing speed. In parallel to this matter of over-consumption, we can discuss the general pollution and carbon footprint caused by our industries. This thesis focuses on the fashion industry, known as the second most polluting industry after the petrol industry.

Changing our way of buying can seem difficult but there are other methods like recycling or reusing that are more accessible. In the fashion industry, more and more apparel collection composed of recycled fibers are proposed. This responds to the raising environmental concerns from the market. Over the last five years, we have also assisted to the development of incentivized take-back programs from apparel brands. The latter propose to their customers to bring back old clothes in-store, generally in exchange for a voucher. Different sustainable disposal methods already exist. We can list the donation to charity, giving to a friend, reselling, ... The take-back programs add another opportunity to divert post-consumer garments from the landfills.

The first goal of this study is to encourage consumers to make use of more sustainable options for their end-of-use clothes. Between 75% and 85% of post-consumer clothes go "to landfill or incineration at the end of their first use cycle" (GreenBlue, 2017, p. 16). We talk about 'end-of-use' instead of 'end-of-life' to stress the environmental impact. Garments do not finish their life as soon as they have been disposed. Their materials and fibers still exist and must be treated according to the principle of circular economy to maximize their lifecycle.

Next to the environmental concerns, this initiative creates marketing and economic opportunities for the apparel brands. First, the take-back programs can be perceived as an ecological service. The brands can make use of it in a marketing and brand equity management context. This allows to leverage secondary brand associations (Swaen, 2017). The brand can be linked with an environment-friendly image. At the same time, it increases the brand awareness.

Another marketing occasion results from the financial incentives linked with the programs. Most of the take-back programs motivate and reward the participants with a voucher. On one

side, it leads consumers who would not have participated otherwise to get involved (Shaw & Maynard, 2008). On the other side, the voucher conducts to sales and consumers loyalty (Kant Hvass, 2014).

In this study, we will try to identify the main factors that influence the consumers to bring their end-of-use garments back in-store and thereby, favorize this disposal method of clothes. In other words, we will attempt to determine the elements that could favor the disposal of post-consumer clothes in-shop. This thesis will focus on the side of consumers. All the factors that we will present are elements that the brands can influence through their communication, their marketing or their logistics. Therefore, we will not talk about psychological or social factors in this work. Instead, we will try to determine the key factors that would make the consumers to choose the take-back program over other disposal solutions.

Very few articles are talking about the take-back programs. Therefore, it has been difficult for us to find existing data and information on the subject. However, other disposal methods have already been analyzed. We got inspired by this literature to discover the factors that seem the most relevant to our case. Four elements have been taken on: the convenience of the method, the environmental and the social (charity) aspects of the disposal. The fourth element regards the financial incentive. Our work is among the first one on the matter, we wanted to focus on the big picture of this initiative.

To get insight into the motivations of the consumers to bring back their end-of-use clothes in-store, we have made use of an online survey. The analysis of the responses allows us to respond to our research question: "What are the factors that influence consumers to bring their end-of-use clothes back to the shop?". We have divided this question into four sub-questions inspecting the four elements listed above.

- 1) Is the convenience of the take-back program the factor that has the biggest impact on the non-participation?
- 2) Has the environmental concern the main influence on the intention to participate to the take-back program?
- 3) Does the social concern negatively impact the intention to participate in a take-back program?
- 4) Does the financial incentive moderate the negative impact of convenience and social concern?

A quantitative analysis of our population will help us to answer to these questions and to propose ways of improvements for the programs.

As presented, the subject has various stakes and motivations: the general interest and the brands ones. They will be further discussed in part I of this thesis. In fact, the first part will talk about the incentives from the clothing brands to propose a take-back program. We have shortly present them, but we think it is worth going a bit more in depth. This will help us to see the big picture and understand the stakes. The second part regards our article review and details the several factors that we have found in the literature. This part starts with a literature review about the other disposal methods. It let us picture the other solutions offered to the consumers to get rid of their clothes. The rest of the second part is divided in four chapters approaching the four factors, discussed earlier. The third part presents the results of our quantitative analysis and is followed by the discussion. Finally, we will conclude this work with a summary and we will make the link with the current literature, our recommendation and the limitation of this thesis.

**Part I - The incentives for the apparel brands:  
Description of the context and motivation of the study**

Before going into more details, we think it is important to start by defining the stakes for the involved brands. We believe that we should bear in mind the big picture to better understand the stakes and the proposed incentives. Therefore, this first chapter will focus on the clothing brands. This will provide us more insight into the reasons to propose a take-back scheme. The subject has economic motivations for the brands, as well as environmental and ethical ones. However, the main goals could be to enhance the brand equity (i.e. the brand image and the brand awareness) and to drive sales. Hereafter, we will discuss these concerns.

First, we will give a view on the environmental concerns to highlight the challenge of closing the loop. Second, we will approach the corporate social responsibility that has been shaped by the environmental issues. We will see that the reaction from the consumers has developed marketing opportunities thanks to the creation of a new market segment. Then, a third chapter will be dedicated to the economic aspect of the post-consumer clothes collection. Finally, we will approach the legal component that needs to be born in mind. The responsibility of post-consumers apparel being a subject that could occupy the legislators in a near future.

### **1. Environmental concerns**

The fashion industry is one of the most controversial industries regarding its social and environmental aspects. It would be difficult to give an exhaustive view on these impacts and moreover, it is not the aim of this thesis. Notwithstanding, some critical elements should be highlighted to underline the importance of textile recycling. Thus, we will shortly review some figures about the environmental impact of the fashion industry. Then, we will discuss the fibers of which our clothes are composed – organic and synthetic – and talk about the technical problems faced by the recycling.

#### **1.1. The fashion industry**

Fashion is ranked at the second position of the most polluting industry, after the petrol industry. According to a report from the Global Fashion Agenda & The Boston Consulting Group (2017), clothing is responsible for 92 million tons of solid waste per year globally and for about 1.715 billion tons of CO<sub>2</sub> emission. This stands for a bit more than 4% of the global solid waste (Global Fashion Agenda & The Boston Consulting Group, 2017) and almost a twentieth of the global emission of 2015 (Ritchie & Roser, 2018) The figures are expected to go upward mainly due to the phenomenon of ‘Fast Fashion’ (Birtwistle & Moore, 2007; The Business of Fashion and

McKinsey & Company, 2016) and the growth of population (Global Fashion Agenda & The Boston Consulting Group, 2017). ‘Fast Fashion’ is characterized by cheap products that imitate designers’ clothes. The low prices increase the likelihood of impulse buys (Pookulangara & Shephard, 2013). However, the inferior quality of those items leads to few usages before being disposed (Birtwistle & Moore, 2007). This is intensified due to the fast-paced trends which make the apparel turned quickly outmoded. Fletcher affirms that a consumer keeps a garment on average for 3 years and 5 months in its wardrobe (as cited in Ekström & Salomonson, 2014). This information stresses the importance of the post-consumer apparel collection and the sustainable treatment.

## 1.2. The cotton

### 1.2.1. The conventional cotton

If we split the composition of the disposed clothes, we must first discuss the main constituent of our outfits, cotton. Cotton is a large component of our clothes and accounts for 38% of the textile in our wardrobe (Hansen & Schaltegger, 2016). It also represents 22% of the fiber production in 2016 (Textile Exchange, 2017). Due to the different treatments received all along the supply chain, cotton has been nicknamed “dirty crops”. It is the most pesticide-intensive crop that man grows. According to the last figures, “10–16 % of worldwide pesticides and 25 % of insecticides” are used on cotton fields while they represent less than 5% of the current agriculture (Hansen & Schaltegger, 2016, p. 42). The pollution pre-consumer does not stop at that stage, as the conversion of cotton in textile is also chemical-demanding.

### 1.2.2. The organic cotton

Organic cotton are “grown within a rotation system that builds soil fertility, protects biodiversity, and are produced without the use of any synthetic chemicals or genetic modification (GMOs)” (Textile Exchange, 2017, p. 24). This could be a solution to decrease the impact on the environment. The label GOTS<sup>1</sup> is an example of international label settled in the European legislation. It determines – among other things – which substance and which level can be used in the agriculture of organic cotton (Global Organic Textile Standard, 2017).

### 1.2.3. The recycled cotton

Although organic cotton would be more nature-friendly than its traditional counterpart, the recycling and reusing of existing cotton fabrics can achieve a higher rate of sustainability. However, the textile to textile recycling of cotton asks to be blended with virgin one. This is

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<sup>1</sup> Global Organic Textile Standard.

currently the only solution to achieve a decent quality of yarn. Therefore, the recycling of cotton garments with the aim of producing new yarn (called ‘textile-to-textile recycling’) still needs virgin cotton in its spinning process.

### 1.3. The synthetic fibers

Next to cotton, other materials are criticized on an environmental point of view. Artificial fibers such as nylon, polyester and acrylic (to quote only some of them) are accused for their negative global impact. A part of the related pollution comes at the production stage. Thereby, the production of nylon releases nitrous oxide<sup>1</sup> (Thiemens & Trogler, 1991). This gas, known as the ‘laughing gas’ is the main responsible factor for ozone-depletion (Ravishankara, Daniel, & Portmann, 2009).

Polyester and nylon are created out of petrochemical substances. The main issue comes from the non-biodegradability of both materials. Thus, once again, recycling become a key concern for the garments composed out of those fibers. If we focus on the polyester fiber, the main issue of its recycling is the difficulty to eliminate the inputs, such as the dyeing components. The recycling of the cotton faces the same limit. The garments could be melted down and reprocessed into a new yarn, but the recycled outputs will keep the color of the inputs. This barrier does not prevent an increase of recycled polyester usage by 58% in 2016 even if it represents only 7% of the total polyester fiber production (Textile Exchange, 2017). According to the non-profit organization Textile Exchange<sup>2</sup>, polyester represented 64% of the global fiber production in 2016 (Textile Exchange, 2017).

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<sup>1</sup> N<sub>2</sub>O.

<sup>2</sup> Textile Exchange is a global non-profit organization which tries to bring sustainable practices in the supply chain of textile.

#### 1.4. Barriers in the recycling process

‘Recycling’ becomes a buzzword and is used to define diverse parts of the same reality. When we will talk about ‘recycling’ of textile, we will use the definition of Maldini et al. (2017) who defines it as “[...] the process of breaking down textiles into raw materials which are then used to make new products” (Maldini et al., 2017, p. 65). However, the literature sometimes associates this term with the consumers or the citizens. We may read sentences such as “the consumers recycle their products”. In this sense, it defines the process of sorting the materials to favorize its recycling by a specialized stakeholder at a later stage.

The discussed list of fibers is non-exhaustive. There are other natural fibers (Wool, silk, etc.) and other synthetic ones (Viscose, elastane, polyamide, etc.) that could have been mentioned. However, the intent was to highlight the potential environmental improvement offered by the reuse and recycling of textile. By diverting apparel and other textiles from the landfill, we could decrease the production of virgin fiber and the environmental burden associated.

We must stress an important barrier in the recycling of clothes. We have already highlighted some concerns regarding the recycling of cotton and polyester. These points are valid in the case of garments made of 100% of those fibers (e.g. 100% cotton or 100% polyester). However, most of apparels are composed of blended materials to combine properties of the different fibers. For instance, it is common to find a sweater made of cotton blended with polyester and/or other combination of fibers. The matter in the recycling process is this combination of fibers. Once blended together, fibers like cotton and polyester cannot be mechanically separated. This is an important problem in the textile-to-textile recycling process and reduces the opportunities to manage end-of-use clothes. Therefore, if reusing is not possible, we undertake a downcycling process. Nevertheless, we assist to the development of technologies that allow to separate the blended fibers (American Chemical Society, 2017; GreenBlue, 2017; Peterson, 2015). We call this process ‘chemical recycling’. In contrast with the ‘mechanical recycling’ (which consists in the usage of machines to proceed the recycling actions), the ‘chemical recycling’ use a chemical process (Peterson, 2015). The technology is still at its early stage. The main challenge will be to turn recycled fibers into raw material at a similar cost and quality than virgin fibers (Peterson, 2015).

## 2. Corporate Social Responsibility and Marketing

### 2.1. The reaction from the customers

We just discussed the alarming environmental situation caused by the fashion industry. In reaction, growing concerns from consumers have developed a market for brands offering sustainable solutions or alternatives (Cone Inc., 2017; James & Montgomery, 2017; The Business of Fashion and McKinsey & Company, 2017). Sustainable clothing brands are defined as those “[...] which incorporates one or more aspects of social and environmental sustainability [...]” (Goworek et al., 2012, p. 938).

After The Business of Fashion and McKinsey & Company (2017), 66% of the millennials<sup>1</sup> are willing to pay more for sustainable clothes. Koszewska (2016) also highlights this acceptance to pay a premium to acquire sustainable apparel brands. If we believe his results, the recognition of these brands even favors the purchase (Koszewska, 2016). Kozar and Hiller Connell (2013) are more toned and state that knowledge about environmental effects leads to higher “environmentally responsible apparel-purchasing behavior” (Kozar & Hiller Connell, 2013, p. 322). However, we can affirm a positive attitude of consumers toward those brands (Kang, Liu, & Kim, 2013) and even an intention to buy their product. In fact, 89% of consumers affirm that they are willing to switch brands to one that is supporting a cause (Cone Inc., 2017). The conditions for the transfer are that the brands must be equal in quality and price.

### 2.2. The reaction from the clothing brands

The previous statements and rates could maintain the assertion of The Business of Fashion and McKinsey & Company (2017) that we will assist to a race for sustainable credibility, as a trend for the industry in 2018. The pressure from various stakeholders pushed brands to establish and promote corporate social responsibility policies.

Michael Hopkins defines:

“CSR<sup>2</sup> is concerned with treating the stakeholders of the firm ethically or in a responsible manner. ‘Ethically or responsible’ means treating stakeholders in a manner deemed acceptable in civilized societies. Social includes economic and environmental responsibility. Stakeholders exist both within a firm and outside. The wider aim of social responsibility is to create higher and higher standards of living, while preserving the profitability of the corporation, for people both within and outside the corporation.” (Hopkins, 2007, p. 15)

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<sup>1</sup> People born between 1982-2005 (Howe & Strauss, 2007).

<sup>2</sup> Corporate Social Responsibility.

Although CSR would be a necessity to comply with the stakeholders' recommendation, it would not drive above average profit. It would just become a help to achieve this average (Blomgren, 2011). Consequently, companies have started to adapt their communication and their marketing strategies. We have also assisted to the development of new business models (e.g. the leasing of clothes). We notice a multiplication of brands offering apparel qualified as sustainable for ethical and/or environmental reasons.

One of the latest trends for a clothing brand to improve its environmental impact, is to 'go circular'. By proposing apparel made of recycling fibers for instance. Another initiative is the 'take-back programs' of post-consumer clothes that we will introduce here-under.

### **2.2.1. Closing the loop**

We have already attended a growing number of brands trying to 'close the loop' by collecting end-of-use clothes from consumers, for some years (Ellen MacArthur Foundation, 2017). The collection is embodied in the principle of circular economy, where the end-of-use products can be reintroduced at the appropriate levels in the production or the distribution phase. We define the circular economy as "a regenerative system in which resource input and waste, emission, and energy leakage are minimised by slowing, closing, and narrowing material and energy loops. [...] through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling" (Geissdoerfer, Savaget, Bocken, & Hultink, 2017, p. 759). Therefore, the collecting brands choose the suitable treatment for the collected clothes: repairing, reusing, remanufacturing or recycling (Andersen, 2007; Ellen MacArthur Foundation, 2017). We can also add 'downcycling' to the list. Downcycling happens when "discarded textiles are turned into new products [...] with a lower value and industrial application" (Maldini et al., 2017, p. 65). Therefore, we talk about 'downcycling' when the post-consumer textile is used for insulation for instance. This stands for most of the 'recycled' textiles in Europe (Watson et al., 2015).

### 2.3. Brand equity

According to Keller (2013), “customer-based brand equity occurs when the consumer has a high level of awareness and familiarity with the brand and holds some strong, favorable, and unique brand association in memory” (Keller, 2013, p. 73). The brand equity can be divided in two components: the brand image and the brand awareness. The brand awareness concerns the recall and the recognition of the brand and its products or services. The brand image regards all the “strong, favorable and unique associations” that the consumer does with the brand (Keller, 2013, p. 77). Choi, Guo, Ho, and Li (2015) appraise the used garment collection as a powerful marketing tool to establish a green brand image and brand awareness. Therefore, a take-back program could be used to bring sustainability and environmental concern into a brand equity. For instance, thanks to their take-back scheme called ‘Garment Collection program’, H&M tries to bring more sustainable associations and lexicon to its brand image. This method of ‘secondary brand association’ is often used to change a brand image in order to readjust to the market (Swaen, 2017). The reaction of the consumers is not always positive as a radical change in image could be unaccepted by the consumers.

Kim and Hall (2015) report that the way a brand highlights its sustainable part, will impact the consumers “motivation to accept the green-branding strategy” (Kim & Hall, 2015, p. 40). Therefore, it can be more difficult for some players to be perceived as relevant due to their brand image. The association with fast fashion or other related associations can diminish the impact of green-branding on environment-savvy consumers (Kim & Hall, 2015). However, Choi et al. (2015) believe that the collection of post-consumer garments can have a positive impact on the brand equity of fast fashion retailers. Karl-Johan Persson – current CEO of H&M – assures that the collection program conducted by his brand is “the sustainability initiative with the highest awareness” amongst their customers (Global Fashion Agenda & The Boston Consulting Group, 2017, p. 61). Therefore, he implies that the program is a great success and increases the perceived sustainability from the customers. His words are in accordance with Ekström and Salomonson (2014). The latter admit that a brand which takes the initiative to collect the end-of-use garments to put them back in the cycle can increase its level of sustainability in consumers mind (Ekström & Salomonson, 2014).

### **3. Economic aspects**

#### **3.1. The value of the collected textile**

The next point that must be approached is the financial value of the post-consumer clothes. We have discussed previously about the marketing opportunity offered by the take-back of post-consumers apparel. Then, a new question concerns the value of the collected garments. We could wonder if this initiative can be profitable for the brands.

The valuation depends mainly on the brand of the garments, the quality of the fabric and the condition of the clothes. Therefore, we should first distinguish the clothes that still possess an inner value - on the second-hand market for instance - from the ones destined for recycling or for downcycling. In fact, a report of 2013 states that reusing textile preserve 9.6% of its original value while recycling only retains 0.4% (Green Alliance, 2013). According to the surveys from Maldini et al. (2017), collectors state they can sell post-consumer textile between 0.05-0.07€ per kilogram for the lowest quality to €0.50-€4.50 for the re-wearables.

