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Fighting Fast Fashion

"Nudging" for change in the global apparel industry:
the promises of Libertarian Paternalism

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Abstract

This thesis sought to answer the question 'how can 'nudging' be used to counter the negative impact that is made, socially and environmentally, by the fast fashion industry?' Building on the libertarian paternalist assumption that people generally make suboptimal choices for themselves and their environments, an experimental survey was used to test the effects of informational 'nudges' on the likeliness a person would buy a pair of jeans from a fictitious brand. Analysis of the data (N=219) suggest that the implementation of informational nudges about the negative social or environmental impact of a brand has a significant negative influence on the likeliness to buy the product in question. The social nudge had a stronger effect, possibly because it addressed the concept of 'child labour', but the effect of the environmental nudge was also significant. These results indicate that the libertarian paternalist approach can be considered a valuable addition to existing efforts to deal with the prevailing problems that are associated with the fast fashion industry, such as the violation of human rights and high environmental externalities. While not neglecting the importance of those efforts, this thesis argues that nudging policy, as it effectively stimulates consumers to behave more responsibly, can stimulate consumers to stimulate fast fashion companies to adopt more responsible business models as well. Therefore, libertarian paternalism may be a way to contribute to a more sustainable global clothing industry.

Photo front page: child worker on cotton plantation. Source: The Guardian.

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"I do love having new clothes, I do love… But old clothes are beastly, we always throw away old clothes. Ending is better than mending, ending is better than mending, ending is better."

--- Aldous Huxley in *A Brave New World* (1932)

"There's a joke in China that says… if you want to know what colour is in fashion, look in the river. You'll see the dye there."

--- Chinese person in documentary *River Blue* (2016)

I. Introduction

Clothing is a way for people all over the world – rich and poor – to distinguish themselves and express a part of their identity. Since the Second World War, as consumerism grew globally, the pace at which clothing trends come and go has quickened. The phenomenon 'fast fashion' developed from this faster pace. But who is paying the price for this seemingly innocent phenomenon? In a world where resources are increasingly scarce, clothes have become increasingly disposable. What does that mean?

The impact of the global apparel industry touches many levels. Consider the pollution caused by massive amounts of clothes which are thrown away, or the microplastics coming off of clothes in the laundry machine, which end up in the oceans and contribute to rising sea temperatures. The environmental pressure to which this industry adds significantly, will on the long run affect everyone, but currently hits mostly developing countries that are least resistant. The production of one cotton t-shirt costs 2,700 litres of water: the equivalent of what one person drinks in 2.5 years (Drew & Yehounme, 2017). While the UN and World Bank (2018) recently called for action because of the crises water shortages cause around the world, the average consumer increased their consumption of clothes with over 60% since the year 2000 (Remy, Speelman, & Swartz, 2016).

Not only the environment suffers: child labour and unfair wages in garment factories, as well as health implications of pesticides used on cotton farms, are just a few examples of risks run by people working in different parts of the supply chain (Brooks, 2015). Five years ago, in April 2013, the Bangladeshi garment factory building 'Rana Plaza' collapsed, killing 1,138 people and severely injuring thousands more. It soon became clear well-known brands like Primark, Mango and Benetton were sourcing from the factories inside Rana Plaza. The disaster became a hallmark for change, and some noteworthy steps have been taken toward better labour circumstances in garment factories in the 'global South' since then, such as the signing of the Bangladesh Accord on Fire and Building Safety by many apparel companies (Clean Clothes Campaign, 2013). But real change remains elusive, as the accords that are signed, do not have real power to enforce compliance. Criticasters say that the signing of these accords and comparable efforts are ultimately a PR exercise, which does not envisage real change (Hira, 2017). How has a positive industry like fashion turned into a serious threat to the environment and to basic human rights? But most importantly: is there a way to change this particularly tenacious trend in such a fast-moving industry?

This is a complex question. The negative aspects of the industry are pressing, but at the same time, the livelihoods of millions of people around the world depend on this industry.

Simply putting a halt to the consumption of fast fashion products through regulation, would damage the economic wellbeing of the many developing countries that are in some way or other involved in this sector. This thesis therefore seeks to find a balance, arguing that while the positive economic development associated with the vibrant global clothing sector should be safeguarded, this does not need to be an excuse not to make an effort to improve labour circumstances and environmental sustainability. Although other, more governance-focused, approaches are not to be neglected, this thesis argues that a role is left for the consumer, who can contribute to change through their shopping behavior. How? By making consumers more aware of the consequences of their choices, through the implementation of what are called 'nudges' in the shopping process. Research shows that people often make choices that are not rationally best for themselves or their environment (Thaler & Sunstein, 2008). This shopping behavior is a case in point. Sales increases suggest few consumers connect the social and environmental impact of this particular industry to their own shopping behavior (Remy, Speelman, & Swartz, 2016). However, informing consumers about the consequences of their choices, has been shown to make them more likely to change those choices to more rational ones. 'Nudging' is a way to inform consumers and stimulate them to make more responsible decisions, without taking away any choices (Thaler & Sunstein, 2008).

The idea that people make suboptimal choices and the concept of nudging comes from the theory of 'libertarian paternalism'. 'Nudges' are social cues and information, designed to help people overcome their irrational tendencies and do positive things for themselves and society, without using coercion (John, et al., 2011). Nudging to make a change in the fashion industry has hardly been researched, but libertarian paternalism itself is a topical concept in social and political science, considered by some as an alternative or addition to traditional neoliberal policies when they fall short (Wilkins, 2013).

Fast fashion consumers tend to neglect the social and environmental consequences of their consumption, even though consequences like global water scarcity likely would hurt them, too. Nudging could be a way address this irrationality, and therefore stimulate change. The research question for this thesis is thus: *how can 'nudging' be used to counter the negative impact that is made, socially and environmentally, by the fast fashion industry?* This question is approached using the theory on libertarian paternalism, and tested through a large-N online experimental survey. The results of the experiment suggest that the implementation of subtle, negative nudges about the social and environmental impact of a clothing brand in the shopping experience, negatively influences the likelihood consumers buy a product from this brand in a significant way. This thesis thus argues that such libertarian paternalist policy

could indeed provide a valuable addition in the search for a solution to the problems posed by the global apparel industry.

The thesis is structured as follows. The next chapter explains the key concept, ‘fast fashion’ and its negative implications, and analyses solutions offered by existing literature. Chapter III discusses the concept of ‘nudging’ as it is presented in the theoretical framework of libertarian paternalism, and presents the hypotheses that were tested on the basis of this theory. Chapter IV then goes into the method used and demonstrates the set-up of the experiment. The results are discussed in chapter V, followed by the discussion (Chapter VI) and, finally, the conclusions of this thesis are presented in Chapter VII.

II. Literature Review

2.1 How 'fast' came into 'fashion'

Consumption of most things is connected to the expression of people's identity, and the consumption of clothing is particularly important in that sense (Berger & Heath, 2007). 'Fast fashion' is the term that has been created to address the part of the apparel industry that updates collections not seasonally, but monthly, weekly or even daily. This incentivizes customers to buy, rather today than tomorrow, and to come back for more next week. It has become normal to have an entirely updated wardrobe every year, and to regularly throw away, or give to charities, the clothes which are no longer in fashion. How did this phenomenon develop, what exactly does it mean, and what are driving forces behind it? This paragraph gives a short overview of existing literature on the fast fashion phenomenon, in order to create a clear basis for the rest of the thesis.

Without diverting too far back into history, it is important to realize that 'fashion' was not always 'fast'. Historically, clothes were a necessity, which was not easy to come by and not to be wasted. The trade in cloth in 16th century England was heavily protected in order to avoid unfair competition, and only the most privileged were allowed to wear clothing in certain exotic colours, which were known to be from foreign lands. When feudal lords gave away clothes they no longer wanted to the people on their land, it was therefore often impossible for these people to wear them, and usually the cloth was sold or reused in other ways. Sometimes, extravagant dress was donated to theatre companies, who could use the costumes in their plays. In any case, the clothes that were available, did not go to waste (Brooks, 2015, pp. 50-55, 74-78). The increased consumption of clothes in a way started with the period of the Industrial Revolution (18th - 19th century), when the introduction of machines brought about acceleration in most industries. However, the real transformation came after WWII, when middle class workers became the main consumers.

Countries that gained independence from colonial regimes in the period after WWII, developed their own textile and clothing industries. These textile industries were protected from unfair foreign competition, as of 1972 by an international agreement called the Multi Fibre Arrangement (MFA). The controls and quotas imposed through this agreement were supposed to protect instable economies and contribute to controlled development of the clothing industry in the global South. Some scholars attribute the uneven development of the clothing industry in the past decade to the fact that the MFA expired in 2005 and vulnerable markets in Africa and Asia were exposed to market competition for which they were not

ready, favouring countries with stronger markets, such as China and India (Ofreneo, 2009; Audet, 2007).

The end of the MFA meant an acceleration for the spread of fast fashion, and increased movement of production from Europe and the United States to low-wage countries (predominantly East Asian), with which American and European manufacturers could not compete. Thanks to the increased liberalisation, the cheap garments soon flooded the markets of the global North. Prices for clothes dropped in the 2000s: by 26.2 per cent in Europe and 17.1 per cent in the USA (Fletcher, 2015, p. 18). Consequently, consumption rose, as it continues to do. The current apparel market is estimated to be worth about 3 trillion USD (Fashion United, 2018). According to the WTO World Trade Statistical Report the total of global apparel export in 2016 amounted to almost $443 million . The USA, Europe, Japan and, increasingly, China, are the biggest importers of clothing. China is also still by and large the biggest exporter, followed by the European Union and Bangladesh. Globally, about 120 million people are employed in some way or other by this industry, the majority of whom are female and vulnerable (World Trade Organization, 2017).

An analysis of the first fast fashion business model, that of Inditex, which is the mother company of the cheap-chique brand Zara (and seven others, such as Bershka and Pull&Bear), demonstrates that the development of fast fashion was not incidental. Carefully thought out, Inditex created a model which does not depend on seasonal collections, but what is called ‘just-in-time production’. Constant auditing of consumers’ reactions as well as rising trends, allows the company to adjust production to the demand immediately, increasingly so with the development of social media allowing companies to track their consumers’ every move. As one analyst put it: ‘Zara spots a trend and thirty days later it’s in their stores.’ (Dopico & Crofton, 2007, p. 44). Not only did this initially create a competitive advantage for Inditex, it also creates a ‘scarcity value’ of clothes: you had better buy the item you like now, because you do not know it will still be in store next week. Other companies, such as fast fashion giant Forever21, copied this strategy and took it even further. Forever21 brings new items to their stores every day. Existing retailers such as the H&M Group inevitably also had to copy the model, in order to maintain their competitive position. Fast fashion turned out to be Inditex’s most influential trend ever (Dopico & Crofton, 2007).

