Université Libre de Bruxelles
Institut de Gestion de l'Environnement et d'Aménagement du Territoire
Faculté des Sciences
Master en Sciences et Gestion de l'Environnement

"The management of its environmental impacts by the fast fashion industry: a case study of H&M's Conscious Actions from the supply chain to the consumer"

Mémoire de Fin d'Etudes présenté par
Mikolajczak, Chloé
en vue de l'obtention du grade académique de
Master en Sciences et Gestion de l'Environnement
Finalité Gestion de l'Environnement Ma60ECTS ENVI4
Année Académique : 2014-2015

Directeur : Professeur Edwin Zaccaï

Acknowledgements

With special thanks to….

Abstract

The fast fashion industry has gained significant importance over the past three decades by offering fashion consumers trendy clothes on a weekly basis at affordable prices.
By doing so, environmental impacts of all kinds have risen throughout the companies' value chain and became such burden that criticisms from NGO's, media's, and the environmentally conscious public have only became louder.

In order to respond to these criticisms while keeping a favorable image and gain the market of conscious consumers, most retailers in the sector have launched, through Corporate Social Responsibility or partnerships with NGOs, initiatives or coallitions, sustainable initiatives to « green » their value chain and attempt to minimize the risks they are causing to the environmnent. Such strategies aim at taking responsibility for the damages caused and endorse the role of « green » brands, but mostly, the goal is to gain competitivity while adressing and gaining new consumers, concerned about the origin and the production of their products and who, otherwise, would not purchase from fast fashion retailers. To do so, brands do not hesitate to emphasize these actions through heavy marketing campaign.

While, in the case of H&M, it is undeniable that efforts regarding concerning stages of the value chain have been made, often with encouraging results, such companies with such financial means are able to go much further. Indeed, it is not rare to see these efforts being focused on steps where positive outcomes are easily atteignable and advertisable, such as where the brand has a strong influence. On the other hand, where retailers only have little control, such as yarn and fabric making, the results and objectives often lack ambition, numerous values or benchmark.

On top of that conclusion, our analysis has showed that making efforts towards reducing environmental impacts is, of course, a step forward but with a growth such as fast fashion's, the current model it bases itself on will conitnue to be overstepping on the planet's boundaries.
Indeed, with depletion of natural ressources, pollution, emissions and production of waste at a scale such as induced by the fast fashion production and consumption's model, environmental sustainability will remain a utopia, unless investments in innovative technologies and a business model less demanding of the environment are adopted and implemented.

Resume en francais

L'industrie de la *fast fashion* n'a cessé de croitre durant les 3 dernières décennies en offrant aux consommateurs des vêtements à la mode, renouvelés toutes les semaines et à des prix abordables.
Cette offre s'accompagne inexorablement d'impacts environnementaux tout au long de la chaine de valeur des entreprises et ces derniers sont devenus un tel problème que les ONG, les médias et les consommateurs « responsables » n'ont cessés de les critiquer.

Pour repondre à ces critiques tout en conservant une image positive et en s'accaparant le marché des consommateurs verts, la plupart des marques du secteur ont lancé, à travers leurs programmes de responsabilité sociétale et environnementale ou des partenariats avec des ONGs, des coallitions ou des acteurs du secteur, des initatives « durables » afin de diminuer leurs impacts sur l'environnement.
De tels initiatives ont pour but de faire prendre leurs responsabilites aux entreprises et d'endosser le rôle de marques « vertes » mais surtout de gagner en compétitivité en séduisant les consommateurs inquiets de l'origine et du mode de production de leurs achats, qui, en d'autres cas, n'achèteraient pas dans des magasins de *fast fashion*. Afin de convaincre ces consommateurs, les marques n'hésitent pas à mettre en avant ces initiatives à travers de puissantes compagnes de marketing.

Même si il est indéniable que, dans le cas d'H&M, des efforts concernant les problèmes environnementaux de certaines etapes de la chaine de valeur on été fait, souvent avec des resultats encourageants, de tels entreprises avec de tels moyens financiers ont la capacité de poursuivre leurs efforts bien plus loin. En effet, il n'est pas rare de noter que ces efforts sont concentrés sur des etapes ou des resultats positifs sont plus facilement atteignables et communicables, tels que celles ou la marque a une influence forte. En revanche, là où les entreprises ne disposent que de peu de contrôle, tel que l'étape de la fabrication des tissus, les resultats et les objectifs sont souvent flous, peu ambitieux et sans points de comparaison.

Au delà de cette conclusion, notre analyse a montré que faire des efforts vers la réduction des impacts environnementaux représente, bien evidemment, un grand pas vers l'avant mais, avec une croissance telle que celle de la *fast fashion,* le modèle actuel sur lequel est basé ce secteur de l'habillement continuera à menacer la capacité de régénération de l'environnement.
En effet, avec l'épuisement des ressources naturelles, la pollution, les émissions et la production de déchets à une echelle telle que celle impliquée par le modèle de production et de consommation de la *fast fashion,* la durabilité environnementale restera une utopie tant que d'importants investissements en technologies innovantes et un modèle economique moins exigeant sur l'environnement seront adoptés et appliqués.

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<u>Introduction</u>

Background and objectives :

The rise in imported goods and the spreading of the popular culture and the mass media in the 1980's led to an unprecedent crisis in the fashion industry. The consumers refused to be imposed pre-defined styles that had been decided the previous year and wanted to be able to buy the latest trends at affordable prices.
The fast fashion model was born out of these demands by providing consumers with cheap fashion that was following most closely, on a weekly basis, the latest trend that could find itself on fast fashion shelves within two weeks.
Ever since its appearance, the fast fashion industry hasn't stopped growing to reach multi-billions turnover and a continous expansion of 10 to 15% a year on average.

To satisfy the fashion conscious consumer's every need in an accessible way, drastic changes have had to be made in areas such as supply chain management, fashion buying, marketing or relationships with the suppliers and concepts have been invented to provide more efficient supply chain in order to increase productivity at an always lower cost.

Yet, this transition has not been without consequences, both on the planet and on vulnerable populations in developping countries, where fast fashion retailers outsource most of their production. Indeed, such model entails high environmental costs ranging from water pollution to atmospheric emissions and depletion of natural ressources as well as the appreance of enormous quantity of solid clothing waste and social issues for the factories workers.

However, in the recent years, voices from NGOs and consumers groups have risen against this consumption model and alternatives have been launched to offer interested consumers other ways to dress.
Facing these critics and potential stronger regulations, many fast fashion brands have decided to launch, programs and actions to improve their social and environmental performances and their image, yet a doubt remains on whether these strategies are targeting the right issues and have the intended goal.
While the sustainability issues caused by the fast fashion industry have been known for a while, the scientific literature remains limited regarding the matter which makes it a innovative topic to deal with. Indeed, articles have been written regarding fast fashion model one one side and sustainable supply chains on the other but few authors have taken a closer look on the impacts each topic has on the other.

Therefore, our research question will be the following : *by what means is the fast fashion industry attempting to reduce its environmental impacts and are these initatives consistent in a context of overproduction and overconsumption such as the one inherent to fast fashion ?*

To answer this question, we will need to identify in the first place the drivers of this growing awareness from the fast fashion industry regarding the risks it is placing on the planet, followed by the actions and strategies set up by to mitigate those risks and finally what are the results of these initiatives in terms of environmental pressure.
To be able to produce such analysis, it is fundamental to understand the inherent features of the fast fashion model on one side, including the clothing consumption model it induced and

each of the impacts it causes environmentally wise on the other hand. Only then will we be able to take a critical look on these sustainable initiatives.

Limitations of the subject and of the dissertation

The subject of our dissertation is the fast fashion industry which sould not be confused with the fashion industry that includes other segments such as luxury fashion, *haute-couture*, ready to wear and retail. It is fundamental to mark out this difference as the impacts of these different categories are, obviously, not the same.

Moreover, due to the nature of our degree course, we have decided to focus exclusively on the environmental impacts of the industry and set aside the numerous social consequences that we felt were not relevant to our analysis and have already been the subject of other dissertations. Therefore, when we use the term « sustainability » we are exclusevely refering to environmental sustainability that can be defined as « responsible interaction with the environment to avoid depletion or degradation of natural ressources and allow for long term environmental quality » (Unesco, 2015).

Finally, since we have decided to write out this dissertation in english, most of our sources were looked for and analyzed in english, therefore exluding authors from other languages in this research.

Méthodology et ressources used

This dissertation is based on an extended review of the litterature for the theoretical part regarding the features of fast fashion and the consequences entailed by this business model. To do so, we searched through several database with key words such as « fast fashion », « fast fashion model », « sustainability and fast fashion ».

We also drafted a questionnaire to learn more about the consumption habits of fast fashion consumers and their opinions regarding sustainability and the industry. The extented methodology will be developed in the corresponding sub section.

Finally, we chose to perform a case study, to analyze concretely,the corporate social responsibility of one of the most representative fast fashion brands in the sector : H&M.

To do so, we created an analysis grid with a certain number of criterias corresponding to the various value chain's stages and the environmental impacts that can be found throughout it.

The analysis was then based on several ressources produced by the brand such as its Corporate Social Responsibility report or its Annual Financial report.

All of these sources were analyzed in english.

Structure of the dissertation

This dissertation will start by exposing the notions at stake such as the advent of fast fashion, the consequences it led to in terms of production and consumption, the sustainability issues faced by the industry as well as the consumer's opinions and the alternatives to the model that have started to surface recently.

In the second part, we will focus on the subject of our case study : H&M and we will analyse its « sustainable strategy » from a critical and environmental point of view, in order to identify the progress or the missing elements and deduct whether these initiatives could, indeed, reduce the industry's massive environmental impacts or if this is more a matter of greenwashing and cornering of a new market.

Part 1 : Fast fashion, a highly successful, yet complex industry

1. What is fast fashion

1.1. Fashion in its traditional form

For decades fashion has functionned with 2 collections a year according to the seasons : spring/summer and fall/winter. The collections would be presented at least 6 months in advance and the designer's choices would dictate what would be fashionable for the next half year (Sull & Turconi, 2008 ; Birtwistle et al, 2003).
Overall, the supply chain would need about 18 months to deliver a new product and 66 weeks alone from the raw material to the consumer with only 11 connected to manufacturing, 40 to warehousing and 15 for the product lying and waiting in the store (Barnes & Lea-Greenwood, 2006)

These particularly long amounts of time between the design decision making and the arrival in stores, called lead times, were linked to the strategy in place at that time : the push through strategy, according to which production of the products begins without concern for what the customers are demanding (Krajewski & al, 2007 quoted in Hansson, 2011). The fashion retailers would buy according to their forecasting previsions based on the fashion shows and the sales from the previous years and push these new products towards the consumers without knowing if these orders would match the consumer's wishes. (Birtwistle et al, 2003).

However, this model showed a high risk of « inaccuracy from out of date data and difficulties in predicting popular sellers » (Birtwistle et al, 2003, quoted in Bruce & Daly, 2006, p.57), that could lead to stocking unwanted items while best sellers would run out of stock (Bruce & Daly, 2006).
Indeed, thanks to this forecasting strategy of the consumers needs and what would become fashionable, retailers were using mass production which « leads to a high level of inventories » (Hanson, 2011, p.11) that, in case of a shift in trends would remain unsold merchandise for the retailers, therefore representing an important financial loss.

1.2 The advent of fast fashion

The model we described above, based on forecasting the trends based on previous sales and pushing products towards the customer, hit a turning point in the 1980's.
Until then, and despite its numerous disadvantages, it was working because the « fashion industry was based on low cost mass production of standardized styles that did not change frequently due to the design restrictions of the factories, such as Levi's 501 jeans and a man's

white shirt » (Brooks, 1979 quoted in Bhardwaj & Fairhurst, 2010, p.166).

But in the mid 80's, the market for imported goods started to grow significantly, leading to the fading out of mass production in western countries, because of the increased interest from consumers in fashion causing a reduced demand for standardized clothing (Baily 2001 quoted in Bhardwaj & Fairhurst, 2010).

The timing also corresponds to the spreading of mass media and popular culture which enabled consumers to have a better access to fashion shows, trade fairs and celebrity styles, leading to an increased demand for fashionable products, on a frequent basis.

Fast fashion was born.

Among the many definitions of fast fashion, we chose the one by Barnes and Lea-Greenwood according to whom fast fashion is « a business strategy which aims to reduce the processes involved in the buying cycle and lead times for getting new fashion product into stores, in order to satisfy consumer demand at its peak » (Barnes & Lea-Greenwood, 2006, p.259).

However, to do so, retailers have had to drastically adapt their business models, adopt new strategies, change their vision and develop new partnerships. We will develop some of these changes in the following section.

1.3 The pillars of the fast fashion model.

The main concept that drives fast fashion is **time.**

As we mentioned above, contrary to the push through strategy which was the norm in traditional fashion, fast fashion works thanks to a pull strategy (Barnes and Lea-Greenwood 2010).

Rather than not taking into account the customer's needs and gambling on his wish to purchase the products bought by the retailers, the fast fashion concept focuses on the consumer, shifting the model towards a demand driven approach, that has consequences not only on the supply chain management, but also on the purchasing behaviour of customers.

A. Consumer driven approach

In the past 20 years, consumers have developped a taste for fashion leading to a significant growth in the sector.

What used to be unaccessible to most people has found its way through the consumers, thanks to the mass media and the culture of celebrities and other personalities.

It is not uncommon nowadays for women's magazines to publish photos of fashion shows or what the celebrities are wearing « leading to a demystification of the fashion process » (Sydney, 2008 quoted in Bhardwaj and Fairhurst, 2010, p.168).

This increase of fashion consicous consumers led to a rapidly growing demand for affordable fashionable clothes, that can be bought and renewed frequently to remain trendy, leading to a shorter lifecycle of the product.

Indeed, rather than offering clothes that would last a whole season, retailers are renewing the garments so frequently that « interpretations of the runway designs are introduced to the stores in a minmum of three to five weeks » (Barnes & Lea-Greenwood, 2006 quoted in Bhardwaj and Fairhurst, 2010, p.169), leading to a sometimes weekly consumption of clothing. .

The focus being now on what the consumer wants and how to bring the trend to him in the shortest time possible, the fast fashion industry has been using various methods to monitor the customers preferences and fulfill these wishes as fast as possible. (Barnes & Lea-Greenwood, 2010).

We will thereafter present two of these concepts that seemed the most relevant to us when it comes to understanding the basis of fast fashion.

B. Quick response

According to Sheridan et al Quick Response is a « consumer driven business strategy of co-operative planning by supply chain partners, to ensure the right goods are in the right place, at the right time, using IT and flexible manufacturing to eliminate inefficiencies from the entire supply chain » (Sheridan et al, 2006, p.302).

In order to achieve these particular short lead times implied by Quick Response, Cachon and Swinney advocate for a combination of different factors, including the location of the production, information systems to monitor inventory and restocking and finally, methods for shipment and distribution (Cachon & Swinney, 2011).
These elements enable retailers to be highly reactive to the changes in demand and to offer consumers the exact product they are looking for at the exact moment they want it.

Hayes and Jones identified the key element of quick response as « advanced information technology » (Hayes & Jones, 2006) that offers this kind of reactivity to the retailer. Indeed not only can this kind of technology capture the demand as close to the consumer as possible, it also enables the supplier to be almost immediately informed of any changes or evolution in the inventory and to act according to these elements, avoiding thereby the long lead times in traditional fashion due to the information being forecasted from previous years sales (Sheridan et al, 2006).
As specified by Netessitne and Sang, « the system does not need to be very sophisticated but enables the feedback of real time sales information into distribution, production and even design decisions » (Netessine & Sang, 2009, p.64).
 Quick response thereby creates an invisible link between the consumer and the supplier thanks to which retailers are always able to provide the latest trends at the wanted time.

By using this strategy, fewer mass orders are sent pre-season but frequent small ones are made throughout the season. Therefore, the system also helps with avoiding holding unwanted stock that might not be able to be sold during the sales, as the styles would already

be out of fashion as the « risk associated with forecasting as product specifications are not finalised until closer to delivery » (Birtwistle et al, 2003 quoted in Bruce & Daly, 2006).

According to Hammond and Kelly, quick response has been described since the 80's as the only viable strategy under the current conditions in the clothing market (Hammond & Kelly, 1990 quoted in Netessine & Sang, 2009).

C. Enhanced design

Reactivity and adaptability to the changes in trends and consumer demand, are not the only component of the fast fashion's model which aims at offering not only new collections frequently, but also highly fashionable designs which Cahon & SSwiney refers to as « enhanced design ».
The goal here is to offer products « that are of greater value to consumers and hence elicit a greater willingness to pay » (Cahon & Swiney, 2011, p.779) which may lead retailers to charge « higher prices on "trendy" products than on more conservative products » (Cahon & Swiney, 2011, p.779). Indeed, enhanced design may be more costly than mass production of standardized products, but it represents a key component of fast fashion's specificity and can therefore not be avoided.
To make sure, that the designs are answering the consumers' demand, an in depth investigation of the consumer's preferences as well as a reduction in design lead time is mandatory (Cahon & Swiney, 2011).

It is the combination of quick response and enhanced design that makes fast fashion as efficient as it is today. Some companies are only based on one or the other concept and can therefore not expect to offer the same level of fashionability at such a low cost and as frequently as a fast fashion does.

1.4 The changes entailed by the fast fashion model

The appearance and spreading of the fast fashion model has significantly challenged the traditionnal approach to fashion buying, supply chain management and sourcing leading to a necessary restructuration of these activities as well as fast adaptation to these new principles from all the actors involved in the sector.

A. Fashion buying

Fast fashion with its increased rhythm of seasons that can go up to 12 or 20 in some cases such as Zara (Barnes & Lea-Greenwood, 2006) has tremendously changed fashion buying habits.