We earlier saw the technical challenges faced by the recycling of cotton, polyester and other fibers. Ekström and Salomonson (2014) advocate for a development of the textile collection to turn these raw materials into an affordable alternative. For now, the quantity gathered is too small and the sorting too labor intensive to be profitable (Ekström & Salomonson, 2014). Therefore, most of the collected post-consumer goods that cannot be reused are downcycled (e.g. into insulation) or are incinerated to produce energy.

To make it more efficient and gain economies of scale, the implication of consumers is required. Raising the volume of the collected textile and clothes would drive incentives to develop appropriate technology and infrastructures to close the loop in this industry.

#### **3.2. The use of collected garments**

Currently, there are two main options for the clothing brands that propose a take-back scheme. Either they work in partnership with a collector, either they develop a second-hand market for their clothes.

##### **3.2.1. Partnership**

Most of the brands which propose a take-back program, work in partnership with a collector. The collectors can be a charity organization or a private collection company. For instance, the H&M group (i.e. H&M, COS, Cheep Monday, etc.) works with the German textile collector and handler I:Collect (I:CO) (Watson et al., 2015). A small donation of 0.02€ per kilo collected

is made to charities. I:CO oversees the sorting of the apparel in the most sustainable manner. They try to enhance the textile-to-textile recycling part (H&M Group, 2018).

Inditex, another major group in the fashion industry (Zara, Massimo Dutti, etc.), directly gives the collected garments to non-profit organizations such as Red Cross, Caritas, Oxfam, etc. The latter are in charge of the sorting (reuse, recycle, etc.) but conserve all the profit achieved (Inditex group, n.d.).

### **3.2.2. Second hand of their own branded products**

We have also assisted to clothing brands developing the second-hand market of their own products (Kant Hvass, 2014). This is the result of take-back programs, driven by the increasing demand for second-hand. An effort is brought to the design of long-lasting clothes and to the extent of their uses. Filippa K, Eileen Fisher, Boomerang, Patagonia (Kant Hvass, 2014), MUD Jeans are among the brands that play along.

### **3.3. Consumer loyalty**

Companies that implement a take-back scheme for post-consumer apparel increase in all likelihood their consumer loyalty (Kant Hvass, 2014) and engagement (Global Fashion Agenda & The Boston Consulting Group, 2018). The perceived loyalty driven could be the result of incentives surrounding the program and not due to the take-back initiative itself. We should bear in mind that the take-back programs are generally incentivized by a financial reward for the involved customers. Therefore, finding the most efficient factors to involve the customers in a collecting program seems a key element to reduce the costs. This financial reward takes generally the form of a voucher that leads to the purchase of new products from the brands. This aspect will be discussed more in depth in the section dedicated to the financial incentives (Part II - Section "5.4. Financial incentives").

## 4. Laws and policies

### 4.1. Extended producer responsibility and Product stewardship

A last element which could motivate brands to start a take-back scheme, is the legislation. This initiative of collection is embodied in the principle of Extended Producer Responsibility (EPR) or Product Stewardship (PS) (Kant Hvass, 2014; Wagner, 2013). Extended producer responsibility is defined as “an environmental policy approach in which a producer’s responsibility for a product is extended to the post-consumer stage of a product’s life cycle” (OECD, 2000, p. 9) The difference with a product stewardship policy is that – in the latter - the responsibility is shared between different stakeholders involved in the life-cycle of the product (Wagner, 2013). In both cases, the idea was to shift the “financial burden of waste management from municipalities and taxpayers to firms and consumers” (Lifset, Atasu, & Tojo, 2013, p. 162). Then all the infrastructure and recycling systems came along. We must notify that take-back programs from the clothing brands are currently a voluntary initiative while some EPR/PS can be mandatory and driven by an external authority (group, industry, state, etc.)

### 4.2. European legislation

Embodied in the concerns discussed above, new policies are suggested by authorities such as the European Commission. As mentioned by Guide, Harrison, and Van Wassenhove (2003), the legislation could bring incentives to undertake a “take back” system if the expected profits from this system are not sufficient. First, we should mention the new proposition of EU Waste Directive (2017) which calls the Member States to “set up mandatory separate collection of textiles by 2020” (European Commission, 2017a). Even if this text has not the force of law, it defines the priorities of the European policymakers regarding the waste issues. In parallel, the European Commission wants to stimulate the European transition toward more circular economy. The action plan brings the reusing and the recycling of products to the forefront (European Commission, 2017b). With this in mind, we could see appearing policies for extended producer responsibility in the fashion and textile industries. Currently, the only country that knows a compulsory EPR<sup>1</sup> system for textiles is France. To be considered as an EPR system, “the producers should not only collect their products at the postconsumer stage, but should also take physical and/or economical responsibility for treatment of textiles after collection” (The International Institute for Industrial Environmental Economics, 2014, p. 53). Therefore, apparel brands should take the lead by preparing themselves for those potential regulations and policies

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<sup>1</sup> Extended Producer Responsibility.

(Álvarez-Gil, Berrone, Husillos, & Lado, 2007). We talk here about a matter which could be more related to the domain of Risk Management.

## **5. Conclusion of part I**

We have talked about the four main reasons for a clothing brand to propose a take-back program for post-consumer garments. First, the environmental reason which is of general interest. However, the companies understand their role in the improvement of the current situation. Then, we have highlighted more strategic reasons that ensue from the first one. The take-back program could be a powerful marketing tool. Associated with other initiatives or products, the brands can adapt to a market that is more and more concerned over sustainability. We have stressed the result on the brand equity. The third motive was related to the value of the collected clothes and the sales opportunities. As explained, some clothing brands work in partnership with collectors (charity related or not). The clothing brands seem to not earn any direct gain from the collected clothes. However, some brands take advantage of the collection program to get back clothes of their own brand. Thanks to this, they organize a secondhand network of their own garments. In parallel, the distribution of voucher as a reward for the participants leads to new sales for the brands. The final motive that we have identified, is a legal reason or currently a reason related to the risk management. In fact, there is a transition toward the circular economy in Europe. We could see extended producer responsibility policies appearing in the following years.

## **Part II: The incentives for the consumers - Exploratory analysis**

Now that we have expressed the incentives for the clothing brands to propose a take-back program for the post-consumers clothes, we will focus on how to get the consumers involved. As we have indicated in the first part, the participation of consumers has several objectives for the clothing brands. Thus, the aim of this thesis is to find the best factors that would favorize the take-back program as a disposal method for clothes. We would like to know how to encourage people to choose to bring back their clothes in-store.

The multiplication of these programs of collection is quite recent, and the level of awareness of this disposal option still must be assessed. Due to this early stage, the literature on the subject is quite rare. We have found very few studies dedicated to this case (e.g. Kant Hvass (2014)). A meta-analysis, realized by Laitala (2014) on the current literature about clothing disposal behaviors, states that none of the “studies included take-back schemes as disposal options, most likely because they are a rather new alternative on the consumer market” (Laitala, 2014, p. 452). Consequently, the article review of this thesis is mainly based on three topics. We have researched about the involvement of consumers in recycling. Then we have considered their current way of getting rid of clothes. Finally, we have examined the incentives proposed by other industries to engage the consumers in a take-back scheme. The following parts sum up the findings out of the current literature.

We will first give a small introduction about the apparel disposal, then we will investigate the reasons that could bring an individual to get rid of its garments. Afterwards, we will list the available solutions of disposal. Finally, we will get to the heart of the matter as we will discuss the key factors that shape the choice of disposal method.

## **1. Apparel disposal**

Disposal is a key concern in the reduction of the global and carbon impact of the fashion industry. We refer to ‘disposal’ as the act of getting rid of something and, in our case getting rid of garments. According to the Amsterdam-based social enterprise Circle Economy (2017a), 20 million of garments ends up in landfills or are incinerated each year in Europe and in the United States alone. If we believe this rate, between 75% and 85% of end-of-use clothes go “to landfill or incineration at the end of their first use cycle” (GreenBlue, 2017, p. 16). This fits with the estimations that between 20% (Global Fashion Agenda & The Boston Consulting Group, 2017) and 25% (Ellen MacArthur Foundation, 2017) of clothing are collected globally. However, 95% of the discarded clothes could be reused or recycled according to the last source. Meanwhile, only 0.1% of the current collected textile waste is turned back into new garments (Circle Economy, 2017b). In the first part, we saw the stakes and current limits of the textile-to-textile recycling.

Several reasons could explain this amount of textile going to landfills or being incinerated. Among the elements that can be listed: the lack of facility proposed for the collecting and the recycling of textile (Anderson & Huge Brodin, 2005) and the lack of awareness (Vicente & Reis, 2008). Therefore, the consumers should be informed and incentivized to get involved in a sustainable disposal method like a take-back program.

## **2. Reasons of the garments disposal**

Before studying the incentives of consumers to be involved in a take-back program of end-of-use clothes, we must get to the roots. We must talk about the motives of garments discarding by consumers. We have identified seven of them:

- 1) A first reason is due to the change in trends. The seasonality of fashion and the speeding up of collection revealed to the public conduct consumers to get rid of apparel which get faster old-fashioned.
- 2) In the second position, we can talk about a feeling of boredom toward the outfit. This feeling is not associated with the factor ‘trends’ seen before.
- 3) A third excuse is due to a damaged garment. No matter if this latter can be repaired, it has lost its functionality or attractiveness in the eyes of its owner.
- 4) The fourth motive can be linked with the previous one as it is related to the changing condition of a garment but here, without being damaged. It can happen when the color

has been altered due to the washing, when the piece has shrunk, etc. (Laitala & Klepp, 2011)

- 5) In the fifth position, we have the body change experienced by the owner and which make the use of the apparel difficult or impossible (change of weight or size). The apparel for kids is a good example. (Laitala & Klepp, 2011)
- 6) A sixth reason would be associated to a lack of storage place. The consumers have then to get rid of some pieces of their wardrobes, to make some place, either for other clothes or for another purpose (Ha-Brookshire & Hodges, 2009).
- 7) Bad emotion associated to garment is our last factor. The individual clears it out because of bad experiences, either related directly to the garment or not.

### **3. Current methods and solutions available**

For this thesis, we only consider the permanent disposal of an apparel. Therefore, swapping clothes with a friends or relatives is not taken into consideration, nor turning garments into rags, for instance.

Among the sustainable method of discarding, we can list the following solutions:

- Giving to charity (Bianchi & Birtwistle, 2010; Laitala & Klepp, 2011)
- Discarding in a recycling bin
- Giving away to friends or relatives (Albinsson & Perera, 2009; Bianchi & Birtwistle, 2010; Laitala & Klepp, 2011)
- Selling on internet (Bianchi & Birtwistle, 2010)
- Bring it back in shop (take-back programs) (Kant Hvass, 2014)

Among the method which are not considered as sustainable, we can point:

- Discarding with the household waste (Laitala & Klepp, 2011)
- Discarding in the nature

## **4. Factors of importance**

We will now focus on the factors, or at least criteria, that can shape the decision of the consumers to prefer one disposal method over another one. This will help us responding to our research question. As a reminder, the latter is “What are the factors that influence consumers to bring their end-of-use clothes back to the shop?”. We will only present the elements that the clothing brands can influence through their communication, their marketing or their logistics.

First, we will detail what seems to be the main element: the convenience. Then we will talk about the awareness. This term is a bit generic. On one side, this section will focus on the awareness toward the take-back program. On the other side, it will review the awareness toward the environmental impact of the fashion industry. As the promotion of this program is mainly environment-oriented, the awareness toward these two elements will be reviewed in the same part. The third section will approach the charity-related side of the end-of-use clothes disposal. The article review has made us realize that a lot of people associate the clothing disposal with charity organizations. The link between cleaning out a closet and the donation to impoverished people seems strong in people’s mind. Finally, we will consider the financial incentive. This latter would be one of the big strengths of the take-back programs.

### **4.1. Convenience**

According to our literature review, convenience is the main element to involve people in a defined disposal program. Originally, there is a utilitarian motivation behind the disposal of apparel. People will try to achieve it in a “task-oriented, rational manner” (Ha-Brookshire & Hodges, 2009, p. 190). This implies seeking for the most convenient way. Convenience can be defined as “the quality of being suitable or useful for a particular purpose, especially by making something easier or saving you time” (“Convenience,” 2009). Therefore, the number of collected points, the ease of use (locations, items accepted, etc.) and the period of access (opening or access hours and days) are features that impact the convenience.

#### **4.1.1. Accessibility and simplicity**

Some authors have stressed a clear link between convenience, the rate of participation in recycling (Anderson & Huge Brodin, 2005; Chen & Tung, 2009; Diekmann & Preisendörfer, 2003) and the frequency of participation (Domina & Koch, 2002). Anderson and Huge Brodin (2005) remind us that the consumers are confronted to transactional costs in the process. These transactional costs can be defined as “the amount of effort, time and money [...] that it takes to arrange a piece of business” (Parkinson & Noble, 2005) They must sort the end-of-use products

and bring them to a recycling facility. This action is mainly time-demanding but can also lead to financial costs (e.g. if the participant needs to take his car to reach the collection point). Therefore, the quality of consumer service, the number and location of collecting points are a key concern (Anderson & Huges Brodin, 2005). Ahmad, Bazmi, Bhutto, Shahzadi, and Bukhari (2014) have revealed that the most reliable factor to predict the attitude toward recycling is the time commitment. An individual who allocates more time to recycling has a more positive attitude toward it. This element would be more significant than the cost of recycling and the convenience of available related infrastructure (Ahmad et al., 2014). People with a higher positive attitude related to a disposal method could afford a lower degree of convenience.

The level of ease is also to be considered, as Vicente and Reis (2008) warn that the level of difficulty is the main predictor of non-participation in a recycling program. By simplifying and making the process easier, we decrease the complexity for the consumers and increase the likelihood of participation. For instance, sorting apparel will increase the complication of the task and the level of non-participation if the collector only accepts some specific garments.

In the same way, Perceived Behavioral Control (PBC) would be “the most important predictor of recycling intention” (Botetzagias, Dima, & Malesios, 2015, p. 65). PBC<sup>1</sup> can be seen as the degree to which an individual believes he can fully master an action (Ajzen, 2002). Those authors are joined by Vicente and Reis (2008) who state the importance of people believing in their individual role and action to set up a successful recycling program. Therefore, to increase this PBC, greater convenience is a suitable step. For instance, by increasing the number of recycling spots, individuals could have quicker access to them. Furthermore, it could increase the visibility and act as a reminder (Botetzagias et al., 2015). Thus, it will also impact the awareness. In fine, this could strengthen the suited behavior.

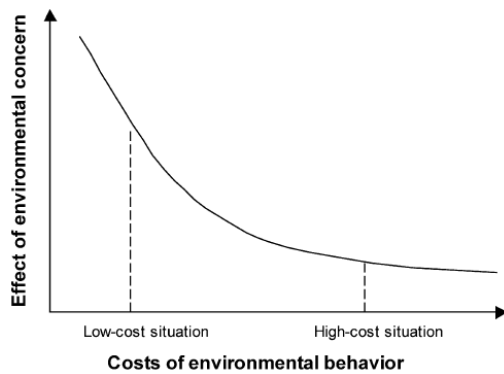
#### **4.1.2. Convenience versus environment**

An interesting point is brought by the study of Diekmann and Preisendörfer (2003), based on a German population. The authors say that ecological behaviors are undertaken only under little costs and high convenience. They join the previous statements on that point, but they also write that the environmental concern does not counterbalance this effect. In fact, the environmental concern is a prerequisite for the ecological behavior. As we know, this latter is more likely to

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<sup>1</sup> Perceived Behavioral Control.

Figure 10 - Low cost hypothesis (Diekmann & Preisendörfer, 2003, p. 449)



be effectuated in case of little inconvenience and minimum personal costs (Figure 1). In other words, we can increase the probability to transform a positive attitude toward environment into a real action by decreasing the costs and the inconvenience (Diekmann & Preisendörfer, 2003). From there we can join the statement from H. M. Joung and Park-Poaps (2013) that discarding in household waste is mainly affected by the convenience. Only people with strong environmental concern could abide a higher level of inconvenience. Therefore, the main danger of little convenience is environment-related, as we risk seeing clothes ending up in landfills with all the pollution issues it carries. Increasing the convenience of a clothing disposal method could involve a larger range of consumers. The disposal of clothes within the household waste being by default the most convenient solution, despite being unsustainable.

We have found only one study (Žurga, Hladnik, & Tavčer, 2015) which does not accept the positive link between the proximity of an apparel recycling bin and the increase of apparel recycling rate. This could be an example that a lack of awareness toward environmental impact of apparel disposal behavior is not compensated by a bigger convenience. Therefore, the consumers need some environmental awareness and positive attitude to join a collection point. We will come back to this point in the next part, dedicated to the awareness.

#### 4.1.3. The recycling of clothes and the household waste

The recycling of clothes should not be assimilated to the recycling of other consumer goods. In fact, the “waste recycling behavior” is a “weak predictor of clothing disposal patterns” (Shim, 1995, p. 46). This could be explained by the higher convenience that has turned recycling behavior into habits for people (curbside recycling, etc.), while the disposal of clothes is not as accessible (Shim, 1995). Therefore, if we believe the findings of Shim (1995) we could not predict the intention of consumers to be involved in responsible clothes disposal, based on their participation in recycling other goods. In the study from Žurga et al. (2015), while 4 respondents on 5 state that they sort household waste, only 35% recycle clothes. Nevertheless, we should also be careful with this result. The waste recycling behavior could also be due to compulsory recycling program required by the legislation. In the case of people who take part to the sorting and recycling of household waste on a voluntary basis, the factor could be a stronger predictor. Thus, this could explain that Bianchi and Birtwistle (2010) have found that the general recycling

behavior was positively correlated with responsible clothing disposition in opposition with Shim (1995).

#### **4.1.4. Convenience of take-back program**

Weber, Lynes, and Young (2017) assume in their study that fashion consumers may be more involved in 'alternative' textile disposal method. We can consider the take-back programs among these methods. By definition, those consumers visit more often shops and may have more opportunity to bring their end-of-use clothes back in-shop (Weber et al., 2017). We do not agree with Weber et al. (2017) as 'fashion consumers' could also shop mainly online and thus not visit clothing shops frequently. Once again, if we want to expand the initiatives to a larger audience, increasing the convenience seems essential (ease of access in-shop, presence of collection bin outside of the shop, etc.). The program could seem more convenient for people living in a city center, for instance. Therefore, the recycling bins and the charity collection points, situated close to habitations, are more accessible solutions. Clothing brands must combine convenience with other incentives and elements that will be discussed in the next parts.