Notably, not all clothing brands have their own factories, but Inditex does (contrary to, for example, the pure retailer H&M). Although the Spanish Inditex for a while maintained the majority of their production in Europe (Portugal), competition eventually drove them overseas as well. Other factory-owning retailers, such as the Italian Benetton, for a long time were also

credited with keeping labour in Europe. However, since the 2000s, outsourcing has become common practice for all brands participating in the fast fashion phenomenon. European production was associated with higher quality, but the more disposable nature of fast fashion does not necessarily require high quality garments, making lower quality garments produced in low-wage countries acceptable, and even favourable, because they cost less (Tokatli, 2008).

Companies like Inditex, Forever21 and H&M cater to all kinds of consumers, but target primarily the young and impressionable, those who faithfully follow every new trend. It is noteworthy though, that these 'hip' brands are not the only ones in the apparel industry that create a problem. Big American chains like Walmart, not exactly known for their fashionable items, also work with this strategy of mass-production and fast turnover. And also more expensive, 'quality' brands, such as Nike or Levi's, produce in low-wage developing countries. At this point, it is highly unlikely that any piece of clothing you buy for what is today considered an 'acceptable' price, was produced in the US or Europe. This stimulates developing economies and provides jobs for millions of people with few alternatives: a chance to escape poverty. One might ask: what is the problem? The negative aspects of this phenomenon are both social and environmental. The next section discusses existing literature on the negative social impact of the apparel industry.

2.2 The social impact of fast fashion

The social impact of the fast fashion industry seems faraway for most consumers. Simply put, it comes down to the following: extremely low wages for garment factory workers, near-absence of (compliance with) worker's rights, labour under dangerous circumstances and occurrence of child labour. The collapse of the Rana Plaza warehouse in Bangladesh turned the world's attention to these circumstances at once, yet it did not lead to significant improvement in the industry (Hira & Benson-Rea, 2017). How is that possible? The negative social impact of the apparel industry is more complex than might seem at first. In this paragraph, some of the key problems are discussed, as well as solutions that have been offered so far.

Despite the increase in production numbers, every item in store is still put together by human hands. Human hands that operate machines, but human labour remains indispensable in the clothing industry, no matter how little money the item is sold for. And as brands have been lowering their prices in the past decades, particularly since the termination of the Multi Fibre Arrangement, the production of the garments also has to happen for increasingly low costs. Reduction of costs is achieved by upscaling production and lowering wages, so workers

simply have to produce more for less money. Clients, such as Primark or Forever21, demand the lowest possible price for the production of their garments, and if one factory owner or contractor refuses to produce at that price, they simply go to another one. The manufacturer that might want to pay a fair wage is left with an impossible decision: underpaying the factory workers, or losing business, eventually not paying the workers at all (Barnes & Lea-Greenwood, 2006). Furthermore, subcontractors argue that the unreasonable demands placed by multinationals in terms of cutting wage and keeping prices low, de-incentivize them to enforce better labour standards (Hira, 2017, p. 41).

The high demand is also associated with the prevalence of child labour in this sector. Although illegal, many manufacturers work with subcontractors for specific parts of the supply chain, like dyeing or attaching buttons. It is in these subcontracting levels of the production process, that conditions are especially dire, as they are the least monitored (Entwistle, 2014). Furthermore, child labour is especially prevalent in the cotton-farming sector. Estimates are that of the 168 million children that worldwide are involved in some kind of child labour, 59% happens in the agriculture sector. Child labour is mostly used to meet a high labour demand because it is cheap, or even unpaid (forced), and also because the small hands and bodies of children are better suited for certain parts of the cotton production such as cross-pollination and weeding. Various social norms also play a role in the occurrence of child labour. Especially in the cotton industry, the work is heavy and often hazardous, making it strictly illegal without exceptions, but it prevails in countries with weak legal structures (International Labour Organization, 2016).

The fear to lose business is problematic on a government level as well. Local governments in countries with a large producing sector, like Bangladesh, are wary of enforcing better labour standards because they fear the work will move elsewhere. Hira (2017) argues that the solution lies with the leadership in countries such as Bangladesh themselves. However, that requires larger political change, as corruption often plays a role in developing countries as well. For example, of the 345 Members of Parliament in Bangladesh, 29 are factory owners in the garment manufacturing industry. Such conflicting interests obviously leave little room for change (Hira, 2017).

A global labour standard, in order to avoid a “race to the bottom” of labour standards between developing countries, could be a solution according to some scholars (Heintz, 2002). Since the reluctance of individual countries to raise their labour standards incentivizes all countries to choose the lowest possible standards, out of fear to lose their competitive position, global integration of labour standards could offer a way to undercut this. However,

for example raising wages in the apparel sector is likely to lead to a decrease in job availability, which would probably hurt female workers with few alternatives the most (Heintz, 2002). The International Labour Organization (ILO), a UN organ designed to promote labour standards around the world, has been fighting for workers' rights such as a living wage and the right to unionization. Unfortunately, the ILO does not have any enforcement power. The World Trade Organization (WTO) so far has refused to include social and environmental clauses in their agreements, and decent working conditions for everyone were not included in the UN Sustainable Development Goals. As Hira (2017) put it: there is a surplus in cheap labour. Going against that, is going against basic economics. However, research has shown that a 2-6% increase in retail price could lead to a 100% increase in wages, without the loss of jobs, indicating that room for change exists if companies are willing to slightly rise their prices (Heintz, 2002).

It should be noted that some progress has been made since 'Rana Plaza'. In the pre-Rana Plaza period, audits conducted by independent and external parties, such as the Fair Wear Foundation, were found to be shady, as factories kept 'double books', where the 'official' ones showed red numbers, so the companies did not have to pay to employee welfare funds. Furthermore, audits were often pre-announced, giving (sub)contractors time to prepare for them. Since Rana Plaza, in Bangladesh several institutions have been created in order to increase regulation and strengthen enforcement through sanctioning. Labour laws have been improved, in order to better ensure workers' rights and workers' safety in the workplace. Further efforts include the set-up of helplines, where workers can anonymously report issues they encounter. The Bangladesh Accord on Fire & Building Safety as well as the Alliance for Bangladesh Worker Safety, which are supported by over 200 large brands, impose sanctions on factories that do not comply with their rules. Overall, research indicates that a desire to improve workers circumstances does exist. However, the right to unionization remains a problem, and although wages have been risen multiple times since 2015, they are still significantly below a living wage (Rahman & Khondaker Golam, 2017).

The European Parliament has argued in favour of stronger legislation for companies ever since the Rana Plaza disaster, especially concerning the traceability of the supply chains. The European Commission, however, has not undertaken any steps to create such legislation so far (European Parliament, 2018). Furthermore, a letter sent to a Dutch member of the European Parliament by the lobby of the Dutch textile branch organization suggested that the textile branch itself, at least in the Netherlands, is also against more legislation (Demkes, 2017). All in all, existing efforts are slow in making a real change, because they are dependent

on (corrupt) local structures and intergovernmental organizations which lack enforcement power, or are not willing to use that power, like in the case of the EU. Companies themselves seem willing to move toward more sustainable business models (see the next paragraph) which also include social responsibility, but on their own conditions only, as they oppose stronger legislation as well. .

Considering the entire lifecycle of our clothes, another social effect is linked to the disposal of those clothes that go out of style, or simply were not sold. According to a report by Oxfam, the second-hand clothing trade employs thousands of people in Sub-Saharan Africa, much more than the local manufacturing industry. The report acknowledges that it is not possible to estimate what the situation would be like if this trade did not exist, and that job creation is positive, but also that it creates a kind of dependency on these donations that does not stimulate sustainable development (Baden & Barber, 2005).

Andrew Brooks (2015) confirms the idea that the inflow of second hand-clothing negatively influences the local clothing industry in African countries, but he argues that staggering development of local industries in African countries has many more causes. The termination of the Multi Fibre Arrangement was especially disastrous for African countries, which used to have a significant garment producing sector of their own, but were unable to compete with more advanced industries of East Asia. The Nigerian clothing sector, for example, disappeared completely since the 1980s (Brooks, 2015, pp. 119-130). In addition to these findings, other authors have demonstrated that also the import of cheap new clothes from Asia to African countries is associated with this effect (Gibbon & Ponte, 2005). Anyway, the influx of (second-hand) clothes is such, that markets large enough to absorb it do not exist, and much of it ends up in massive landfills. This brings us to the next paragraph: the environmental impact of fast fashion.

2.3 The environmental impact of fast fashion

The social impact discussed in the previous paragraph, affects people in the so-called ‘global South’ or the developing world. Faraway from the majority of consumers, who are in the US and Europe, it is somewhat understandable that consumers have difficulty connecting these issues to their own shopping behaviour, if they even know about them. Although the consequences of climate change are strongly affecting countries in the global South as well, it is an issue that concerns people everywhere. Everyone wears clothes, and at the same time everyone will be to some extent affected by the negative environmental aspects of the fast fashion industry. The rising sea level, diminishing of ice and snow and overall increase in

water and atmospheric temperatures poses a security threat for people everywhere in the world (Intergovernmental Panel on Climate Change, 2014). This paragraphs discusses how the current apparel industry creates negative externalities that have an impact on the environment and enhance climate change, and discusses existing literature about efforts to deal with this.

The environmental impact of the global apparel industry has two main aspects. The first is the production of fibres, natural or synthetic, the processing of these fibres using dye and other technologies, the energy the factories use and the costs of shipping the cloth and garments around the world. In short: the fast fashion supply chain. The second aspect is about what happens when clothes are disposed of: given to charity with the aim to send them to developing countries, or simply thrown away. Of those clothes, over 80% ends up in landfills, and the defecation of processed fibres is so complex that these piles of clothes exert toxic chemicals for many years after they are dumped (Remy, Speelman, & Swartz, 2016). It is thus the impact of the entire lifecycle of clothes that is discussed in this paragraph.

A popular misconception is that the apparel industry is 'the second most polluting industry in the world, trumped only by the oil industry' (Sweeny, 2015). The complexity of pollution generated in some way or other by the consumption of clothes makes it hard to verify such claims. Whether it be second or third or fifth, the pollution caused in parts of the supply chain is telling enough. The World Resources Institute shows that cotton is used for about 33 percent of all fibres and textile. A water-intensive crop, the production of one cotton t-shirt requires approximately 2,700 litres of water. In addition to that, about five trillion litres of water is used each year for the dyeing of fabric. Furthermore, 24 percent of all insecticides and 11 percent of all pesticides in the world are used to grow cotton. Synthetic alternatives to cotton, such as polyester, need less water and land, but are dependent on oil and therefore have a bigger carbon footprint. The production of one polyester t-shirt causes 5.5 kilograms of GHG emissions (Drew & Yehounme, 2017). The total yearly CO2 emissions in the clothing industry is 1.2 billion tons, more than international flights and maritime shipping. Predictions are that if consumption continues to grow at the current rate, the amount of natural resources needed for the apparel industry alone will have tripled by 2050 (Nature Climate Change, 2018).