Where buying was traditionnaly following fixed trade fairs, fashions show based on the 4 seasons of the year, and happened as long as a year in advance of the selling season (Birtwistle et al, 2003), in companies with a focus on fast fashion, « buying can occur frequently, even a on weekly basis » (Buckley, 2006, quoted in Bruce & Daly, 2006)

This change in the frequency of buying may entail higher costs, but it also avoids retailers fear of excessive stock and out of stock sales (Bruce & Daly, 2006).

Moreover, buying on a weekly basis is the only way to ensure a frequent enough restocking to meet the consumer's demands in the right time. Indeed, as new styles can be designed and produced within two weeks (Morgan & Birtwistle, 2009) a frequent buying system enables retailers to never fall short of the latest trends and always offer consumer's full shelves, feeding the regular consumption cycle that caracterizes the fast fashion consumption behaviour.

However, by increasing the buying rhythm within the year, the supply chain management has been strongly impacted and the relationship with the suppliers has had to adapt quickly.

B. Supply chain management

Chen and Paulraj define the supply chain as « all the activities that must be performed to create value, from procuring raw mterials, transforming them into finished products, and delivering those products to the customers » (Chen & Paulrakj, 2004, quoted in Kim, 2013, p.217). The adoption of the fast fashion model has not been without mutliple consequences on these activities, and we will expound here some of these changes.

We mentioned above quick response and enhanced design, but other concepts have been developed to improve the supply chain in the fast fashion sector, such as « agile supply chain », « lean » or « just in time » (Barnes &Lea-Greenwood 2010). These concepts may differ in their methodology but they all have the same purpose : to achieve an effective supply chain management which is a key element in the fast fashion model. To do so, « these practices have often been related to vertical integration focusing on collaboration, information sharing and trust between entities in a supply chain » (Bhardwaj & Fairhurst, 2010, p.170).
But to achieve such a goal, the choice of a concept to abide by is not the only challenge to focus on, « the firm must be able to co-ordinate among the supply chain participants such as suppliers, vendors, outsourcing partners, distributors and customers effectively » (Porter, 1986 ; Chen et al, 2001 ; Zimmer, 2002 quoted in in Kim, 2013, p.217).

However, with the increased number of seasons and frequent orders that need to arrive in shops within weeks, the suppliers have been put under significant pressure.

Contrary to the traditional supply chain where an important number of suppliers is used, in

fast fashion, the tendency is at limiting the number of suppliers to avoid losing time communicating with hundreds, sometimes thousands of partners, which could delay the arrival of the product on the shelves. (Barnes & Lea Greenwood, 2006). This choice to reduce the number of entities involved leads to the creation of partnerships between retailers and suppliers rather than just a top-down chain of command (Barnes & Lea Greenwood, 2006).

Therefore, supplier selection is a key component of supply chain management (Moin, 2986, quoted in Bruce & Daly, 2006) and « time and cost are the key parameters dominating vendor selection » (Bruce & Daly, 2006, p.331).

Moreover, « suppliers are now expected to carry out quality control, packaging, ticketing and encouraged to do creative product development in an attempt to reduce cycle times and be more responsive to consumer demand » (Barnes & Lea-Greenwood, 2006, p.267) .Less suppliers added to shorter production time, has led to increased responsibilities for suppliers if they want to remain working with the retailers, therefore enhancing competitivity amongst them.

On top of the above, suppliers have also been pressured into providing smaller quantities, as low as 500 pieces in some cases (Barnes & Lea-Greenwood, 2006) to keep the unique feeling of highly fashionable pieces and avoid the risk of a product becoming unpopular (Doyle et al, 2006 quoted in Hansson, 2011). But retailers are, on the other hand, still demanding vast quantities of basic products. Combining these demands represents a significant challenge for the suppliers.

On the other hand, close collaboration within the supply chain has risen. The sector « requires suppliers that understand the importance of changes and the ability to get trends into the store and available to the consumer in shortest possible time » (Bruce & Daly, 2006 quoted in Hansson, 2011). The several concepts that rule the supply chain in fast fashion that we mentionned are based on data sharing between shops managers, retailers and suppliers (Barnes & Lea-Greenwood, 2006 ; Christopher et al, 2004 ; Bhardwaj & Fairhurst, 2010) entailing trust and partnerships to deal with highly variable market conditions.

Beyond the agreement of all the actors in the sector that having an efficient supply chain is mandatory for meeting the consumer's needs, not all the retailers have adopted the same business model to reach the desired objectives.

1.5 Different sourcing model for different retailers

Considering the many changes working with fast fashion retailers imply for the supply chain actors, it seems fundamental for the retailers to make a thorough examination of the sourcing models they want to adopt. Indeed, this choice will lead to working with different partners in different parts of the world, different costs as well as a different strategy. According to Kim,

« a sourcing strategy involves how much of the process needed to make its products the firm should internalize » (Kim, 2013, p. 222).

A. Outsourcing

When a firm decides to outsource its production, « it uses external suppliers and/or partner companies for making products or procuring parts and materials » (Kim, 2013, p.223).

Along with the need to provide new products frequently and to maintain low prices, many companies in the fast fashion industry started to relocate sourcing, manufacturing and processing to foreign countries where the labor and environmental costs are significantly lower, « resulting in a substantial cost advantage ». (Bhardwaj & Fairhurst, 2010, p.168).

The focus of our case study whose specificities we will develop in the second part of this work, H&M, is often cited as an example to illustrate outsourcing in the fast fashion sector, as it oursources most of its activities to low-wage countries, especially in Asia. The reason the company started working with independant foreign suppliers that could meet the frequent demands for a lower price, was to enable H&M to offer « fashion and quality at the best price » the motto according to which the company abides. But, more generally, « since labor costs are the major portion of the production cost in moderately priced apparel, keeping labor costs as low as possible makes sense » (Mihm, 2010, p.56). The main reason behind outsourcing is therefore cost related.

Moreover, by doing so, H&M can also increase competitivity amongst its 700 suppliers and by doig so the brand has a better control when it comes to replacing inneficient supplier.
Therefore, H&M and other outsourcing retailers can choose among the best and most reactive suppliers and thereby offer fashionable clothes at the lowest price possible.
In the case of H&M, factories and suppliers are not the only components of the supply chain that are outsourced ; none of the stores are owned by the company, but only rented.

However, by sub contracting many operations to many different suppliers, sometimes in different countries, longer lead times can occur, leading to less reactive responses to the changes in demand and less control over the supply chain is possible (Christopher et al, 2004 ; Birtwistle et al, 2003, Bruce & Daly, 2006).
But, in the case of outsourcing companies, using this model enables them to lower the prices on the products, therefore increasing the demand which enables the costs of outsourcing, such as a reduction in speed to market and quality barriers, to be covered by more sales (Fernie & Azuma, 2004 quoted in Barned & Lea Greenwood, 2006). Moreover, the adoption of quick response and other supply chain management strategies has shown that efficiency and rapidity in the clothing supply chain are possible even when long physical distances are involved.

B. *Insourcing*

Another sourcing model that can be found in the fast fashion sector, is insourcing which « implies that the firm makes its products or supplies internally, i.e. inside its own plants or facilities » (Kim, 2013, p. 222).
Zara, part of the ever growing spanish group Inditex, is the main example of insourcing and vertical integration in the industry as the company « controls every part of the supply chain » (Mihm, 2010, p.58).

Zara uses its own designers and relies heavily on regular communication with the shop managers to find out the consumer's needs and is therefore able to design, produce and put new garments in the stores within two weeks (Mihm, 2010).
Moreover, the company sells its products only to the stores owned by Inditex and these stores sell only Zara's products (Crofton & Dopico, 2007). Inditex also owns a large portion of its factories and maintains the « capital intensive, yet complicated operations in house and outsources the labor intensive operations to a network of local subcontractors many of which (…) in Galicia » (Sull & Turconi, 2008, p.6). This enables the company to shorten the lead times and maintain flexibility.
Finally, « distribution and retail sales are also performed by Inditex subsidiaries » (Crofton & Dopico, 2007, p. 43) finalizing the vertical integration of the operations.

By insourcing most of its activities and producing only the products with a longer life cycle in lower wage countries, retailers may avoid the costs and higher lead times related to distance and can also enjoy a tight control on all of their operations, enabling fast reactivity and the assurance of producing clothes that always meet the consumers demands at the right time.

After having presented the characteristics of the fast fashion industry, as well as the upheaval its appearance caused in the sector and the important concepts and business models related to it, we would like to move on to the main issue that will be developped in this thesis : the environmental unsustainability of the fast fashion industry.
Several reasons leading to this unsustainability might seem obvious after this first chapter, however we would like to develop in the following one, both the issues linked to the concept of fast fashion itself as well as some of the environmental impacts that can be encountered throughout the value chain of a fast fashion garment.

2. How is fast fashion unsustainable for the environment ?

2.1 By the way it creates a new model regarding clothing consumption

Fast fashion, thanks to the combination of different factors such as enhanced design and quick response is able to respond to the consumer's demand in lead times as short as two weeks in

some cases. The goal being to provide every consumer, each time they step into a fast fashion store, with new and fashionable items that were not on display during their previous visit .
However, it has been noted that this kind of model has an impact on consumer purchasing behavior.

While, traditionally, many consumers were « anticipating markdowns and intentionally delaying purchasing until a sale occurs » (Rozhon, 2004, quoted in Cachon & Swinney, 2011,p.779), fast fashion with its frequent stocking-up and low prices has been able to turn this behaviour around.

By focusing on the idea of « here today, gone tomorrow » retailers began to create a « sense of perishability » (Byun & Sternsquist, 2012) which encourages the customer to buy more frequently in the fear of missing out.

Moreover thanks to the enhanced design concept, retailers provide consumers with products that they value more and are less willing to loose by waiting for a sale if there is any risk that the item will stock out. (Cachon & Swinney, 2011, p.779).

As Abrahamson identified : « Fashion, more than any other industry in the world, embraces obsolescence as a primary goal ; fast fashion simply raises the stakes » (Abrahamson, 2011 ; quoted in Annamma et al, 2012, p.276).

On top of the supply chain strategies used to encourage the consumer to return frequently, the actual wearability of the clothes sold in the fast fashion industry represents a challenge that induces frequent purchasing.

Indeed, due to the outsourcing strategies to lower-cost countries carried out by retailers, the quality of the clothes has significantly decreased leading to a shorter life-cycle of the product (Annamma et al, 2012). In some cases, the designs of fast fashion retailers are made to be worn « fewer than 10 times » (McAfee et al, 2004, quoted in Morgan & Birtwistle, 2009, p.191 ; Shepard & Pookulangara, 2013, p.11) before the product becomes unwearable, but it does not prevent the consumer from continuing to purchase at fast fashion retailers as they are « getting increasingly accustomed to cheap fashion and, by the same process, (…) getting used to poor-quality fashion » ((Pedersen & Andersen, 2013, p.11).

Added to this sense of perishability and the quality issue, fast fashion consumers also indulge in purchasing new items so frequently because of the immediate gratification they get from it (Annamma et al, 2012). Thanks to the low prices offered by the industry and the ever increasing certainty of finding the latest trends in stores, consumers, not only get to buy more often but are quickly and simply satisfied.

At Toktali explains : « fast fashion replaces exclusivity, glamour, originality and luxury with « massclusivity » and planned spontaneity » (Toktali, 2008, quoted in Ammana et al, 2012, p.276), making the consumer an individual perpetually looking for new ways to satisfy its need for novelty and providing him with a cheap and accessible way to sustain his wishes before he starts looking for something new again.

However, this model does not only lead to overconsumption of textiles because of the increase in the purchasing frequency of the customer, it also impacts the behaviour once the garment is bought.

The low cost and quality but high trendiness of the garments sold by fast fashion retailers are creating a more « disposable view of clothing » (Claudio 2007) which consumers seem to have embraced without guilt (Morgan & Birtwistle, 2009) and without consideration for the environmental impacts this behavior entails.

Indeed, when consumption of quality clothing, involving skilled labour, entailed a higher cost, consumers would wear the garment for several years before buying a new one (Tungate 2009, quoted in Annamma et al, 2012) or try to repair it if necessary. For fast fashion products, on the other hand, there comes a point where « repairing a garments is no longer worthwhile » (Niinimaki & Hassi, 2011, p.1878) when a new one can be bought for even cheaper than the cost of repair.

Thus, the flow of textile waste is quickly increasing in the western countries, host of fast fashion retail shops to become in some cases the « fastest growing waste stream between 2005 and 2010 » as it is in Britain (Defra, 2008, quoted in Niinimaki & Hassi, 2011, p.1878). These numbers illustrate how consumers are throwing to waste more textile than ever before which is clearly linked to the cheap products provided by fast fashion retailers (Morgan & Birtwistle, 2009, p.191).

Indeed, whether because of the quality or the need to make space for new garments that need to be bought quickly before they run out of stock, fast fashion seems to be « by its very nature, a fast response system that encourages disposibility » (Fletcher, 2008, quoted in Annamma et al, 2012, p.275).

Fast fashion and its consequences on the consumer's behaviour led to the « removal of stigma attached to buying from value retailers » (Birtwistle et al, 2003), opening the gates for excessive consumption at an unsustainable rate for the environment.

Indeed, it is, without a doubt, the unimaginable amount of clothes that are produced and sold that accounts for one of the primary causes of unsustainability in the fashion industry. (Pedersen & Andersen, 2013, p.8)

2.2 By its various impacts on the environment

Figure 1 : Environmental challenges along the fast fashion's value chain

Each step of the clothing production, from the raw materials to the finished garment, carries an environmental impact with it. In the case of fast fashion, the potential for environmental degradation is even greater, due to the need for cheap material production and manufacturing conditions, as well as the rapidity with which the garments need to arrive in the stores.

Before we briefly present the different stages of a garments lifecycle and the various risks they present for the environment, it has to be noted than the environmental performance and therefore the potential for environmental impact is « material specific and depends on the energy and toxicity life-cycle profile of the material » (Alwood et al, 2006, p.3). Some fibers will therefore carry a much higher environmental cost than others.

This screen shot simplifies the long and complicated apparel value chain that includes several steps, often in different countries that all include significant environmental impacts from waste water emissions, solid waste production, energy consumption, green house gases emissions and depletion of natural ressources (Kozlowski et al, 2012). This will lead us to develop some of these impacts in the following section.

A. Impact on the soil and water during the production of raw material

The raw materials phase « includes all activities that pertain to the acquisition of the raw materials that will be processed into fibres and textiles » (Kozlowski et al, 2012, p.28) and entails several major environmental impacts such as use of toxic chemicals and water pollution (Allwood et al, 2006).

Growing conventional (non organic) cotton for instance, which is one of the most used and versatile fibers in the clothing industry, requires more insecticide than any other crop and accounts for 10% of the total pesticide use worldwide (Eco Chic Design Award, 2014), which is not negligable in the context of intensive production as is the case in fast fashion.

However, man made-fibers as well as synthetic fibers are also widely used and not without consequences either.
« The manufacture of polyester and other synthetic fabrics is an energy intensive process requiring large amounts of crude oil and (…) volatile monomers, solvents and other by-products of polyester production are emitted in the wastewater » (Claudio, 2007, p.450).
Therefore, there is not one fiber used in the clothing industry that does not depleat natural ressources, from petrol for synthetic fibres, to water for cotton and, in 2012, the numbers were up to 132 million tonnes of coal and between six and nine trillions litres of water per year that went into fibre production (Eco Chic Design Award, 2014).

B. Pollution during the manufacturing stage

The textile processing and manufacturing stage includes many processes such as « washing, pre-treatments, dyeing, spinning, application of finishes and weaving by hand of machinery » (Kozlowski et al, 2012, p.28) and entail some specificities that need to be noted here.

This stage is particularly harmful in terms of water pollution as, just for the dyeing process,

« between 70 and 150 litres of water may be required to dye 1kk of textiles » (Chakraborty et al, 2005; Babu et al, 2007 quoted in Eco Chic Design Award, 2014).

Moreover, we saw that it is not uncommon for fast fashion retailers to outsource, if not all, a significant part of the supply chain to low-wage countries, and especially those in Asia. Once the raw material has been produced, it is exported to the country where it is « milled, woven into fabrics, cut, and assembled according to the fashion industry's specifications » (Claudio 2007, p.450). However, the country where these activities will take place will take on the burden of the environmental impact linked to these activities. For instance, in China, which, in 2007, had emerged as the largerst exporter of fast fashion (Claudio, 2007, p.450) the organisation Greenpeace found in two manufacturing facilities used by well known fast fashion brands « hazardous and persistent chemicals with hormone-disrupting properties » (Greenpeace, 2011). While these emissions are linked to fast fashion brands supply chain activities, they will not support the environmental costs of their outsourcing strategies to countries with low environmental regulation, leaving developping countries with signifcant damage to take care of.

C. Atmospheric impacts during the transportation phase

Though the environmental impact of the energy used in transportation is small (Allwood et al, 2006) the global aspect of the typical fast fashion supply chain that involves different sites for different activities in various parts of the world, is leading to inevitable carbone emissions linked to transportation between these different steps (Shen, 2014).

On top of the emissions linked to outsourcing, the industry, in order to reduce lead time and replenish as fast as possible, is choosing what seem to be the most efficient transportation systems to bring the products in stores fast enough, that include truck, ship, airplane « or a combination of methods, each burning up precious fossil fuels and emitting harmful toxins into the atmosphere » (FastFashion.weebly, n.d).

Therefore, where this stage could have little consequences in terms of energy consumption and emissions compared to the rest of the value chain, the nature of fast fashion itself with its necessary speed and minimizing of costs has brought it to represent a non negligable part of the atmospheric emissions of the industry.