#### **4.2. Awareness**

Awareness is a word that possesses a broad sense. The definition is the "knowledge or understanding of a particular subject or situation: environmental/political/social awareness" ("Awareness," 2009). In this part, we will gather all the points that could be enhanced thanks to the communication and the information from the brands (or a third party). This could have shaped the current knowledge of the consumers or could influence it. We will talk about the take-back programs and all the information around that method.

The article review puts us in mind that people may not be enough aware of the different sustainable disposal methods (among which the take-back program). Moreover, people would be more involved if they had more information regarding what happens to the collected clothes and about the impact of their behavior. Thus, the following sub-parts contains information regarding the current consumers awareness toward the take-back program. Then we will talk about the relation between the consumers and their clothes. In this section we will see that this relation makes the consumers choose different destinations for their end-of-use garments. After, we will approach the role of terms and policies. Finally, we will present the importance of the communication regarding what happen to the collected post-consumers apparel.

Although we notice that consumers are more and more aware of the environment, the recycling rates are still low (Aydin, 2017). We have seen previously that this could be explained by a lack of convenience. However, a bigger awareness should also drive more intention and positive behavior toward sustainable disposal method. If we remember the graph of Diekmann and Preisendörfer (2003) (figure 1), we suppose that an increase in awareness would have a positive impact on the attitude and therefore, an upward shift of the curve.

#### **4.2.1. The different disposal method**

The literature review reveals that people may not be aware of the different solutions offered to their end-of-use clothes. The findings of Goworek et al. (2012) show that little awareness explains part of the low link between environmental interest and recycling behavior. Therefore, consumers who are informed about the different disposal solutions are more likely to be involved in them (Vicente & Reis, 2008). Koukouvinos (2012) agrees with Vicente and Reis (2008) and states that awareness toward responsible disposition influences the clothing disposal behavior. In this sense, the lack of knowledge regarding the different disposal options has been listed among the barriers for sustainable consumers behaviors (Harris, Roby, & Dibb, 2016).

#### **4.2.2. The take-back program**

Little is known about the awareness of consumers toward take-back programs. The only element present in the literature is the low involvement in this method. A better communication on the solutions proposed could change the current behavior of the consumers. In fact, communication is a key factor in the education of individuals toward more sustainable post-consumer choices of disposal (Bianchi & Birtwistle, 2012). Apparel brands should thereby spread the take-back solution in their marketing program (Norum, 2017). Obviously, informed people have more likelihood to participate in a recycling program than individuals who are not informed about it. This assumption has been confirmed by the researches of Vicente and Reis (2008). In an online survey conducted in Germany, Poland, Sweden, and the U.S., 14.4% of the participants affirmed to use incentivized take-back schemes for their end-of-use clothes. This alternative disposal initiative is among the only one that the same participants report they will support in the future (Gwozdz, Steensen Nielsen, & Müller, 2017). However, we should be careful with these results. The broad-spectrum of geographical regions certainly brings inter-country differences that the authors do not relate in their article. For instance, Weber et al. (2017) talk about a participation rate of 3% only for this disposal option, according to a Canadian population. In our questionnaire, we will try to assess the awareness and the level of participation in Belgium.

Between February 2013 and June 2018, H&M has collected 2,047,625 kg of post-consumer garments in Belgium. This initiative is conducted by the group in 51 countries and has gathered 65,517,830 kg over the same period. Thus, a mean of 1,284,663kg collected per participating country. Belgium is the 13<sup>th</sup> biggest collector in this program (Charity Star, 2018). The amount collected per inhabitant has not been calculated but would have certainly ranked the country at a higher place. This gives us an idea about the awareness and the participation of the Belgian population.

#### **4.2.3. Relation toward clothes**

The disposal method selected may depend on the price of garments. Surveys from Morgan and Birtwistle (2009) reveal that fast fashion products are more often discarded while more expensive items are given to charity or resold. Fast Fashion items are often of inferior quality which limits the number of usages. Therefore the consumers do not perceive the importance to recycle them (Norum, 2017). However, Gwozdz et al. (2017) noticed that there is no difference in the choice of disposal between people who buy premium brands and consumers of the other segments. Therefore, the subjective value of garments could play a role.

Another fact is that consumers are more likely to discard some type of garments rather than other ones. Gwozdz et al. (2017) reveal that t-shirts for instance are less likely to be given a second life than a pair of jeans. Underwear and socks would also be more often discarded because it is linked with intimacy and may be considered as cheap (Žurga et al., 2015). Therefore, people prefer to get rid of them from home and do not see the potential recycling value. However, we assist to the development of take-back programs even from lingerie brands (e.g. Intimissimi, Hunkemöller, Calzedonia, etc.).

The deformation that the clothes may experience over time leads also to change in the user perception. A garment distorted will not be disposed the same way as an apparel still in a good condition (Trudel & Argo, 2013). This change of condition impacts “the perceived usefulness of the product” and thus, the willingness of the consumer to recycle it (Trudel & Argo, 2013, p. 640). When a garment has lost its initial shape, is beyond repair or simply damaged, it could be more likely disposed in a bin. This is due to the lack of awareness toward the value of the post-consumer textile, regardless of the condition of the garment (Weber et al., 2017). The previous statement could be due to the larger proportion of female individuals in survey regarding clothing. Women are said to be more sensitive to the deformation of shape, size and fit while men are more concerned about the functionality aspect (Laitala & Klepp, 2011). In addition, the

latter seem more aware of the value of end-of-use clothes. This lead to distinct reasons of disposal (Bubna & Norum, 2017).

Men would be more likely to give to second-hand shop and charity than women, according to Bubna and Norum (2017). Nevertheless, we should be careful with this result as the study has been conducted at various locations of apparel disposal sites and included only on 13 men. We believe that the choice of locations to conduct the survey could influence the category of individuals. In fact, people who choose to dispose their clothes within the household waste cannot be interviewed in an “apparel disposal site”.

#### **4.2.4. Information about participation terms and policies**

Basically, all clothing and textile can be collected as they can later be sorted between: reuse, upcycled, recycled or downcycled. A lack of knowledge and awareness could lead to unsustainable disposal choice. In-store take-back schemes could lead to more awareness toward the value of clothes (Fraser, 2015).

Not every brand accepts to collect all type of clothing. For instance, MUD Jeans only takes back jeans that contain minimum 96% of cotton, no matter the condition of the pants. Therefore, apparel brands should communicate in clear terms about their policies regarding what can be dropped in-shop. Norum (2017) recommends explaining to the consumers what can be recycled and what cannot. In fact, some discard clothes due to lack of expertise (Norum, 2017; Rezaei, 2016). This is partly due to the incapacity of some consumers to see the end-of-use garments as a resource (Watson et al., 2015), as we have explained. Through a communication campaign, brands could educate and inform their customers on the collected type of clothes. A survey conducted by Stall-Meadows and Goudeau (2012), on a population with a ‘WITHIN’ method<sup>1</sup>, has revealed the positive effect of an educational campaign regarding the disposal of garments. Raising awareness about the different solutions offered and the residual value of a post-consumer textile has led to increase the rate of recycling intention, regardless of the condition of the garments (Stall-Meadows & Goudeau, 2012).

#### **4.2.5. The post-collection treatment of the clothes**

The awareness about the environmental impact of clothing disposal could be the key to sustainable related behavior. After Chen and Tung (2009), the recycling intention grows with the perception of the consequences that the recycling can have. Thus, the creation of content about the treatment reserved to the post-consumer goods and the way it can solve environmental

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<sup>1</sup> Same population surveyed at 2 different moments

issues can increase the participation (Norum, 2017; Vicente & Reis, 2008). This message can raise the feeling of responsibility as well as the willingness of doing the ‘right-things’ (Bianchi & Birtwistle, 2012; Crociata, Agovino, & Sacco, 2015). H.-M. Joung and Park-Poaps (2013) accept also the positive impact that the feeling of “doing good” has on environmental behaviors. A communication aiming at educating the individuals through reasoning could have a long-term impact. Developing a sense of environmentalism rather than motivating a recycling behavior could achieve this goal (Shim, 1995). This would mean that an educative and persuasive message would have more durable effect on people’s behaviors than a financial incentive. In the same way, Vicente and Reis (2008) affirm that the faith in the individual role and impact in a recycling program is stronger than any material or moral incentives. The role of communication about the impact of sustainable disposal behaviors seems thus critical.

Harris et al. (2016) warn that even when the consumers know about other way to dispose and about the environmental benefits of some process, they act according to their habits and how they have been taught to act. Goworek et al. (2012) came to the same findings and assured the predominance of routines and habits over awareness of sustainable solution. Therefore, the family environment could have a decisive impact on shaping environmental behaviors regardless of financial reward (H. M. Joung & Park-Poaps, 2013).

Koukouvinos (2012) stresses that “the lack of infrastructure and informational campaigns” could be responsible for the low social importance of “responsible clothing disposal” (Koukouvinos, 2012, p. 32). We will not approach the social factors in our study. However, we must mention that Crociata et al. (2015) highlight the effect of social influence as a long term incentive. Thus, if we combine the words of Koukouvinos (2012) and Crociata et al. (2015), we obtain that more infrastructure and informational campaigns could lead to strengthen the social importance of responsible clothing disposal. This social importance would be a long-term incentive for the recycling behavior.

#### 4.3. Donations to charity

The results of Bianchi and Birtwistle (2012) show that a positive attitude toward recycling predicts a bigger chance that an individual gives garments to charity. In this context, the authors talk about general recycling and not textile-related. In addition, other authors have noticed a positive relation between environmental attitudes and donation (H. M. Joung & Park-Poaps, 2013; Shim, 1995). Moreover, a survey on a British population shows that donations to charities is the top-of-mind disposal choice (Hibbert, Horne & Tagg (2005) as cited in Norum, 2017). On one side,

this could be due to a lack of knowledge regarding other disposal options. On the other side, this could be related to the willingness to contribute to charity at ‘low cost’. In fact, people engaged in this disposal method can have the feeling of doing a good deed at no cost. It asks less effort than doing a monetary donation as there is a utilitarian motive behind the disposition of apparel. Ha-Brookshire and Hodges (2009) highlight in this way the hedonic values associated with the utility of the donation of clothes, while Albinsson and Perera (2009) stress the altruism feeling related to it. Bianchi and Birtwistle (2010) join them on that point, revealing that donation to charity makes the donor “feels good” and is the main reason of participation (Bianchi & Birtwistle, 2010, p. 364).

The impact of convenience is not considered by most of the here-above authors. Therefore, we bear in mind the results from Ha-Brookshire and Hodges (2009) that convenience also play an important role in donation. In fact, their results echo the theory of Diekmann and Preisendörfer (2003). These latter revealed that the higher the inconvenience, the less the environmental concern affects the ecological behavior. The same phenomenon seems to appear if we replace the environmental concerns by the social and charity-related ones. The respondents select the donation site more based on convenience than on what the collectors would do with the garments (Ha-Brookshire & Hodges, 2009). Therefore, giving clothes to charity could be the top-of-mind sustainable disposal method due to its convenience. The local charity collection point being generally accessible all day long at proximity of houses.

#### 4.4. Financial incentives

Thanks to the literature review, we have approached the apparent complementarity of awareness and convenience. However, raising awareness and increasing the convenience may not be enough to maximize the participation rate. Financial concern pushes people to choose for the solutions that would make them save money or earn some. Therefore, this could explain that next to the charity solution, we assist more often to resale and reuse rather than choosing other sustainable discarding methods (H.-M. Joung & Park-Poaps, 2013). Jacobs and Bailey highlighted, already in 1982, the role of monetary incentive in the growth of individual recycling behavior (as cited in H. M. Joung & Park-Poaps, 2013).

##### 4.4.1. Convenience of the programs versus the financial incentive

In the context of a curbside recycling program, Shaw and Maynard (2008) disclosed two important conclusions. On one side, that the financial incentive would bring new individuals who did not participate formerly. On the other side, that the “enhancement of the scheme” was

more important than the monetary incentive to change positively the behavior of the population (Shaw & Maynard, 2008, p. 1739). We should bear in mind that the curbside recycling could not be applied in the current context. However, we can understand from the studies of Shaw and Maynard (2008) that convenience is more important than the financial incentive. Moreover, both should be complementary if we want to broaden the participants circle. While this financial incentive could be a mandatory stimulus for some people, it does not affect the recycling intention of individuals with a high level of environmental interest (Schultz & Oskamp, 1996).

#### **4.4.2. Remaining effect over time**

Authors have named the financial rewards as a key influence on the intention to recycle. For Diekmann and Preisendörfer (2003), the financial incentive is more effective than positive attitude toward the environment. However, Crociata et al. (2015) have expressed reservation on the matter. In fact, they recognize that the monetary incentive plays an important role in the recycling behavior. However, it should be taken into consideration that this behavior is expected to stop, if the financial incentive disappears (Crociata et al., 2015). The long-term effect would be present but costly to sustain. We have seen that Vicente and Reis (2008) do not favorize neither the financial incentives as a key element for a successful recycling program.

In opposition, Maki, Burns, Ha, and Rothman (2016) believe that there is a remaining effect on consumers behaviors, even when the financial incentive has been removed. We do not assist to a return to the baseline levels. These authors have conducted a meta-analysis, which means that they have analyzed and compared articles from different authors to come up with these results. Therefore, even if it seems that the authors benefit from a broader view on the different studies undertaken on the subject, we take this statement with caution.

#### **4.4.3. The voucher as a reward for the participation**

Currently, apparel brands that want to involve their customers in a take-back scheme are using a reward system like the offer of discounts on the next purchase. The North Face (H.-M. Joung, 2014), H&M, Marks & Spencer, have in-shop collecting programs that remunerate the participants with a voucher (Camilleri, 2017). Other take-back initiatives take place online through ecommerce platforms (e.g. MUD Jeans). The strategy is not new and appeared in the 60's on American ground. The clothing companies offered then a similar coupon in exchange for old garments (Packard, 1960).

#### **4.4.4. The voucher as a sales driver**

In a previous chapter about the ‘economic aspects’ (Part I – Chapter ‘3. Economic aspects’), we have discussed about the loyalty that the take-back program could bring to a brand. This loyalty could be the result of the financial incentive in the form of a voucher. Brand loyalty can be evaluated “in terms of repeat purchases and the amount or share of category volume attributed to the brand” (Keller, 2013, p. 120). Therefore, we cannot state that the take-back program drives brand loyalty. In fact, the repeat purchase would be due to the voucher rather than a certain attachment to the brand. Therefore, we must use the term ‘consumer loyalty’ as expressed by Kant Hvass (2014). Peattie (1995) criticizes this method of promotion as it is “aimed at producing rather than overcoming brand loyalty” (Peattie, 1995, p. 695).

As we mentioned earlier, Kant Hvass (2014) tells that the use of vouchers in exchange for post-consumer clothes, conducts to more consumer loyalty. If we believe one informant from his survey, 87% of the coupons offered are used. Which means that people taking part in the collection initiative, place a new order in almost 9 cases on 10. The lack of data disclosure from brands prevents us from assessing this statement. According to Alford and Biswas (2002), the discount has a positive effect on the value perception and on the buying intention and a negative effect on the search intention. This can explain the consumer loyalty driven by the program. However, it is difficult to appraise in which proportion does the take-back program drive sales.

## **5. Conclusion of part II**

After a first part focused on the apparel brands, we have investigated about the elements that affect the choice of consumers to get involved in a clothing disposal method rather than in another one. We have highlighted four components that we have found in our literature review. First, we have stressed the key role of the convenience. The utilitarian motive that implies the disposal, leads people to rationally choose for the most convenient solution. Then, we have seen that awareness toward environmental concerns conducts people to adapt their disposal choice, originally solely driven by the utilitarian motivation. Another part revealed that next to this environmental aspect, social stakes can also play a role. Especially in some countries where there are strong connections between the collection of post-consumer garments and the donation to charity organization dedicated to impoverished people. Finally, we have studied the impact of financial incentives. Particularly due to the current use of this method by the apparel brands which propose a take-back program.

## Part III: Descriptive analysis

### 1. Model

As we have said previously, the collecting programs proposed by apparel brands are still at their early stage. At the time of our analysis, only few scientific articles on the topic had been found. However, other clothing disposal methods had already been analyzed. This offered us a basis to understand the expectations and motivations from participants.

We have found some inspiration thanks to Ha-Brookshire and Hodges (2009) and Ajzen (1991) to design our model. In fact, Ha-Brookshire and Hodges (2009) explored the clothing donation behavior and is thus, similar to our subject. We have taken some elements of their model and have adapted it to the results of our literature and to the case of the take-back programs. The work from Ajzen (1991) was more a help to understand the first one. A copy of their models can be found in appendix 1 to notice the change that we have brought.

As presented earlier, we want to analyze “the factors that influence consumer to bring their end-of-use clothes back in-store”. An exhaustive analysis would have been more developed and would consider for instance the beliefs of the consumers. In addition, we should have contemplated personal and social factors such as the personality of the consumer, the effect of the social pressure, the social environment, etc. Instead, we wanted to focus on the factors that brands could influence through their marketing, their communication and their supply chain actions. Therefore, to explain the involvement of consumers into a take-back program, we will only regard their attitudes (mainly toward the social and environmental aspect related to the clothing disposal), intentions and claimed behaviors. We refer to the work of Fishbein and Ajzen (1975) to describe these concepts.

The **attitude** is defined as “a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object” (Fishbein & Ajzen, 1975, p. 11). Thus, the attitude of a consumer regarding the take-back program makes that this latter will be favorable or not toward it. Fishbein and Ajzen (1975) talk about a ‘learned predisposition’ as the attitude is shaped thanks to the experience and current knowledge of the consumers. As the attitude is supposed to influence the behavior in a positive or negative sense, we can define it as a ‘predisposition’. An attitude toward a behavior is also determined by the beliefs about the consequences of the behavior and the evaluation of those consequences (Fishbein & Ajzen, 1975).

Therefore, the communication of the clothing brands about their collection program could directly impact the attitude of the consumers.