The defecation process of the chemically modified fibres of garments that are disposed yearly in the US alone, amounts to a greenhouse gas emission comparable to that of over seven million cars (Wicker, 2016). Some clothes, about 2% of the total amount of discarded clothes in the US, can be resold in vintage stores. But not fast fashion products: vintage stores

do not want low-quality, unoriginal pieces of clothing. These pieces are shipped abroad, to third world countries, where the surpluses that cannot be sold or donated also become trash (Wicker, 2016; Remy, Speelman, & Swartz, 2016).

Research on how to deal with the toll industry takes in general on the climate has been growing. The possibilities of Sustainable Business Models (SBMs), have been researched in industries such as transport, agriculture and food (Pal & Gander, 2018). A kind of sub-category in SBMs is Green Supply Chain Management (GSCM). GSCM involves all stakeholders in the supply chain in making the entire supply chain 'greener', while also enhancing economic performance (Brito, Carbone, & Meunier, 2008). Examples of changes that need to be made, and in some cases already are being practiced, are the use of organic fibres (reducing the use of pesticides and insecticides); reuse and recycling of materials; the use of clean technologies; and clean product design (taking into account the production technologies) (Caniato, Caridi, Crippa, & Moretto, 2012).

On a more general level, the literature suggests that the business models in the fashion industry need to change in three interconnected ways: narrowing, slowing and closing. The 'narrowing' of the business model can be achieved through more demand-driven production and low-energy and water-conscious production methods. The use of organic fibres and clean technologies would fall under that (Pal & Gander, 2018). 'Slowing' relates to the concept 'slow fashion', fast fashion's most obvious antithesis. Slow fashion promotes durable, timeless garments, created to last a lifetime, thus aimed at lowering overall consumption. Brands that practice slow fashion often offer the option to have products mended in case they are damaged, or returned for the sake of recycling (Fletcher, 2015). 'Closing' is part of the broader concept of circular economy, which entails a zero-waste system in which growth is not linear, but circular, and externalities are reused in the cycle instead of wasted. Recycling of materials falls in that category.

Change thus has to occur within the supply chain of apparel companies, sooner rather than later. Fletcher (1998) argued already twenty years ago, before the real acceleration of the industry had even taken place, that a more circular model was needed in order to keep the clothing industry sustainable (Fletcher, 1998). Collaboration of stakeholders and internal governance is needed to make this a successful solution (Li, Zhao, Shi, & Li, 2014). Pal and Gander (2018) argue that a change toward more sustainable business models would indeed be a way to put a stop to the negative elements of the fast fashion industry, but that at the moment there are no alternatives to the existing fast fashion business models that are scalable to an extent that it would make a real change in the industry. This is an important argument in

the discussion about SBMs: environmental sustainability and economic sustainability need to go hand in hand, in order to be able to upscale sufficiently to really challenge the status quo.

The inherently wasteful nature of this particular industry poses a problem here. As discussed earlier, fast fashion brands manage to create 'scarcity value' by not only implying that a specific garment will only be in stores for a short period of time, but actually updating collections very often (Dopico & Crofton, 2007). Efforts to make the fashion industry more sustainable both socially and environmentally, cannot forgo the 'fashioness' of the industry itself, because if what is in stores does not appeal to the mainstream consumer, it will not be possible to upscale the sustainable model and as such, the difference made will be marginal (Pal & Gander, 2018).

Companies do increasingly organize themselves in order to realize this kind of change. The 'Global Fashion Agenda' for example unites various leaders in the industry, such as H&M Group and Target, to set a common agenda for the creation of a sustainable fashion industry. The prognoses in their reports show gradual improvement in terms of GHG-emissions and energy usage over the coming years (Global Fashion Agenda & Boston Consulting Group, 2018). Naturally, these are positive developments, which may offer a start to uniting the (fast) 'fashioness' with a sustainable approach. These private efforts are, however, voluntary. The progress is monitored by a third party, but nothing happens if goals are not met. It is therefore questionable how effective such private efforts are.

Although many countries are working toward accomplishing the Paris Climate Agreement goals by 2050, such accords face similar problems regarding enforcement mechanisms. In a time when one of the leading global economies, the US, is not even a party to this accord, such intergovernmental options, while important, need to be connected to strong public policy on a national level (Kinley, 2016). As seen earlier, the European Commission is reluctant when it comes to creating stronger legislation. This thesis argues that by creating a focus on the consumer, it is the consumer who can stimulate positive change and acceleration of implementation of sustainable business models in existing companies, also without such legislation.

The consumer could make a difference on two levels. First, increased consumption of 'good' brands, would allow those brands to upscale production and lower the costs for those garments. Making sustainable clothing more affordable, would further increase their level of attractiveness, creating a positive cycle. Secondly, the choice not to buy clothes the production of which has an unacceptable environmental footprint and supports a system of unfair exploitation at the expense of human rights in developing countries, could push those

brands to adopt a policy aimed at making a change. The next section further discusses the motivations behind existing consumption behaviour of the fast fashion consumer and implications of changing that behaviour.

2.4 A job for the consumer

Earlier in this chapter, the question was asked what the problem is with the fact that most of our clothes are not anymore produced in 'the global North'. This was answered by stipulating the negative social consequences that accompany production of products in competitive low-wage countries, and the environmental consequences that accompany the mass-consumption enabled by those low wages. Although a decrease in consumption may address the latter issue, the positive social developments that are associated with this industry are likely to be jeopardized by a drop in consumption. The labour circumstances can, however, be improved, and the consumer can play a role in accomplishing that.

Evidently, consumption is at the heart of the fast fashion trend. Research on the motivations behind the consumer's to buy 'fast fashion' links it to the development of 'the self' and the increasing importance to constantly satisfy new demands (Barnes & Lea-Greenwood, 2006). Although people are affected by the negative aspects of this industry, and they do care to some extent about this, usually their empathy does not translate into behavioural change, because sustainable clothes are considered unfashionable or more costly (McNeill & Moore, 2015).

As 'fast' has become the dominant and, as Kate Fletcher (2015) argues, therefore only, way to experience fashion, many people consider it to be an inevitability. Alternatives seem impractical and expensive. However, this status quo was constructed through choices made by people, and should not be considered inevitable at all. Different choices can instigate change (Fletcher, 2015, pp. 19-20). Choices made by consumers also play a role here, although most consumers do not experience it that way. This presents a collective-action problem, in which consumers could play a crucial role, for example by boycotting brands of which they know their production is unethical, or the production process particularly polluting. However, as consumers cannot be sure that their decisions will have an impact, and they generally do not connect their consumption behaviour with the long-term consequences, they do not do anything. Boycotting a brand may seem rather drastic, but it has proven to be an effective a way to encourage change within companies, for example in 2005 when an anti-fur campaign convinced several brands, including Inditex, to take fur products out of their collections (Lee, Seifert, & Cherrier, 2017). Research shows also that consumers are more likely to boycott

irresponsible firms, than to actively support responsible ones. In other words: negative information leads to more action, than positive information (Mohr, Webb, & Harris, 2001).

Yet it remains impossible to undertake any action if the information in question is not available. Lacking information about the environmental and social impact of the clothes people buy is problematic for those consumers that are interested in making more responsible purchasing choices. The fact that they often do not know what the origins of their clothes are, makes it difficult to boycott brands that engage in practices they in principle do not agree with (McNeill & Moore, 2015). That information matters to consumers, is confirmed by the study of Grappi, Romani and Barbarossa (2017) which shows that campaigns against polluting fashion brands by NGOs negatively influence consumers' attitudes toward these brands. A problem here is the complexity of the supply chains. Retailers use many different locations for the various aspects of their production chain. A pair of jeans may contain cotton from the US, Eastern Europe and East Asia. It may be dyed in India and sewn together in Myanmar, where different (sub)contractors take care of the sewing and the addition of buttons and zippers. The complete supply chain of most apparel brands is long and not easily traceable, and companies are not eager to bring clear information about this forward (Brooks, 2015).

A major issue in trying to create a consumer-driven solution to this problem is thus the lack of transparency in the industry. An initiative of Human Rights Watch, the "Transparency Pledge" aims to convince apparel companies to sign a pledge for a specific disclosure policy, providing detailed information on their supply chain. Such transparency could make a significant change in the industry, simplifying efforts to track unethical practices and paving the way for the creation of a clear value-label, which could inform consumers. However, out of 72 apparel companies that Human Rights Watch asked to sign the pledge, only 17 fully did. Among these 17 are some large players, such as H&M Group, C&A and Nike. But among those who did not respond or indicated not to be interested in publishing such information, were big players as well: Primark, Forever21, Mango and Armani – to name a few (Human Rights Watch, 2017). This initiative could thus make a change, but companies still need to be convinced of the salience of the problem and the real business-risk it poses. Which, again, is exactly where the consumer could play a role, if they were 'nudged' into that direction.

Many scholars agree that, in the end, a continuation of clothing consumption at the existing rate is problematic by nature (Luz, 2007). A general turn towards less consumption, less waste-creation, and particularly less purchasing of garments that are not durable, would certainly make a significant change in the environmental impact of the problem. But while the middle class is expanding globally, this would likely compromise the positive social impact.

There is a need for the labour circumstances in the supply chain to *change*, but it is questionable whether it would be wise to simply encourage consumers to completely and irrevocably turn their backs to an industry that employs, for example, over 80% of Bangladesh's working population (Hira, 2017). That does not mean, however, that the existing labour circumstances are justified. The status quo can be challenged, and this is exactly where the concept of 'nudging' comes in. As discussed earlier, consumers cannot be expected to know what is wrong with their clothes, but that does not mean they do not want to know. The social media campaign 'Who made my clothes?', which triggered over 110,000 people to voice their concerns online through the #whomademyclothes in 2017, confirms that indeed people are interested to know the story behind what they wear, as does literature discussed in this chapter (Fashion Revolution, 2017; McNeill & Moore, 2015). Nudging can play a role in informing consumers, which may lead them to choose more sustainable options when they purchase clothes, and perceive their consuming choices as an instrument through which they can contribute to a more sustainable global clothing industry. This will be further explained in the theoretical framework below.

III. Theory

3.1 Libertarian Paternalism

The theory behind the concept of 'nudging' comes from behavioural economics and is called 'Libertarian Paternalism'. It is developed by economist Richard H. Thaler and law scholar Cass R. Sunstein in the book *Nudge: Improving Decisions About Health, Wealth and Happiness* (2008). The key characteristics of this theory are in the name. Libertarian paternalism is paternalistic, because it aims at steering the choices of citizens in a certain direction that is more beneficial for themselves and their environment. It is also libertarian, because no choices are taken away: if people want to make choices that will harm them, they are still free to do so. People should be 'free to choose', and libertarian paternalism is aimed at making it easy for people to go their own way, not at 'burdening people who want to exercise their freedom' (Thaler & Sunstein, 2008, p. 5).