D. Consumer using phase

While we may think that the environmental impacts of a garment's life are concentrated within the supply chain and stop once the product is bought, the consumer using phase with its maintenance activities such as washing, drying, ironing and dry cleaning (Kozlowski et al,

2012) counts as an important part of the overall environmental impact of the product. According to H&M's Conscious Report for instance, it represents 26% of their total climate impacts and 8% of the water use throughout the garment's lifespan (H&M Conscious Actions Sustainability Report, 2014). Ìndeed, frequent laundering of a garment can end up « using more energy than what was used in the making of it » (Aakko & Koskennurmi-Sivonen, 2013, p.18 ; Allwood et al, 2006) especially when it is made out of specific fibers that require frequent washing or special drying. Allwood and the other authors of the Waste Couture report have identified that when a consumer purchases a 250g cotton T-shirt, they must also in effect purchase 1.7kg of fossil fuel to provide electricity for washing, drying and ironing that will release to air 4kg of CO_2 emissions and send 125g of detergent to the wastewater (Allwood et al, 2006, p. 64).

Moreover, the chemicals contained in washing powders and liquids such as phosphate, can have an impact on the environment as severe as to « limitate the survival of various water-based organisms » (Allwood et al, 2006, p.41) when vast quantities are discharged in the water.

The consumer use phase has therefore one of the largest negative environmental impacts (Kozlowsky et al, 2012) despite being outside the activities under the supervision of the fast fashion retailers. We will see during our case study that this phase represents a significant challenge in the sustainability strategy of fast fashion retailers compared to more traditional supply chain stages, where effort can not only be made more easily, but are also more visible and advertisable.

E. Disposal issue at the end of the product's life

We attempted to show, in the above section, how mentalities have shifted from repairing, mending or even recycling clothes (Claudio, 2007) to a disposable view of clothing thanks to the planned obsolescent strategy led by fast fashion retailers.
This consumerist model led to a signficant increase of solid waste at the end of the product's lifecycle as people discard clothing more (Morgan & Birtwistle, 2009), sometimes as often as every ten washes.

The disposal of high volumes of clothing waste does not only have an impact in terms of quantity that fills up landffills fast (Milner, 2007 quoted in Morgan & Birtwistle, 2009), due to non biodegredable synthetic products (Morgan & Birtwistle, 2009) it also « causes methane emissions to air and pollution to groundwater through toxic chemicals » (Fletcher, 2008 ; Morgan & Birtwistle, 2009).

Recycling is therefore vital whether through consumers bringing their own clothes to charity shops or by companies that recycle them into new product as « both natural and man-made fibers, and the majority of all textiles thrown away are recyclable » (Waste online, 2008, quoted in Morgan & Birtwistle, 2009, p.192). However, an issue currently limits the increase

in recycling : the separation of the different textile components as « numerous material types and extensive use of fibre blends have become significant bottlenecks (…). A large and constant stream of specific material is essential for the economic feasibility of recovery » (Allwood et al, 2006, p.31)

Moreover the percentage of customers that actually bring their used clothing to charity shops or to specific bins that will allow recycle is still fairly low (Allwood et al, 2006, p.69) due to behavioral limits and a lack of education.

F. Greenwashing issue in the marketing strategy

According to Shen « the concept of sustainability is important in marketing and branding, since it can strenghten customer interest and loyalty » (Shen, 2014, p.3). We can understand why companies would be interested in adverstising their sustainable actions, if they are taking any, or even attempt to present themselves greener than they actually are if it can strengthen their customer base, or even bring them new ones.

However, this strategy entails a risk of greenwashing if the brand is emphasizing efforts that it is not actually taking, or that do not have a credible or useful impact in improving sutainability.

Greenpeace has identified several companies as greenwashers that are putting forward their environmental efforts while either failing on transparency or failing in matching their words with actions on the ground (Greenpeace, n.d).

Some fashion specialists even go further. According to them, all types of environmental marketing from fast fashion retailers represents greenwashing as "Sustainability and consumerism do not go hand in hand » (Breener, 2014), « unnecessary consumption is the driving force in today's fashion industry » (Kozlowski et al, 2015, p.22) and any efforts to make the consumer believe otherwise would be greenwashing.

Therefore, the greenwashing marketing strategies themselves do not have a direct environmental impact, but by convincing the consumer to choose a brand because of its efforts towards improving sustainability in its system, they enable these brands to increase their customer base, therefore creating a potential environmental impact linked to the consumption of these new customers.

Now that we have presented some of the environmental impacts following a fast fashion product value chain, it seems important to look into the customer's thoughts and actions on sustainability in the industry.

Indeed, since fast fashion is consumer driven, we would like to study the perception consumers have of the impact the industry is causing and whether or not they feel concerned enough to demand an improvement in these sustainability issues the industry is facing.

3 Customer's actions and opinions on sustainability in the fast fashion industry

In order to identify certain types of behaviour that might drive a more sustainable consumption in fast fashion, we will go through the scientific literature regarding the relationship between fast fashion consumers and sustainability in the industry, before drafting our own questionnaire. In order to do so, we will identify several hypotheses that we want to verify or nullify,a methodology to build a relevant questionnaire and analyze date as well a certain limits that could prevent the obtaining of conclusive date
We will then analyse our results to draw conclusions linked to the hypotheses previously developped.

3.1 Conclusions of previous researches.

There has been a fair amount of research regarding fast fashion consumers and their attitudes towards sustainability and amongst those that seemed the most relevant to us, the findings were consistent.

Indeed, according to the studies we found on this topic (Bray et al, 2010 quoted in Mcneill & Moore, 2015 ; Joergens, 2006 ; Annamma et al, 2012), which have been conducted in various parts of the worls such as South Korea, Hong-Kong, New Zealand, Canada and the UK, while many consumers have strong convictions toward the consumption of sustainable goods, these convictions do not always translate into action, particularly in regards to fashion items (Mcneill et Moore, 2015 ; Joergens, 2006).

To justify this distinction between beliefs and behaviours, the authors of these studies have identified factors which, whilst some of them seem obvious, such as « price, value, trends and brand image, elements which are particularly relevant to clothing consumption » (Solomon and Rabolt, 2004 quoted in Mcneill & Moore, 2015), the most common one, is more unexpected : unattractiveness
For most respondents of these studies, a sustainable fashion garment will be, per definition, unfashionable and unattractive. (Mcneill & Moore, 2015), and in a western world where appearances and peer approval are highly important, the perception of the garment's look is the upmost importance to the consumer.

Moreover, awareness and the mindset of the consumer also represent an important challenge. In the study conducted by Mcneill and Moore in 2015, « The majority of participants in this study were aware of the impact of fast fashion and clothing consumption (…) but did not consider these issues in relation to their own fashion consumption (….) unless it was in relation to what they (as an individual) would benefit from or have to sacrifice when making sustainable clothing choices » (Mcneill & Moore, 2015, p.218).
As Joergens expressed : « If consumers recognize the demands that fast fashion makes on the environment, they seem to block it from their consciousness » (Joergens, 2006)

This lack of knowledge or unconscious denial to acknowledge the facts therefore represent one of the main barriers on the path to sustainable fashion and feeds the circle of cheap clothing consumption at an unsustainable rate.

Some brands, however, have picked up on these doubts that some consumers seem to have and « are actively responding to these concerns by various means, such as launching slow fashion brands themselves, or leading pro-environmental movements » (Kim et al, 2013, p.245). But the lack of response from the consumers doesn't surprise Mcneill and Moore, according to whom, this is « a phenomenon common to many industries offering sustainable products in a market based on the rapid turnover of goods. » (Mcneill & Moore, 2015, p.212)

Therefore, we decided that a questionnaire, which details will be presented thereafter, would be an the right method to verify or nullify some of these findings and produce new information to validate or invalidate the following hypotheses, as well as understand better the relationship between fast fashion consumers and sustainable practices in the fast fashion context.

3.2 Hypotheses of our research

Through this questionnaire, 5 hypotheses will be tested :

Hypothetis 1 : **Fast fashion consumers shop frequently at fast fashion retail stores and their consumption is driven by the inherent characteristics of the industry.** According to Birtwistle & Moore, fast fashion consumers shop frequently, up to once a week , this will therefore be our benchmark. Regarding the « inherent characteristics of the industry », we base ourselves on the basis of the fast fashion business model with its frequent restocking and very low prices, thus encouraging frequent visits to the shops.

Hypothesis 2 : **Being conscious of the environment and acting in its favor in every day life, does not shape the fast fashion consumer's choices, when it comes to clothing.**
As previous studies identified the discrepency between beliefs and behaviour of fast fashion consumers, we wanted to verify its topicality and consistency in a foreign market and with a sample of respondents not based on age.

Hypothesis 3 : **Fast fashion consumers lack knowledge on the environmental impacts of the fast fashion industry.**
Among the reasons quoted in previous studies regarding the absence of an environmentally conscious behaviour in their fast fashion purchasing habits, respondents often pointed out their lack of knowledge on these issues (Cornell, 2010, quoted in Mcneill & Moore, 2015). We wanted to verify this point and eventually identify the reasons why consumers feel unaware and uninformed on these important issues.

Hypothesis 4 : **When aware of an eco-friendly product among non eco-friendly ones, consumers have a tendency to buy the first one.**
Written differently than hypothesis 2, the question matching hypothesis 4 has the aim to verify the consistency of the respondants's answers regarding their behaviour when faced with both eco-friendly products and non eco-friendly ones.

Hypothesis 5 : **Fast fashion consumers are more concerned about the environmental impacts of fast fashion than the social impacts.**
As social rights movements have taken an important place in the debate on the unsustainable character of the fashion industry, the goal is here to identify by which cause do the consumers feel more sensitized to, in order to attempt to justify the focus chosen by companies on one or the other issue.

3.3 Methodology

A. Of the questionnaire

Choice of questions :

We chose a qualitative study with mostly closed questions to be able to verify the presence or absence of certain types of behaviour.
However, we decided to also add an open question in order to enable the respondants to developp the reason why they think they lack the understanding on how their behaviour affects the environment, as we believe that offering the respondents predefined answers will not allow them to identify the roots of the issue.
Regarding the questions about their attendance in fast fashion shops and their eco friendly habits, we have decided to use frequencies rather than exact numbers to avoid rough estimates.
Finally, the survey is quite short since the respondents will be individuals coming out of a fast fashion shop and therefore probably lacking the time for in depth questionning ((Gauthy-Sinéchal & Vandercammen, 2008).

Structure :

The study's structure goes from the general to the more specific. Indeed, the first 5 questions will confirm or invalidate hypothesis 1.
The second part of the study aims at noting two types of behaviour :
- A potential link between eco friendly habits and fast fashion purchasing behaviour, as well as the lack of understanding or the unconscious denial of the consumers on how their behaviour affects the environment, which answers to hypothesis 2 and 3.
- The preference or indifference to an eco-friendly garment when surrounded by non eco-friendly products. This will help validate or invalidate hypothesis 5.

Finally, the questionnaire ends by asking the respondant about their personal affinity regarding the two main impacts of the fast fashion industry, which corresponds to hypothesis 6.

The last part will enable us to learn more about the socio professional category of our respondants.

B. Of the data collection

The methodology implies intercept-survey on the same day, fast fashion consumers in one of the main shopping streets in Brussels. Considering the location of the conduction of our survey, we decided to write the questionnaire in french to enable the largest number of respondants to answer it.

To target fast fashion consumers only, we will interview people carrying a bag of one of the main fast fashion brands such as Zara, H&M, Primark, Stradivarius, Gap etc.

Therefore, the results will be linked to their fast fashion consumers status and not the generation they belong to, and the sample of respondants will vary in age, sex and occupation. Moreover, no previous research will be made on the respondents eco-friendly behaviour or its absence to keep the results neutral.

As for the number of respondents, we are looking at 50 to 75 filled out surveys. Indeed, the questions will be asked by myself only, making it difficult to predict a high number of answers. Moreover, there is the risk that fast fashion shop managers refuse that the survey questions are asked in front of the premises.

3.4 Limits to our study

Our study has several limitations and it is important to identify them before presenting the findings

The first one is linked to the respondants profile.

The respondants will be Belgian fast fashion consumers, therefore limiting the findings to the Belgian market. Moreover, the questionnaire being asked face to face to individuals coming out of fast fashion stores, the findings can not apply to other form of shopping such as e-shopping.

Considering that the survey will be filled by myself only, there is a risk of an unconscious choice to ask similar-aged consumers.

The second limit has to do with the orientation of the questions.

We will attempt to keep the answers as neutral as possible but considering the shortness of questionnaire, we decided not to add transition questions. Therefore, the importance granted to questions related to a pro environment behaviour might influence the respondants into giving answers that make them seem more environmentally conscious than they really are (Gauthy-Sinéchal & Vandercammen, 2008).

Now that we have developped the hypothetis we would like to verify, methodology for the construction of the questionnaire and for the data collection as well as the limitations, we will now present and analyze the findings of our study.

3.5 Presentation of the results

A. Sample analysis

Throughout this survey, we had 56 fast fashion consumers fill out the questionaire. It took four hours on a saturday afternoon in rue Neuve in Brussels.
The data were then inputed in an excel file to review all the answers and be able to produce statistics.
78.6% of the respondants were females while 21.4% were males which corresponds to the findings of Morgan and Birtwistle, 2009 cited in Moore according to whom « young females exhibit the highest levels of demand for new fashion items » and therefore are the most likely to be found in fast fashion stores on a typical shopping day. Moreover, several fast fashion retailers only offer female clothing, making female customers the main fast fashion client.
64.3% of the people who answered the questionnaire were between 18 and 25 years old and the second most represented category were individuals between 25 to 40 years old.
Regarding their profession, 71.4% were students while the rest of the respondants were working people.

Figure 2 : Demography of the respondants
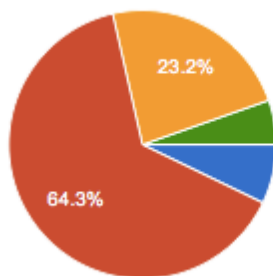
<18 ans	4	7.1 %
Entre 18 et 25 ans	36	64.3 %
Entre 25 et 40 ans	13	23.2 %
Plus de 40 ans	3	5.4 %
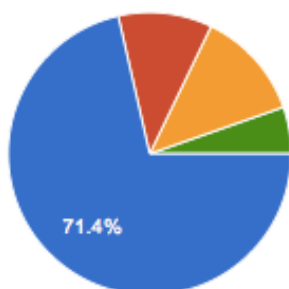
Etudiant	40	71.4 %
Ouvrier	6	10.7 %
Employé	7	12.5 %
Cadre	3	5.4 %
Sans emploi	0	0 %

Our sample is therefore relatively representative of fast fashion consumers since they have been identified mostly as « young » individuals under 28 years old, by some of the authors (Annamma et al, 2012), part of the « Generation Y », aka between 18 and 34 years old for others (Bhardwaj & Fairhust, 2010).

Moreover, Morgan and Birtwistle in a study regarding young fashion consumer's disposal habits have noted the « high propensity of female consumers towards fast fashion » (Morgan & Birtwistle, 2009) and together with the fact that most of fast fashion retailers focus their efforts on female clothing, we can reasonably conclude that the *average* fast fashion consumer is a female aged between 18 and 34.

B. Analysis of the results with regards to the hypotheses

Hypothesis 1

Table 1 : Cross table of the respondant's purchasing habits.

		Shopping frequency				Number of articles bought			
		<1 month	1-2 month	3-4 month	> 1 week	1	2	3-5	>5
Age group	<18		75%	25%		25%	50%		25%
	18-25	48%	35%	13%	4%	36%	47%	11,5%	5,5%
	25-40	46%	38,5%	15,5%		38,5%	23%	30,5%	7,5%
	>40	100%				25%	75%		
Occupation	Student	52,5%	32,5%	12,5%	2,5%	30%	45%	17,5%	7,5%
	Laborer	16 ,5%	83,5%			50%	50%		
	Employee	28,5	43%			43%	43%	14%	
	Executive	100%				25%	75%		

According to the results, most of the respondants buy new garments in fast fashion shops less than once a month and the shopping frequency keeps on decreasing as people grow older. None of the respondants over 40 visits a fast fashion store every month.

- In fact, the age group with the highest frequency attendance is also the youngest : all respondants under 18 go shopping at least once a month and they are also the age group with the highest number of articles bought per visit : 75% of them buy at least two and up to five or more garments every time they enter a fast fashion retailer. This finding is consistent with Morgan and Birtwistle's study in which one in five of young female consumers acknoweledged purchasing a new garment every week (Morgan & Birtwistle, 2009).

- For the older respondants, they seem to take advantage of their rarer visits to buy several articles. Indeed, most people over 18 seem to buy at least two new garments on each visit and for individuals over 40 years old, this is the habit of 75% of the respondants.

- We decided to compare these results with the ones obtained by analyzing the answers through the occupation of the respondants. Interestingly, the findings about the number of articles bought per visit were completely similar and consistent with the age group. For instance, exécutives, who problably belong to the group of older individuals, shop in fast fashion stores less than once a month and a vast majority of them buy 2 garments per visit. However, over half of the students, aka, the younger people, declared shopping in fast fashion stores less than once a month contrary to laborers who in the vast majority (83,5%) shop at least once or twice every month. However, despite visiting the most frequently our targeted retailers, respondants in this occupation group were also among the ones that spent the less since half of them only buy one new garment per visit while the other half buys two.

- 52,5% of students declared shopping less than once a month but they were also the only occupation groups where 2,5% of the respondants admitted visiting fast fashion shops more than once a week.

Figure 3 : Drivers of fast fashion consumption

Pourquoi consommez vous des articles de fast fashion?