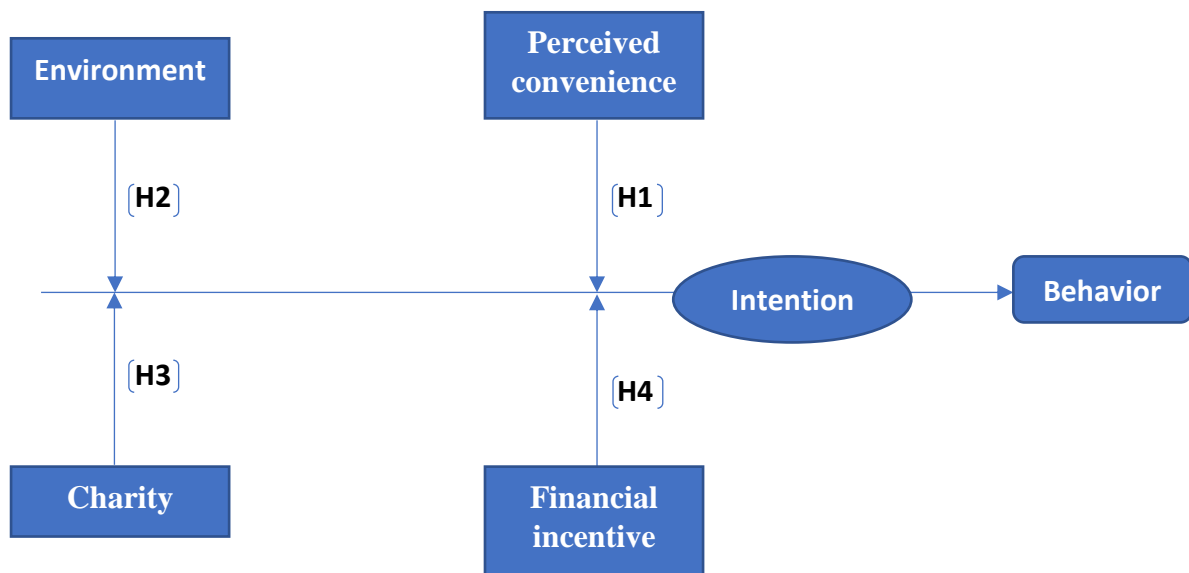
The behavioral **intention** is determined by three variables (Ajzen, 1991). First, the attitude that we have defined here-above. Then we have the subjective norms, that are “determined by normative beliefs and motivation to comply” (Fishbein & Ajzen, 1975, p. 314). The normative beliefs are mainly determined by the social environment of a consumers (family, friends, reference group, etc.). The interesting part is the ‘motivation to comply’. The literature shows that the financial incentive could play a significant role in the involvement of consumers in a take-back program (Diekmann & Preisendörfer, 2003; Shaw & Maynard, 2008). This incentive directly affects the subjective norms. In fact, the consumers will be given a financial reward if they comply with the programs of the apparel brands. Therefore, the individual will have to assess if the action required is acceptable (ethically, socially, etc.) and the motivation to comply sufficient to get involved. Finally, we have the ‘perceived behavioral control’ that determines the extent to which the consumer thinks he can master an action (Ajzen, 2002). The perceived convenience of a disposal program could impact the PBC, as we have already written in the section about convenience (Part II – Section ‘5.1. Convenience’). To give people the feeling that the action is under their active management, greater convenience should be proposed.

The last part of the model is the **behavior**. This is the goal that we want to achieve. We want to increase the likelihood that a consumer will use a take-back program as a disposal method for its end-of-use clothes. There is a difference between intention and behavior due to the factors present between the willingness to act and the action. The intention – as the attitude – is valid at a given moment and can change over time. First, there is a factor of time between the moment a consumer intent to perform an action and the moment of the action. In addition, other factors interfere in the process. Based on the literature, we can consider the ‘convenience’ as one of these factors. In fact, a consumer can have a positive attitude toward the take-back scheme and have the intention to make use of it to dispose its old garments. However, at the time to transpose this willingness into a behavior, the consumer realizes that the program is inconvenient for him. It could be that he needs to make a detour to join the collection point or that his schedule does not fit with the opening hours. Therefore, the intention is not transposed into an action and we could consider this as a failure of the program. In our model, we make the distinction between the convenience and the perceived convenience. While the first one can only be assessed during the behavior, the perceived convenience is the idea that the individual

has about the convenience at the intention phase. Only the perceived convenience can be considered in our study.

We can picture the steps ‘attitude-intention-behavior’ as the funnel model we use in marketing: ‘awareness-consideration-conversion-loyalty-advocacy’. If the consumer goes until the stage of the behavior and get a positive experience, we can suppose that his attitude will increase positively. This could lead to a loyalty toward the take-back program itself and even an advocacy. We will not analyze this last part in our work. We present here-under the visualization of our model.

Figure 11- Model



## 2. List of hypotheses to be tested

We will now list and introduce the hypotheses that we want to test. They are based on our literature review and they will help us responding to our research question.

**H1: The convenience of the take-back program is the factor that has the biggest impact on the non-participation.**

The in-shop take-back program supposes that the consumers bring their end-of-use garments back in a store. Therefore, it is easier to imagine users as people living in a city-center due to the proximity with a commercial zone. The participation is in fact mainly time-demanding but can also lead to financial costs (e.g. if the participant needs to take his car to reach the collection point). Previously, we have talked about the link between convenience and the rate of participation in recycling (Anderson & Huge Brodin, 2005; Chen & Tung, 2009; Diekmann &

Preisendörfer, 2003). We can suppose that people who do not want to participate, consider the distance and the time it would take them to reach the collection point. Therefore, they may choose another method, more convenient for them (Ahmad et al., 2014).

According to Weber et al. (2017), ‘fashion consumers’ would be more willing to join a take-back program due to their frequent visits in a clothing shop. Therefore, we should investigate if the consumers who report to visit a clothing shop less often, also mention the inconvenience of the program and if it prevents them from making use of the take-back program.

**H2: The environmental concern has the main influence on the intention to participate to the take-back program.**

We have explained the raising awareness of consumers toward environment-friendly products (Cone Inc., 2017; James & Montgomery, 2017; The Business of Fashion and McKinsey & Company, 2017). Therefore, we can suppose that behind this awareness and more conscious consumption, there is also the willingness to use a sustainable disposal method. Information from MUD Jeans shows that participants want to help with closing the loop and are motivated by the ‘textile-to-textile’ recycling.

The environmental aspect of the take-back programs is the main element highlighted by the brands. Consumers aware of this disposal may be influenced by the promoted environmental aspect.

**H3: Social concern has a negative effect on the intention to participate in a take-back program.**

By social concern, we mean the sensitivity toward poverty issues and marginalization. We have seen in the literature that charity donation has a leading role in the clothing disposal process (Bianchi & Birtwistle, 2010; Laitala & Klepp, 2011). However, people may decide to choose this option for utilitarian reasons mixed to the convenience of the method (Ha-Brookshire & Hodges, 2009). In fact, charity organizations have succeeded to implement a convenient disposal method in several countries like Belgium, France, the Netherlands, etc. This has been achieved thanks to the positioning of collection bins near habitations. Next to this, some people can express the hedonic values associated with the donation (Ha-Brookshire & Hodges, 2009) and the related altruism feeling (Albinsson & Perera, 2009). These feelings could be absent from the take-back programs and thus, impact the participation rate.

**H4: The financial incentive moderates the negative impact of convenience and social concern.**

Shaw and Maynard (2008) recognize that the financial incentive would bring new individuals who did not participate formerly. Therefore, we could see an expansion of the number of the participants thanks to this incentive. People who are not influenced by the environmental aspect and charity could be influenced by the idea of earning some money. Consumers who favorize the resale of their clothes could perceive the take-back program as an alternative. In addition, the financial incentive could alter the potential inconvenience of the program. In fact, we can see the financial incentive as a ‘motivation to comply’ in the sense of Fishbein and Ajzen (1975). This affects the normative beliefs which impact the intention.

### **3. Methodology**

The methodology chapter has been inspired from the lessons of ‘Etudes de marché’ by M. Gordy Pleyers (2017)

#### **3.1. Data collection**

We have conducted a one-off study which pictures the state, mindset and behavior of our sample at a given moment. We have made use of a quantitative survey as this latter is the most adapted to gather the knowledge, attitude, motivation and behavior from the individuals of our population and to quantify them. The survey has been conducted online via Google Forms, free survey program from the web-based software office suite proposed by Google. We have opted for this program thanks to its complete, user-friendly and free solutions. In addition, the responses gathered can be downloaded under an xml and csv form. In a second part, this allows the data processing via the program for statistical analysis SPSS by IBM.

##### **3.1.1. Pro and cons of the online method**

Conducting a quantitative survey via internet is known for its unequalled advantages. First, this method is time-saving because, once the questionnaire written and shared, there is no need for a pollster to conduct the interviews. The answers were directly encoding in a spreadsheet. The absence of pollster during the survey decreases the risk of bias (e.g. due to the interview style), but also has drawbacks as we will see later. Second, the participant remains anonymous. Our questionnaire contains elements relative to the respect of the environment. This subject could be sensitive. For instance, it could be socially-unacceptable for an individual to openly claim that he – or she – discards his/her old clothes in the nature. The anonymity of a survey assures more honesty in the answers. This anonymity is guaranteed in the introduction of our survey.

A third advantage is related to the rapid geographical coverage that allows us to quickly reach people across several places. Since we do not have the ambition and neither the intention to write an exhaustive list of the advantages of the online method, we will limit us to one other element. The method gave the opportunity to the participants to respond at the time that suits them the best. This last element is important and, in addition to enough reminder, it allows a higher rate of involvement.

The online survey also has some inconveniences. The main disadvantage is the higher rate of abandoning. The absence of motivation during this method leads to more participants stopping along the way. This is the benefit from a pollster, as he could be used as motivational source to incite the participant to finish the questionnaire. Knowing this weakness of the online method, we have tried to reach a tradeoff with enough questions. Too many questions lead to a lower participation rate and more abandonments. Therefore, we may not have fully used the survey to go in depth of our analysis. We have tried to ask the most important questions, while getting rid of others for matter of responding time. A last disadvantage is to remove people without internet connection (by choice, because of their advanced age, because of lack of funds, etc.)

### **3.1.2. Population, sample and means of propagation**

For reasons of accessibility we will focus on the Belgian population. We will focus on citizens over the age of legal majority. In Belgium, that age is set on 18. According to the last census – dating from 2016 – Belgium counts 8,982,329 inhabitants over 18 years old (Service Public Fédéral Belge, n.d.). We could have focused on the persons responsible for the disposal of end-of-use clothes inside their household. However, as most of the current take-back programs reward participants with a voucher, we can imagine that the owner of the garments wants to benefit from it.

The questionnaire has been shared for a one-month period on Facebook and LinkedIn. It has been posted on our personal page, leading to other members sharing it. These latter come from different milieus, regions and have different profiles, which allowed us to reach respondents from diverse backgrounds. We did not want to share the survey in specific Facebook or LinkedIn groups (e.g. about clothes or environment) in order not to create a bias due to specific attitude from these consumers. The size of our sample has not been defined beforehand. We have tried to reach the maximum of people and to create a questionnaire that would give us a minimum of abandonments, as explained previously. In the end 269 individuals have accepted to answer to our survey. We knew that the more participants we would have, the better our confidence interval would be. However, the limitation of these two social medias to share our

survey brings us to a non-probability sampling of convenience. This is due to the non-accessibility of the whole concerned population and the freedom of participation. We are aware of the impact this will have on our induction.

### 3.2. The questionnaire

We have already mentioned the use of Google Forms to write our questionnaire. The latter contains a total of twenty-one questions. However, we have created different parts in a way that the participants do not have to respond to more than 20 questions in total.

We have decided to translate the survey in the two main languages of Belgium: Dutch and French. We could also have included English and German. However, this would have led to too much effort in comparison to the gain in participants we could have expected. The translation has been achieved with a lot of precaution thanks to the help of a Flemish university student. The main risk was to change the meaning or the influence of the questions. In addition, some adaptations have been conducted. In Flanders, people are less familiar to the charity organization 'Les Petits Riens asbl' while the awareness is higher in Wallonia. Therefore, for the Dutch-speaking version of the questionnaire, the association 'Red Cross' has been chosen instead to illustrate the donation to charity.

All the facts, behaviors and activities were recorded thanks to dichotomous and multichotomic questions with single or multiple choices questions. While all the selection criteria and intention were collected thanks to 7-point Likert scale. We have decided to use 7-point to obtain an interval scale and thus quantitative variables. The only exception concerned the intention to participate has been registered with a multichotomic question with single response. This choice has been made to target and differentiate the following questions based on the non-intention or on the positive intention. In addition, we were asking in this question if the respondents had already made use of a take-back program. This way of proceeding convinced us at first. However, the non-use of a Likert scale to assess the intention of participation has also some drawbacks. The main one being the impossibility to analyze the correlation with factors.

*Structure* - We have tried to create a participant-friendly questionnaire, again with the willingness to avoid abandonments. There is a wish to use neither technical vocabulary nor ambiguous words (e.g. often, sometimes, expensive, cheap, etc.). The questionnaire has been pre-tested on several people who did not express any comment except spelling mistakes. A pre-tested individual was a 69-years old woman who is not computer-savvy and nevertheless has succeeded to answer our survey. We will explain now the structure of our survey.

A first part was giving the choice between the French and the Dutch version of the questionnaire. Once the suited language selected, the researcher and the survey were presented. We have stressed the importance of their participation to empower the participants and give them a feeling of altruism. The topic of the research was only displayed in the title to not give too much hint to the participant. This first part has also been used to assure the rapidity and the anonymity of the questionnaire.

The next part focused on questions of introduction. The goal was to make the respondent feel at ease while gathering general answers based on their recycling, shopping and clothing disposal behavior. To record the behaviors, we have used multiple choices questions. The last question of the part concerns the selection criteria for the clothing disposal method. Then we enter in the heart of the matter with a question regarding the awareness toward the take-back programs proposed by apparel brands. The people not aware were directly redirected to a question about their intention to participate. The people aware of the solution were asked more details about their awareness (top-of-mind brands, presence of a financial incentive, etc.) and were joining the other group about the intention to participate.

Based on the intention to participate, people were asked the reasons for getting involved or not. The aim was to determine the importance of a range of factors. The penultimate section was in common for the whole sample and concerned the opinion about the financial incentive and the attitude toward the donation to charity. Finally, we have required some information about the identity of the respondent: countries, age and sex. We did not use a filter question about the nationality in the beginning for the simple reason that we decided to focus on Belgium afterwards. In fact, it was easier to limit ourselves to this country as we knew the different disposal methods and conditions that are proposed there. We were not sure that the exact same conditions were proposed in other countries. This could have affected the attitude between citizens of different countries. We have inquired about the age by asking the year of birth. This method is supposed to get better honesty from people in among the female sex. We have brought the questionnaire to a close by thanking again the person surveyed for their time.

The survey does not contain any reverse coded item which could have ensured the quality of the answers. Instead, we have made use of one ‘trick question’ with a Likert scale, where readers were asked to select the response ‘1’. Six individuals have been withdrawn from our list because they failed this test. We could debate about the efficacy of this method. Nevertheless, we have judged it enough to ensure that respondents were enough focused at the time of their participation.

At several parts of the questionnaire, we tried to motivate the respondents by displaying supporting words and the number of remaining questions.

The complete questionnaire can be found in appendix 2 and 3 for the French and the Dutch version.

#### **4. Results analysis**

The analysis has been conducted thanks to IBM SPSS Statistics. We will first start with a description of our sample (gender and age) and give some information about their general recycling behavior and shopping behavior. This will help us in the analysis of our factors. Second, we will reveal the results related to the awareness regarding the take-back program. Finally, we will test our hypotheses. We have tried to keep them in the same order as for their presentation in the literature review. Thus, we will first analyze the results related to the convenience, then the environment and the charity and, at the end, the results related to the financial factor.

##### **4.1. Description of our sample**

The first section of our results analysis concerns the description of our sample. We have said previously that we have gathered the response of 269 respondents. 229 on our French version and 40 on the Dutch one. Among them, 6 questionnaires must be removed from the French part, due to the trick question which insured that the participants were sufficiently focused on our survey. Two others have been deleted from our database because they did not fit with our age criterion. We have mentioned that we decided to focus on the Belgian population, after the launch of our survey. Thus, we must remove the citizens of other countries. The final sample is comprised of 238 individuals (202 – French speaking; 36 – Dutch speaking) (Appendix 4).

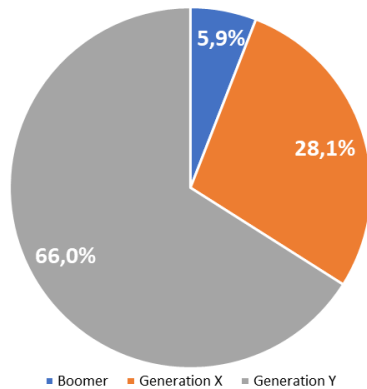
##### **4.1.1. Gender**

188 individuals report to be women, while only 50 of them state to be from the male sex. Therefore, 79% of our sample are from the female sex and the remaining 21% are male. In the French group, 77.2% are women, while it goes up to 88.9% in the Dutch group (Appendix 5).

### 4.1.2. Age

The minimum age is 18 years old (2000) and matches with our criterion of legal majority. The oldest participant is 70 years old (1948). Thirty-three subjects are born in 1994, which makes that 24 years old is the age the most represented (mode), while 27 is the median age (1991). We

Figure 12 - Shares of the generations present in our sample



can recognize three generations within our sample according to the delimitations from Howe and Strauss (2007): the ‘Baby Boomers’, the ‘generation X’ and the ‘generation Y’. Our age criterion prevents us from accessing to the ‘generation Z’. The ‘Baby Boomers’ are the people born between 1943 and 1960 (Howe & Strauss, 2007) and represent 5.9% of our sample (n=14). The ‘generation X’ is constituted by the men and women born between 1961 and 1981. 28.1% of our sample concerns this generation (n=67). Roberts and Manolis (2000) call them the ‘Baby Busters’ and state that they are more concerned by marketing and advertisement than Baby Boomers. Finally, we have the ‘generation Y’ or ‘Millennials’ from 1982 until 2005. Other authors do not agree with the delimitation of Howe and Strauss (2007) and limit the Millennials to the late 1990’s. They speak for 66% of our sample (n=157) (Figure 3). This is the generation which possesses the best access to information after the ‘generation Z’. In addition, they are theoretically defined by their motivation toward sustainability (Atamian Hahn-Petersen, 2018; Pomarici & Vecchio, 2014) (Appendix 6).