The argument behind the need for, and usefulness of libertarian paternalism is threefold. First of all, the idea that people are rational and well able to make choices that are in their own best interest most of the time, upon which traditional neoliberal theory rests, is considered incorrect. This builds on Herbert Simon's concept of 'bounded rationality', an economic concept which sees people as rational up to a certain point, but as irrational after that. Instead of accepting today's economically driven man, or 'homo economicus', as a rational decision-maker, Simon argued that people have a limited ability and understanding of their environment, which affects the choices they make (Simon, 1955). Going further, libertarian paternalists maintain that people *usually* make bad decisions, which they would not have made if they were completely rational. This does not go for everyone: the authors differentiate between 'homo economicus' ('Econ' in Sunstein and Thaler's terminology), who is rational and makes self-benefiting choices, and 'homo sapiens' ('Human'), who is not rational and usually highly influenced by primary subconscious instincts, coming from the 'Automatic Brain System'. These people, the Humans, as opposed to the Econs, generally can benefit from libertarian paternalism.

The second part of the argument is central to the theory: influencing choices is inevitable. A government cannot possibly *not* influence choices and outcomes. For example, a policy that makes citizens organ donors by default, offering an opt-out option instead of opt-in, is a way to influence citizens' behaviour concerning becoming organ donors. But maintaining an opt-in system *also* influences citizens' behaviour, albeit in a different direction. Notably, a difference exists between behaviour which is accidentally influenced by the context upon which people base decisions, and intentionally changing that context with

the aim to alter behaviour (Hansen & Jespersen, 2013). But both depend on a choice (to interfere or not to interfere), which, given its inevitable nature, might as well be made in a way that the general well-being of people is increased (Thaler & Sunstein, 2003).

Finally, libertarian paternalism, as opposed to hard paternalism, is not coercive. Libertarian paternalism does not coerce people to choose 'the right thing', through legislation or regulations. People who want to make choices that differ from the default option that a government has decided for them, are free to do so. Again: libertarian paternalism is not aimed at limiting people who want to exercise their freedom. It is aimed at non-rational Humans, to improve their health, wealth and environment. Humans frequently fail to do this themselves, because they are prone to rely on the Automatic System in the brain, which is in charge of the things that we do intuitively. Its opponent, the 'Reflective System', is the system that we use when analysing complex problems, like playing a game of chess, or choosing a retirement plan. The Reflective System may realize that junk-food is not good for one's health. It is the Automatic System which later convinces you to eat a burger nonetheless, because it seems so tasty. The same system convinces consumers they simply must have another t-shirt, even though their closet is full and 70% of what they own, is never even worn (Remy, Speelman, & Swartz, 2016).

Choices can be influenced by governments, businesses and individuals. A classic example is the director of a school cafeteria that places the fruit in a more salient place than the deserts, in order to increase children's consumption of fruit (Thaler & Sunstein, 2003). The director of the cafeteria from this example is called a 'choice architect'. As the influence of these 'architects of choice' is unavoidable, it might as well be used to the benefit of people and society in general. After all, what parent would oppose to the idea of their children eating healthier? Other classic examples of nudges are the picture of a fly in urinals which causes men to spill significantly less because they automatically aim at the fly, or horizontal stripes on the highway, the distance between which decreases right before a sharp turn, giving drivers the impression that they are accelerating and thus making them slow down. According to Thaler and Sunstein, nudges influence people's behaviour for the better and can effectively be used to stimulate more environmentally and socially responsible behaviour (Thaler & Sunstein, 2003).

Notably, nudges do not equal incentives, the classical economic reason for people to make specific choices. Incentives, which are financial, can be a part of nudges: prices are very important in the decision-making process. However, they are politically complex, because the costs of pollution are hidden, while the costs of for example oil at the gas station are quite

clear. If this price goes up, because of higher taxes in order to discourage the use of cars, people feel that immediately, and will be unhappy, because they are not fully aware of the (future) price of polluting the air. Better communication is crucial in such a situation, and can be achieved by implementing a nudge, but the rise of prices in itself it not considered a nudge (Thaler & Sunstein, 2008, pp. 185-198).

This theory is not free from critique. The main scholarly argument against nudging is that it is an intrusion in the freedom of choice, compromising values such as empowerment and fairness that governments of most liberal democracies promote (Goodwin, 2012). The risk that this 'soft' paternalism may diverge into hard paternalism is an important concern in that regard, raised by among others Edward Glaeser (2006). Considering the fact that civil servants, or 'choice architects' may just as well make suboptimal choices, Glaeser argues that in order to make sure that liberal paternalism is indeed beneficial to most people, its policies should primarily focus on topics like suicide or dangerous drugs which clearly cause harm (Glaeser, 2006). Arguably, child labour, and also climate change may be considered such topics.

Hansen & Jespersen (2013) have constructed a framework to deal with the question how public policy officers can use nudges responsibly. They distinguish between transparent and non-transparent nudges, and divide these in type-1 and type-2 nudges. The type-1 nudges are aimed to influence the 'automatic brain system', such as the 'stripes on the road' example. They manipulate behaviour unconsciously. Type-2 nudges are aimed at influencing the 'reflective brain system' by making use of the (flawed) automatic system. The fly-in-the-urinal is a type-2 example. The automatic tendency to aim at the fly, awakens the reflective system and creates an overall increase of conscious behaviour while urinating. The transparent and non-transparent distinction is quite forward: the determination whether or not you are aware of the nudge. People soon enough figure out the fly is fake, making this a transparent nudge. The aforementioned stripes on the road that create the illusion of acceleration, on the other hand, are non-transparent. A default opt-out setting for organ donation is not considered transparent, while a prompted choice system for donor registration, is (Hansen & Jespersen, 2013).

Criticasters furthermore object to the rather bleak picture of people's cognitive ability and decision-making skills that is painted by libertarian paternalists (Jones, Pykett, & Whitehead, 2011). Gigerenzer (2015), following this point, argues that libertarian paternalism and nudging neglects the importance of simply educating people, in order to actually make them better and more rational decision-makers themselves. The problem with education is that

it is costly and time-consuming, while nudges are characterized by low costs and relatively quick effects. A common kind of nudging is 'disclosure policy', which aims to inform and educate people about harmful effects of certain behaviours. Health warnings on cigarette packages are an example of disclosure policy. They do not render solid education about the risks of smoking redundant, but this disclosure policy has proven to be effective (Hammond, Tong, McDonald, Cameron, & Brown, 2003).

Increased transparency on why certain nudges are implemented and how they work is a part of disclosure policy as well. Liberal paternalists believe that a lack of 'feedback' is one of the key elements leading to suboptimal choices. Receiving better feedback on suboptimal choices is crucial in their theory, as feedback is what makes people learn. Libertarian paternalists are thus not against educating people at all, they just maintain that for certain salient issues, education is a road that may be too long, and that for certain decisions we do not get a second chance (Thaler & Sunstein, 2008, pp. 242-244).

To summarize, libertarian paternalism holds that people are guided by temptation and mindlessness, an inability to assess risks correctly, and a tendency to follow the crowd. Nudges are simple, non-coercive interventions, which do not limit choices, for example by making tobacco illegal, but do stimulate people to refrain from smoking by informing them about the risks when they buy cigarettes (Thaler & Sunstein, 2008). Although valid concerns about risks of libertarian paternalism exist, transparent, type-II nudges really maintain freedom of choice and speak to the reflective brain system, minimizing the risk that people are unconsciously manipulated and such nudges are abused (Hansen & Jespersen, 2013).

3.2 The effectiveness of 'Nudge'

Since the theory of libertarian paternalism was coined by Thaler and Sunstein, a lot of research has been done on the actual effectiveness of nudging, with promising results. Experimental as well as field research has shown that changing default settings is effective in increasing the number of organ donations in a country (Johnson & Goldstein, 2003) and people's subscription to pension planning programs (Prabhakar, 2017). Nudging people toward healthier food choices in order to combat the prevalence of obesity is extensively discussed in the literature, and tested especially in the US. The placing and promotion of healthier products, as well as defaulting healthier side dishes in predetermined menus, are effective nudges here (Kraak, Englund, Misyak, & Serrano, 2017). Furthermore, setting healthier snacks as the default option for parent to give to their children, increased the likelihood of parents keeping their children on a healthier diet (Loeb, et al., 2017) and a study

on nudging in order to stimulate children to wash their hands in Bangladesh showed an increase of children washing their hands with soap from 4% to 74% in two weeks (Dreibelbis, Kroeger, Hossain, Venkatesh, & Ram, 2016). Though some of these nudges have shown to lose their effect after a while, as was the case for a nudging policy to encourage recycling in Great Britain (John, et al., 2011), recent research by Thaler, Cronqvist and Yu (2018) shows that in the case of pension plan default settings in Sweden, the effects are lasting over twenty years, suggesting that nudges can also contribute to long-term behavioural change (Cronqvist, Thaler, & Yu, 2018).

These are just a few examples, and nudges have been proven to be effective in numerous ways, just as other forms of libertarian paternalism have. Governments in many countries already make use of these creative incentives, such as the UK which has an official department researching the possibilities of 'nudging' in public policy. The European Commission also has a research program which focuses on the possibilities for the use of behavioural economics in European policy, and the topic is on the governmental agenda in countries such as France and Australia (Croson & Treich, 2014, p. 338).

3.3 Nudging to save the planet

'Green nudges' are the kind of nudges that stimulate consumers to make environmentally responsible choices. In a way they can be considered as policies aimed at overcoming the collective action problem posed by many industries with high negative environmental externalities, like the energy sector or, evidently, the clothing industry. They are 'nudges to save the planet' (Thaler & Sunstein, 2008). Croson and Treich (2008) explain that the factors that lead to the bounded rationality upon which libertarian paternalism builds, are passive choice, complexity, limited personal experience, third party marketing and intertemporal choice. These factors are all present in the case of environmental policy, making nudging indeed an appropriate policy to deal with it. 'Green nudges' are, for example, a university adopting a policy to set all printers on double-sided printing by default to save paper (Rutgers University saved 7 million pages or 620 trees in one trimester) or the use of smaller plates to reduce food waste (Croson & Treich, 2014). In the energy sector, research showed that when the energy provider sends monthly letters comparing the energy usage of one household to that of their neighbors, using statements like 'you used 15% less electricity than your efficient neighbors this month', this leads to a decrease in energy usage (Allcott & Rogers, 2014).

The use of green nudges to tackle environmental and social issues also receives a lot of criticism, though. These kinds of nudges are strongly intertwined with the prevalent norms and values of the 'choice architect' in power. Indeed, the account of the fierce proponents of libertarian paternalism, does not take into consideration those who may lose from certain nudges (Schnellenbach, 2012). To be concrete: the paper distributor for Rutger University that suddenly sold 7 million less pages in one trimester, is neglected in the account of green libertarian paternalists who celebrate the trees that were saved. Schnellenbach (2012) therefore argues that libertarian paternalism is not aimed at increasing the general welfare and efficiency of society, but merely at redistributing utility while consolidating existing norms, such as 'the environment should be protected' in the aforementioned example.