Le prix	48	85.7 %
La qualité	5	8.9 %
Le réapprovisionnement fréquent	21	37.5 %
Rester dans la tendance	12	21.4 %
Autre	3	5.4 %
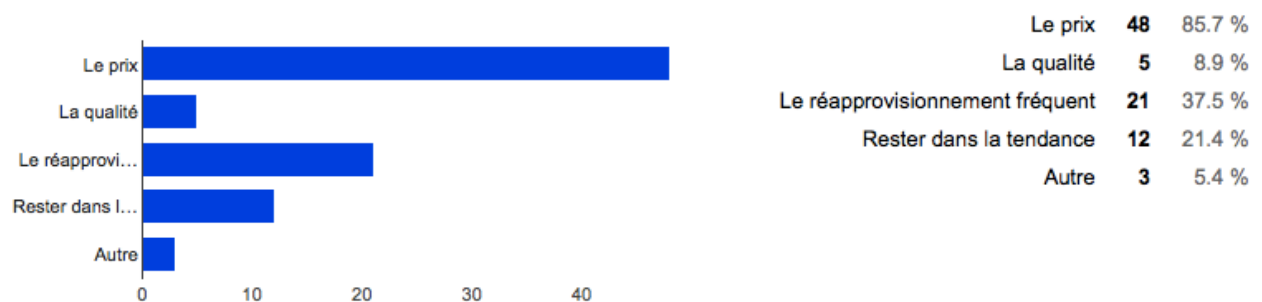
- Regarding the motivation behind their fast fashion purchasing habits, the most given answer by the respondants was by far, the price (85.7%) followed by the frequent restocking (21.4%). These answers are not surprising since they represents two of the main aspects of the fast fashion model, which we spoke about in the first part of this work : quick response and enhanced design which enables the retailers to lower their prices drastically, while still ofering fashionable designs.

- The least chosen answer was quality with only 5 respondants out of 56. This is perfectly consistent with what fast fashion retailers offer to their customers : competitive prices, fashionable clothes that are renewed up to once a week, which lack the quality of a long lasting garment, and aim to be worn fewer than ten times (McAfee et al, 2004 quoted in Birtwistle & Moore, 2010) The reference to ten washes is derived from fast fashion companies themselves, who openly proffer the number as a benchmark, after which an item will no longer be expected to retain its original value, due to poor-quality materials and manufacturing.

Hypothesis 2 :

For the following, we only considered the 67.9% of respondants who answered yes to the question « do you think that you are acting in favour of the environment in your every day life ? ». 31% declared doing so every day while 47% regularly. Overall, 78% estimated having an eco friendly behavior quite frequently.

However, among these individuals, 76% admitted not taking the environment into account when shopping for clothes. While, this may be surprising, it is consistent with the findings presented in the above section according to which concerns about unethical practises and convictions about sustainability do not always translate into actions, especially when it comes to fashion consumption.

Another intersting finding is that half of the respondants with an eco-friendly behaviour declared that knowledge of the fast fashion industry's environmental impacts, would influence their consumption of products whilst 63% of them declared themselves willing to ask the brand to change or improve these practices.

We can therefore reasonably deduct that environmentally-concerned consumers are more willing to ask a brand to change its unsustainable and unethical behaviour, rather than change their own when it comes to the consumption of fast fashion garments.

Hypothesis 3 :

Regarding the lack of knowledge of fast fashion consumers of the environmental impacts the retailers' supply chain implies, 89,3% of respondants said they thought that there were some environmental consequences but only a few were able to quote some of the impacts. Among the responses, the most common were pollution, overproduction of raw materials and waste.

When asked why they thought they did not know all the impacts of fast fashion, the respondants pointed out the lack of communication from the brands and the absence of campaigns against them.

Therefore, we can conclude that most fast fashion consumers do think that the companies they are buying from have environmental impacts and that they can quote the most obvious ones that can be linked to many production systems of various products, not only clothing.

However, some of them also note that there is an obvious lack of knowledge due to an absence of communication regarding these issues.

Hypothesis 4 :

Among the respondents, 53,6% declared themselves more willing to buy a garment from the H&M Conscious Collection, than one not in this eco-friendly collection.

However, outside of the formal frame of the questionnaire, several respondents specified that this choice would be determined by the look of the article. Indeed, as the literature has previously showed, one of the main preconceptions about sustainable clothing among fashion consumers, is the unattractivity of the product.

This tendency seems to be contradictory with our previous findings about the lack of taking the environment into account in fashion consumption behaviour, and therefore we think theses answers might be biased because of the will to appear more environmentally conscious than they really are.

Hythothesis 5

Concerning our hypothesis, according to which fast fashion consumers would be more concerned by environmental impacts in the industry, rather than the social impacts, the results have proven otherwise. Indeed, the vast majority of respondents, 85,5% declared that they feel more sensitized to social issues such as poor working conditions, low wages or even child labour rather than the many environmental impacts linked with the clothing industry and especially fast fashion.

These findings are useful to us as they lead us to wonder in which way the environmental improvements of fast fashion retailers should be emphazised next to the social rights movements and how the brand chosen for our case study, H&M, is dealing with this seeming preference of its consumers in its sustainable strategy.

We can conclude that while many fast fashion consumers seem to feel sensitized to the environment, some even acting regularly in its favour by recycling or using public transport amongst other initiatives, yet when it comes to their fast fashion consumption, an important majority does not take the environment into account.

While some argue that they are not aware of the environmental cost of cheap clothing production, many know about them but just decide to purposefully or unconsciously not pay attention, in order to continue overconsumming without guilt.

However, there are some consumers that are more vigilant and for whom sustainability is a key criteria in their consumption choices. It is amongst other reasons that we will expose thereafter, to satisfy those conscious consumers that some alternatives have risen in the clothing industry such as eco fashion and slow fashion. Some fast fashion retailers are also

taking into account this evolution and launching their own sustainable brands or implementing corporate social responsibility to green their activities These alternatives will be the topic of the following section.

4. The evolutions towards sustainable alternatives in the clothing industry

Sustainable alternatives to the fast fashion model are happening in two distinct ways ;
The first one corresponds to sustainable initiatives taken within the fast fashion industry to develop sustainability either in the whole company or only in some parts/all of the supply chain.
The second one corresponds to initiatives that position themselves as opposing the fast fashion system and that aim to offer a sustainable yet fashionable alternative.
However, before presenting some of these initiatives that we found the most relevant in this study, either because of their magnitude or because they are related to our case study, we will start by introducing the main reasons that led to the creation of such movements and initiatives.

4.1 The main drivers of sustainable alternatives in the clothing industry

De Brito, Carbonne and Meunier Blancquart have **identified three main drivers of su**stainable initiatives in the clothing sector.

A.Legislation

 The first one is legislation. According to the authors, some companies remain cautious about legislation constraints, others update their system as soon as a new rule comes out while « some anticicapte such legislative changes, in order to gain some competitive advantage from acting as first movers, and thus transforming a constraint into an opportunity » (De Brito et al, 2007).
Several legislations that target directly or indirectly the textile sector have been implemented, especially at the EU level. REACH for instance adopted in 2007, aims at updating and improving the current legislation on chemical substances and regulate their production (Allwood et al, 2006) and has therefore restricted the usage of several chemicals in clothing if the garments are to be sold within the EU. Regarding the end products, the European Equipment and Product Safety Act regulates the use of heavy metals and other toxics used in textile (Claudio, 2007). The EU has also set up standards such as öko-tex standard 100 that can be used as guidance by the retailers to achieve a more environmentally friendly production (Claudio, 2007). These regulations are just some of the legislations and standards

that can impact the fast fashion industry's activities and push them towards embracing more sustainable measures to either respect or anticipate these regulations.

B. Competitive advantage

The second driver is the compititive advantage that sustainability can offer by reaching eco-conscious customers that might otherwise not buy from these kind of brands (De Brito et al, 2008). Indeed, today's consumers are becoming increasingly aware of the environmental and social impacts of the brands (Allwood et al, 2006) and as Shen points out, « a great deal of existing litterature has shown that consumers are willing to purchase eco-fashion products if green marketing is successful » (Shen, 2014, p. 6239). This new market of conscious customers represents a vast opportunity for retailers if they manage to position themselves as sustainability actors in the sector.

C. Corporate Responsibility

The third driver is the Corporate Responsibility movement that « integrates environmental and social concerns into business strategies » (De Brito et al, 2008, p.538). According to these authors, the movement applied at the company level is linked to the concept of sustainable development at the macro level and while it may not have concrete consequences on logistics and the supply chain in the industry yet, it is infusing sustainable principles through the company's actions. Of this movement was born Corporate Social Responsibility that we will develop hereafter.

D. Public pressure

However, another driver, that was not mentioned in Carbone and Blanquart study, can be identified : public pressure. The clean clothes campaign for instance, which is the largest pan european coalition of NGO and labour unions campigning for the improvement of working conditions has, amongst other results, led to many businesses adopting the code of conduct proposed by the campaign that contains numerous measures regarding sustainability issues, especially worker's rights (Clean Clothes, n.d)
More recently, in July 2015, the European Union voted unanimously to ban imports of clothes and textiles containing the toxic chemical nonylphenol ethoxylates (NPEs) within the Union (Wu, 2015).
This vote is certainly no stranger to public and NGO pressure on the topic that has been taking place for several years now, as one of Greenpeace reports, Dirty Laundry « drew huge media attention, as it pointed out a loophole in REACH chemical legislation » (Wu, 2015).
There is no denying that on the side of legislation constraints and the search for profit, the consumer's opinion and the pressure that can come from civil society organizations or NGOs are playing a crucial role in « lobbying » fast fashion brands into taking and implementing sustainability measures as the companies « respond to stakeholder

pressure by altering their strategies and engaging in restorative behaviours »
(Klein, 2000 ; Perrini & Tencati 2006 ; Park-Poaps, 2010 quoted in Kozlowski et al, 2012, p.25).

4.2 The movements of eco-fashion and slow fashion

A. Eco-fashion

The International Standards Organization (ISO) has defined eco-fashion as « identifying the general environmental performance of a product within a product group based on its whole life-cycle in order to contribute to improvements in key environmental measures and to support sustainable consumption patterns » (Claudio, 2007)
The concept regroups several aspects on which a firm can focus on to lower its environmental impacts such as raw materials, components and processes and product criteria and subsequent lifecycle (Smal, 2012). Globally, in the context of fashion, the eco approach usually focuses on using sustainable materials and cleaner production methods and increased recycling (Smal, 2011).
However according to Smal, the « success of eco fashion should be viewed from a product development perspective, where design is driving the process » (Smal, 2011). Indeed, while the current approaches have only focused on environmentally friendly materials or recycling « the material focus in production is just a part of sustainable environmental practices » as the whole apparel production produces negative impacts on the environment (Jung & Jin, 2014, p.511).

Moreover, there are no standards for eco-friendly garments yet, but the multiplication of eco labels and/or marketing tools to promote green initiatives is growing. However, in order to make sure initatives undertakook are productive and results driven to provide the consumer with reliable information, standardization of these labels is fundamental (Moore et al, 2009 quoted in Aakko & Koshennurmi-Sivonent, 2013).

B. Slow fashion

Slow fashion was first mentioned by Fletcher from the Centre for Sustainable Fashion in the UK, in 2007. The concept has its roots in the slow food movement and is considered as an objection to fast fashion, though not the opposite (Aakko & Koskennurmi-Sivonen, 2013)
Fletcher identified slow fashion as « designing, producing, consuming and living better by considering environmental and social sustainability and by producing beautiful and conscientious garments at a lower speed » (Fletcher, 2008 quoted in Jung & Jin, 2014, p.512).
Clark went further by creating a framework for slow fashion based on three pillars : a local approach, transparent production systems and sustainable and sensorial products (Clark, 2008). By doing so, the aim of the movement is not only to reduce the speed of production in the clothing industry but also to change the mindset of the consumer into buying less

garments of a higher quality ; that is to say, shifting from « quantity to quality » (Jung & Jin, 2014, p.512).

By slowing the production, environmental impacts significantly decrease as it « enables raw materials to grow naturally » (Fletcher, 2008) and as less garments are produced, it « reduces the consumtpion of ressources and the amounts of waste » (Cline, 2012 quoted in Jung & Jin, 2014, p.512).

By slowing the consumption, the product can expect a longer lifecycle that « allows reducing consumption of natural ressources and the waste of energy » (Jung & Jin, 2014, p.512) that occur during the production but also during the consumer's use phase.

Moreover, the design itself has to be sustainable in order to last and not be influencecd by trends so that the consumer « takes time to fully appreciate fashion and hold the clothing for a long time » (Johansson, 2010, quoted in Jung & Jin, 2014, p.512).

Therefore, the slow fashion movement is broader than just environmental sustainability (Jung & Jin, 2014) and takes into account all the aspects linked to a garment, from a production respectful of the environment and of people, to a conscious consumption involving high quality and versatile products, thus targetting most of the sustainability issues in the industry.

4.3 Corporate Social Responsibility

Corporate social responsability (CSR) is defined by the European Commission as « a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis » (European Commission, 2011) ; the concept relies on the belief that a company is normatively responsible for satisfying the values of a society in which it operates (Carroll, 1989 ; Park-Poaps, 2010 quoted in Kozlowski et al, 2012, p.24).

To answer to the many critisisms that have risen against the fast fashion industry, many firms have adopted a corporate social responsability strategy in order to demonstrate their commitment to both the environment and to their employees and to avoid suffering from a damaged image, a loss of consumer and shareholder trust (Arrigo, 2013).

The benefits of such a strategy have been identified and range from a better financial performance, employee attraction, retention and satisfaction, enhancement of corporate image and positive consumer reactions (Arrigo, 2013).

However, in the apparel industry, CSR shifts the previous focus on social and environmental responsibility strategies to a more « holistic and systematic approach » including therefore the entire life cycle (Kozlowski et al, 2012). Indeed, despite the fact that companies usually have the most influence on stages directily linked to their activities such as raw material production, manufacturing, distribution and retailing, CSR strategy can influence the other stages through « implementing strategies such as supply chain management, consumer education and purchasing policy ». (Kozlowski et al, 2012).

4.4 The limits to these alternatives

While slow and eco fashion have been growing in popularity in the past two decades, with known designers starting to use eco materials, new brand launches based on environmental protection and ethical working conditions or even sustainable fashion shows (Ozdamar Ertekin & Atik, 2015), sustainability and fashion are still often considered an oxymoron and fast fashion remains the first choice for many consumers.

Ozdamar Ertekin and Atik have identified two main groups of barriers limiting sustainabable alternatives in the sector.
The first one is linked to the global economic context while the second one implies the consumers.

A. Global economic context

- *Globalization* represents an important challenge with its implications, such as the fragmentation of the supply chain in various countries in order to cut costs makes it « difficult to ensure that ethical standards are applied to the whole system » (Bears, 2009 quoted in Ozdamar Ertekin & Atik, 2015, p. 61) from the raw materials production to the garment disposal (Kozlowski et al, 2012). It also led to a detachment of the consumer towards the impacts his consumption may have, as they do not see them and most of the time are unaware of them (Ozdamar Ertekin & Atik, 2015) since the impacts mostly occur in countries far from the consuption spot.
- Sustainability might also be seen by some firms as a restraint to *economic growth* and they might prefer to maintain the current system to avoid what they think may lead to loss of jobs and a rise in unemployment (Dolan et al, 2006 quoted in Ozdamar Ertekin & Atik, 2015)

B. The consumer's choice.

- *Inconvenience* means that consumers might choose to ignore the environmental or social impacts of their purchase « if being ethical or sustainable requires the investment of more time and effort » (Eckhardt et al, 2010 quoted in Ozdamar Ertekin & Atik, 2015, p.61).
- Beyond the simple inconvenience, *cost* also plays an important role regarding sustainable consumption, especially in the clothing industry. Once consumer has got accustomed to affordable fashion, it is likely that this will prevent or limit pro-sustainable and pro-environement behaviour (Blake, 1999 ; Thogersen, 2005 ; Young et al, 2005 quoted in Ozdamar Ertekin & Atik, 2015) if the sustainable garment is more expensive.

- *Lack of knowledge and awareness* is a fundamental barrier, as very few consumers make the link between their consumption habits and the impact it may have beforehand (Connollu & Prothero, 2003 ; Hobson, 2004 quoted in Ozdamar Ertekin & Atik, 2015). However, the numerous labels or marketing strategies put in place by retailers that aim at having the consumer believe that the products he is buying is eco-friendly or respects the workers rights are not increasing awareness but rather maintaining the consumer in a confused state of mind. Yet to come out of this state requires motivation and personal efforts that not all fast fashion consumers are willing make (Ozdamar Ertekin & Atik, 2015).
- *Attitude behaviour gap* that we have been able to identify thanks to our study that confirmed the findings of many scientific authors remains frequent in fast fashion consumers. Even when they declare being sensitized to sustainability issues and willing to act in favour of the environment for instance, a gap exists between these convictions and the consumption behaviour especially in the fast fashion context. (Niinimaki, 2010).
- Finally, *aesthetics* represents an important challenge for many consumers. Indeed, to them, a major concern regarding the consumption of eco-clothing or slow fashion is the fashionability of the designs as they do not associate these concepts with trends but rather with hippie movements, environmentalists (Welter, 2008 quoted in Ozdamar Ertekin & Atik, 2015) or vintage clothing. As a result « the current eco-fashion and ethical clothing appeals only to certain groups of consumers » (Niinimaki & Hassi, 2010 quoted in Ozdamar Ertekin & Atik, 2015)

Despite these recognized challenges towards infusing sustainability into the clothing industry, and especially the fast fashion sector, most retailers have been adopting measures towards reducing both their environmental and social impacts, either through Corporate Social Responsibility or partnerships with external actors that are relevant to the targeted areas. H&M, one of the most famous and successful retailers in the sector has been doing both.
To understand the details of such strategy as well as verify the coherence of these actions with the most urging needs for impacts reduction, we have decided to perfom a case study of H&M's Conscious Actions.