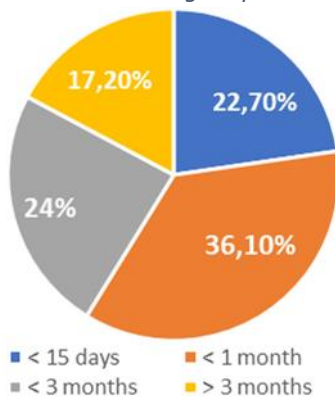
### 4.1.3. General recycling behavior

We have tried to identify the recycling behavior of household waste among the profile of our respondents. In Belgium, selective sorting is compulsory. We wanted to know if the surveyed people, that reported to sort their household waste, do this on a voluntary basis or if they acknowledge to comply due to the obligation. 74% affirm that they would sort their waste even if it was not compulsory (n=176). Among the remaining, 23.5% stresses their involvement to comply with the legal part (n=56) and 2.5% confess to not sort their waste (n=6) (Appendix 7).

#### 4.1.4. Apparel consumption

Two criteria have been selected to define the consumer profile of our sample: the frequency of visits in a clothing shop and the kind of shop visited. **The frequency** is directly in link with our

Figure 13- Frequency of visits in a clothing shop



research and will help us define the convenience to get involved in a take-back program. This is the reason of our interest in this frequency and not the frequency of apparel purchase. We bear in mind the comment from Weber et al. (2017) that consumers who visit more often clothing shops would have more intention to make use of this disposal program. The literature about clothing consumption takes generally the seasons as a key point in time to demarcate the frequencies (e.g. McKinney, Legette-Traylor, Kincade, & Holloman, 2004). However, the Fashion industry is not limited

anymore to the 4 traditional seasons and people could adapt to the trends thanks to online shopping. However, we have kept four delimitations in time. 17.2% report to visit a clothing shop less than once each three months (n=41) and thus less than once per season. The remaining 82.8% go to the shop more often (n=197) (Figure 4). 22.7% state to visit a clothing shop at least once each 15 days, 36.1% at least once in a month and 24% minimum one time each 3 months (Appendix 8).

To define the **kind of clothing shops** visited by the respondents, we have asked how much money they normally spend on a t-shirt. We have investigated about the prices proposed by different type of brands to split them between 'entry-range', 'mid-range', 'top-range' and 'premium and luxe'. We are conscious that people could encounter difficulties to talk about money. However, we have chosen to display prices rather than brand names to avoid using brands that people do not know and prevent the wrong qualification. On the other side, we thought that using our classification could also cause a problem to people who do not want to be associated with term such as 'entry-level'. 58.4% of our sample spend less than 25€ on a t-shirt (n=139). Brands proposing this rate are mainly retailers at the entry-range, sometimes associated with the phenomenon of Fast-fashion (H&M, Zara, etc.). 33.2% pay between 25€ and 50€ in average for a t-shirt and are considered as consumers of the 'mid-range' (n=79). Only 6.3% (n=15) and 2.1% (n=5) spend respectively between 50€ and 100€, and more than 100€. The first is referred as 'top-range' and the second as 'premium'. Brands proposing a take-back program are principally in the 'entry' and 'mid' ranges (Appendix 8).

#### 4.2. Awareness toward the take-back program

Before responding to our hypotheses, we wanted to do a summary about the awareness regarding the take-back program. Among the respondents, 38.7% report knowing that they can bring back their end-of use clothes in-store (n=92). This stands for 40.4% of the female respondents (n=76) and 32% of the male respondents (n=16). 83 respondents among the 92 who stated to be aware of the take-back programs, can name at least one brand offering this disposal solution. Only 65 persons know that the brands offer a voucher as a reward for their participation. The five most cited brands are H&M (cited 44 times), Brantano (shoes retailer), C&A, Point Carré (multi-brand retailer) (named 11 times) and JBC (named 10 times). H&M is the top-of-mind brand offering this disposal solution. 68 individuals have been informed about the take-back program in-shop. This is the channel that has brought the higher rate of awareness, followed by the word-of-mouth (cited 23 times) and the brands website (cited 18 times) (Appendix 9).

Within our sample, 12.2% have already made use of this disposal method and intent to continue (n=29). However, only 6 individuals on those 29 had reported previously to use the take-back programs to get rid of clothes that they no longer want to keep. 39.1% intent to participate to the program but have not already participate (n=93), while the remaining 48.7% of our sample state that they do not want to take part (n=116) (Appendix 10). We must precise here that among the surveyed who do not intent to participate to an apparel take-back program, 6 had reported to use this disposal method for their end-of-use garments. Unfortunately, we miss of further information to assess this result (Appendix 19).

If we sum up, **122 individuals intent** to use a take-back program for their end of use garments while the other 116 respondents of our survey, do not intent to take part. We only use these two sub-groups when we will compare the people who intent to participate and those who do not. We will talk about them respectively as the group with a 'positive intention' and the group with a 'non-intention'.

### 4.3. Test of our hypotheses

#### 4.3.1. Convenience

**Frequency of visit:** we want to check if there is a difference in the frequency of clothing shop visits between the people who intent to participate and the others. Weber et al. (2017) affirmed that fashion consumers are supposed to be more involved in this disposal method due to their higher frequency of visits in a clothing shop. The question about frequency has brought us with a qualitative variable. Thus, we cannot use a One-way ANOVA to assess a difference of means.

*Table 8 - Frequency of visits and intention to participate in a take-back program*

<b>Pearson Chi-Square</b>	Significative: $0.007 < 0.05$
<b>Phi and Cramer's V</b>	Significative: $0.007 < 0.05$ Value: 0.226

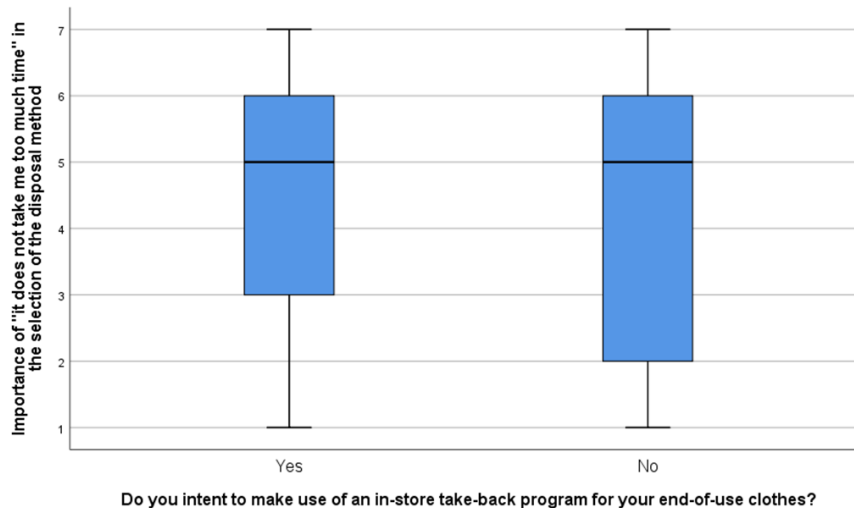
Therefore, we must execute a Chi-Square test of Independence to verify if the two variables are dependent. We obtain a significance inferior to 0.05 (0.007). The hypothesis of independence is rejected. We can conclude from our sample that the intention of participation to the take-back program is dependent to the frequency of visits in a clothing shop. In addition, we can see that 75% of the consumers who visits a clothing shop less than once each 3 months, reports not to be interested in the use of the take-back program. The values of the Phi and Cramer's V for this test are both of 0.226 (Table 1). The closest the value is to 1.00, the more the variables are dependent (Appendix 11.1.).

**Time, distance and cost:** We will analyze the attitude of consumers toward the variables 'time', 'distance' and 'cost'. Thanks to the use of a 7-point Likert scale, we have asked to rate several factors according to their importance in the selection of a disposal method for clothes (Question 5). The higher the rating, the more important is the criterion (from 1= 'Not important' up to 7= 'Major importance'). The 7-points of the Likert scale gives us a quantitative variable. The analysis between the two groups defined above (positive intention versus non-intention) conducts to the use of Independent samples T tests.

The first test that we undertake concerns the variable '**time**'. The respondents had to express the importance of the statement "the disposal method does not take me too much time". The mean is 4.33 (standard deviation: 2.106) for the people with the intention to take part and 4.15 (standard deviation: 2.274) for the people who do not have this intention. The results of the independent samples T test reveal that the difference between the means is non-significative

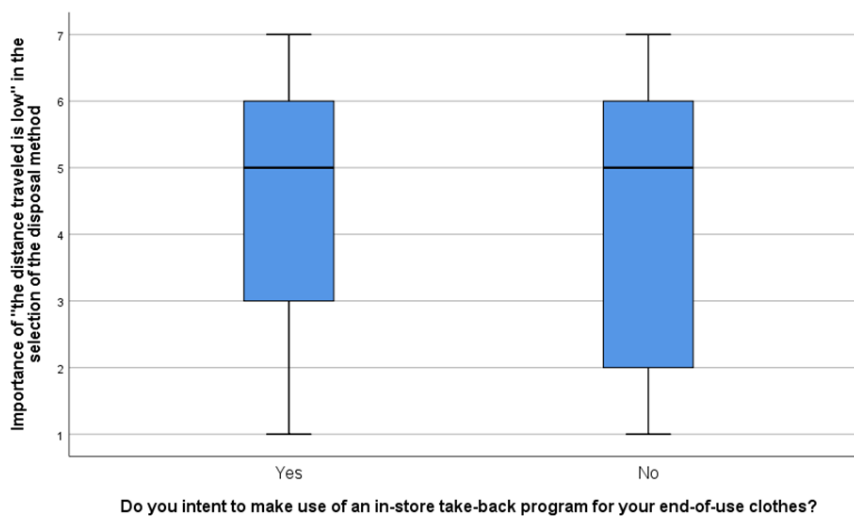
( $0.524 > 0.05$ ). Based on this test, we cannot affirm that there is a difference between the people who intent to take part to the take-back program and the consumers who do not, regarding their attitude toward the variable 'time' (Appendix 11.2.).

Figure 14 - Boxplot analysis of the variable 'time'



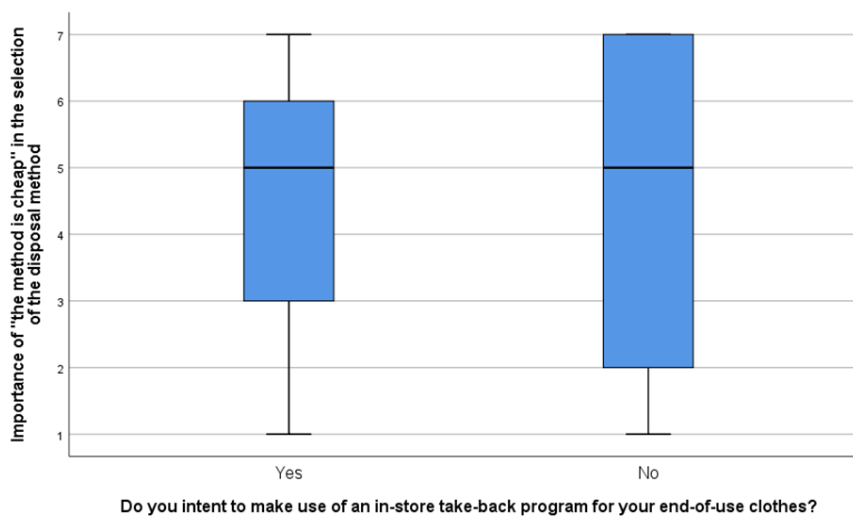
The same test is now realized for the variable '**distance**'. Respondents had to rate the importance of "the traveled distance to access the disposal point is low". The mean is of 4.47 (standard deviation: 2.046) for the people who intent to participate and of 4.22 (standard deviation: 2.227) for the people who do not. The independent samples T test exposes that the difference between these means is not significant ( $0.381 > 0.05$ ). We cannot affirm a difference of attitude toward the variable 'distance', between the consumers with a positive intention and the others (Appendix 11.3.).

Figure 15 - Boxplot analysis of the variable 'distance'



The last component of the convenience is related to the ‘cost’. The cost can be represented under many forms such as a tax for the disposition, the cost of transportation, etc. The respondents had to rate the importance of a low cost for the disposal method to be chosen. We obtain a mean of 4.59 (standard deviation: 2.127) for the consumers favorable to the use of the take-back programs and a mean of 4.40 (standard deviation: 2.417) for the others. The independent samples T test affirms that the difference of means is not significant ( $0.513 > 0.05$ ). Therefore, we cannot state that there is a difference of attitude regarding the variable ‘cost’, between the two groups (Appendix 11.4.).

Figure 16 - Boxplot analysis of the variable 'cost'



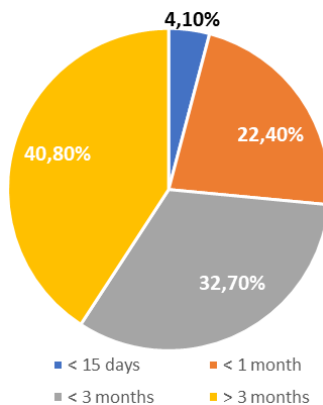
The analyses that we have conducted reveal that there is no real difference of attitude between the people who have reported their intention to make use of the take-back program and the other ones. A boxplot analysis of the three variables discussed here-above has revealed that the inter-quartile range is always larger for the people who do not intend to participate (Figure 5-7).

**Consumers with a non-intention:** We will focus now on the respondents who have reported not to plan making use of a take-back program ( $n=116$ ). We have asked them to select the reasons that explain their choice (Table 2). They had the right to select more than one criterion (Question 11). The data we will use here are available under the appendix 12.

Table 9 - Reasons of non-intention to make use of a take-back program and number of times named

Problem of frequency	Problem of proximity	Prefer other methods	Financial incentive too low	Too much effort	Not environmentally-friendly enough	Prefer charity
49	36	61	10	4	18	56

Figure 17 - Frequency of visits in a clothing shop (problem of frequency reported)



Among the 116 respondents who do not intend to make use of the program, 49 give the reasons that they do not visit clothing shops enough. However, 26.5% of these latter visit clothing shops at least once in a month (n=13). We cannot state that it constitutes a discrepancy. We will talk about it in our discussion part (Figure 8).

The problem of proximity with a clothing shop offering a take-back program has been named 36 times. 19 of them were among the 49 who gave the reason of frequency here-above. This leads to 66 respondents complaining about the inconvenience. We have tried to see if there was a difference of attitude toward the factor 'distance' - already discussed previously - between the persons who report a problem of 'proximity' and the others. We have used an independent samples T test. However, the difference in means was not significant ( $0.152 > 0.05$ ). Nevertheless, we notice on the boxplot that the interquartile range is situated on higher values for the people who report a problem of proximity with an in-store collection point. Only 4 people have selected that participating to the take-back program was asking too much effort and therefore, was one reason that prevents them from taking part (Appendix 12).

**Consumers with a positive intention:** We will focus now on the respondents who have reported a positive intention toward the take-back programs (n=122). We have used a 7-point Likert scale where the individuals of this group needed to rate several factors based on their impact on the intention to participate (Table 3). The higher the score given, the higher the impact on the motivation (Question 12). A previous test has brought us to the acceptance of a dependence between the intention of participation and the frequency of visits in a clothing shop. However, the analysis of the answers reveals that the frequency of visit in a clothing shop is the factor that may influence the least the intention to participate. The influence of the factor has a mean of 4 (standard deviation: 1.885) (Appendix 13). We will come back on this in the discussion part.

Table 10 - Motivation to participate rated on a 7-point Likert scale

Motivation	Mean	Standard deviation
Financial incentive	4.78	1.876
Frequency of visit	4.00	1.885
Textile-to-textile recycling	5.34	1.515
E.P.R	5.30	1.655
Attachment toward brand	4.61	1.723
Environmental aspect	5.61	1.463

**Sum up:** The literature review brought us to a first hypothesis. We assumed that “**the convenience of the take-back program is the factor that has the biggest impact on the non-participation**” (H1). However, the tests undertaken on our sample leads us to another point of view. It seems in fact that the convenience may not be the factor that prevent the most the participation. The large standard deviation obtained when we have tested the difference elements (distance, cost and time) can serve as a proof. In addition, the problems of frequency and proximity are not the most named reasons of non-participation. It is still too soon to accept or reject this first hypothesis. We have seen that there was not a significant difference of attitude toward the components of the convenience, between the people who intent to use the take-back program and the ones who do not. Nevertheless, we have accepted the dependence between the participation and the frequency of visit in a clothing shop.

We will now focus on the environmental factor. The clothing brands play mainly on this side in their communication to encourage the recycling behavior.

#### 4.3.2. Environment

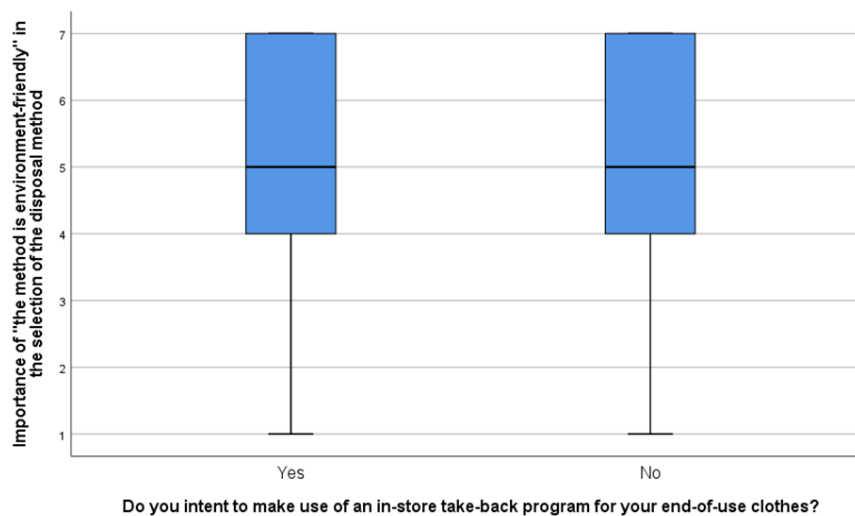
First, we want to analyze if there is a dependence between the voluntary general recycling behavior and the intention to participate to the program. To do so, we must execute a Chi-Square test of Independence to see if the two variables are independent. We obtain a significance inferior to 0.05 (0.037). The hypothesis of independence is rejected. Based on our sample, we can affirm that there is a dependence between the voluntary general recycling behavior and the intention to participate to the take-back program. The values of the Phi and Cramer’s V for this test are both of 0.166 (Table 4). The closest the value is to 1.00, the more the variables are dependent. Therefore, the dependence exists but may not be strong. We can find a larger rate of intention to participate among the individuals who report to sort their household waste voluntarily (55.68% versus 39.29%) (Appendix 14.1.).