Furthermore, the effectiveness of green nudges is dependent on individual preferences, and individual preferences tend to be quite heterogeneous. In fact, if these aspects (individual preferences and redistribution of costs) are not adequately accounted for, the risk exists of imposing a loss of utility from underconsumption, that "may easily be larger than the loss from overconsumption in the non-paternalistic default setting" (Schnellenbach, 2012, p. 268). Carlin, Gervais and Manso (2009) also warn for the risk of worsening externalities through libertarian paternalistic policies. They argue it is probable that nudging is likely to add value when information is hard to acquire and not easily shared across individuals (Ian, Gervais, & Manso, 2009). These arguments are particularly convincing when nudges 'manipulate' choices or behaviour while the agents in question are not aware of that, or of the full consequences of their altered behaviour, and less when the nudges are fairly transparent. However, as discussed earlier in this thesis, it is exactly this issue that needs to be kept in mind while dealing with the problems posed by the fast fashion industry. Stimulating underconsumption, while possibly beneficial in some ways, could have high costs as well, jeopardizing jobs of millions of people with little alternative job possibilities.

Despite these critiques, a large-N study in Sweden and the US has shown that most people are positive toward nudging, in both these countries. The study maintained a difference between nudges aimed at the 'self', so increased personal welfare, and 'social' nudges aimed at the benefit of society. More analytically thinking people were more likely to accept both kinds of nudges, but the authors concluded that different kinds of nudges are suitable for different people (Hagman, Andersson, Västfjäll, & Tinghög, 2015). This is in line with the idea that in general, nudges are less likely to work on groups that are very heterogenic in their preferences. Personal preference, values and norms play an important role in the decision-

making process which is hard to diverge through transparent nudges, though not impossible (Busic-Sontic, Czap, & Fuerst, 2017).

3.4 Libertarian Paternalism & Fast Fashion: formulation of hypotheses

As discussed in the previous chapter, the fast fashion industry has a significant negative impact both socially and environmentally. Efforts to make a change exist, politically, independently and within the business realm. As discussed earlier, there is a need for increased corporate social responsibility through the development of sustainable business models and sustainable supply chains (Pal & Gander, 2018; Turker & Altuntas, 2014). Research concerned with consumer reactions in this area mainly focuses on the effect of negative publicity on the reputation of companies (Grappi, Romani, & Barbarossa, 2017) and to what extent such reputational damage then influences the attitude and behaviour of consumers, which appears strongly connected with how environmentally conscious people are (McNeill & Moore, 2015; Kim, Forney, & Arnold, 1997).

The development of positive 'eco-labels' are considered a way to contribute to change in the industry that comes quite close to the theory discussed here. An eco-label can be considered a nudge, because although it does not make alternative choices more costly (in fact, ecolabels are often associated with higher prices (Grunert, Hieke, & Wills, 2014)), it aims to make the choice for brands with such a label more attractive and thus 'nudge' people into buying it. This is a type-2 kind of nudge, which is also closely intertwined with traditional marketing. Although seemingly transparent, these labels have a non-transparent side to them as well. The connection that is left to make by the consumer, that brands *without* a 'fair trade' stamp are thus not fair trade and might make use of questionable practices like child labour and chemicals that cause health hazards, is not naturally deduced, because the information provided by the label is one-sided. Based only on the knowledge that a specific brand is *not* fair trade, it seems fairly presumptuous to assume that a brand then effectively must be socially and environmentally harmful. Since brands have to apply for such labels themselves, this assumption would also not necessarily be correct. In that sense, these labels thus do not contribute to the needed increased transparency in the mainstream clothing industry.

Existing research on the working of such positive labels indicates that they work primarily on consumers who already are socially conscious (Dickson, 2001). This idea is confirmed by a study on the effect of environment-friendly fashion advertising campaign (Kim, Forney, & Arnold, 1997). Testing the effect of existing labels, such as the FSC – Forest

Stewardship Council and the EU Ecolabel, on companies' sustainability strategies, Glancy et al. (2015) find that they have a marginal effect on the development of sustainable clothing design inside clothing companies. Grunert et al. (2014) show that ecolabels in the food industry also have little impact on consumer behaviour, even though many consumers do have a general concern for environmental issues. The existing research does not include the effect of negative nudges. Yet, it could be much more effective to create a value label that makes the underlying logic that comes with positive value labels ('if this product if fair trade, that must mean that a product without this label, is not') visible - if it is correct. This is also supported by the finding that consumers are more likely to negatively change their behaviour when brands are irresponsible, than actively support companies when they are shown to be responsible (Mohr, Webb, & Harris, 2001).

While there is a lot of research being done on how the fashion industry can become more sustainable, and the use of (positive) value labels as well as the effect of negative publicity about ethical or environmental values of brands also receives scholarly attention, the concept of libertarian paternalism has not yet been connected to this problem as such. However, considering the limited effect and complexity of existing solutions (as discussed in chapter 2), it is worthwhile to look into the possibilities of this approach as part of a public policy solution to the problems of the fast fashion industry. While better legislation and enforcement of that legislation is pivotal, the consumer can play a role as well, if they are given the choice. Research suggests that around 50% of consumers would rather choose sustainable products, if this did not mean a significant increase in price (Kim, Forney, & Arnold, 1997). Another study shows this number to be even as high as 78% (Dickson, 2001).

To sum up, this thesis thus adds to both the literature on the creation of a more sustainable clothing industry, and the literature on libertarian paternalism. The effect of negative environmental and social nudges on the expected behaviour of consumers of the clothing industry is tested through a large-N online experiment. This thesis contributes to the literature on effectiveness of such informational nudges. Specifically, two hypotheses are formed:

H_1: When a negative, informational nudge about the environmental impact of a brand is inserted in the shopping experience, consumers are less likely to buy from this brand.

H_2: When a negative, informational nudge about the social impact of a brand is inserted in the shopping experience, consumers are less likely to buy from this brand.

The next chapter further goes into the method and details of this experiment.

IV. Methodology

The hypotheses were tested by conducting a large-N online survey experiment. This method allows to test different scenarios and their effects on respondents' answers on the survey questions. It is thus an ideal way to test the effect of different kinds of nudges. The scenarios were assigned randomly, which is crucial for this type of experiment, and widespread distribution was achieved via social media. The online set-up was particularly suitable for this topic because fast fashion consumers in fact increasingly do their purchases online. The use of experiments in political science has become more common in the past decades, especially because they allow researchers to come closer to a causal claim than regular observational research, thanks to the random assignment of experimental groups (Morton & Williams, 2008).

4.1 Experimental design

The experiment was conducted using the tool Qualtrics, which facilitated a broad distribution of the experiment. The design of a questionnaire can significantly affect the response rate and reliability of the survey (Saunders, Lewis, & Thornhill, 2016, pp. 436-449). This experiment therefore maintained a high level of simplicity and a high visual factor, which is in line with advertising and marketing in the actual clothing industry.

The respondents were randomly presented a simulation of a webpage on which they could 'buy' a pair of jeans, which was shown in a photo (no brand names were included in the experiment to control for personal bias). Three scenarios 1 (control), 2 (environmental nudge) and 3 (social nudge) were assigned randomly by the Qualtrics software, which was essential in order to control for unobservable variables (Morton & Williams, 2008, p. 343). The choice for jeans was based on the fact that it is among the most popular items of clothing worldwide for men and women alike, rich and poor, increasing the likelihood that respondents would be able to identify with the situation (Brooks, 2015, pp. 1-38). The decision what pictures to use exactly, was made on the basis of a pre-test with N=40. Respondents for this pre-test were presented with five images of jeans from fast fashion brands (names not included in the test) and asked to indicate which one they liked best. They were also asked whether they could identify the brands of these jeans. This pre-test was adjusted for gender, so people indicating they were male, were shown pictures for males, and female respondents only saw jeans for females. The jeans with both the most 'likes' and the least correct brand recognition, were chosen for the actual survey. These criteria were used in order to minimize bias on the basis

of brand recognition in the experiment, and to maximize the likelihood that people would be able to identify with the situation in the experiment.

On the basis of this pre-test, the 'webpage' for a fictitious clothing brand was created using the graphic design program *Gravit Designer* (see figures 1 and 2). A specific page was created for male and female respondents. The general information about the jeans was provided equally in all scenarios, adjusted (as little as possible) for gender. The control group scenario had no nudge. In the other two scenarios, a visual nudge that informed about social or environmental effects of the brand's production process was worked into the webpage (see figure 3). The nudges were placed in the exact same location on the webpage for all scenarios, male and female. Also, the descriptive text on the webpage was similar for the female and male scenario, in order to minimize difference between the male and female scenarios.[1]

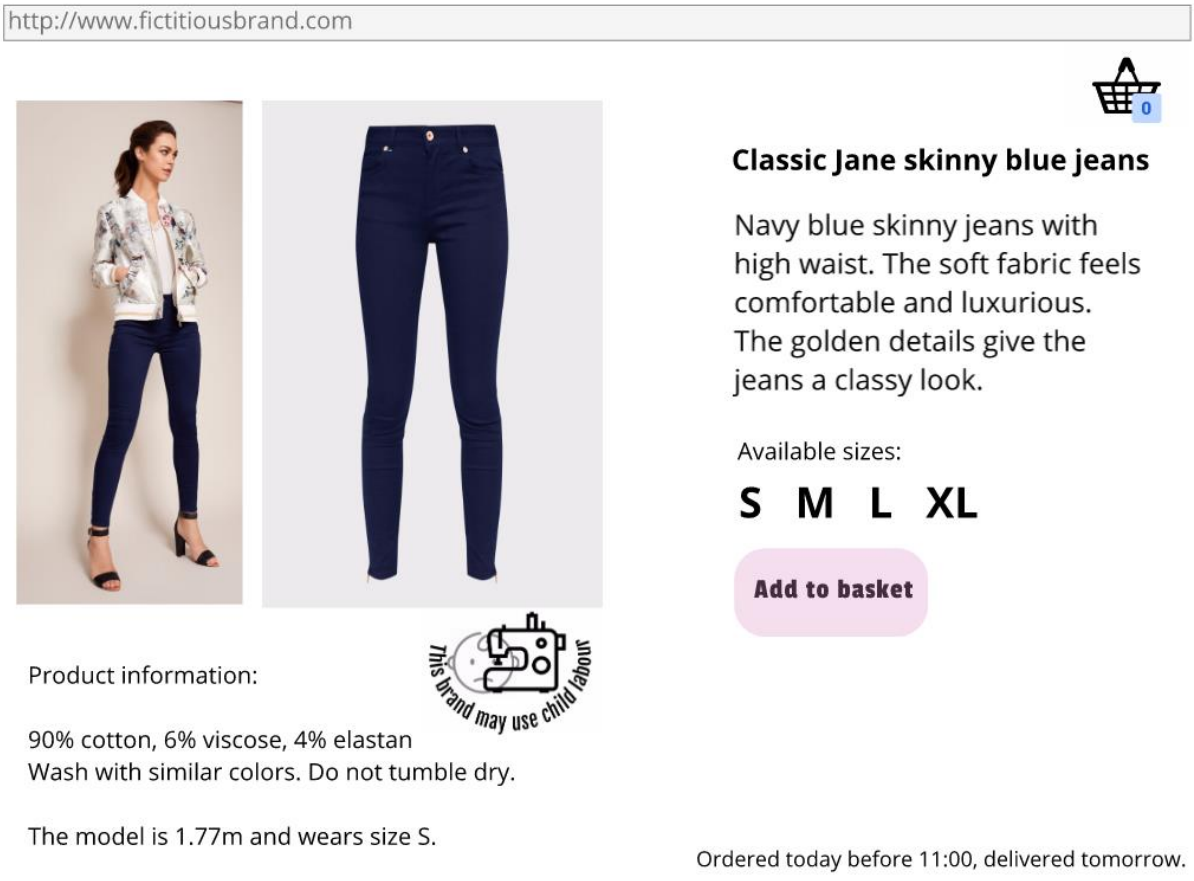

Figure 1. Example of female webpage, with social nudge.