Part 2 : H&M's sustainable strategy, from the supply chain to the consumer

5. Presentation of the item of the case study

5.1 H&M, a fast fashion flagship

H&M, which stands for Hennes & Mauritz, was created in Vasteras, Sweden in 1947 by Erlin Persson who was inspired by a trip to the US where he discovered the ready to wear clothing industry (Capt & al, 2014).

Today, the group is made of six brands, has over 3,600 stores in 57 different countries and works with 132 000 employees. (H&M Annual Report, 2014). The H&M brand itself represents 3200 stores in 55 countries. From now on, we will focus on H&M as a brand and not the group and will use « retailer », « brand » or « company » to refer to H&M.

The retailer offers clothes, accessorises and underwear to women, men and children and also caters its own cosmetic line as well as a home decor products line. According to the annual report for 2014, the turnover of the company before tax was 176 billion SEK which in Euro amounts around 18 704 285 819 euros.

The message carried by the brand is « fashion and quality at the best price in a sustainable way » (H&M Annual Report, 2014). The choice of word is already interesting for our case study as until 2014, the philosophy was just « fashion and quality at the best price » which leads us to believe that the brand has decided to prioritize its sustainable initiatives in the recent period.

In order to provide this, H&M works thanks to in house designers, no middlemen, large purchasing volumes, identifying the right markets to buy from, efficient logistics, cost conscisousness in all parts of the organisation. (H&M, n.d). H&M buys items on an ongoing basis throughout the season (H&M Annual Report, 2014).

Moreover, H&M has an outsourcing strategy, meaning that the firm does not own any factories but buys products from idependent suppliers, over 700, mostly located between Asia and Europe (Capt & al, 2014).

In the fast fashion industry, H&M places currently 2nd, right after Inditext that owns Zara and its 6000 stores (Capt & al, 2014).

However, H&M is expanding fast: in 2014 alone, 379 new stores opened and 9 countries will be added to the online store in 2015. In Belgium for instance, H&M has 78 stores and 5 were opened in 2014 only (H&M Annual Report, 2014)

The outsourcing strategy, the frequent buying, the fast expansion and the importance granted to the trendiness of the products, all correspond to characteristics of the fast fashion model we described in the first part, making H&M an ideal exemple of a fast fashion retailer for our

case study. Moreover, thanks to its extremely low prices, even for the industry, H&M is one of the most known and prospere brands in the sector and often quoted as an example in case studies on the topic.

5.2 H&M and environmental sustainability

Just like all the other fast fashion retailers, H&M has been struggling with its environmental impacts and did not escape the Detox or Clean clothes campaign pressure led by different NGOs to increase sustainability in its activities.
However, H&M is no stranger to bringing environmental considerations into discussions and turning them into actions. Indeed, in 1995, the company first launched an organic collection called Nature Calling, but the clothes being mostly uncolored, the initiative did not have the expected success and was quickly shut down (Goldfingle, 2011). Nine years later, the retailer started to integrate organic cotton to some chosen products to make sure that sustainable materials could be used without compromising the design (Goldfingle, 2011).
Finally, in 2010, the first conscious collection was launched with more sustainable materials such as organic cotton and recycled polyester.

All these initiatives are part of the Corporate Social Responsibility strategy led by H&M. While CSR is not mentioned as such by the company on its website or in its annual reports, the CEO presents the Conscious Actions initiative as a « challenge of ultimately making fashion sustainable and sustainability fashionable » (H&M Annual Report, 2014) by making all activtities, economically, socially and environmentally sustainable matching exactly the definition of CSR as « a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntay basis (European Commission, 2011).

By developing these initiatives, H&M has forged itself a reputation as a sustainability leader in the sector for which it has received several awards such as making the list of the world's most ethical companies, the world's biggest user of organic cotton, the Dow Jones Sutainability index.

As for the drivers that led the brand to set up these activities, H&M UK director who was interviewed in 2015 by Goldfingle stated that « with size comes responsibility » and that H&M had a duty as a global retailer (Goldfingle, 2011) to respect and protect the communities they're working with and the environment they are exploiting.
However, beyond the moral aspect put forward by the retailer's executives, lies a substantial economical advantage. Indeed, as we developped earlier, the rise in conscious customer, that care about the impacts and the origin of the products they're buying, is undeniable and this market is expected to continue to grow significantly. Therefore, by responding to this demand, H&M is increasing its customer base as well as positioning itself as a leader in the sector, thereby improving its competitivity in a highly competitive market.

5.3 The Conscious Actions

To fully endorse this role, H&M went beyond the CSR strategy of its competitors and launched every year since 2010, simultaneously the Conscious Collection and the Conscious Actions Sutainability report.
The first one is a capsule collection of a few garnements made of sustainable materials while the second one is a report that gathers in a highly visual way all the information on the areas which the brand focuses its efforts on, as well as all the actions undertook and their results. These reports are not only meant for the shareholders but are also a communication tool that can provide information to all the stakeholders involved with H&M, including conscious customers.
The launch of the collection serves as a showcase for the brand in order to highlight the report and its efforts in the field of sustainability.

The Conscious Actions were launched by H&M in 2010 while previously refered to as Corporate Social Responsibility (H&M, n.d).

They are made of 7 commitments, each including dozens of actions every stage of a ganement lifespan.

The 7 commitments are :

Figure 4: H&M's seven commitments

To choose the area of focus and enable these initiatives to be as efficient as possible, H&M identified, for each value chain stage, the main impacts as well as the influence the brand has on reducing them.

Figure 5: The climate and water impacts along H&M's value chain

DESIGN				RAW MATERIALS			
OUR INFLUENCE	CLIMATE IMPACT*	WATER IMPACT*	SOCIAL IMPACT	OUR INFLUENCE	CLIMATE IMPACT*	WATER IMPACT*	SOCIAL IMPACT
High	0%	0%	Medium	Medium	12%	87%	High

FABRIC AND YARN PRODUCTION				GARMENT PRODUCTION			
OUR INFLUENCE	CLIMATE IMPACT*	WATER IMPACT*	SOCIAL IMPACT	OUR INFLUENCE	CLIMATE IMPACT*	WATER IMPACT*	SOCIAL IMPACT
Low	36%	6%	High	Medium	6%	1%	High

TRANSPORT				SALES			
OUR INFLUENCE	CLIMATE IMPACT*	WATER IMPACT*	SOCIAL IMPACT	OUR INFLUENCE	CLIMATE IMPACT*	WATER IMPACT*	SOCIAL IMPACT
Medium	6%	0%	Medium	High	10%	0%	High

USE			
OUR INFLUENCE	CLIMATE IMPACT*	WATER IMPACT*	SOCIAL IMPACT
Low	26%	8%	High

It has to be noted that the evaluation of these impacts was done thanks to a lifecycle assessment methodology for the footprint analysis and the water footpring network's methodology was used for the water impact and includes green blue and grey water footprint (H&M Conscious Actions Sustainability report, 2014). These are the tools commonly used to identify and measure a brand's impacts in the fast fashion sector.

6. H&M Conscious Actions : a critical analysis

6.1 Applied methodology

To answer the research question regarding the actions undertook by H&M to decrease its environmental impacts along its value chain and the results of this strategy, we will analyse H&M's 2014 corporate social responsibility report entitled « H&M Conscious Actions Sustainability Report 2014 » as well as gather information from its annual financial report and the brand's website.

According to this website, these anually published reports « cover material sustainability strategies, activities and performance for the global group operations of H&M Hennes & Mauritz AB » (H&M, n.d).
They are produced in accordance with the Global Reporting Initiative G4 Sustainability reporting guildelines and also includes material indicators from the pilot of the Apparel and Footwear Sector Supplement. They are reviewed by the highest executive management and external assurance has been provided for some of the selected indicators (H&M, n.d).

The 2014 report, which we mainly base our analysis on, is 117 pages long and is divided into 7 sustainable actions the company wants to focus the attention of the readers on. Within each

of the sections, are presents the actions led during the 2013-2014 financial year and what results these initiatives led to.

Hence, the report contains a lot of information but because its aim is to be easily accessible to as many stakeholders as possible, few are justified by indicators or a rigorous scientific methodology and the reasons behind the choices of the indicators and the area worth focusing on, are poorly justified.

The report is freely accessible on H&M's website and is used as a communication tool for the company, both for its relations with its shareholders but also with the consumers.

Therefore, and hence the specific nature of this document, we have decided that to analyse its content in the most scientifical manner possible, an analysis grid would be required. To build this grid, sources outside of H&M and sources that have been used by H&M, have been taken into account to define several criterias in order to be as complete and rigorous as possible.

6.2 Methodological choices of the grid's criterias

A. Sources outside of H&M

- **The scientific litterature**

While according to Aakko and Koskennurmi-Sivonen « the methods of reaching sustainability in fast fashion are not clear at all » (Aakko & Koshennurmi-Sivonen, 2013, p.14), a certain number of actions that can be undertook by fashion companies have been identified by the literature to bring sustainability to a garnement's lifespan.

Indeed, several authors, such as de Brito et al, Aakko and Koskennurmi-Sivonen, Li et al, or Niinimaki and Hassi agree that, fast fashion, due to its inherent needs and its production model, represents a heavy burden for the environment and and that taking sustainability measures at different stages of the supply chain could reduce these environmental impacts in a significant way.

In order to do so, these authors often begin their analysis by emphasizing the importance of the design phase. According to Niinimaki and Hassi, the current « short life span of textiles and especially clothing is one of the main problems in the current industrial system (which is) based on *planned* obsolescence » (Niinimaki & Hassi, 2011, p.1878).

Therefore, in order to overturn this prepared shortness of life, the design phase seems crucial in the way that it has the ability to infuse sustainability in the product's whole lifecycle, even before the garnement is produced.

To take this into account in our analysis, we have decided to retain two aspects of the design phase that enable the product to have fewer environmental impacts:
- The taking into account of the product's lifecycle
- The use of innovative technology to minimize the environmental impacts

After the design phase, the authors begin to develop sustainability in the supply chain by the raw material production stage.

Indeed « while choosing materials is an essential part of the aesthetic of any design, it also plays a remarkable role in the sustainability aspects of fashion » (Aako & Koskennurmi-Sivonen, 2013, p.16)

Therefore, and regarding the important part this stage of the supply chain represents in the total of the environmental impacts of a garnement's life, we have decided to divide the criteria in 2 sub-categories.

- The first one will verify if the choice of materials is made with environmental concern. When it comes to fast fashion, in order to be able to sell clothes as affordable as possible, raw materials are rarely chosen with regards to their environmental consequences, such as the energy necessary for their production or the pollution they entail but rather to their cost. However, when sustainability is taken into account, the reduction of these impacts can be extremely significant and improve the company's CSR performance.
- The second one deals with the use of recycled materials that prevents exploiting new virgin ressources and reduces the amount of clothing waste found is landfills

For the next step of the supply chain, the transformation and treatment of fabrics and manufacturing of clothes, few pieces of information were provided in the scientifical litterature and we will therefore develop this further in the next sub-title : the European Comission's report.

With regard to the transport phase, « few supply chains are as notorious as the fashion supply chain for having such an unpredictable demand » (De Brito et al, 2008, p.16) and this feature entails high environmental costs especially in the form of greenhouse gas emissions, since, to enable a fast turnover, the items are mosly transported by plane.

In order to measure the environmental friendliness of the actions taken in terms of transportation, we have added a criteria that will enable to identify whether clean transporation modes are used by the company and to what extent.

The last aspect of the garnement's supply chain we wanted to analyse thanks to the grid is the saving of energy throughout the supply chain, without focusing on one specific stage. Indeed, we followed the remark of Fletcher, acccording to whom « unless we look at a product from a lifecycle or whole-system perspective, we risk ignoring major sources of environmental impact (such as the use phase) and opportunities for innovation and change » (Aako & Koskennurmi-Sivonen, 2013, p.18).

To do so, we will focus on the energy efficiency of the life span of the product as well as the use of renewable energies.

On top of the above, we added a few criterias representing issues, outside the supply chain itself, that were raised by some authors and that we think are very much relevant to this analysis.

The first one is the consumer's use phase, which is one of the stage with the most negative environmental impacts. We will analyze whether the retailer communicates with the consumer on how to act towards producing less environmental impacts and if the company provides the consumer with a way to dispose their unwanted garnments.

The second one deals with the use of labels or norms of compliance as « Ecolabels serve a key role in transmitting information about standardized and certified processes related to a product » (Thomas, 2008; Moore et al., 2009; Sherburne, 2009 quoted in Aako & Koskennurmi-Sivonent, 2013, p.19).
These labels are not only important for the company to position itself compared to its competitors but also for the consumers who, otherwise, would be unaware of the effort of the brand in terms of sustainability.
We have decided not to control the compliance to the many labels that exist, individually, but rather identify whether the company chooses to comply to any ecolabels, a personal code of conduct or is respecting the 14000 ISO norm or other available norm.

This latter point brings us to a criteria we did not find in the scientific litterature but thought as essential to verify the company's commitment: the auditing process.
As it is widely reknown, the supply chain in the fast fashion industry is particularly long and complex and involves a high number of stakeholders, most often located in different countries.
Therefore, as much as the focal company wants to implement sustainability measures, it can be hard to make sure that every supplier and sub-contractor is respecting these measures.
To check whether the company takes into account this essential aspect, the grid contains a criteria that helps verify what kind of suppliers are audited and what are the measures planned in case of non compliance.

- **The EU Comission Report on Best Available Techniques in the Textile Industry**

In 2003, the European Commission published a document referencing the Best Available Techniques for the Textile Industry (EU Commission, 2003). The 626 pages document covers various stages such as the fibre manufacturing, the pretreatment, deying, printing and various environmental impacts such as the emissions or the spreading of various chemicals into the environment.
However, regarding the complexity of this document that aims at providing textile and clothing professionals with technical information, we have decided to use it as a source only to monitor the position of H&M regarding the Best Available Techniques to avoid hazardous chemicals and in the management of water ressources.

B. H&M's Reporting Guidelines

Secondly, we wanted to analyse H&M's compliance with the reporting guildelines it has used to prepare and publish its report.
Whereas this topic won't be represented by a criteria in the grid itself it, we will mention it at the end of our analysis and believe that a short explanation of these guidelines and the role they plain in sustainability reporting is, therefore, necessary.

Indeed, those guidelines that are mentioned several times on H&M's website and in the report itself serve as a proof of seriousness and a guarantee of reliability in the context of a corporate social responsibility tool.

The three guidelines H&M reports according to are:

- ✓ The Global Reporting Initiative G4 guidelines on sustainability
- ✓ The Pilot of the Apparel and sector supplement
- ✓ UN Global Compact principles.

Accordng to the GRI, « the value of the sustainability reporting process is that it ensures organizations consider their impacts on these sustainability issues, and enables them to be transparent about the risks and opportunities they face » (GRI, n.d).
The Pilot of the Apparel and Footwear Sector Supplement is an addition to the GRI guidelines, especially for companies in this sector and the UN Global Compact principles are 10 principles regarding human rights, labour, environment and anti-corruption that companies should ncorporate into their strategies and procedures to "not only uphold their basic responsibilities to people and planet, but also setting the stage for long-term success" (UN Global Compact, n.d)

C. Weighting of the environmental impacts along the value chain

Beyond the choice of criterias to of the analysis grid, it seemed mandatory to allocate a weight to each phase regarding the importance of its environmental impacts.
In order to do so, we looked for information regarding this matter in the litterature but we also took information from H&M's report itself, including the tables in the previous section (Figure 5).
To facilitate the reading of the environmental's impacts weight, we chose to use "Xs" next to the supply chain's step in the grid that can be found in the appendix. The more Xs, the most important the environmental impacts are, and therefore, in our analysis, the most interesting and relevant the actions taken about that stage are.

6.3 The content of the company's strategy

Now that our methodology has been clarified, we will start analyzing H&M's Conscious Actions by focusing on the content of the strategy and the results presented by the company.

A. Sustainable product design

While the design phase itself does not produce any environmental impacts, all the authors who wrote on environmental sustainability in the fast fashion industry that we came across, agree on the huge potential of this phase in decreasing the environmental impacts throughout the value chain of the product.
Indeed, decisions such as raw materials, textiles, dying, finishing and processing are made at this stage and this represents the greatest opportunity for change (Kozlowski & al, 2015) through environmental and social considerations.
Moreover, the design phase also has an influence on « how a product must be cared and maintained; and the options for re-use and other alternatives concerning end-of-life management" (Kozlowski & al, 2012, p.25).

a) The lifecycle of the product in the design phase

While H&M seems to acknowledge the importance of this stage, the brand does not dedicate a special commitment to it nor a specific action.
Rather, it is mentioned at various locations in the report such as the emissions focus where the company admits how important design is in the choice of sustainable materials.
Circular design is also mentioned in an interview of the CEO of the Ellen MacArthur Foundation, however there is no mention of H&M using this strategy according to which products are designed for disassembly or for modularity, enabling thereby a high potential for recycling.
The design phase can also be found in the focus on water stewardship where « water conscious fabrics choices right from the start when designing our products » is mentioned though no details are given on this matter.

b) The use of technology to minimize environmental impacts

Several innovative technologies are available to the clothing industry in order to reduce its environmental impacts such as nanotechnology and coatings that reduce energy and material impact, digital printing, laser cutting and welding or materials that are produced with closed loop systems (Kozlowski & al, 2015 ; Aakko & Koskennurmi-Sivonen, 2013).
Yet, the use of such technology is not quoted in H&M's CSR report except the mention of the shift from solven-based glues to water-based glues and other more sustainable alternatives in the making of shoes and accessoriess, and the use of innovative technology to reduce environmental impact in the production such as Tencel. The solvent based glues containing

volatile organic compounds that are detrimental for the air quality, water and soil, the use of less polluting and dangerous products is a step forward.