Table 11 - General recycling behavior and intention to participate in a take-back program

<b>Pearson Chi-Square</b>	Significative: $0.037 < 0.05$
<b>Phi and Cramer's V</b>	Significative: $0.037 < 0.05$ Value: 0.166

We will now study the importance of the factor 'environment' between the respondents with a positive intention and the ones with a non-intention (Appendix 14.2.). As explained earlier, thanks to the use of a 7-point Likert scale, we have asked to rate several factors according to their importance in the selection of a disposal method for clothes (Question 5). The higher the rating, the most important the criterion was (from 1= 'Not important' up to 7= 'Major importance'). We conduct an independent samples T test. Once again, the difference of attitude is not significant ( $0.430 > 0.05$ ). The mean for the respondents with an intention to participate is 5.10 (standard deviation: 1.779) and the mean for the others is 4.91 (standard deviation: 1.991). The boxplot obtained looks exactly similar and confirms the non-difference of attitude toward the importance of an environment-friendly disposal method (Figure 9).

Figure 18 - Boxplot analysis of the variable 'environment'



According to the general mean obtained from our sample at the question 5, we can see that the selection of an environment-friendly method of disposition is the third most crucial factor (Table 5). Only 'it helps a good cause' (charity) and 'it can make a friend or a relative happy' do better (Appendix 15).

Table 12 - Importance of factors in the selection of a disposal method, rated on a 7-point Likert scale

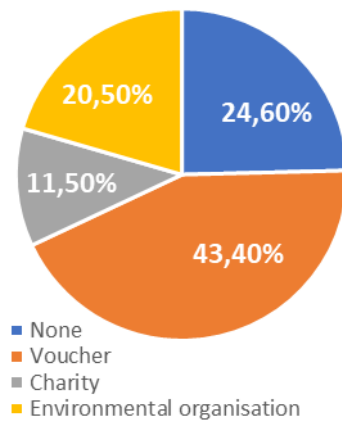
Motivation	Mean	Standard deviation
Importance of charity	5.61	1.719
Importance of friends happy	5.09	2.076
Importance of environment	5.00	1.884
Importance of reuse (2 <sup>nd</sup> life)	4.90	2.090
Importance of cost	4.50	2.270
Importance of distance	4.35	2.135
Importance of time	4.24	2.187
Importance of financial incentive	2.72	2.004

In addition, we would like to analyze the intention to participate between individuals who can be defined as environment-friendly people or who at least express eco-conscious behaviors. To this end, we have selected respondents who sort their household waste on a voluntary basis. Among them, we have gathered those who expressed an attitude of 6 or 7 on the Likert scale, regarding the importance of the environment aspect in the disposal method. This conducts to a group of 91 individuals. Within them 52 intent to participate (57.1%) while the remaining 39 express their non-interest in this method (42.9%) (Appendix 16).

**Consumers with a non-intention:** Among the 116 respondents who do not intent to make use of a take-back program, we have just seen that 39 can be defined as eco-conscious. Among them 27 are individuals who report not to be interested in the program due to a problem of proximity and/or frequency of visits in a clothing shop proposing this solution. 8 members of this group explain that the method is not enough environment-friendly according to them (Appendix 17).

**Consumers with a positive intention:** We focus here on the 122 respondents who have expressed an intention to participate in the take-back program. We have already explained the use of a 7-point Likert scale where the respondents needed to rate several factors based on their impact on the intention to participate (Question 12). The higher the score given, the bigger the impact on the motivation. The importance of the environmental aspect gets the best mean with 5.61 (standard deviation: 1.463). After this factor, the second and third highest means are respectively ‘the importance of textile-to-textile recycling’ (mean 5.34 – standard deviation: 1.515) and ‘the importance of the extended producer responsibility (mean: 5.30 – standard deviation: 1.655) (Appendix 13 and table 5).

Figure 10 - Compensation requested by the positive intention group in exchange for their participation



The surveyed people with a positive intention have also been asked which compensation they expect from the clothing brands in exchange for their participation (Question 13). They had the choice between no compensation, a voucher, a donation to charity or a donation to an environmental organization (Figure 10). 24.6% have responded to do this for the environmental aspect and do not expect any other compensation (n=30). 11.5% would participate in exchange for a donation from the brands to an organization with an environmental goal (n=14). The addition of the two rates reveals that 36.1% of the respondents who intend to participate, seem purely motivated by the environmental aspect of the take-back program (n=34). This rate goes up to 44.8% if we only focus on the respondents who possess a positive intention and who report to have already made use of this disposal method for their end-of-use clothes (Appendix 18).

**Sum up:** The second hypothesis that we have expressed was that “**the environmental concern has the main influence on the intention to participate to the take-back program**” (H2). We have seen that this is the most highlighted aspect by the people with the intention to participate. In the case of people who behave in an eco-conscious way, we have revealed that 57.1% intent to take part to the program (n=52). In the remaining 39 individuals who compose the group that we have defined as ‘eco-conscious’, 27 name frequency and proximity as factors that prevent them from participating. Finally, we have seen that among the people with a positive intention, 36.1% report doing it for an environmental reason. We based this last statement on the compensation asked in exchange for their involvement. Based on these elements we can accept the second hypothesis (H2).

### 4.3.3. Charity

If we focus on the general attitude of our whole sample, the charity factor is reported as the most important criterion in the selection of a disposal method (Appendix 13 and table 5). At the question 5 already discussed, the mean obtained through the 7-point Likert scale is 5.61 (standard deviation: 1.719). Surprisingly, we obtain the exact same means if we split the sample in the two groups that we study (‘positive intention’ versus ‘non-intention’) with a slightly smaller standard deviation for the ‘non-intention’ group (1.609 versus 1.836 for the ‘positive intention’ group). The donation to charity is the 3<sup>rd</sup> most used method to get rid of end-of-use

apparel. 88 individuals have reported to make use of it (Table 6). The most common disposal method is to dispose of clothes in a collection bin (n=166), followed by ‘giving to friends or relatives’ (n=137) (Appendix 19). This reveals the importance of the charity aspect in the disposition of clothes.

*Table 13 - Method used by our sample to dispose their end-of-used clothes - number of times named*

Household waste	Giving to friends or relatives	Reselling	Take-back program	In a collection bin	Giving to charity
8	137	59	19	166	88

**Consumers with a non-intention:** 56 individuals of the group which is not interested in making use of a take-back program respond that they rather prefer to give to charity (Appendix 12). However, in the same sub-group, only 36 had reported to give their clothes to charity as a method usually used (Appendix 19.2.). We will talk about this element in the discussion part. The absence of charity-destination is the second factor of non-intention to participate to be reported after the factor of convenience. To be noted that some respondents report both issues (Appendix 20).

**Consumers with a positive intention:** We did not ask charity-related question to the people who express the intention to take part to the programs. Nevertheless, as explained previously, the surveyed people with a positive intention have been asked which compensation they expect from the clothing brands in exchange for their participation (Question 13). Only 20.5% claim that they would expect a donation to charity in exchange for their participation (n=25) (Appendix 18).

At the end of the questionnaire, we have asked our sample (n=238) to choose between giving their end-of-use clothes to a clothing brand or to charity (Question 16). We have set the hypothesis in equal condition of convenience and compensation received. We explained them that they had two boxes in front of them. One for the charity and one for the brand. They had to select which destination they would choose for their old jeans. 95% of our sample choose the donation to charity (n=226). Another interesting element is that among the 12 respondents who choose to give to a clothing brand in equal conditions, 4 had not the intention to make use of the take back program at the question 10. Their non-intention was due to the inconvenience but also due to the financial incentive (discussed in the next part) (Appendix 21).

**Sum up:** Respondents revealed the importance of the charity aspect in their choice for a disposal method. The best global attitude of our sample is expressed toward this aspect, rather than any other factor (environment, convenience, etc.) In addition, we have seen that in equal convenience and conditions, 95% of the surveyed people prefer to give their end-of-use clothes to charity. Thus, we can accept our third hypothesis which states that “**Social concern has a negative effect on the intention to participate in a take-back program**” (H3). We thought that the inconvenience would have been the factor that prevent the most the participation. However, the results of our analysis reveal that charity is the element which has the bigger impact. We cannot accept that “**the convenience of the take-back program is the factor that has the biggest impact on the non-participation**” (H1). However, we still accept the negative effect of inconvenience on the intention to participate.

#### 4.3.4. Financial

We will first talk about the importance of the financial factor in the selection of a disposal method. We have approached the factor ‘cost’ previously (Part III – ‘4.3.1. Convenience’). The respondents also had to rate the importance of a financial incentive in the selection of a disposal method (Question 5). If we look at the appendix 15, we can see that ‘earning some money’ while getting rid of clothes is the factor the less important according to our sample. We have a general mean of 2.72 (standard deviation: 2.004) on the 7-point Likert scale. Knowing that the surveyed-people had to rate the factor from ‘Not important’ (=1) up to ‘Major importance’ (=7), the notation ‘4’ stands for a neutral opinion. The financial factor is the only one which is globally considered as “not important”. If we look at the difference of mean between the individuals who intent to participate to the take-back program and the ones who do not, we notice a difference of 0.54.

*Table 14 - Difference in means for the variable 'earning money' between the positive and the non-intention group*

Intention	N	Mean	Standard deviation
Yes	122	2.98	2.004
No	116	2.44	1.975
<b>T-Test for Equally of Means</b>			
Significative	0.036 < 0.05		

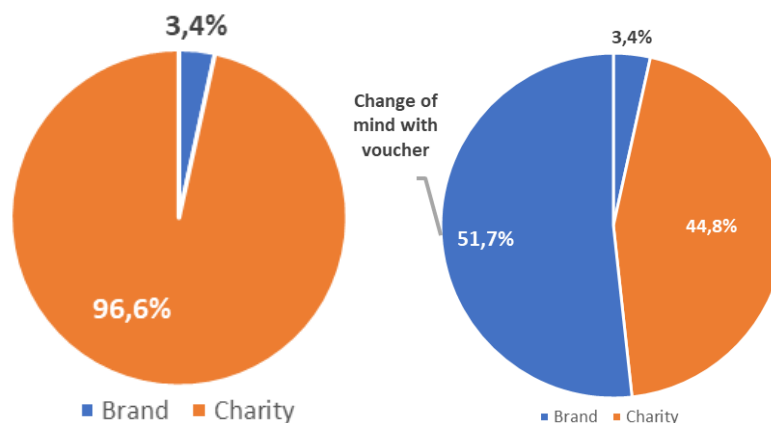
The mean of the first group is 2.98 (standard deviation: 2.004) and for the second, we have a mean of 2.44 (standard deviation: 1.975) The independent samples T test confirms that the difference is significative (0.036 < 0.05). Thus, we can affirm, based on our sample, that the

persons who attach more importance to a financial incentive are more willing to make use of a take-back program for their end-of-use clothes (Appendix 22). However, this factor is still the least important of our list, as already highlighted. If we focus on the individuals who had reported to resell their end-of use clothes as a disposal method ( $n=59$ ), the discussed mean reaches 4.17 (standard deviation: 2.052). However, it is still the factor with the lowest level of importance. Due to the higher appraising of the financial factor, we can expect a larger rate of intention to participate in this group. We observe that 61% of this group intent to take part to the program ( $n=36$ ) (Appendix 23).

**Consumers with a non-intention:** Among the respondents who do not intent to participate to the take-back programs ( $n=116$ ), only 10 of them give as reason that the financial incentive is too low (Appendix 12). This stresses the apparent non-importance of the financial incentive for the people who do not intent to participate.

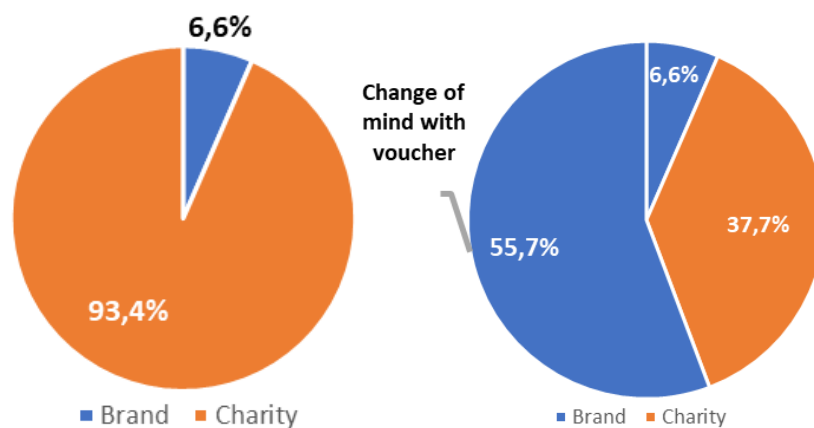
However, we can analyze the impact of the financial incentive on this group. As a reminder, we asked to our sample to choose between giving their end-of-use clothes to a clothing brand or to charity in a situation of identical conditions (Question 16). 95% of our sample had chosen the donation to charity ( $n=226$ ). However, we have asked these 226 respondents if a financial compensation (under the form of a voucher) would make them change their mind. 56.6% agree, which makes that people among those who reported a non-intention to participate, have changed their mind due to the financial incentive ( $n=128$ ). We must bear in mind the restrictive hypotheses of our question: only two disposal methods, with same convenience and conditions. The realization of a crosstab reveals that 60 individuals on 112 - who reported to not intent to take part to the take-back program – reconsider giving their end-of-use clothes to charity due to the financial incentive (Appendix 24 and figure 11).

Figure 11 - Choice between brand and charity from the 'non-intention' group: in equal condition (left) - with financial incentive from brand (right)



**Consumers with a positive intention:** The crosstab realized here above reveals also a change among the 114 individuals who intent to make use of a take-back program but were giving to charity in a case of similar condition (figure 12). In fact, the financial incentive only makes 68 individuals change their mind in this group. The 46 others would not change their mind in this scenario and would still choose giving their end-of-use clothes to charity (Appendix 24).

Figure 12 - Choice between brand and charity from the 'positive intention' group: in equal condition (left) - with financial incentive from brand (right)



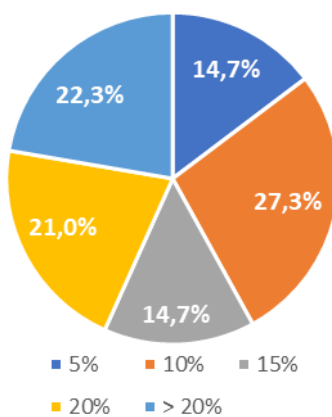
If we look at the general attitude of the people who reported an intention to take part to the collection program, the importance of the financial incentive received a mean of 4.87 (standard deviation: 1.876) on our 7-point Likert scale (Question 12). This factor was ranked at the 4<sup>th</sup> position of the most important motivation to take part. It comes just after the three factors related to the environment. We must bear in mind that the charity factor was not part of the question 12 (Appendix 13).

In addition, regarding the question about the compensation expected from the clothing brands in exchange for the participation, the financial incentive was the most represented choice. 43.4% of the respondents with a positive intention were asking a voucher as a compensation (n=53) (Appendix 18 and figure 10). 81.1% of these 53 individuals had reported the importance of the financial incentive on their motivation to participate (marked 5 or + on the 7-point Likert scale), while it is only the case for 56.5% of the individuals choosing for another compensation (n=69) (Appendix 25). It might be interesting to see if the people with a positive intention but who report not to be influenced by the financial incentive at the question 17 (n=46) (Number of the one where we ask if they would still give to charity if they receive a voucher) were expected to receive a voucher as compensation. We can see in the appendix 26 that among the 46 individuals in that case, only 30.4% reported to expect a voucher in compensation (n=14). This proves that

the intention of the 32 others does not seem to not be linked to the financial incentive at all but rather to the social responsibility aspects (environment and/or social).

**The value of the financial incentive:** We have asked all our respondents about the minimum value of the voucher that they would request in case of participation and in the case of financial reward for their involvement. The results reveal a mode at “10% discount” with 27.3% of the sample (n=65). 42% of the total sample claim that they would be happy with a value of 10% discount. The median is a 15% discount (Figure 13).

Figure 13 - Minimum value requested for a voucher - whole sample



We can now split this response according to the two different groups that we have analyzed. First, we realize that the people with a non-intention to participate ask for a higher value of discount. The mode is ‘more than 20%’ with 39.7% of this group who vote for it (n=46) while it is the less chosen response among the respondents with a positive intention (n=7). For this second group, the mode is “10% discount” with 49 votes. This stands for 40.2% of this group. In the same way, “10 % discount” is the median for the ‘positive intention’ group. To reach the median among the ‘non-intention’ group, the brands will have to propose “20% discount” (Appendix

27).

**Sum up:** The financial factor is the element that has the lowest importance in the selection of a disposal method according to our sample. It is even the only factor with a general mean below the notation ‘4’ on our 7-point Likert scale. However, we have noticed a significant difference between the group of people who reported an intention to make use of a take-back program and the group without a positive intention. We have also revealed that the respondents who stated to usually resell their end-of-use garments, give more importance to the financial factor. Nevertheless, it comes last at the last position when these factors are ranked according to their importance in selecting a disposal method.

A major result comes from the group of individuals with a positive intention toward the take-back programs. They rank the motivation related to the financial incentive at the fourth place, after the elements related to the environment. In addition, 43.4% would choose a voucher as a reward for their participation.

The last element that we must bear in mind from this section is that part of the group with a non-intention would agree to change their mind in exchange for a financial incentive.

## Part IV - Discussion

The analysis being done, we can interpret the results were detailed in the previous part. We will discuss the findings in the same order as they have been presented previously. Thus, we will first talk about our sample and its description. Then, we will tell more about the awareness and intention regarding the take-back programs. Finally, we will discuss the factor ‘convenience’, ‘environment’, ‘charity’ and ‘finance’.

**Sample:** First, we must come back on our sample and its composition. The people who have accepted to respond to our questionnaire are mainly from the female sex. We have revealed that 79% of our sample are women. Laitala (2014) highlights that most of the articles about the disposal of end-of-use apparel received the same lack of responses from the men. Women are recognized as being more sensitive to fashion. We have tried to give as less information as possible about the subject of our study. The title of the questionnaire only displayed that the topic was about circular economy and clothing brands. No hints revealed the part of the disposal method and the take-back schemes. However, it could be that a lot of men have abandoned the questionnaire along the way, due to their non-interest.