[1] Please consult the appendix section *a.* for all scenarios as they were presented in the experiment.

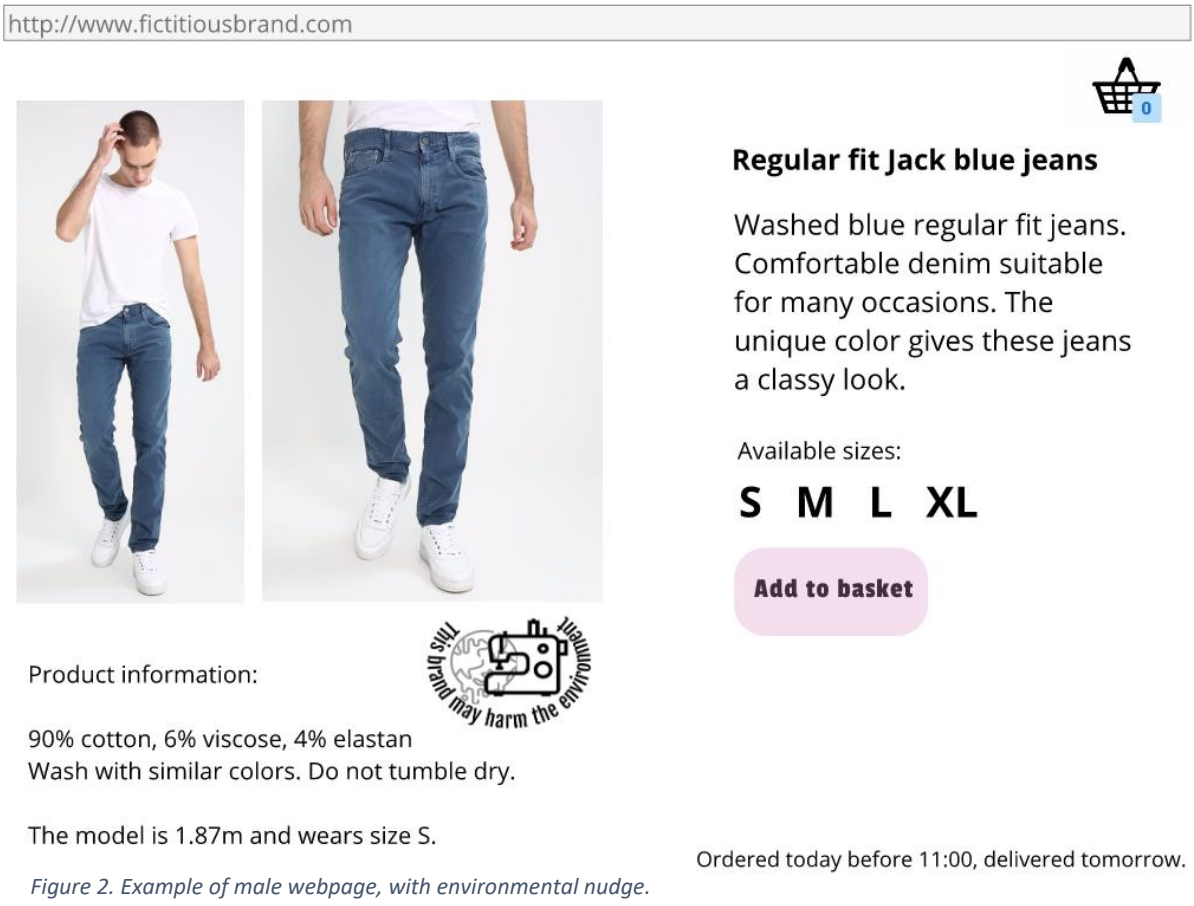

Figure 2. Example of male webpage, with environmental nudge.

Figure 3. The two nudges used that were used in the experiment. Left = social nudge; right = environmental nudge.

The nudges were designed by the author, using Gravit as well. The content of these nudges was chosen because they follow the distinction between negative social and environmental impact of the fast fashion industry as has been done in this thesis so far. The wording is purposefully '*may harm'* and '*may use'.* That way, the lack of transparency that was established as problematic earlier in this thesis, is targeted. Although it would be hard to find out whether a brand uses child labour, and if this is the case, the way forward would be to prosecute them rather than to implement a nudge, the phrasing '*may* use child labour' makes

this nudge suitable for any brand that refuses to be transparent about the labour conditions in their supply chains. It obviously is possible that they do not use child labour at all, but if the conditions were good, they should not have a reason to be secretive about them, especially not now that an increasing amount of brands publicizes this information through the Transparency Pledge (Human Rights Watch, 2017). Similarly, if a brand does not harm the environment, they have reason to openly communicate that. The use of 'child labour', makes the social nudge more salient than the environmental one, and this nudge is thus likely to lead to a stronger reaction.

4.2 Survey design [2]

Since the scenarios were adjusted for gender, the survey started by determining whether the respondent was male or female. Depending on the answer, the survey then showed the respondent one of the three scenarios (so control, with environmental nudge or with social nudge) for the correct gender category. Next, questions that served as indicators for the dependent variable (shopping behavior) were asked. The first question regarded the way the shopping environment made the respondent feel. It consisted of six feelings: good, bad, guilty, happy, sad and enthusiastic, which were presented in a randomized order as well. The response was set on a Likert scale with 5 options, 1 being 'does not describe my feelings', 2 'slightly describes my feelings', 3 'moderately describes my feelings', 4 'mostly describes my feelings' and 5 'clearly describes my feelings'. The next question regarded the main dependent variable, the likeliness respondents would actually buy a product based on their 'shopping experience'. The answers were on a Likert scale with 5 options as well, with 1 'Extremely likely', 3 'neither likely nor unlikely' and 5 'extremely unlikely'. Next, the respondents were shown once more the picture of the jeans, this time without the nudge, regardless of their experimental group (but still adjusted for male/female). They were then asked the maximum price they would be willing to pay for the jeans, with 7 options, coded as 0 – 6, 0 being 'I would not want a product by this brand, 3 'Up to €70', and 6 'More than €200'. A question to determine what criteria the respondent based their price choice on followed (multiple options possible, including 'environmental value of brand' and 'social value of brand'). Finally, a manipulation check consisted of the question 'Did you notice any information about the social and/or environmental impact of this brand on the "webpage"?

[2] The full survey can be found in the appendix, section *b.*

thus, the first picture you were presented with)', with options 'yes', 'no' or 'I do not remember'.

The next section of the survey consisted of general and shopping-related control questions. Fast fashion targets the average consumer, who may not be able to afford higher education or an expensive mortgage, but *is* able to buy many clothes, since fast fashion clothes are extremely cheap (Politt, 2012). Also, it seems likely that consumers with a higher income are more willing to pay a bit more for 'better' brands, while for consumers with little to spend, price is likely to be a much more stringent aspect of their consumption behaviour. One control question therefore regarded respondents' monthly net income, with 7 options scaled 1 'below €1000' and 7 'Above €10,000'. Women are the predominant fast fashion consumers, but not the only ones (Entwistle, 2014) and for practical reasons, a distinction on the basis of sex was necessary in order to be able to participate in the experiment. Gender is thus also a control variable.

Other control questions regarded age, education and number of shopping moments per year. These questions all gave 7 interval options from low to high, coded as 1 to 7. Nationality was to be typed by respondents themselves. Finally, the respondents were asked what criteria they value most in general when they shop for clothes. This question gave 8 predetermined options, and a text option for 'other'. Respondents were forced to respond this question, as it was connected to the next question: 'how important is [aspect of choice] to you?' with a Likert scale of 1 – 5, 1 'Extremely important', 3 'Moderately important' and 5 'Not at all important'. This question was a repetition for the sake of internal validity, ending the survey. The estimated time to take the survey was 5 minutes and it was not possible to return to previous pages during the survey, but it was possible to pause and continue later.

Though simple and visual, the nudges contained some text, as it was most important that they were correctly understood. Foddy (1993) states that the validity and reliability of an experiment is highly influenced by surveys which are misunderstood by respondents. A way to somewhat overcome this is to do a pilot survey, which was done for this project as well (Foddy, 1993, pp. 181-188). This pilot survey, with N=28, helped optimize the scaling of the questions and clarify some of the wording. Unclear phrasing of some control questions, such as whether 'education' meant education completed or to be completed, was pointed out by a few respondents. On the basis of this, some control questions were adjusted. The pilot results showed the reaction on the experiment went in the 'right' direction (see appendix), so a negative correlation between experimental groups and the variable likeliness to buy, indicating the survey design in general functioned as it was intended.

4.3 Distribution & Method of analysis

The experiment was distributed online, primarily via social media such as Facebook and WhatsApp. The survey was mobile-friendly, with the possibility to zoom in. The sample is thus a convenience sample and the results inevitably will suffer from some convenience bias. However, as the purchasing of clothes is also increasingly done online, this distribution method does in a way deal with the primary objection of political scientists against experimental methods: the lack of external validity (Morton & Williams, 2008). This may somewhat balance the convenience bias of the sample. The fact that this convenience sample (the author's own personal social network) does probably include the typical fast fashion consumer: the majority of the personal network of the author is female, between the age of sixteen and thirty, also contributes to that. As distribution took place online, it had a certain 'snowball effect', and the existing convenience bias may have been slightly balanced by this as well, though it still needs to be kept in mind. The sample is likely to include a much higher number of university-educated people than the actual population, for example. Male groups were targeted specifically, in an attempt to have an approximately even distribution of males and females in the sample. For example, the survey was specifically shared among male friend groups, like soccer teams and friends or fraternities.

Qualtrics automatically coded the survey responses. When the default coding was not convenient, variables were recoded manually, as will be explained in the result section. The data is analyzed using ordinary least squares (OLS) regression, taking the nudges as multiple dummy variables. Although some debate exists in terms of the suitability of OLS on this type of data (Russell, Bobko, & Schmitt, 1992), which can also be considered ordinal categorical as opposed to quantitative data, it is common practice and generally accepted to use regression analysis on Likert-scale data (Saunders, Lewis, & Thornhill, 2016). The next chapter discusses the results.