However, this initative was made by H&M to improve the health of factory workers, so not aimed at diminishing environmental impacts and there is no mention that the initiative is taken during the design phase.

Regarding the use of innovative fibers, the only two mentioned in the report are Tencel, which according to its website, is a lyocell fiber of botanic origine that has an ecological production thanks to a closed loop process (Lenzing Fibers, n.d) and Lyocel which is a fabric that is made from the fibre of certain trees that require little water and few pesticides to thrive (H&M, n.d). While these innovative fibers represent a significant step forward for the sustainability of the materials used, no detail is provided on to what extent they are being used nor if they are linked to other innovative sustainable technologies throughout the value chain.

Therefore, and despite the importance granted to the design phase in improving the environmental friendliness of clothing product by the authors, we have not found in H&M's ressources, mention of any specific measures taken at this stage towards environmental sustainability nor the existence of a framework that could be used by designers to ensure such caracteristics.

For instance, the life cycle of the product does not seem to be taken into account by the designers, meaning that no special consideration will be given to the product during its production and its use to decrease its environmental impacts, that would come from a designer's decision or initiative.

Moreover, despite the many technologies available to make a product more respectful or the environment, H&M seems to focus its efforts on using two innovative fibers restricting thereby the use of other innovative technologies at the raw material stage.

In order to adress this lack of focus on this crucial stage of the garnement's value chain, we would advise the wide use, amongst designers, of a framework that would include the various sustainable initiatives that can be taken at the design phase and that will considerebly modify the environmental impacts of the products throughout the value chain. Such considerations could include the sustainability of the material chosen, the choice of eco-friendly processing, manufacturing and finishing factories as well as excplicitly choosing fabrics that require unfrequent washing and drying, all of this without compromising the looks and the price of the product.

B. Sourcing materials

The production of raw materials for supplying and manufacturing represents an important share of the environmental impacts of a fast fashion garnement. This step is therefore highly important in terms of sustainability as a careful choice of the materials could decrease significantly the environmental impacts linked to a garnment 's production.

a) <u>Choose material with environmental concern</u>

H&M seems to enphasize its use of eco friendly materials.

Indeed in the first commitment: « provide fashion for conscious customers », a whole focus is dedicated to « conscious products and materials ».

As we developed in the section regarding the environmental challenges faced by fast fashion, the industry uses several types of fibers: natural fibers such as cotton and synthetic fibers such as polyester.

The most used material in the sector is cotton, known to be a highly demanding crop in terms of water and pesticides and entailing other environmental costs such as soil depletion due to the mono crop culture, chemical removing of weed and other toxic chemicals.

However, H&M has been shifting towards organic cotton for several years and became, in 2013, the world's number one user of organic cotton according to the Textile Exchange Organic Cotton Market Report 2013, despite being surpassed by C&A in 2014 (The Textile Exchange, 2013). Contrary to conventional grown cotton, organic cotton requires no pesticides, the seeds are natural and contain no GMO, the soil is preserved thanks to annual crop rotation and the weed removal is hand made. In 2014, the volume of organic cotton used by H&M was 13.7% of its total cotton use which doubled from the 7.8% of 2012. Its goal is to use only sustainable cotton by 2020.

The term "sustainable" is used because H&M does not only organic cotton, it also sources some of this material with the Better Cotton Initiative that works towards « making global cotton production better for the people who produce it, better for the environment it grows in and better for the sector's future » (The Better Cotton Initiative, n.d) by respecting several commitments such as:

- Better Cotton is produced by farmers who minimise the harmful impact of crop protection practices.
- Better Cotton is produced by farmers who use water efficiently and care for the availability of water.
- Better Cotton is produced by farmers who care for the health of the soil.
- Better Cotton is produced by farmers who conserve natural habitats.
- Better Cotton is produced by farmers who care for and preserve the quality of the fibre.
- Better Cotton is produced by farmers who promote Decent Work.

Overall, Better Cotton represents 7.5% of the total cotton use in 2014, therefore increasing the use of sustainable cotton to 21.2%, so less than a quarter.

However, BCI does not especially promote organic cotton production or other certified method of agriculture that respects specified standards but rather promotes a holistic approach to improve the impacts associated with whatever production system the farmers use.

As an international standard, BCI collaborates with many fast fashion firms including H&M and its direct competitor Inditext. However unlike organic cotton, the standards regarding measures to diminish environmental impacts differ depending upon the scale of the parcel and the work focuses on improving the environmental conditions in traditional cotton growing

which equates as coming a long way since the environmental impacts of the production of the « world dirtiest crop » are disastrous.

Moreover, H&M has been partnering up with World Wildlife Fund to create a strategy to save water at each stage of of the garnement production cycle including the production of raw material.

All these initatives strengten the credibility of H&M as a major sustainabilty actor and these efforts lead the consumer to believe that the brand chooses, indeed, its materials with environmental concern. However it has to be noted that the sustainable cotton use represents less than a quarter of the total cotton of the brand meaning that more than 75% of the cotton H&M's garnements are made of, still remain highly polluting and water demanding. Moreover, the brand was caught in 2010 in a scandal according to which, 30% of the cotton tested in the brands's clothes contained GMO's and other pesticides (Schwartz, 2010). While H&M acknowleged the facts, it pretented not knowing about this problem, causing serious concerns in terms of credibility which it overturned thanks to the partnership mentioned above and a heavy marketing campaign.

Regarding the other types of fibers used in the clothing industry, mention is made of recycled polyester but we will develop this issue in the following sub-section. However the environmental issues linked to other man-made fibers and synthetic fibers do not seem to be adressed by H&M despite the environmental impacts they entail such as depletion of non renewable ressources.

b) Recycling

Making clothes from recycled materials has been an increased concern for H&M and the concept of closing the loop on textile fibers is the subject of an entire focus in the Sutainability Report.

In 2013, the brand launched a system of garnement collecting of any clothes of any brand in any conditions through boxes set up in almost all of H&M stores against a coupon giving the consumer a discount. From these collected items, H&M reuses or recycles all of them as the goal is to send none to landfills. In 2014, the brand already doubled the amount of collected garnments compared to 2013 to reach 7,649 tones.
For 2015, the target H&M has set, is to increase the number of pieces made with at least 20% recycled fabric from collected garnements by more than 300% compared to 2014. However, while this percentage might seem high, H&M does not mention the number of products made of recycled materials from collected garnments in 2014, leaving a doubt on the ambitiousness of this strategy.
Moreover, in order to do so without loosing quality, the brand mentions it still needs additional technological innovation. Indeed at this stage, the available technologies do not allow a garnement to be made of more than 20% of recycled cotton without significant loss of

quality and therefore durability which would counter the brand's efforts to improve its sutainability performance.

Therefore, while the target seems ambitious, several challenges remain on the path to closing the loop between collected garnments and newly produced clothes.

On top of the garnment collecting system, H&M also recycles polyester into clothes. Polyester is a synthetic fiber made from petrol that has various uses in different industries. It is quite popular in the clothing sector especially under the polyethylene terephtalate (PET) shape but can also be used to make plastic bottles. To produce 1kg of PET, 1,9kg of gross petrol is needed and this material is not biodegradable causing significant pollution (Strid, n.d).

In 2014, H&M recycled the equivalent of almost 40 million PET bottles and the brand would like to increase this number up to 60 millions in 2015.

However, the company specifies that its data concerning the number of PET bottles is not fully accurate, therefore enphasizing the need to be cautious when taking these numbers into account.

Moreover, the overall amount of recycled material used by the brand represents 0,2% of the total material use. When considering the millions of pieces made each year by the retailer, 0,2% seems very low regarding the heavy advertising the brand does on these initiatives and the role of sustainability leader it wants to endorse.

Indeed, by recycling old garnements or plastic bottles into new products, H&M's objectives is double: the brand wants to reduce the need for extracting virgin ressources at the beginning of the supply chain and diminish the amount of waste that ends up in landfills but for the impact to be significant in terms of depletion of natural ressources and reducing the 5% that represent clothing in all the waste found in landfills, the efforts in terms of recycling need to be upscaled fast with countable and transparent objectives in percentage and not in equivalents.

To conclude, H&M's efforts on using sustainable materials is commendable as not many brands in the sector use such vast amount of organic cotton for instance or implement clothing collecting systems and recycle some of these collected items into new garnments.

However, in order for a garnement to be labeled as Conscious and be advertised as such, the condition is to be made of at least 40% independently certified materials such as organic or recycled fabrics or other innovative more sustainable fabrics such as Tencel.

Yet, regarding the very low percentage of recycled materials used by the brand and the quantity of organic cotton purchased, we may wonder if 40% isn't a weak benchmark, set up to be able to advertise and sell more garnements under the conscious handhtag therefore expanding the collection and at the same time the image of H&M as a sustainability leader. Indeed, 40%, while not as low as 20% that could be besmirching the efforts of the brand, is far from the 100% of organic cotton used if slow fashion brand such as People Tree. As much as we understand that 100% of sustainable materials could be too ambitious target for a fast fashion brand, we are convinced that, within its conscious collection, H&M could significantly increase the percentage of sustainable materials used in all the products sold with the handtag.

C. Use of the Best Available Techniques to avoid hazardous chemichals and improve water management in the treatment and manufacturing of fabrics

Once the raw material has been produced, it need to be transformed into fabric and yarn, then only can the product be manufactured in suppliers factories. These two stages are made of steps such as spinning, weaving and kinitting, dyeing, cutting and sewing and finishing.

These steps entail significantly negative environmental impacts such a high need for energy, chemichals and water pollution.
Moreover, factories that perform this kind of activities are often located in countries with weak environmental regulation, leading to « offshore pollution ».

These stages have been targeted by the Detox Campaign led by Greenpeace who reported important water pollution in Chinese manufactoring factories linked to H&M and other fast fashion brands.
The main chemical that was found in the water and in the clothes was nonylphenol ethoxylates (NPEs) that breaks down in nonylphenol which are hormone disruptors and can build up in the environment. Moreover, the pollution does not only occur at the factories location as once the garnement is contaminated, all the washing cycles it will go through will release these toxic chemicals into the environment of the washing location, aka countries that might have forbidden these chemicals.
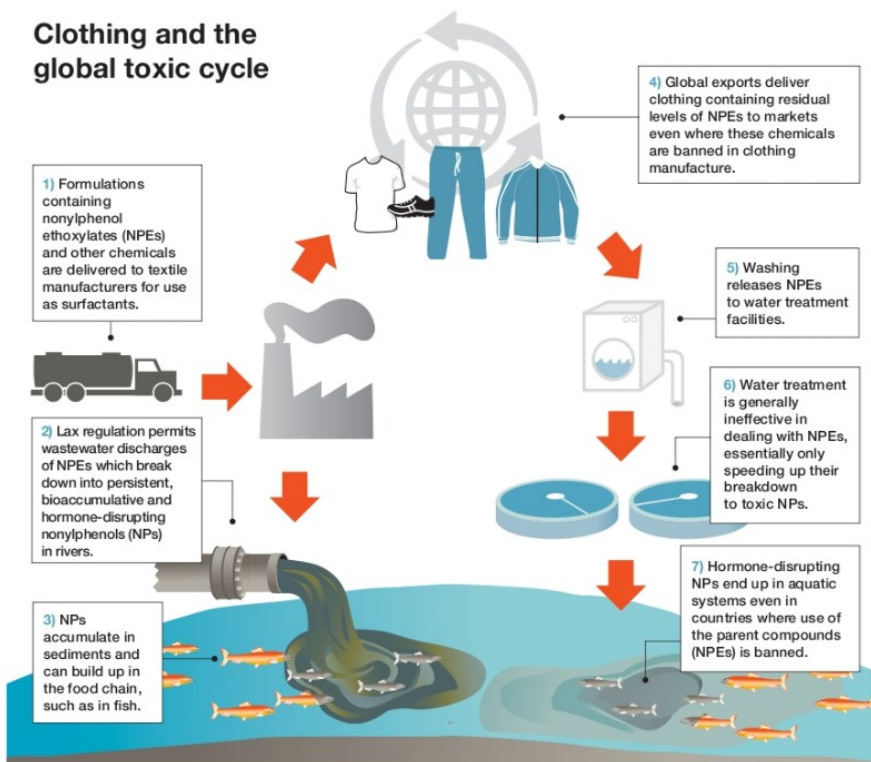
Figure 6: The global toxic cycle of a garment's life

H&M hads acknowledged these issues and engaged in water stewardship strategies for supplier factories with in house wet processes, especially in China and Bangladesh, as part of their « use natural ressources responsibily » commitment. As part of this strategy, the brand requires its supplier factories with wet processes to treat their wastewater, either by having their own treatment plant or by using shared treatment plants. The brand has also partnered up with WWF to develop new strategies for data verification and testing through external laboratories.

Moreover, in places where water is rare, the brand has set goals for factories to have improved water management systems and annual targets for reduced water withdrawals as well as increased water recycling. While these initiatives match the best available techniques recommended by the European Commission in terms of water management, the results of this strategy remain fairly poor. Indeed, out of the 105,000m3 that are averagely withdrawed every year per factory, between 5 to 7% are recycled compared to 7 to 9% in 2013 and the percentage of factories that withdraw 100 to more than 200 liters of water per Kg of clothing has not decreased between 2012 and 2014.

Water discharge is not the only emissions caused by processing and manufacturing. Indeed the preatment of synthetic fibre, for instance, can happen either through wet processing or dry processing. While the first case contributes to the increase of organic load in the final water effluent, the second leads to organic substances to become airborne. Concerning natural fibres, all the substances that were absorbed by the fiber during production have to be removed before the finishing processes, therefore being discharged in the environment as well (EU commission, 2003). The air pollution can also come from the printing processes in cases when organic solvents and heat treatments are used. Not to mention the green house gases emissions linked to the burning of fossil fuels to provide the necessary energy for the processes involved (EU Commission, 2003).

Therefore, the quality of the raw material plays an important role in the prevention of the environmental impacts occuring at these stages. While H&M has made significant efforts in order to source more sustainable materials such as organic cotton that has not been exposed to pesticides nor other chemicals, these initiatives remain submitted to the market conditions and thereby remain an exception in the material sourcing model of the brand.

Regarding hazardous chemicals discharge in the environment, H&M aims at zero discharge by 2020, accordingly to its commitment to Greenpeace Detox campaign and specifies that it is using the precautionary principle according to which "*'Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation.'* (UK Government, n.d)

However, this kind of objective entails close relationships with the factories and while H&M puts fowards its long term partnership with some of its suppliers, it admits not having direct business relations with the producers of fabric and yarn and working to improve their performance through external organisations. While we will develop this issue later on, the lack of control on one of the most environmentally costly stage of the value chain is rather concerning when aiming at more sustainability.

To deal with chemicals with suppliers it is actually linked to, H&M has multiplied ressources to enable them to use less harmful chemicals such as creating positive lists of chemicals from specific producers that can be used in compliance with H&M's engagement or even the creation of a « Best Chemical Management Practice » which aims to be set up by 2017. While these initiatives are mostly still on trial and do not resolve the issue of lack of oversight of some supply chain activities, they seem to be a good start at enforcing general good management practices and improved knowledge of the suppliers on the hazardous chemicals

topic which could help the brand to reach its objective of zero discharge by 2020.

Regarding the selection and use of chemicals, the ideal strategy to avoid preventable environmental impacts would be to « achieve the desired process result without the use of chemicals, then avoid their use altogether and where this is not possible, adopt a risk-based approach to selecting chemicals and their utilisation mode in order to ensure the lowest overall risk. » (EU Commission, 2003). It has to be noted that, despite the lack of control the company has on some of the factories that produce the fabric used in its garnements, H&M claims to be using the precautionary principle in its approach to chemicals selection which is consistent with the best available techniques suggested by the EU Commisssion.

To conclude, while the treatment of fabrics and the manufacturing and finishing stages are some of the most harmful steps for the environment of a garnment's lifecycle, ambitious objectives seem to be put in place by H&M. However, there is a clear lack of details on how to implement these objectives with the concerned actors, as well as lack of data that the brand needs to improve. Moreover, these efforts need to be stepped up not only because of the impacts these stages generate overseas but also because they indirectly lead to pollution at the buying locations, causing multiple pollution spots, despite the sometimes harscher legislations in place in the countries where purchasing occurs.

D. Saving energy

As we have realized so far, the fast fashion sector is made of complex, long, value chains that imply various environmental impacts linked to different needs. However, one thing can be found at every step : energy. The industry is, indeed, particularly greedy in energy and the necessity of rapidity has only increased this need.

BREAKDOWN OF CLIMATE IMPACT ACROSS THE VALUE CHAIN %
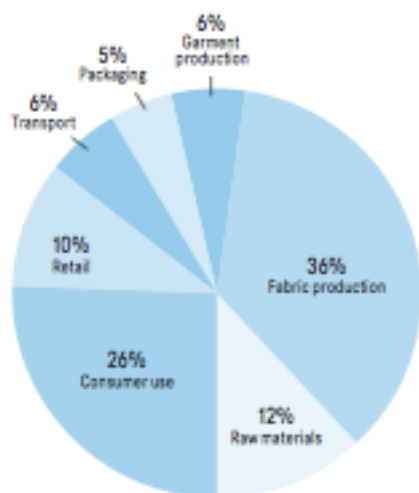
a) **Energy efficiency throughout the lifespan of the product**

Figure 7: The breakdown of the climat impact along H&M's value chain in %

Measures can be taken to reduce the negative effects the industry can have, including the CO_2 emissions linked to the energy need.
To do so, H&M has differenciated emissions linked to its own operations and emissions along the value chain.