One could argue that we need to hear more about the male voice on this matter. We agree with this statement. However, we do think that women are still the one responsible for the disposal of clothes in their household. Thus, this could lead to the obtention of a sample more representative of the reality. However, we have assumed that the financial incentive, which accompanied the take-back programs, conducts to the willingness from the owner of the clothes to benefit from it. Therefore, we did not want to limit our study to the population responsible for clothing disposition inside their households.

Regarding the represented generations in our sample, we notice that the Millennials state for 66% of the surveyed people. As a reminder, we have defined this generation as being born between 1982 and 2005 (Howe & Strauss, 2007). Our criterion of majority makes that we do not focus on the people born after 2000. If we refer to the proportion of millennials in the Belgian population, we are more close to 30% according to the figures of SPF Economie (2018). This over-representation may lead to a bias. However, we have underlined that our sample was a non-probability sampling of convenience and that we were aware of the impact that this can have on our induction. Nevertheless, this percentage of Millennials allows us to get insight into an interesting target market. In fact, the Millennials are the target of most of the clothing brands

which propose a take-back program. For the most part, we are satisfied with the composition of our sample. Our only regret regards the proportion of Dutch-speaking respondents which translates our failure at reaching consumers from Flanders.

The consumer habits from our sample have been defined through the frequency of visit in a clothing shop and the average price paid for the acquisition of a t-shirt. This clothing item has been chosen arbitrarily to define the range of apparel shop. We have seen that 91.6% of our sample pay less than 50€ for a t-shirt. We have not found information about this proportion in other articles and cannot compare our results. However, the clothing shops proposing a take-back program are currently situated in this range of price. Thus, linked with the generation criterion, we can affirm that we are in the target segment of the concerned clothing brands.

**Awareness and intention:** In the literature, the state of awareness toward the take-back programs for end-of-use clothes was uncommon. We have seen that 38.7% of our sample is aware of this disposal method (n=92) and only 12.2% had already made use of it (n=29). This reflects the communicational effort that must still be done to increase the related knowledge of the consumers. We can also remark that among the consumers aware, one on three reports to have already participated.

More than the half of our sample expressed a positive intention toward the take-back programs (n=122). To analyze the intentions of our sample, we have based ourselves on the factors of convenience, environment, charity and on the financial factor.

**Convenience:** We have not found significative differences of attitude toward the variable 'time', 'distance', and 'cost' between the consumers with a positive intention and those with a negative intention. Thus, it seems that there is not a difference of tolerance toward inconvenience between the two groups. Nevertheless, the boxplot analysis of the three variables revealed that their evaluation of the three factors seems less homogeneous than the evaluation from the people with a positive intention. Therefore, the non-participation would not be entirely due to the inconvenience. In fact, we may notice different levels of acceptance of the inconvenience among the consumers with a non-intention. However, Ha-Brookshire and Hodges (2009) affirmed that people are task-oriented for their disposal actions and look for the most convenient solution. The collection programs proposed by apparel brands suppose that consumers drop their end-of-use clothes in-shop. Weber et al. (2017) assume that fashion consumers – due to their higher frequency of visits in a clothing shop – were more willing to make use of it. A first test that we have conducted, confirmed the dependence between the

intention to participate and the frequency of visit in a clothing shop. The higher this frequency, the more the consumers have the possibility to bring their end-of-use clothes. This may also explain the non-difference of attitude toward the elements of convenience (time, distance and cost). Frequent visitors may consider the take-back program as a convenient solution. It is less likely to see non-frequent visitors getting involved.

42.2% of the people who do not intent to participate, name the low frequency of visit as a barrier to get involved (n=49). Nevertheless, we have seen that 13 of them go to a clothing shop at least once in a month. We said that it may not constitute a discrepancy as we lack information to assess it. Nonetheless, the choice of cleaning out a closet has an utilitarian motivation – to quote once again Ha-Brookshire and Hodges (2009). Our assumption is that the decision to get rid of end-of-use clothes may not be coordinated with the visit of a clothing shop by these respondents. Here, playing on other factors could lead these frequent customers to bring back their end-of-use clothes.

36 individuals explained having a problem of proximity with clothing shops. We have tested the difference of means regarding the attitude toward the factor ‘distance’. The difference was not significative. However, the boxplots reveal another configuration of the interquartile range (Appendix 12 and table 2). It seems thus that the distance is a real barrier that prevents them to take part to the programs.

The respondents with a positive intention report the minor importance on their participation of the frequency of visits in a clothing shop. Nevertheless, we have seen the dependence of the frequency of visit and the intention to participate. This means that the people who go more often in a clothing shop are more willing to make use of the take-back programs. However, their visits are not the prime element that drives them to use this disposal method rather than another one.

**Environment:** Our analysis reveals that there is not a significative difference of attitude toward the importance of selecting an environment-friendly disposal method, between the positive intention and the non-intention groups. The environmental communication behind the take-back programs proposed by the apparel brand made us thought that we would have noticed a difference of attitude toward this factor. The absence of a Likert scale to assess the intention of respondents prevents us from verifying the link between environment-friendly attitude and intention to participate. Therefore, to verify this, we have put together people that we defined as ‘eco-conscious’. Thanks to the response of these 91 people, we can affirm that they express more intention to participate. 52 individuals of this group report a positive intention. Among

the 39 other members, 27 are not interested due to problems of proximity and/or frequency of visits. This sustains our conviction that the environmental aspect of the take-back program spread by the clothing brands has a positive effect on the intention to participate but may be diminished by the convenience of the take-back programs.

The environmental aspect is the principal motivation to get involved according to the group with a positive intention. Although the non-significant difference of attitude toward the factor 'environment' in the selection of a clothing disposal method, it seems to be a major motivation for the respondents who intend to bring back their clothes in-store. However, we see that only 36.1% of the group with a positive intention ask for a compensation in link with the environment. This rate is higher for the consumers who report to have already participate. This reinforces our belief that the environmental message convinces the consumers to make use of the disposal method. We have also seen that these people are motivated by participating to the textile-to-textile recycling. However, only one thousandth of the collected garments follow this destination. This rate of conversion should increase in the future, as discussed in the part I. The impact would be to reinforce the willingness of consumers to get involved in closing the loop by bringing end-of-use clothes in-store. The extended producer responsibility plays a significative role too, as it is ranked at the third place of the key motivation. Consumers feel that producers need to take more responsibility of their waste. Legislation in this direction may also increase the intention to get involved.

**Charity:** We have discussed the importance of the charity aspect in the disposal of clothes. Our results confirm our previous information and statements. First, we have seen the attitude of the respondents toward this element. 'Helping the people in need' is ranked as the most important factor in the selection of a clothing disposal method. There is no significative difference of attitude between the people with a positive intention toward the take-back programs and the other one. However, giving the end-of-use clothes is only the third most used method. We should inform our reader that the respondents may have been misled on this question (Question 4). We wanted to make a difference between the donation of garments to charity and the donation to private companies, via the use of collection bins. A picture of the collection bin had been displayed in our questionnaire, to help the respondents to visualize the bin in question (Appendix 28). The bins of the private collectors look like the ones from the charity. Both exists in Belgian municipalities under the form of identical bins. This could lead to a confusion among the citizens. In addition, Ha-Brookshire and Hodges (2009) affirm that this method is often solicited more for its convenience than for its charity-destination. Therefore, the picture may

have misled the respondents while our goal was to make the difference between the private bins and the charity ones.

Among the consumers with a non-intention, we notice that almost the half claim to not intent to participate as they prefer to give their end-of-use clothes to charity (n=56). This element is the most named barrier, before the frequency of visits.

We have learned from our survey that 95% of our sample prefer to give their clothes to charity rather than to a clothing brand. In this question, the convenience was identical and the financial incentive non-existent. This stresses perfectly the apparent role of the other factors on shaping the decision regarding the disposal methods. The overwhelming majority is certainly due to the altruist feeling associated, as expressed by Albinsson and Perera (2009). We can affirm, based on our sample, that the absence of charity-destination for the collected garments is the biggest barrier to participate. The link between charity and disposal of clothes is strongly present in the mind of consumers. In addition, this method has been favored by the high convenience established in Belgium via the network of collection bins.

**Financial:** While, 95% of the sample choose for charity in similar condition, the proposition of a financial incentive makes a difference. We note a change of intention for 56.6% of the people who had chosen charity over brands in similar disposal conditions (n=128). We assist to a complete change in the configuration of the groups 'positive intention' and 'non-intention'. 60 individuals out of the 112 who claimed previously a non-intention, would now be willing to participate. This proves the importance of the financial incentive over the charity factor for these consumers. Nevertheless, this configuration also leads to a change in opinion from the respondents who previously had the intention to participate. 46 out of 114 who had reported a positive intention but preferred to give to charity rather than to a brand (Question 16), are not influence in their choice, by the financial incentive. This result is interesting and shows the importance of the charity factor. It proves that even in similar conditions and with a financial incentive, the take-back program may lose consumers with a positive intention to participate.

Although the positive effect of the environmental factor, we saw that only 36.1% of the respondents with a positive intention seem purely motivated by this one. 43.4% report expecting a voucher in compensation for their involvement. The financial incentive is ranked after the environmental aspect, based on their effect on the motivation to get involved. This element is a key feature of the take-back programs and seems to play a significant role in the willingness to participate.

The financial factor was the only attitude which had received a mean under '4' on our 7-point Likert scale. Therefore, it is the only element of which the general mean was reported as 'non-important' in the selection of a disposal method. The general attitude of our sample is that the disposal method should not lead to costs, but it is not important that the method makes earn some money.

We get an interesting information from the group with a positive intention. In fact, although considering 'earning some money' as not important in the selection of a disposal method (mean of 2.98 with a standard deviation of 2.004 at question 5), the financial incentive is ranked as the 4<sup>th</sup> most important motivation to participate to the take-back programs. Thus, we understand from these people that earning money is not a key factor in the selection of a disposal method. However, the financial incentive seems to be a crucial motivation to comply.

To further clarify, we can look at the compensation requested at the question 13, 43.4% of the respondents with a positive intention expect a voucher as reward for their participation. We have just stated that the financial factor was ranked at the 4<sup>th</sup> place of the most important motive to participate to the take-back programs. Only factors related to the environment and the ecology scored better. However, only 36.1% of the group with a positive intention seem purely motivated by the environment, based on the compensation asked.

The financial incentive is in fact, a diversification element specific to the take-back program and which asks less effort than reselling apparel. Consumers with a positive intention is less demanding regarding to the value of the garment. We reach the median with a "10% discount" which stands for the value generally proposed on the market (H&M group, MUD Jeans, etc.). To reach the median among the 'non-intention' group, the brands need to propose a "20% discount". We see that for the latter group, the mode is at "more than 20% discount" which is difficult to be proposed by the brands. Only Patagonia proposes such rates but only for products of their own brand and under different conditions. Intermediary we can name Filippa K with its "15% discount" but here also, only for products of their own brand and under different conditions.

## Conclusion

The take-back programs proposed by apparel brands as a disposal method for the post-consumer garments can bring a solutions to the environmental issues while creating marketing opportunities.

We wanted to analyze the factors that influence consumers to bring their end-of-use clothes back in-shop. We have focused on the elements that the clothing brands can impact through their communication, marketing and logistics. Our literature review highlights four major factors: the convenience, the environment, the social and the financial aspect.

First, we note that there is not a significative difference of attitude regarding the convenience. People are driven by the utilitarian aspect of clothing disposal. Thus, the more often the consumers visit a clothing shop that proposes a take-back program, the more they are likely to make use of it. This way, we have people who report to not intent to get involved due to either the low frequency of visits or the non-proximity of a collection point. However, we see that some consumers do not report a positive intention despite their high frequency of visits. Here, the brands can play on the three other factors to obtain a positive intention.

Second, the environmental aspect seems to convince people as it is the main motivation for the people with a positive intention. In addition, we have found a higher rate of intention to participate among 'eco-conscious' people. The environmental card is currently the most played in the communication of brands proposing a take-back program. The launch of ready-to-wear collections in recycled fibers legitimates the take-back initiative and its promotion through environment-friendly messages.

Third, the element that prevents the most consumers to participate is the social aspect. Organizations have succeeded to set a strong connection between charity and the disposal of clothes in people's mind. Moreover, they have implemented a convenient system of collection that fits with the utilitarian motive of cleaning out a closet. Thus, the attitude of people toward this method is more favorable and thus more used.

Fourth, the take-back programs have a financial feature that differentiates them from other disposal methods (except reselling). We have seen that this incentive leads to reinforce the positive attitude of consumers who already reported the intention to take part. Furthermore, some people among those who favorize the donation to charity report to be interested too,

depending on the value of the associated voucher. The value requested by this group in counterpart for the participation is sometimes beyond what the brands currently proposed. For the people who reported a positive intention, this value is closer to the reality of the market.

Our study has theoretical implications:

- We accept the assumption from Weber et al. (2017) that fashion consumers are more likely than others to make use of a take-back program. However, we have made the difference between the frequency of clothing purchase (Weber et al., 2017) and the frequency of visits to a clothing shop.
- In accordance with the findings from Diekmann and Preisendörfer (2003), we note the moderating effect of the convenience.
- We reject the statement from Shim (1995) that the waste recycling behavior of people does not help to predict the disposal of clothes. We can find ourselves more in the conclusion of Bianchi and Birtwistle (2010) who reported a link between the general recycling behavior and the use of responsible methods to dispose clothes. We note a dependence between the voluntary recycling of household waste and the intention to use a take-back program.

Finally, we should remind our readers that we have not observed the behavior of the sample. Our findings relate only to the attitudes and intentions. Therefore, the results should be interpreted with caution as Fishbein and Ajzen (1975) wrote that the intention is not the only component which defines the related behavior.

Based on our results, we can present some managerial recommendations. First, the convenience is a major factor in the selection of a disposal method. The take-back programs imply the visit of consumers in-store to drop their end-of-use garments. This is defined by limited collection points and schedules. Some respondents reported their non-intention to participate due to this inconvenience. Clothing brands that are interested in the project could for example install recycling bins at the locations other than in their shops. However, this solution does not consider the proposition of a financial incentive and the associated sales and loyalty opportunities. A second solution could be to offer the consumers to post their end-of-use clothes. While making the take-back program much more convenient, it can be a costly method either for the brands or for the consumers.

Second, the current use of environmental messages to promote the take-back initiative seems effective. We have seen that it leads to positive intention from consumers. The objective behind this communication is to work on the brand image too. We advise to stay coherent with the

products/services and the strategy. We think that the take-back program can be an opportunity to leverage secondary brand associations in a strategy of green marketing. Therefore, the success of its establishment depends on its cognitive consistency (Swaen, 2017).

The main managerial implication of this study is certainly related to our results regarding the social factors. We have accepted the key importance of this element in the selection of a disposal method. Therefore, we think that the take-back programs could also capitalize on this element. While it would not offer a differentiation regarding the direct donation of clothes to a charity organization, it allows to capture participants thanks to the financial incentive. In fact, it would enlarge the number of participants and secure the participation of people with a positive intention who valued charity. Brands can only communicate on this aspect if the destination of the collected goods is charity, at least partially. This leads to the leveraging of other brand associations but can be suited for brands which emphasize social aspect in their values - such as fair wages along their supply chain.

The financial incentive is compulsory to make the most of the take-back program. We have seen that it is an opportunity to conduct sales and to develop consumer loyalty. Nevertheless, we have doubt about its success if the only motive is sales, without working on the match with the brand image. The financial incentive has a key effect on the intention to participate. It creates the intention to participate for some, while it reinforces it for others. The higher the value of the voucher, the more people would be interested to participate. Thus, this value is to be calculated according to the margin of the brand and the aimed objectives. Our results regarding the minimum value requested by the consumers can be helpful in the calculation of the proposed discount. Finally, for brands which propose or would like to develop the secondhand market of their own products, the value of sales have to be taken into account as well (Morana & Seuring, 2007).

The main limitation of this study is the absence of correlation tests. We should have used a Likert scale to record the intention of participation in a take-back program. Instead, we have used a multichotomic question with single response. This had been decided to differentiate the question according to the response received. Like that, we tested dependence between variables, instead of correlation.

Further research on the matter could investigate the kind of garments that the consumers are willing to dispose via a take-back program. We have seen in the literature review that consumers

are more likely to give a second life to certain garments like jeans, but rather discard clothing items like underwear.

Finally, the financial incentive brings a key question. Further investigations on the matter must determine if the voucher leads to sales or if the sales leads to the procurement of a voucher. In fact, we face a potential risk to see people bringing back end-of-use clothes to receive a voucher, while the absence of discount would not have changed the intention of purchase.