V. Results

5.1 Description of data

The final number of respondents counted by Qualtrics was 280. Of these respondents, 71 respondents did not complete the survey. Out of those 71, 44 only filled in their gender and saw the experimental page, but then quit; 16 did not fill in their gender, but simply opened and closed the survey; the remaining 11 partially completed the survey. Of the 11 partially completed observations, 10 did complete the experimental part, meaning that 219 observations were recorded for the experiment, 9 of which have missing values for (some of) the control variables. This number does not include the respondents who did go through all questions, but chose not to respond to (some of) them. The 209 responses that were recorded as complete thus include some responses which were deliberately left blank.

The dependent variable, shopping behavior of consumers when buying clothes, was operationalized as the Likert-scale question about 'likeliness to buy' and the question about price. 'Likeliness to buy' was coded by Qualtrics as 1 = extremely likely and 5 = extremely unlikely, and was reverse-coded by the author. The other dependent variables were 'price' and the six 'how did this experience make you feel' variables. The independent variables are summarized in table 1 below.

Variable	**Explanation**
Nudge	1 = none 2 = environmental nudge 3 = social nudge Coded as multiple dummies
Gender	0 = male 1 = female
Manipulation check	'Did you notice any information about social and/or environmental consequences of brand?' 1 = yes 2 = no 3 = I do not remember
Age	Years; scale 1 to 7, 1 < 18; 4 = 31-40; 7 > 65
Income	Monthly net in euros, including loans/stipends Scale 1 to 7, 1 = €1000,- ; 4 = €2,500-3,500; 7 = Above €10,000.
Education	Highest level completed Scale 1 to 7, 1 = elementary; 7 = PhD

Shopping frequency	Scale 1-8 1 = less than once a year; 4 = every 2-3 months; 8 = every day
Most important feature when shopping	Categorical nominal variable coded as 8 dummies: price; quality; fashion label; brand's impact on the environment; fabric; production process; wearability to multiple occasions; approval of friends.

Table 1. List of independent variables.

5.2 Descriptive statistics

The independent variable of interest, the nudge, was applied randomly to the respondents. This led to three approximately balanced groups, as can be seen in table 2 below. The control group is slightly larger than the other two, indicating that more of the respondents who dropped out were assigned scenarios 2 or 3. The table also shows that the number of males is significantly lower than females, despite efforts to counter that.

Experimental group	Gender, female =1 Male	Female	Total
Nonudge_Control	30	51	81
	37.04	62.96	100.00
	37.97	36.43	36.99
Nudge_Environment	20	48	68
	29.41	70.59	100.00
	25.32	34.29	31.05
Nudge_Social	29	41	70
	41.43	58.57	100.00
	36.71	29.29	31.96
Total	79	140	219
	36.07	63.93	100.00
	100.00	100.00	100.00

Table 2. Frequency table of experimental groups, including row and column percentages.

The summary statistics (table 3) demonstrates that variation between the respondents is quite small, with standard deviations around 1. The negative 'feeling' variables have a lower mean than the positive ones, indicating that less respondents thought that those negative words described their feelings. This suggests that overall, the 'shopping environment' did not trigger a lot of negative feelings, which is confirmed by the histograms in section *d.* of the appendix. The mean outcome for age, 2.87, indicates that most respondents fell in the age groups 2 (18-24) and 3 (25-30), which is as was expected. None of the respondents have completed a PhD degree (education=7), or admitted to daily shopping for clothes (shopping_frequency=8).

Also, no respondents were willing to pay more than €200,- for the jeans in the experiment (price=6).

Variable	Obs	Mean	Std. Dev.	Min	Max
flipLikely~y	217	2.760369	1.044251	1	5
price	217	1.700461	.9895986	0	5
Feel_Good	214	2.406542	1.240231	1	5
Feel_Happy	213	2.13615	1.159562	1	5
Feel_Enthu~c	210	2.061905	1.145399	1	5
Feel_Bad	211	1.78673	1.177978	1	5
Feel_Guilty	213	1.661972	1.132	1	5
Feel_Sad	212	1.716981	1.178438	1	5
age	213	2.868545	1.086624	1	7
income	210	2.504762	1.500391	1	7
education	210	4.752381	1.462651	1	6
flShopping~y	210	4.795238	1.376834	1	7

Table 3. Summary statistics.

Table 4 shows the relatively low correlation between the independent variables, with Pearson's coefficients of below 0.25 for almost all correlations except gender and shopping frequency (flShopping~y), which is actually in line with the common perception that women shop more than men.

	gender	age	income	educat~n	flShop~y
gender	1.0000				
age	-0.0455	1.0000			
income	0.1049	0.1218	1.0000		
education	-0.0379	0.2184	0.0233	1.0000	
flShopping~y	0.3737	-0.1929	0.1096	-0.1275	1.0000

Table 4. Correlation between independent control variables

In order to be able to run an OLS regression, the distribution of the dependent variable needs to be approximately normally distributed, as is demonstrated in figure 4 for the main dependent variable question 'How likely is it you will buy a product by this brand?' (see section *d.* in the appendix for histograms of all dependent variables). The normal distribution for the negative-worded 'feeling' variables are less convincing, but for large samples (N>30) like this one, that is not very problematic (Saunders, Lewis, & Thornhill, 2016).

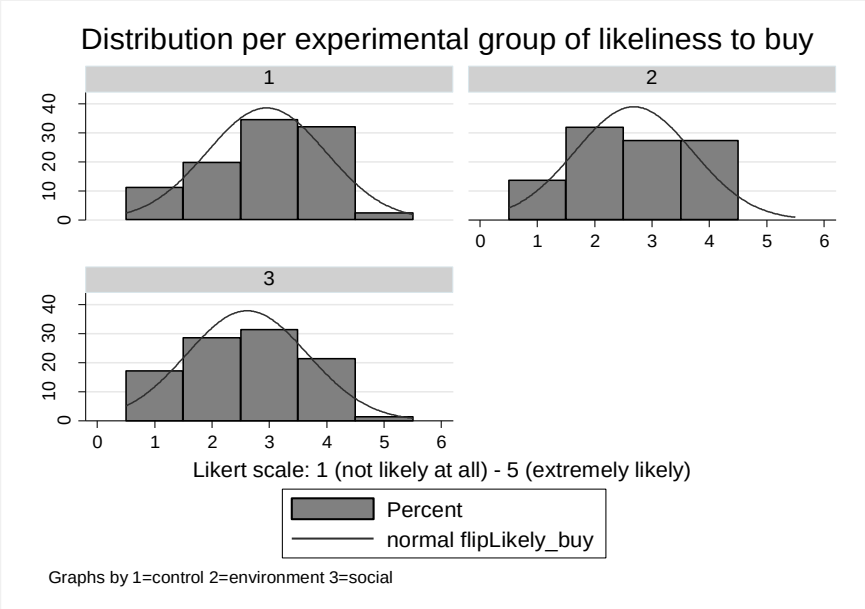

Figure 2. Histograms 'How likely is it you will buy an item from this brand?' per experimental group.

Finally, in the contingency table for the manipulation check (table 5) the Chi-squared statistic of 27.31 at 4 degrees of freedom and a P-value of P<0.0001 indicates that a significant correlation between the occurrence of the nudge and it being noticed, did exist. The percentage of respondents who noticed the nudge, that were also assigned a nudge, is well-balanced around 42% for both the environmental and social nudge. The control group has the highest percentage for 'no' on the manipulation check, which makes sense. It is interesting to note that 50% of the respondents who answered 'no' on this check, were in experimental groups 2 or 3. Furthermore, 27% of all respondents did not remember seeing any nudge, while about two-thirds of those respondents were in fact presented with one.

Experimental group	Did you see environmental or social info? Yes	No	Not remeb	Total
Control	6	50	23	79
	7.59	63.29	29.11	100.00
	10.34	51.02	38.98	36.74
Environment	28	21	17	66
	42.42	31.82	25.76	100.00
	48.28	21.43	28.81	30.70
Social	24	27	19	70
	34.29	38.57	27.14	100.00
	41.38	27.55	32.20	32.56
Total	58	98	59	215
	26.98	45.58	27.44	100.00
	100.00	100.00	100.00	100.00

Pearson chi2(4) = 27.3094 Pr = 0.000

Table 5. Contingency table experimental group by manipulation check.

5.3 Analysis of results

The decision rule used for the analysis is 5%, following common practice. The P-value thus has to be less than 0.05 in order to be able to reject the null-hypothesis, that no significant correlation exists between the main dependent variable, likeliness to buy and the independent variable, nudge. Other dependent variables that were measured are price and the six feelings: good, happy, enthusiastic, bad, sad and guilty. Tests to see how these variables are influenced by the nudges and control variables were also run. In order to test for robustness, an ordered logistic regression was run, which treats the Likert-scale variables as ordinal categorical variables instead of continuous quantitative variables (McCullagh, 1980).

Table 6 shows the regression table for the whole dataset, including the respondents who did not (consciously) notice the nudge. The coefficients of -0.27 for the environmental group and -0.34 for the group with the social nudge, indicates an effect of the nudges in the expected direction: the likeliness that a respondent would buy the item, decreases when a nudge is present. The P-value of 0.048 for the social nudge shows this effect is statistically significant using the 5% decision rule. Evidently, the effect of the environmental nudge is not significant enough. However, this table includes all observations, so also those who were in fact presented with a nudge but did not notice it, which is quite a large part of the observations as was established in the previous section.

Source	SS	df	MS		
Model	4.83280527	2	2.41640263	Number of obs	= 217
Residual	230.706365	214	1.07806713	F(2, 214)	= 2.24
				Prob > F	= 0.1088
Total	235.539171	216	1.09045912	R-squared	= 0.0205
				Adj R-squared	= 0.0114
				Root MSE	= 1.0383

flipLikely_buy	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Experimentalgroup						
Environment	-.2687991	.1721738	-1.56	0.120	-.6081728	.0705746
Social	-.3363316	.1694415	-1.98	0.048	-.6703197	-.0023435
_cons	2.950617	.1153667	25.58	0.000	2.723217	3.178018

Table 6. Regression table of the effect of nudges on 'Likeliness to buy', for all observations.

Further tests were therefore run on the observations that correctly interpreted the group they were in. Thus, the respondents in the control group who indicated they did not see the nudge and the respondents in the experimental groups who indicated they did notice the nudge. This leaves a total of 102 observations. Model 2 in table 7 shows that when only those observations are considered, the effect of the nudges strongly increases, as well as the statistical significance of this effect.