Regarding the emissions along the value chain, the brand does not have the same kind of control that it would on its own activities, therefore heavily relying on

partnerships with the other actors and working thanks to demands and incentives for energy efficiency.

At the raw material stage, for instance, H&M claims that organic cotton reduces by 46% the CO_2 emissions compared to conventional cotton and emphasises the impacts the design choices can have on reducing emissions by making the right material choices. However, we have seen the current small amount of organic cotton used by the company compared to its total material use leading to only a small reduction of overall GHG emissions linked to this stage.

By using recycled materials, however, the brand reduces the energy needs that raw material production can have, but also the methane emissions linked to clothing waste in landfills (Wallander, 2012), but once again the huge reduction potential remains unaccomplished because of the tiny quantity of recycled clothing.

Regarding the impacts of the energy used by its suppliers, H&M says it has engaged in several clean production programmes such as PACT and SAVE that have led to GHG emissions reductions but the brand does not specify to what extent even though « emissions linked to the on-site burning of fossil fuels to produce thermal energy » (EU Commission, 2003) at these stages represents the biggest climate impacts along H&M's value chain (36%). Moreover, reduction of greenhouse gas emissions along its value chain is planned by the retailer but once again without any specific target values.

There is a stage at which H&M has made admirable efforts: the transportation phase. We have seen that in the fast fashion sector, in order to be quick and reactive and bring the trends in stores at the needed time, orders were usually dispatched by plane.

H&M had decided to take the lead on this matter and is now transporting almost over 90% of its products by ship or train and has engaged with providers that are either SmartWay partners (North America), WayAhead (Europe and Asia) or participating in the Clean Shipping Project, which are all programs with the aim of increasing sustainability in the transport sector.

Moreover, « if road transport has to be used, H&M provides a training course to the truck drivers and does not used the trucks which have been used for more than 10 years » (Shen, 2014, p.6241).

Shen has evaluated that this clean modes of transportation decreases the amount of carbon dioxide over 700 tons a year (Shen, 2014).

However, despite these considerable efforts, the expansion and ever increasing production numbers have led to an increase in the tons of CO_2 emitted in 2014 by the brand during its transportation and distribution of foods, energy use and business travel, which now emits 324,794 tonnes a year compared to 229,669 in 2014.

Finally, for the use phase, we will developp this issue later on as this stage is the object of one of the criteria we are using in our analysis grid.

Regarding its own emissions, H&M takes proud in having reduced its total emissions by 4% compared to 2013, an objective that was supposed to be reached in 2015; but the 341,675 tonnes emited in 2014 by its scope 1 and 2 activities are still higher than the 325,551 tones of

2012, which is not surprising considering the long term expansion of the brand. While H&M wants to work towards reducing even more these missions in the future, no congret values are given on that topic, leaving us to believe that H&M is dealing with this sensitive issue year by year rather than setting long term objectives for all its activities.

To achieve the 4% reduction, H&M has mostly focused its efforts on the sales phase, which accounts for 10% of its climate impact and is one of the rare steps where the retailer considers its influence as high. With over 3200 megastores, the energy consumption is high but H&M has set up a target of reducing electricity use per squaremetre in all H&M stores by 20% compared to 2007, by 2020. While this seems to be an honorable ambition for a fast fashion company which always aims to improve the consumer's experience in its stores, the brand has known a setback in 2014, as the reduction was of 12% in 2014 compared to 14% in 2012 and 2013. While H&M explains this slowdown by the addition of some « shopping experiences enhancements » such as LED lighting and video screens, we doubt that reaching a reduction of 20% by 2020 is feasible due to the continuously growing use of technology inside the stores and the opening of always larger stores with all the energy implications it entails such as use of escalators, biggest surface to lighten and video screens as new billboards. Moreover, we believe that emissions could also be avoided thanks to a reduction in stores expansion, thereby in energy consumption and an increase in online shopping availability as only 13 countries are currently able to order H&M's products online.

b) <u>Use of renewable energy</u>

The main reason H&M was able to reduce its own emissions by 4% was thanks to the use of renewable energy. The company sources 27% of its electricity from renewable sources which represents an increase compared to 2013 and the previous years. By the end of 2015, the company aims to be sourcing 80% of its electricity from renewable sources. Moreover, H&M has installed solar panels at their warehouses which generated in 2015 around 785,000kwH of electricity which when divided by the average consuption of american household amounts to the electricity consuption of 65 000 houses. No details is provided on how this renewable electricity is consumed but we would like to think that the produced energy goes into H&M's value chain and is not sold to an outside supplier.

To conclude, in terms of energy efficiency and reduction of the environmental impacts linked to the production and use of energy, H&M seems to have focused a lot of its efforts on stages that are not the most concerning such as the transport phase by partnering up with sustainable programs while lacking initiatives in stages that are highly demanding energy wise, such as the fabric production, step on which the brand has little influence. However, if H&M wants to build a greener value chain and become an example in doing so, partnerships will all the stakeholders involved throughout the garnment's lifecycle must be built in order to not set aside areas where the biggest challenges and the biggest potential for change are located.

E. Consumer's use phase

While not the most obvious, the consumer's use phase, from the moment the garnement is bought until it is disposed, is highly important in terms of environmental impacts. According to H&M, it represents 26% of the climate impact and 8% of the water impact of the garnement, which puts in the second most challenging phase along the value chain. Overall, the use of a garnment can end up using more energy than what was used during its whole production. Not to mention the consequences linked to the final disposal of the garnments such as overfilling of landfills, methane emissions or even CO_2 emissions linked to the burning of the clothes.

Despite these elements, the retailer's role remains complicated since it does not have a direct access to its product anymore but indirect measures can be taken, including communicating with the consumer regarding sustainable actions that can be undertook by him.

a) **Laundering**

The environmental impacts linked to laundering have been exposed in the first part of our work and range from water pollution by hazardous chemicals to intense energy needs. To attempt to remedy to this situation, H&M partenered up with Ginetex, the company leader in care labeling, to label all products of H&M with a tag (see below) on which consumers can find a link to the clevercare website advising them to wash their clothes at 30 degrees instead of 60. Indeed, according to the brand, such initiative could enable a reduction in energy use of 50% especially since, as we mentioned earlier, most fast fashion products are not made to washed more than 10 times, this reduction in intensity would not increase the number of washing cycles.

Figure 8: The clervercare label, located on all H&M's product's handtags

On the other hand, we have not found any information regarding a particular attention granted to laundering in the design phase, despite the fact that some fabrics such as wool, require less frequent laundering, and other can be washed at lower temperatures and air dried (Fletcher, 2008 quoted in Aakko & Koskennurmi-Sivonent, 2013).

However, H&M is very transparent with its customers regarding the different actions they can do about laundering in order to reduce the impacts linked to it including water pollution and energy efficiency. On top of labeling all the brand's products, can be found on the website several advices such as :
- Don't wash clothes unnecessarily
- Lower the washing temperature
- Fill your washing machine

- Choose a "green" detergent
- Avoid dry cleaning
- Leave your washing out to dry
- Give away your clothes! (H&M, n.d)

b) <u>Disposal of the garnment</u>

Considering the shortness of life of a typical fast fashion garnment, the disposal is a crucial element of a brand's sustainability strategy to avoid the many impacts linked to to consumers throwing away their clothes at a frequent rate.

While traditionnaly clothes are either sent to trash or taken to charity shop, H&M established a third way thanks to its garnment collecting strategy through boxes present at almost every H&M store in the world. These boxes collect any clothes in any condition from any brand against a small discount for the consumer. By doing so, every actor involved is winning: the consumer by getting a reward for having a "conscious" behavior and the brand for gaining potential material that can be used in new garnments, reducing the energy needed for the production of those and avoiding being called out for filling landfills.

While we already developed the potential held by these collected items in terms of recyclability into new garnments, H&M also sells back the ones in the best shape, creating a second hand collection and donates to charities the less fashionable ones (Capt & al, 2014). For the items that can not be worn again, they are sent to be transformed into new products such as cleaning rags or burnt to produce energy.

By setting up this collecting system and informing consumers about green laudering, H&M enables its consumers to take an active part in the reduction of the environmental impacts and by doing so, the brand is able to report progress in this matter, even though it does not have a direct control on this stage, as it does on raw material selection or transportation.

F. Control and compliance

a) <u>Use of labels</u>

In order to enhance their credibility as sustainable actors, many brands are complying with norms or labels and when they do, this kind of engagement is often put forward by the brand either in the sustainability report or in advertising.

The existing labels range from organic materials to labour and living conditions such as fair trade, to sustainable development labels such as ecocert to Oeko-Tex Standard 100 that covers human and ecological health. A non-exhaustive list can be found on www.ecolabelindex.com in the textile category.

Amongst these existing labels, H&M has all its products carry the "clevercare" label that encourages the consumers to wash, use and care for their clothes in a more sustainable way. However, except updating the tags of all the clothes in stores, this label does not have an

impact on H&M's supply chain but rather addresses the consumers and their washing habits.

On top of this, the brand is hoping for a future consumer labeling thanks to the HiGG index, "a tool that empowers brands, retailers and facilities of all sizes, at every stage in their sustainability journey, to measure their environmental and social and labor impacts and identify areas for improvement" (Sustainable Apparel Coallition, n.d). The index, an initiative by the Sustainable Apparel Coallition is currently an assessment tool for the brands and their products to allow companies to identify sustainability challenges and opportunities but aspires to become by 2016, a consumer facing label, as soon as the quality of the information is reliable and credible. Since H&M is currently working hard on improving its environmental and social perfomances, it can expect a satisfying ranking for a fast fashion company, which explains its wish to see a consumer-facing label come out of this initiative.

Moreover, H&M created its own label: "conscious" which products are made of "50% independently certified materials such as organic or recycled fabrics or other innovative more sustainable fabrics such as Tencel " (H&M Conscious Actions Sustainability Report, 2014). These materials represented in 2014 14% of the total material use of the brand. By doing so, the brand heavily advertises it just like it would any other collections which enables it to put forwards its own initiatives in terms of sustainability such as the conscious reports. They key of creating its own label is located in the advertising power it gives the brand which can then choose the name of the label, its conditions and its advertising scheme, where doing so with a pre-existant label is much harder and much less appealing for the consumer.

In terms of norms, a widely accepted and used within various industries is the ISO 14000 and 14001. According to the International Organisation for Standardization " The ISO 14000 family of standards provides practical tools for companies and organizations of all kinds looking to manage their environmental responsibilities » (the International Organisation for Standardization, n.d). The norm contains a certain number of conditions for companies to respect in fields such as audits, communications and so on. While the ISO 14000 and its by products are commonly used in the textile industry (Shen, 2014), H&M is not ISO certified as its « ways of working do not correspond with the type of bureaucracy that comes with ISO certification » (H&M CSR Report, 2003). By avoiding this kind of certification scheme, the brand has more flexibility in its initiatives and avoids the sometimes constraining demands that comes with such a commitment.

Instead, the brand has set up its own code of conduct called Index Code of Conduct (ICoC) that enables it to measure its supplier's sustainability performance.
The Code enables the suppliers to be rated with a maximum score of 100 and H&M asseses the scores thanks to "regular audits". The goal is here to rewards suppliiers that have good rankings with "better business", aka more orders, and only the suppliers with the highest scores can become "strategic partners". The list is published which enhances even more the competition amongs suppliers.
The code of conduct contains minimum requirements such as freedom of association, a ban on child's labour, health and safety, whousing conditions, environment, systems approach and

monitoring and enforcement (H&M Code of Conduct, 2010).

In terms of environment, the code of conduct is rather short and only deals with the necessity for environmental permits, handling of chemicals according to H&M's Chemicals restrictions, water management and wastewater treatment that must meet the requirements in local legislation or the Business for Social Responsibility guidelines and waste must ben taken care of in a responsible manner and in accordance with local law.

As this code of conduct applies to all of H&M suppliers, subcontractors and other business partners that do business with H&M we may be surprised by the lack of development and details on these topics, where norms such as ISO 14000 require much more detailed procedure to follow, depending on which activities are conducted at the location and what kind of environmental impacts do they imply (Joshi, 2001).

b) <u>Audit</u>

To show the achievements in environmental management and identify the "good students" along the value chain, "firms often verify the practices of sustainable manufacturing via third parties " (Shen, 2014, p.6239).

Before putting any order for the first time in a supplier's factory, the company's auditors conduct an "in depth head audit". According to the report, 96% of these new factories were audited before a placement was placed in 2014 while the 4% remaining were considered low risk because located in european countries and therefore did not need to go through the process, according to the brand's criterias.

Regarding non first timers factories, H&M, audited 3,623 factories in 2014, which represents 84% of all their supplier factories and on average, each active first-tier factory was audited 1,5times wich represent a slight increase compared to 2013 (1.3).

The next step for H&M is to start integrating second-tier suppliers such as fabric and yarn mills factories into the auditing programme. The targets are mills involved in at least 50% of the production volume by 2015 and in 2014, fabric and yarn mills involved in 35% were covered by the programme.

This is a significant step for the brand as the fabric and yern production accounts for 36% of the climate impacts of a garnment making it the most impactful stage of the supply chain. Therefore by bringing second-tier suppliers with which the firm admitted not having direct relationships with,thereby very little control on, into the auditing system, the brand can enlarge the number of actors in the supply chain concerned by sustainability issues which provides a great opportunity for impacts reduction and competitive advantage, as, by doing so, the competition amongst suppliers (first or second-tiers) that wish to build strategic business relations with the retailer remains fierce.

Indeed, in case of non compliance to the code of conduct, discovered by the audits, H&M begins by analyzing the management system in fault and organizing capacity building as well as training, then if no improvement is noticed, reduces order volumes and at last terminate the relationship.

The auditing was performed by Ernst & Young "with regards to the indicators referred t in the GRI index 2014" (H&M Conscious Actions Sustainability Report, 2014).

c) <u>Reporting compliance</u>

We compared the indicators used by Ernst & young and the indicators urged by the Global Reporting Initiative G4 and found that when it comes to the environment, several criterias advocated by the GRI such as the impacts on the biodiversity or details on energy consumption and emissions were not found in H&M's report. Not all the criterias set by the GRI need to be found in the reporting content. Indeed only the aspects based on the "relevant economic, environmental and social impacts related to all the organization's activities, products, services and relations" (Global Reporting Initiative, n.d) and then prioritized by the organization can be reported. Same applies for the second reporting guidelines of H&M: the pilot version of the Apparel and Footwear Sector Supplement, which is, in fact, a supplement of the GRI G4 reporting guidelines relevant for organizations in this sector.

This matches H&M's strategy of reporting, which is based on 4 steps. Firstly the brand identifies the key aspects by mapping them and creating a gross list based on the GRI G4 list, legislation, investor and NGO questionnaires, media coverage and other criterias. Then, to prioritize aspects, each is scored in regards to their influence on stakeholder assessment and their significance for economic, environmental and social impacts. Then, these aspects are broken down into categories, each with a different weight, such as frequently raised by key stakeholders, in key sustainability benchmarks, rankings, indices and more. It has to be noted here that the two categories with the biggest weight were "frequently raised by key stakeholders" and "importance to business strategy" opposed to "frequently mentioned in the media" or in "sustainability benchmark". Therefore, importance is given to issues that are relevant to the business stragy of the company and the people with the highest interest in it. By using this method, H&M may overlook some important aspects that have been raised by sustainability specialists to focus on less environmentally and socially important aspects, but that are fundamental for the economical well being of the company and the satisfaction of its major stakeholders

The final step is the validation of the materiality matrix by one person from each of the key stakeholders group: customers, colleagues, communities, suppliers and their employees, industry peers, NGOs, IGOs, policymakers.

However, while it is undeniable that choices must be made and that not all aspects can be reported, we wonder if this strategy can not lead to choosing fields where results are either better or more easily reportable, purposely ignoring therefore strategic points where environmental sustainability remains a challenge.

6.4 The shape of the report

After having analyzed the content of H&M's ressources according to criterias set out in advance, we will develop here the shape of the H&M Conscious Actions Sustainability Report 2014, our main source of information.

Indeed, while the information contained in the report are highly important in terms of sustainability, the way they are presented by the brand can also give us information on the brand's implication and its communication strategy. To do so, we divided our analysis in two part : the visual aspect and the content's choice of the report and we analyzed these category from a inexperienced reader's point of view.

A. The report's visual aspect

The core of the report is written in Times New Roman and the prints are rather small, even sometimes hard to read when it deals with additional technical information on data or reporting.
The report is presented in columns which is often a strategy to give a text additional volume and make it seem longer than it actually is, which we suspect might be the case here. Indeed, while the report is currently 117 pages, we suspect that in a landscape format without the illustrations, the content would fit in half its current number of pages as the equivalent of one page in collumn is half a page in landscape.

Figure 9 : Illustration for the « Be climate smart » commitment.

In terms of illustrations, there is more or less one photo or one graph per page written, often quite big, half of the page's size, and often more illustrative than informative. This photo for instance, illustrates the front page for the climate smart commitment even though it does not represent anything linked to the climate or the environment. We suspect this image was chosen for the abundonance of green which is often the colour associated with the environment.

But the climate commitment is not the only example. Throughout the report, photos are almost systematically of H&M's products or people, whether employees, consumer, models, or executives. Indeed, throughout the core of the report, we counted only 11 photos that represented other subject than these mentioned above, such as factories, stores or landscapes, even for the environmental related commitments. Moreover, in almost every photo representing an individual, the subject is smiling, whether he seems to be a sales advisor, an executive, or a factory worker.
We suggest that these choices are made to lead the reader to feel empathy towards this people and that by seeing them « happy » in such various backgrounds, to believe that H&M's actions are indeed improving the life of everyone involved in its supply chain and therefore are successful in their strategy

B. The content's choice

We already talked about the brand's methodology for choosing the topics worth reporting, however, the choices of the formulations as well as the content surrounding the reporting of the results are also topics worth mentioning.