## Bibliography

- Ahmad, M. S., Bazmi, A. A., Bhutto, A. W., Shahzadi, K., & Bukhari, N. (2014). Students' Responses to Improve Environmental Sustainability Through Recycling: Quantitatively Improving Qualitative Model. *Applied Research in Quality of Life*, 11(1), 253-270. doi:10.1007/s11482-014-9366-7
- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211.
- Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of applied social psychology*, 32(4), 665-683.
- Albinsson, P. A., & Perera, B. Y. (2009). From trash to treasure and beyond: the meaning of voluntary disposition. *Journal of Consumer Behaviour*, 8(6), 340-353.
- Alford, B. L., & Biswas, A. (2002). The effects of discount level, price consciousness and sale proneness on consumers' price perception and behavioral intention. *Journal of business research*, 55(9), 775-783.
- Álvarez-Gil, M. J., Berrone, P., Husillos, F. J., & Lado, N. (2007). Reverse logistics, stakeholders' influence, organizational slack, and managers' posture. *Journal of business research*, 60(5), 463-473.
- American Chemical Society. (2017). Upcycling fast fashion to reduce waste and pollution [Press release]. Retrieved from <https://www.acs.org/content/acs/en/pressroom/newsreleases/2017/april/upcycling-fast-fashion-to-reduce-waste-and-pollution.html>
- Andersen, M. S. (2007). An introductory note on the environmental economics of the circular economy. *Sustainability Science*, 2(1), 133-140.
- Anderson, H., & Huges Brodin, M. (2005). The consumer's changing role: the case of recycling. *Management of Environmental Quality: An International Journal*, 16(1), 77-86.
- Atamian Hahn-Petersen, L. (2018). Millennials Say They Care About Sustainability. So, Why Don't They Shop This Way? *Business of Fashion*. Retrieved from <https://www.businessoffashion.com/articles/opinion/op-ed-millennials-say-they-care-about-sustainability-so-why-dont-they-dont-shop-this-way>
- Awareness. (2009). In *Longman dictionary of contemporary English* (5th ed., pp. 101). London: Longman.
- Aydin, H. (2017). Used Clothing Disposal Behavior within the Scope of Sustainable Consumption. *International Journal of Academic Research in Economics and Management Sciences*, 138-152. doi:10.6007/IJAREMS/v6-i3/1352
- Bianchi, C., & Birtwistle, G. (2010). Sell, give away, or donate: an exploratory study of fashion clothing disposal behaviour in two countries. *The International Review of Retail, Distribution and Consumer Research*, 20(3), 353-368.
- Bianchi, C., & Birtwistle, G. (2012). Consumer clothing disposal behaviour: a comparative study. *International Journal of Consumer Studies*, 36(3), 335-341. doi:10.1111/j.1470-6431.2011.01011.x
- Birtwistle, G., & Moore, C. M. (2007). Fashion clothing – where does it all end up? *International Journal of Retail & Distribution Management*, 35(3), 210-216. doi:10.1108/09590550710735068

- Blomgren, A. (2011). Does corporate social responsibility influence profit margins? A case study of executive perceptions. *Corporate Social Responsibility and Environmental Management*, 18(5), 263-274.
- Botetzagias, I., Dima, A.-F., & Malesios, C. (2015). Extending the Theory of Planned Behavior in the context of recycling: The role of moral norms and of demographic predictors. *Resources, Conservation and Recycling*, 95, 58-67. doi:10.1016/j.resconrec.2014.12.004
- Bubna, J. M., & Norum, P. (2017). Male apparel disposal: case study of consignment versus donation. *Journal of Fashion Marketing and Management*, 21(2), 235-246.
- Charity Star. (2018). H&M countries activities. Retrieved from <http://hm.charitystar.com/en/home/>
- Chen, M.-F., & Tung, P.-J. (2009). The Moderating Effect of Perceived Lack of Facilities on Consumers' Recycling Intentions. *Environment and Behavior*, 42(6), 824-844. doi:10.1177/0013916509352833
- Choi, T.-M., Guo, S., Ho, S. S.-Y., & Li, W.-Y. (2015). Effects of used garment collection programs in fast-fashion brands. In *Sustainable fashion supply chain management* (pp. 183-197): Springer.
- Circle Economy. (2017a). Closing the loop: 3 Case Studies Highlighting the Potential Impact of High-Value Textile-to-Textile Recycling. Retrieved from [https://circle-economy.com/high\\_value\\_reuse\\_textile\\_recycling](https://circle-economy.com/high_value_reuse_textile_recycling)
- Circle Economy. (2017b). Post-consumer textile collection is step one, but then what? Retrieved from <https://www.circle-economy.com/post-consumer-textile-collection-fibersort/#.Wre9X4hublW>
- Cone Inc. (2017). *2017 Cone Communications CSR Study*. Retrieved from <http://www.conecomm.com/2017-cone-communications-csr-study-pdf>
- Convenience. (2009). In *Longman dictionary of contemporary English* (5th ed ed., pp. 370). London: Longman.
- Crociata, A., Agovino, M., & Sacco, P. L. (2015). Recycling waste: Does culture matter? *Journal of Behavioral and Experimental Economics*, 55, 40-47. doi:10.1016/j.socec.2015.01.005
- Diekmann, A., & Preisendörfer, P. (2003). Green and greenback: The behavioral effects of environmental attitudes in low-cost and high-cost situations. *Rationality and Society*, 15(4), 441-472.
- Domina, T., & Koch, K. (2002). Convenience and frequency of recycling: implications for including textiles in curbside recycling programs. *Environment and Behavior*, 34(2), 216-238.
- Ekström, K. M., & Salomonson, N. (2014). Reuse and Recycling of Clothing and Textiles—A Network Approach. *Journal of Macromarketing*, 34(3), 383-399. doi:10.1177/0276146714529658
- Ellen MacArthur Foundation. (2017). *A new textiles economy: Redesigning Fashion's future*. Retrieved from [https://www.ellenmacarthurfoundation.org/assets/downloads/publications/A-New-Textiles-Economy\\_Full-Report\\_Updated\\_1-12-17.pdf](https://www.ellenmacarthurfoundation.org/assets/downloads/publications/A-New-Textiles-Economy_Full-Report_Updated_1-12-17.pdf)
- 2015/0275(COD) - Proposal for a directive of the European Parliament and of the Council amending Directive 2008/98/EC on waste, (2017a).
- Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the implementation of the Circular Economy Action Plan, (2017b).
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*.

- Fraser, K. (2015). ReDress: Reducing Textile waste through Component Reuse.
- Geissdoerfer, M., Savaget, P., Bocken, N. M., & Hultink, E. J. (2017). The Circular Economy—A new sustainability paradigm? *Journal of Cleaner Production*, *143*, 757-768.
- Global Fashion Agenda & The Boston Consulting Group. (2017). *Pulse of the fashion industry*. Retrieved from [http://globalfashionagenda.com/wp-content/uploads/2017/05/Pulse-of-the-Fashion-Industry\\_2017.pdf](http://globalfashionagenda.com/wp-content/uploads/2017/05/Pulse-of-the-Fashion-Industry_2017.pdf)
- Global Fashion Agenda & The Boston Consulting Group. (2018). *Pulse of the fashion industry*. Retrieved from <http://www.globalfashionagenda.com/publications/>
- Global Organic Textile Standard. (2017). Global Organic Textile Standard (GOTS). Version 5.0. Retrieved from [http://www.global-standard.org/images/GOTS\\_Documents/GOTS\\_Standard\\_5.0.pdf](http://www.global-standard.org/images/GOTS_Documents/GOTS_Standard_5.0.pdf)
- Goworek, H., Wigley, S. M., Fisher, T., Cooper, T., Woodward, S., & Hiller, A. (2012). The sustainable clothing market: an evaluation of potential strategies for UK retailers. *International Journal of Retail & Distribution Management*, *40*(12), 935-955. doi:10.1108/09590551211274937
- Green Alliance. (2013). *Resource resilient UK: A report from the Circular Economy Task Force*. Retrieved from London: <http://www.green-alliance.org.uk/resources/Resource%20resilient%20UK.pdf>
- GreenBlue. (2017). *Chemical recycling. Making fiber-to-fiber recycling a reality for polyester textiles*. Retrieved from <http://greenblueorg.s3.amazonaws.com/smm/wp-content/uploads/2017/10/Chemical-Recycling-Making-Fiber-to-Fiber-Recycling-a-Reality-for-Polyester-Textiles-1.pdf>
- Guide, V. D. R., Harrison, T. P., & Van Wassenhove, L. N. (2003). The challenge of closed-loop supply chains. *Interfaces*, *33*(6), 3-6.
- Gwozdz, W., Steensen Nielsen, K., & Müller, T. (2017). An Environmental Perspective on Clothing Consumption: Consumer Segments and Their Behavioral Patterns. *Sustainability*, *9*(5), 762.
- H&M Group. (2018). *H&M group: Sustainability report 2017*. Retrieved from [http://about.hm.com/content/dam/hmgroup/groupsite/documents/masterlanguage/CSR/reports/2017%20Sustainability%20report/HM\\_group\\_SustainabilityReport\\_2017\\_FullReport.pdf](http://about.hm.com/content/dam/hmgroup/groupsite/documents/masterlanguage/CSR/reports/2017%20Sustainability%20report/HM_group_SustainabilityReport_2017_FullReport.pdf)
- Ha-Brookshire, J. E., & Hodges, N. N. (2009). Socially responsible consumer behavior? Exploring used clothing donation behavior. *Clothing and Textiles Research Journal*, *27*(3), 179-196.
- Hansen, E. G., & Schaltegger, S. (2016). Mainstreaming of Sustainable Cotton in the German Clothing Industry. In *Sustainable Fibres for Fashion Industry* (pp. 39-58): Springer.
- Harris, F., Roby, H., & Dibb, S. (2016). Sustainable clothing: challenges, barriers and interventions for encouraging more sustainable consumer behaviour. *International Journal of Consumer Studies*, *40*(3), 309-318. doi:10.1111/ijcs.12257
- Hopkins, M. (2007). Corporate social responsibility and international development: Is business the solution? Earthscan. In: James & James.
- Howe, N., & Strauss, W. (2007). The next 20 years. *Harvard business review*, *85*(7-8), 41-52.
- Inditex group. (n.d.). Collect, reuse, recycle. Retrieved from <https://www.inditex.com/our-commitment-to-the-environment/closing-the-loop/collect-reuse-recycle>
- James, A. M., & Montgomery, B. (2017). The Role of the Retailer in Socially Responsible Fashion Purchasing. In *Textiles and Clothing Sustainability* (pp. 1-40): Springer.

- Joung, H.-M. (2014). Fast-fashion consumers' post-purchase behaviours. *International Journal of Retail & Distribution Management*, 42(8), 688-697. doi:10.1108/ijrdm-03-2013-0055
- Joung, H.-M., & Park-Poaps, H. (2013). Factors motivating and influencing clothing disposal behaviours. *International Journal of Consumer Studies*, 37(1), 105-111. doi:10.1111/j.1470-6431.2011.01048.x
- Joung, H. M., & Park-Poaps, H. (2013). Factors motivating and influencing clothing disposal behaviours. *International Journal of Consumer Studies*, 37(1), 105-111.
- Kang, J., Liu, C., & Kim, S. H. (2013). Environmentally sustainable textile and apparel consumption: the role of consumer knowledge, perceived consumer effectiveness and perceived personal relevance. *International Journal of Consumer Studies*, 37(4), 442-452.
- Kant Hvass, K. (2014). Post-retail responsibility of garments – a fashion industry perspective. *Journal of Fashion Marketing and Management: An International Journal*, 18(4), 413-430. doi:10.1108/jfmm-01-2013-0005
- Keller, K. L. (2013). *Strategic brand management: building, measuring, and managing brand equity* (Global, 4th ed.). Boston (Mass.): Pearson.
- Kim, H.-S., & Hall, M. L. (2015). Green brand strategies in the fashion industry: Leveraging connections of the consumer, brand, and environmental sustainability. In *Sustainable Fashion Supply Chain Management* (pp. 31-45): Springer.
- Koszewska, M. (2016). Understanding consumer behavior in the sustainable clothing market: Model development and verification. In *Green Fashion* (pp. 43-94): Springer.
- Koukouvinos, D. (2012). Psychosocial Factors Influencing Young Consumers' Clothing Disposal Behaviour in Greece.
- Kozar, J. M., & Hiller Connell, K. Y. (2013). Socially and environmentally responsible apparel consumption: knowledge, attitudes, and behaviors. *Social responsibility journal*, 9(2), 315-324.
- Laitala, K. (2014). Consumers' clothing disposal behaviour—a synthesis of research results. *International Journal of Consumer Studies*, 38(5), 444-457.
- Laitala, K., & Klepp, I. G. (2011). Environmental improvement by prolonging clothing use period. *Towards sustainability in the textile and fashion industry*, 26, 2011.
- Lifset, R., Atasu, A., & Tojo, N. (2013). Extended producer responsibility. *Journal of Industrial Ecology*, 17(2), 162-166.
- Maki, A., Burns, R. J., Ha, L., & Rothman, A. J. (2016). Paying people to protect the environment: A meta-analysis of financial incentive interventions to promote proenvironmental behaviors. *Journal of Environmental Psychology*, 47, 242-255.
- Maldini, I., Duncker, L., Bregman, L., Piltz, G., Duscha, L., Cunningham, G., . . . van Balgooi, F. (2017). Measuring the Dutch clothing mountain: data for sustainability-oriented studies and actions in the apparel sector. In Amsterdam: Hogeschool van Amsterdam.
- McKinney, L. N., Legette-Traylor, D., Kincade, D. H., & Holloman, L. O. (2004). Selected social factors and the clothing buying behaviour patterns of black college consumers. *The International Review of Retail, Distribution and Consumer Research*, 14(4), 389-406.
- Morana, R., & Seuring, S. (2007). End-of-life returns of long-lived products from end customer—insights from an ideally set up closed-loop supply chain. *International Journal of Production Research*, 45(18-19), 4423-4437. doi:10.1080/00207540701472736

- Morgan, L. R., & Birtwistle, G. (2009). An investigation of young fashion consumers' disposal habits. *International Journal of Consumer Studies*, 33(2), 190-198. doi:10.1111/j.1470-6431.2009.00756.x
- Norum, P. (2017). Towards Sustainable Clothing Disposition: Exploring the Consumer Choice to Use Trash as a Disposal Option. *Sustainability*, 9(7). doi:10.3390/su9071187
- OECD. (2000). *Extended Producer Responsibility : A Guidance Manual for Governments*. Paris: OECD.
- Packard, V. O. (1960). *The Waste Makers*. New York: David McKay Company. In: Inc.
- Parkinson, D., & Noble, J. (2005). Transactional costs. In *Oxford business English dictionary for learners of English* (pp. 574). Oxford: Oxford university press.
- Past Earth overshoot days. (2018). Retrieved from <https://www.overshootday.org/newsroom/past-earth-overshoot-days/>
- Peattie, K. (1995). Sales promotion. In M. J. Balker (Ed.), *Companion Encyclopedia of Marketing* (pp. 683-701). London & New York: Routledge.
- Peterson, A. (2015). *Towards Recycling of Textile Fibers: Separation and Characterization of Textile Fibers and Blends*. Diss. Chalmers University of Technology, Retrieved from <http://publications.lib.chalmers.se/records/fulltext/218483/218483.pdf>
- Pleyers, G. (2017). *LLSMS2005 Etudes de marché*. Université Catholique de Louvain.
- Pomarici, E., & Vecchio, R. (2014). Millennial generation attitudes to sustainable wine: an exploratory study on Italian consumers. *Journal of Cleaner Production*, 66, 537-545.
- Pookulangara, S., & Shephard, A. (2013). Slow fashion movement: Understanding consumer perceptions—An exploratory study. *Journal of Retailing and Consumer Services*, 20(2), 200-206. doi:10.1016/j.jretconser.2012.12.002
- Ravishankara, A., Daniel, J. S., & Portmann, R. W. (2009). Nitrous oxide (N<sub>2</sub>O): the dominant ozone-depleting substance emitted in the 21st century. *Science*, 326(5949), 123-125.
- Rezaei, S. (2016). *Apparel Recycling: Consumer Behavior and Brands' Perspectives*: North Carolina State University.
- Ritchie, H., & Roser, M. (2018). CO<sub>2</sub> and other Greenhouse Gas Emissions. Retrieved from <https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>
- Roberts, J. A., & Manolis, C. (2000). Baby boomers and busters: an exploratory investigation of attitudes toward marketing, advertising and consumerism. *Journal of Consumer Marketing*, 17(6), 481-497.
- Schultz, P. W., & Oskamp, S. (1996). Effort as a moderator of the attitude-behavior relationship: General environmental concern and recycling. *Social psychology quarterly*, 375-383.
- Service Public Fédéral Belge. (n.d.). Un aperçu chiffré de la population. Retrieved from [https://www.belgium.be/fr/la\\_belgique/connaitre\\_le\\_pays/Population](https://www.belgium.be/fr/la_belgique/connaitre_le_pays/Population)
- Shaw, P., & Maynard, S. (2008). The potential of financial incentives to enhance householders' kerbside recycling behaviour. *Waste management*, 28(10), 1732-1741.
- Shim, S. (1995). Environmentalism and consumers' clothing disposal patterns: an exploratory study. *Clothing and Textiles Research Journal*, 13(1), 38-48.
- SPF Economie. (2018). Structure de la population. Retrieved from <https://statbel.fgov.be/fr/themes/population/structure-de-la-population#news>
- Stall-Meadows, C., & Goudeau, C. (2012). An unexplored direction in solid waste reduction: household textiles and clothing recycling. *Journal of Extension*, 50(5), 5RIB3.

- Swaen, V. (2017). *LLSMS2021 Managing Brand Equity*. Université Catholique de Louvain.
- Textile Exchange. (2017). *Preferred fibers & materials: Market report 2017*. Retrieved from <http://textileexchange.org/2017-market-reports/>
- The Business of Fashion and McKinsey & Company. (2016). *The state of fashion 2017*. Retrieved from <https://www.businessoffashion.com/articles/news-analysis/the-state-of-fashion-2017>
- The Business of Fashion and McKinsey & Company. (2017). *The state of fashion 2018*. Retrieved from [https://cdn.businessoffashion.com/reports/The\\_State\\_of\\_Fashion\\_2018\\_v2.pdf](https://cdn.businessoffashion.com/reports/The_State_of_Fashion_2018_v2.pdf)
- The International Institute for Industrial Environmental Economics. (2014). *EPR systems and new business models: Reuse and recycling of textiles in the Nordic region*: The International Institute for Industrial Environmental Economics.
- Thiemens, M. H., & Trogler, W. C. (1991). Nylon production: an unknown source of atmospheric nitrous oxide. *Science*, *251*(4996), 932-934.
- Trudel, R., & Argo, J. J. (2013). The Effect of Product Size and Form Distortion on Consumer Recycling Behavior. *Journal of Consumer Research*, *40*(4), 632-643. doi:10.1086/671475
- Vicente, P., & Reis, E. (2008). Factors influencing households' participation in recycling. *Waste Management & Research*, *26*(2), 140-146.
- Wagner, T. P. (2013). Examining the concept of convenient collection: An application to extended producer responsibility and product stewardship frameworks. *Waste management*, *33*(3), 499-507.
- Watson, D., Kiørboe, N., Palm, D., Tekie, H., Ekvall, T., Lindhqvist, T., . . . Rubach, S. (2015). *EPR-systems and new business models: Part II: Policy packages to increase reuse and recycling of textiles in the Nordic region*: Nordic Council of Ministers.
- Weber, S., Lynes, J., & Young, S. B. (2017). Fashion interest as a driver for consumer textile waste management: reuse, recycle or disposal. *International Journal of Consumer Studies*, *41*(2), 207-215. doi:10.1111/ijcs.12328
- Žurga, Z., Hladnik, A., & Tavčer, P. F. (2015). Environmentally sustainable apparel acquisition and disposal behaviours among Slovenian consumers. *Autex Research Journal*, *15*(4), 243-259.