Just like Atluntas did in its analysis of coporate reports in the fast fashion industry, we counted the occurrence of several topics that, that after analyzing the report, we thought were particularly frequently mentioned.

« Supply chain » was mentioned 39 times and H&M refers to some of its suppliers as strategic partners while « sustainable » or « sustainability » was mentioned 131 times and « impacts » 102 times.

This rather short analysis already brings us signficant information, the first one being that the brand acknowledge that it has an important impact, both on the communities and on the planet and is not afraid to admit so. On the other hand, H&M's communicators truly want the focus to be on sustainability and their actions towards it by mentionning the concept on average 1,5 times per page : this is the key idea of the report that the brand wants the reader to remember. Finally, the fact that the supply chain concept was not quoted as much brings us to think that supply chain management and the sometimes technical aspects that surround it is not what the brand wants the reader to focus on but rather is drawing its attention to the holistical approach of sustainability issues H&M has decided to have.

Before developping the various actions, H&M's communicators lay out key numbers regarding the results of the actions that would be developped after.

While these numbers are mostly relevant, some of the figures can be misleading as no references are provided. The number of 40 millions PET bottles for instance might seem like a lot to most readers but without any comparison possible, these numbers are questionable for aware readers.

On top of the information regarding the sustainability actions, the report includes, before each comitment, an interview of an executive of H&M or an NGO in the sector concerned by the commitment, in which the interviewee praises the action undertook by the brand in that field. For instance, a child specialist of UNICEF, the program coordinator for SOLIDARIDAD (a network for sustainable production), the CEO of the Ellen MacArthur Foundation or the director of partnership for the climate group.

While the presence of these individuals undeniably give credibility to the brand's initiatives, the process might seem a over the top as if all these actors had been selected because of their position favorable towards the brand's strategy.

Our overall impression while going through this report was, that while it is presented in a highly visual way and is very pleasant to go through thanks to the numerous illustrations and the chosen presentation, it felt like a disguised advertisement for a greenwashing campaign.

6.5 Research perspective

We decided to focus this caste study on H&M since the retailer is not only considered a leader in the fast fashion industry and is continuously expanding its activities making it a great flagship of the industry, it is also a leader in terms of sustainability and, as such, has won several awards and distinctions (H&M Conscious Actions Sustainability Report, 2014). Consequently, our findings regarding H&M's strategy are only applicable to this brand and can not be expanded to other retailers, which isn't the case for our final observation that runs for the whole industry (see below).

Therefore, further research comparing the sustainability strategies of various fast fashion retailers could be undertook to identify similarities. Identifying consequences in incorporating sustainability strategies such as craddle to craddle or the use of 100% sustainable materials could also be interesting to convince retailers of the opportunities that lie in changing the current business model of the sector. Finally, a cost-benefit analysis would also be relevant in this perspective.

6.6 Discussion

Despite sometimes the necessity of a very personal analysis due to the lack of general framework regarding this field, some general findings were able to be brought out such as :

1st observation : fast fashion consumer care about the environment and are willing to buy eco-friendly garnments.

The findings of the survey we conducted amongst fat fashion consumers, was that most of them care about the environment and are even acting in its favour regularly, and even though they most often don't take the environmental consequences of their purchasing habits into account when consuming fast fashion, the majority declared themselves more willing to buy a « sustainably » made garnment rather than a regular product.

Therefore what H&M calls « conscious customer » and the litterature refers to as « environmentally-friendly consumers » or « green consumers » is nowadays an economical reality that every company including fast fashion retailers can no longer ignore since their number is excpected to grow, which represents a potential new base of customers, if their needs are properly catered for.

2nd observation : H&M is making efforts to diminish its impacts on the environment and become a « green brand ».

Throughout the analysis of the different ressources we used, we found out that H&M has launched several initiatives, partnered up with key actors in the field and reported on these actions following sustainable reporting guidelines.

Indeed, the first major step towards more environmental sustainability undertook by H&M, was to acknowledge and identify the different impacts the brand generates, and make those findings public.

The second was obviously to find solutions to reduce these impacts in a way that was feasible both in terms of technology and cost.

In many fields, we think that H&M has performed well in this matter and has done significant progress in several fields.

Becoming the world's number one user of organic cotton for instance was an important step forward especially considering the implications linked to the production of conventional cotton.

Setting up a garnment collecting program and recycling some of these products into new clothes was also an intersting initiative in the perspective of closing the loop on textile fibers, therefore reducing energy and natural ressources exploitation as well as clothing waste in landfills.

Setting up standards for water management and wastewater treatment as well as comitting to Greenpeace to avoid the use of hazardous chemicals in its supply chain by 2020, demonstrates good will from the brand to align itself with the most challenging demands of environmental NGOs and also go beyond the sometimes less constraignant environmental regulations in the countries where it outsources most of its production.

Another sign of good will from H&M is the efforts to reduce emissions and improve energy efficiency within its own activities. Indeed, as the brand lacks contol upon some of its strategic suppliers, it focuses its efforts in terms of CO_2 emissions and energy reduction on the transport and the sales phase where it has strategic grip and was even able to reach its planned target for 2015 already in 2014. Moreover, goals to increase the use of renewable energy as well as becoming itself a producer of renewable electricity are also set up for the shot term.

On the other hand H&M has also put in some efforts in the consumer's use phase even though the brand does not have any control on the consumer's behaviour through setting handtags and generated transparent information on its website to inform the consumer on how it can change its behaviour towards more environmentally friendly, less energy consuming and polluting garnment care, and also offered him a way to dispose of its used garnments in a way that prevents them from filling landfills. The garnment collecting initiative is now spread in almost every H&M's stores and has had significantly good results in terms of garnment's recycling.

Finally, the brand has decided not to comply to a pre-existant label or norm, except for the garnment care, but rather create its own label and its own code of conduct applicable to all of its suppliers, subcontractors and business partners.

The label aims at offering conscious consumer a collection that satisfies their needs and enable the brand to advertise it and the efforts linked to its production just like any normal collection despite the fact that it represents only 1% of their total garnment production (Capt & al, 2014).

The code of conduct is a common practice amongst fast fashion retailers that enable them to set standards to their partners that can be easily controllable by frequent audits. On top of that

H&M has started to make public the name of all of its suppliers, demonstrating a concern about more transparency in an industry often considered as opaque.

<u>3rd observation : H&M could go much further in its approach, including by targetting,in priority, the most environmentally harmful stages of its value chain</u>

Despite all these efforts, H&M still has some significant progress to do to mitigate more of its environmental impacts. Besides, the brand has the economical means to do so through innovative technologies but also human efforts and strategic choices.

Firstly, the company could increase significantly its share of sustainable materials used including organic cotton and recycled fibers from its garnement collecting program by investing in technologies that enable newly produced clothes to be made of more than just 20% of recycled cotton. Moreover, regarding its conscious collection, why not increase the share of minimum sustainable materials so that the garnments from this collection can fully diserve the calling « sustainable » ?

The design decision making leading to the buying of materials being one of the stage where H&M has the strongest influence, despite not owning the farms or the factories producing the raw material, if the brand was to put in request for biggest quantity of sustainable materials, producers of raw material would increase their production of such materials, establishing a virtuous circle.
We could therefore expect from one of the leading fast fashion brand in terms of sustainability, more ambitious targets regarding the use of sustainable materials, despite a potential higher price.

Moreover, regarding the yarn and fiber processing and manufacturing stage which is the most environmentally harmful stage of the whole value chain, H&M could go beyong the only establishment and compliance control of its code of conduct by choosing suppliers with high environmental criterias and enable communication between raw material producers and suppliers to avoid unnecessary treatment or fiber transformation as advocated in the EU Commission's guidelines on the best available techniques in the textile industry. Requesting to blend some of the processes together and provide sufficient infrastructures for water recycling and wastewater treatment to the suppliers could also be an interesting initiative in view of energy efficiency and water pollution prevention, two impacts distinctive of the fast fashion industry.
 However, doing so would mean shifting the supplier's selection from cost and minimum compliance to the code of conduct criterias to most likely more expensive suppliers with a proven respect of the environment and of environmental regulations.
This would probably be complicated for a brand such as H&M as it would lead to a loss of competitive advantage which the brand wants to maintain at all cost while building an image of sustainability leader. Thefore it has been focusing its efforts on easily managable stages such as sales and transport which represent less environmental risks.

A lack of ambitious targets and necessary data for efficient results can also be noted. The reduction of emissions per year, which was of 4% in 2014, is expected to be even more important in the future but no concrete targets have been set by the company. Moreover, regarding the value chain, H&M hasn't stated any results on the reduction of greenhouse gases emissions, only that it was in the process of developping a method to report on these kind of emissions.

Regarding the reduction of energy use in its stores by 20% by 2020 compared to 2007, no details are provided regarding the method to do so and how the brand is going to proceed considering its continous expansion. Besides, at several location in the report, specificities regarding missing or collecting methodology of data can be found in very small prints.

Finally, by not complying with any international labels or norms, H&M is able, though still following good business general principles to « make its own rules » and not follow the compliance process set by the label or the norm, avoiding thereby reporting to a third party. By setting up its own Code of Conduct, the brand also aims at improving « overall supply chain performance and set significant sustainability criteria for their suppliers » (Turker & Altuntas, 2014, p.18), creating thereby a tool to enhance supply chain performance. Moreover, as noticed by Turket & Altuntas, when H&M says it rewards its suppliers with the best sustainable performance by more business and has 150 strategic partners making more than 50% of all the brand's product it's not really a reward as much as it is « the nature of doing business ».

4th observation : Fast fashion, in its current shape, is a model conflicting with environmental sustainability

After carefully analyzing the ressources related to our caste study, we stepped away went back to the basic elements of the fast fashion model to attempt to draw a final observation regarding its relationship with environmental sustainability.
Our realization was as follow : despite the many undeniable efforts made by fast fashion retailers in accordance with sustainable guidelines or in partnership with key actors in the relevant fields, the model itself of fast fashion which is based on planned obscolence and always faster replenishment is not reconcilable with the earth's boundaries.

The cyclical consumption fast fashion aims to feed by bringing new styles into shops as frequently as every two weeks can not be as efficient and as fast if true, constraining, sustainable considerations that will slow down or increase the production cost are taking into account. Moreover, if the production's costs rise, so will the garnments prices which fast fashion retailers can not have without loosing a substancial part of their consumer that are especially attracted by low prices.

Besides the production and consuption consideration, the continuous expansion of most fast fashion retailers is also an ennemy of sustainability. H&M for instance has a growth strategy of 10 to 15% every year which relates to an agressive expansion strategy that entails an

important use of energy, natural ressources, chemicals and other environmentally harmful methods. As several anti fast fashion journalists mention « is it a sustainable product if environmental impacts decrease by 5% each year but sales grow by 8% a year ? » (Young, 2014)

This elephant in the room is not mentioned once in all the ressources we went though which is not surprising. Indeed, in order to reduce significantly the impacts or even prevent having any on the environment, a new model based on « innovative business models » and « ways to collaborate » to « allow the industry to meet aspirational sustainability goals » (Young, 2014) should be adopted, which would cause a revolution in the clothing sector, probably linked to a significant loss of profit, that, retailers are obviously not ready for.

7. Conclusion

The fast fashion strategy has brought many criticisms on itself for not running out of environmentally harmful processes and for leading consumers to purchase more frequently than ever, being therefore also responsible for filling up landfills fast and encouraging an overconsumption of textile products.
On the other hand, more and more consumers feel concerned about where and how their items have been produced and are ready to pay a higher price for eco-friendly products leading to the birth of several alternatives, within or outside the industry, such as eco fashion or corporate social responsibility that nourished the sustainability movement in the clothing sector.

To deal with this changing context, most retailers have reacted by, either collaborating with relevant partners, or setting up corporate social responsibility strategies, and reporting on their results. While the content of these strategies may differ between retailers, the outlines are often the same and deal with environmental impacts along the value chain and social issues in low cost producing countries.
These strategies are implemented throughout Codes of Conduct or compliance to external labels or norms and frequent audits to control the brand's partners' compliance with these sustainability measures.

The focus of our case study, H&M, often described as a leader in sustainability in the industry, embraced the movement and set up a Conscious Collection made of "sustainable garnment" as well as hundreds of Conscious Actions divided in 7 commitments that gather all of H&M's initiatives in terms of sustainability, including the creation of such Code of Conduct and auditing programs, as well as additional measures such as consumer's information, transparency, partnerships with external organisations and marketing.

However, our analysis pointed out that despite many efforts and sometimes significant reduction of various environmental impacts, the heart of the environmentaly sustainability issues faced by the industry lies within its model itself. Indeed, the fast fashion model is based on rules that are, essentially, incompatible with the planet's boundaries and the concept of environmental sustainability defined in the introduction. By producing such quantities so frequently and convincing the consumer that the key to trendiness lies in an almost continuous consumption scheme, fast fashion can not expect that lessening negative impacts only, while maintaining such growth and such business model will enable it to become sustainable in the short or long run.

Unless the industry starts investing massively in innovative technologies and apply new strategies to transform its model, rather than spending a significant part of its money in marketing the efforts that are currently made, the chances of concrete reduction of the environmental impacts linked to its value chain remain, unfortunately, rather slim.

Yet, in a world's where consumers are used to overconsumption and the companies are feeding this vicious circle without attempting to change their consumer's behavior, the question remains as whether tiny efforts towards sustainability, even without an upheaval in the production and consumption models, isn't always better than no progresses at all? Should we lower our expectations and welcome and applaude efforts by the polluters when they are made rather than criticize them for not going far enough? Or should we attempt to pressure fast fashion retailers by supplying ourselves only with slow fashion brands even if that means renouncing to fashionability and spending more money?

These are questions that consumers should ask themselves when buying fast fashion garments, but in order to do so, information needs to be available and education on those topics is essential for a concrete, lasting changing of mentalities.

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9. Appendix

Appendix 1 : Questionnaire

Questionnaire qualitatif utilisé dans le cadre du mémoire sur les impacts environnementaux de l'industrie de la Fast Fashion.

Consommation d'articles de fast fashion :

A quel fréquence effectuez vous des achats dans des enseignes de fast fashion ?

- Moins d'une fois par mois
- 1 ou 2 fois par mois
- 3 ou 4 fois par mois
- Plus d'une fois par semaine

Combien d'articles achetez vous lors de vos passages dans des enseignes de fast fashion ?

- 1 article
- 2 articles
- Entre 3 et 5 articles
- Plus de 5 articles

Pourquoi consommez vous des articles de fast fashion ?

- Le prix
- La qualité
- Le réapprovisionnement fréquent
- Rester dans la tendance
- Autre : _____

Pratiques environnementales

Pensez vous agir en faveur de l'environnement au quotidien ?

- Oui
- Non

Si oui, à quel degré ?

- Tous les jours
- Regulièrement

- De temps en temps
- Peu souvent

Si oui, sous quelle forme?

- Recyclage
- Economie d'énergie
- Alimentation biologique
- Utilisation des transports publics
- Achats durables
- Autres : _____

Dans le contexte stricte de la mode, pensez vous avoir une consommation respectueuse de l'environnement ?

- Oui
- Non

Pensez vous que l'industrie de la fast fashion a une conséquence sur l'environnement ?

- Oui
- Non

Si oui, quels sont ces impacts selon vous ?

- _____
___

Si non, à quoi pensez vous que cette absence de connaissance est due ?

- _____
___

Si vous aviez/avez connaissance des impacts environnementaux de la fast fashion, cela influence/influencerait-il vos habitudes de consommations ?

- Oui
- Non

Si vous aviez/avez connaissance des impacts environnementaux de la fast fashion, demandriez/demandrez vous à la marque des les diminuer ?

- Oui
- Non

Avez vous connaissance de la collection Conscious d'H&M, plus respectueuse de l'environnement et faite notamment en coton bio ?

- Oui
- Non

Si oui avez vous tendance à acheter d'avantage d'articles provenant de cette collection plutôt que des articles n'en faisant pas partie ?

- Oui
- Non

Si vous en aviez connaissance, pensez vous que vous auriez tendance à acheter d'avantage d'articles provenant de cette collection plutôt que des articles n'en faisant pas partie ?
- Oui
- Non

Pensez vous être plus sensible aux problèmes environnementaux ou aux problèmes sociaux posés par l'industrie de la mode ?

- Les impacts environnementaux
- Les impacts sociaux

Pouvez vous citer une marque de mode, selon vous, respectueuse de l'environnement ?

_____

_____

Renseignements personnels :

Sexe :
- Feminin
- Masculin

Age :
- _____

Profession :
- Etudiant
- Ouvrier
- Employé
- Cadre
- Sans emploi

Appendix 2 : Analysis grid of the H&M Conscious Actions Sustainability Report 2014

Item to analyse	Response	Additional comments
Design phase		
1. Sustainable product design (XX)		
1.1 Take into account the lifecycle of the product in the design phase		
1.2 Use of technology to minimize environmental impacts		
Supply chain Production of raw materials for supply and manufacturing represent 15% of the environmental impacts of a fast fashion garnement.		
2. Sourcing materials (XXX)		
2.1 Choose material with environmental concern		
2.2 Recycling		
3. Use of the Best Available Techniques to avoir hazardous chemicals in the treatment of fabrics and especially at the following stages (XX)		
4.Saving ressources (XX)		
4.1 Energy efficiency throughout the lifespan of the product		
4.1.3 Use of renewable energy		

Consumer's using phase This phase represents the second one with the highest environmental impacts (around 40%)		
5. Laundering (XXX)		
6. Disposal of the garnment		
Control and compliance		
7. Use of labels , norms of Code of Conduct		
8. Audit		