	Model 1	Model 2	Model 3	Model 4	Model 5
Nudge Environment	-0.269	-0.614**	-0.638**	-0.677**	-0.676**
	(-1.56)	(-2.69)	(-2.72)	(-2.92)	(-3.05)
Nudge Social	-0.336*	-1.025***	-1.024***	-1.021***	-1.019***
	(-1.98)	(-4.26)	(-4.20)	(-4.31)	(-4.41)
Gender, female = 1			-0.290	-0.271	
			(-1.27)	(-1.23)	
Age, scale 1-7			-0.109	-0.109	
			(-0.80)	(-0.80)	
Income net monthly in euros, scale: 1 (<1,000) -7 (>10,000)			0.0565	0.0333	
			(0.64)	(0.36)	
Education completed			-0.0559	-0.0219	
			(-0.69)	(-0.28)	
Shopping frequency			0.0108	-0.00615	
			(0.13)	(-0.07)	
Environment=1				-1.507*	-1.622**
				(-2.18)	(-2.99)
Constant	2.951***	2.900***	3.506***	3.509***	2.962***
	(25.58)	(21.18)	(5.40)	(5.48)	(21.56)
Observations	217	102	99	97	98
R^2	0.021	0.167	0.201	0.247	0.241

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 7. OLS regressions of 'Likeliness to buy' including different control variables.

Once the analysis is limited to the observations that interpreted the experiment correctly, the effect of the environmental nudge increases to -.614, significant at a p<0.01 level and the effect of the social nudge increases to -1.025, significant at a level of p<0.001. The R-squared is quite low for both these models. The addition of control variables leads to a higher R-squared, but none of the control variables show a significant correlation with the dependent variable at a significance level of p<0.05. Model 4 includes whether or not the respondents indicated that environmental value of the brand was important to them. When adding the eight criteria that could be chosen as 'most important when shopping in general' one by one to the model, this was the only one that showed significant correlation with the outcome variable. This shows that whether the respondents indicated that the environmental value of the brand is generally important to them when shopping, is significantly negatively correlated with the likeliness to buy. People who consider environmental value the most important feature of a brand, were thus less likely to buy the product in the experiment, which seems logical. Model 4 has the highest R-squared, suggesting that it is the most robust. The coefficients of the

nudges are lowest in this model as well. However, since many of the variables in the model do not show a significant correlation with the outcome variable, those are left out of the final model, slightly lowering its strength. The dummy variable for 'environmental value' stays significant after the removal of the other control variables. Model 5 is thus the final model, with an R-squared of 0.24 and statistical significance of $p<0.01$ for the environmental nudge and $p<0.001$ for the social nudge. The full regression table for the final model can be found in the appendix (*e.*).

Another dependent variable that is of interest is price. The respondents were asked to indicate how much they were willing to pay for the jeans they were presented with, and it was to be expected that those respondents who were in one of the experimental groups would want to pay less for the jeans than the control group respondents. The regression run to test this gave significant results only for the social nudge, at a significance level of $p<0.05$ (see table 8). The coefficient is negative, suggesting that the social nudge indeed has a significant negative effect on the price the respondents were willing to pay for the jeans. However, with an R-squared of 0.064, this is not a particularly convincing model.

The other dependent variables which were measured through the experiment are the six variables that describe feelings: good, happy, enthusiastic, bad, sad and guilty. Although feelings do not necessarily give any information about the actual behavior connected to these feelings, it is interesting to see how the attitudes of the respondents were influenced by the different nudges. Table 8 gives an overview of the effect of the presence of the nudges for all the dependent variables on which a significant effect exists. Interestingly, the effect of the nudges on the positive feelings is much weaker than the effect on the negative feelings. Enthusiastic and happy were not significantly influenced at all (see appendix), so they are not included in table 8. The control variables had no association with any of the variables. The effect of the social nudge is strongest, which is in line with the results for likeliness to buy and price. For the feeling 'good', the presence of the social nudge gives a coefficient of -0.68, with R-squared = 0.117 at a significance level of 0.05. Though not extremely convincing, this does indicate that the nudge worked as expected: it negatively influenced whether the experimental 'webpage' made the respondent feel 'good'.

	Likeliness to buy 1 (not at all) - 5 (extremely)	**Price** Scale 0-8	**Good** 1 (not) – 5 (clearly)	**Bad** 1 (not) – 5 (clearly)	**Sad** 1 (not) – 5 (clearly)	**Guilty** 1 (not) – 5 (clearly)
Nudge Environment	-0.676**	-0.244	0.388	0.787**	0.843**	0.847**
	(-3.05)	(-1.02)	(1.52)	(2.81)	(3.00)	(3.31)
Nudge Social	-1.019***	-0.655*	-0.684*	1.563***	1.667***	1.917***
	(-4.41)	(-2.60)	(-2.54)	(5.44)	(5.71)	(7.20)
Environment = 1	-1.622**					
	(-2.99)					
Constant	2.962***	1.780***	2.184***	1.521***	1.417***	1.375***
	(21.56)	(12.39)	(14.16)	(9.17)	(8.41)	(8.95)
Observations	98	102	101	98	99	99
R^2	0.241	0.064	0.117	0.244	0.261	0.354

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 8. Effect of nudges on all significant dependent variables (most robust models only; please consult appendix for complete regression tables of feelings).

The negative feelings are much more strongly associated with the nudge, which may have to do with the nudges also being negative. The coefficients for these feelings are positive, which makes sense since the scale is 1 = does not describe my feelings and 5 = clearly describes my feelings. For the environmental nudge, the effects on negative feelings are significant at a significance level of 0.01, and for the social nudge at a 0.001 significance level. The coefficients for the social nudge are very high, indicating a strong effect. The coefficient for 'guilty' is almost 2 for the social nudge, implying respondents noticing the social nudge are likely to move up two scales on 'feeling guilty' at a significance level of 0.001 (holding all else constant). The social nudge clearly had the strongest effect, as was expected. The strong association between 'child labour' and the feeling 'guilty' is quite interesting.

The coefficients for the environmental nudge, though lower, are also quite strong: near to 1 for all negative feelings. These results all indicate that the presence of a negative nudge increases negative feelings. Paradoxically, it does not lead to an equally strong decrease in positive feelings. This is interesting, because it appears that the nudges are thus correlated with negative feelings and negative actions, while positive feelings are not as significantly harmed. If such nudges were implemented, this could mean that although products with a negative nudge increase a negative attitude about the consumption of that product (and

possibly lead to refrain from buying), existing positive feelings about the brand in question may not be equally harmed. However, these results do not provide sufficient information to be sure of such an effect, so this is something that would have to be tested in future research.

	Model 1	**Model 2**	**Model 3**
Nudge Environment	-0.471 (-1.57)	-1.213** (-2.69)	-1.298** (-2.79)
Nudge Social	-0.593* (-2.00)	-1.926*** (-3.96)	-1.982*** (-3.97)
Gender, female =1			-0.532 (-1.16)
Income net monthly euros, scale: 1 (<1,000) -7 (>10,000)			0.0931 (0.56)
Age, scale 1-7			-0.208 (-0.85)
Education completed, scale 1-7			-0.119 (-0.73)
Shopping frequency, scale 1-8			0.0113 (0.07)
cut1 Constant	-2.191*** (-8.28)	-2.407*** (-6.45)	-3.808** (-2.94)
cut2 Constant	-0.744*** (-3.44)	-0.586* (-2.10)	-1.886 (-1.50)
cut3 Constant	0.597** (2.80)	0.646* (2.31)	-0.624 (-0.50)
cut4 Constant	3.966*** (6.63)		
Observations R^2	217	102	99

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 9. Robustness check: ordered logistic regression for the main variable of interest 'likeliness to buy'.

Finally, in order to test the robustness of the results, an ordered logistic regression was run on the data. The results for 'likeliness to buy' are summarized in table 9. The ordered logistic regression models 2 and 3 also show a significant negative association of the nudges with the dependent variable 'likeliness to buy'. Furthermore, the control variables are also not significantly correlated with the outcome variables in these models. This confirms the idea that the OLS model is quite robust.[3]

[3] Please consult section *f.* in the appendix for the ordered logistic regressions on the other dependent variables.

To summarize, the data gathered through the surveys provides sufficient evidence to reject the null-hypothesis that consumer behavior is not influenced by the presence of either a social or an environmental nudge. The results show a significant negative correlation of the behavior variable, 'likeliness to buy', with both the social and the environmental nudge, thus confirming the hypotheses *H_1: when a negative, informational nudge about the environmental impact of a brand is inserted in the shopping experience, consumers are less likely to buy from this brand* and *H_2* w*hen a negative, informational nudge about the social impact of a brand is inserted in the shopping experience, consumers are less likely to buy from this brand.*

The effect of the social nudge is stronger, as was expected. The social nudge is also associated more strongly with the presence of negative feelings, which possibly has to do with the design of the nudge: child labour is much more concrete than 'the environment'. It is also interesting to see that the general control variables were not significantly correlated with the effects. This indicates that this type of nudges might work on all kinds of populations. Further research is necessary to test whether these control variables are more significant in different samples, or what other variables are significantly associated with the effect of nudges. Overall, the results are interesting, while they also provide a broad basis for ideas for further research, which are discussed in the discussion chapter.

VI. Discussion

6.1 Limitations of this study

Although the results of the experiment provide enough basis to confirm the hypotheses of this study, the experiment obviously also has limitations. This paragraph will discuss the limitations and explain how they might be avoided in future research.

First of all, the design of the experiment was, in retrospect, not optimal on several points. The fact that only approximately half of the respondents interpreted the experiment correctly, while the other half indicated not to have (consciously) seen a nudge while they were in fact in one of the experimental groups, suggests that the nudges may not have been clear enough. Although it was partly the point to create *subtle* nudges, it would be interesting to see how the results would have been if more respondents had interpreted the experiment as it was intended. Given that the nudges were quite small and in grey scale, further experimental research could test the effects of different colours or sizes. On the other hand, in an actual online shopping experience, a consumer would logically still be on the page with the nudge when making the decision whether or not to buy a product, possibly decreasing the likelihood that the nudge is forgotten. In that sense, the external validity of this experiment can also be questioned: in a real online shopping experience, a consumer is likely to take more time to register all information provided on the website, because they actually have something to lose.

This brings us to the second issue with the experimental design. Since it was aimed to keep the survey short, in order to increase the likelihood that people who started it, would also finish it, a choice for one pair of jeans was made for each gender. Obviously, not everyone liked that specific pair of jeans, despite the use of the pre-test. Personal style is very important in making a decision regarding clothes. This was also confirmed by the fact that 127 respondents indicated it as a factor they considered when deciding how much they were willing to pay for the jeans in the experiment. A more solid experiment might include several clothing options in order to control better for personal preference bias, for example the way Dickson (2001) has done in her experiment testing positive value labels. The general information in the fictitious ‘webpage’ also could have been made more appealing to everyone. One respondent answered in the text option that the delivery option was a reason not to buy the product. The ‘webpage’ states ‘Ordered today before 11:00, delivered tomorrow’. This could have easily been changed to ‘Ordered today before 23:00, delivered tomorrow’, making it more appealing to people who value fast delivery. One respondent also indicated that not being able to tumble dry the jeans was problematic. Even though these are

just a few respondents, such information may have been better to leave out, as it did not really add much and apparently did distract some respondents.

The choice for the six 'feelings' questions in the survey was not optimal, since these questions did not really provide an answer to the research question which deals with behaviour rather than with feelings. Although it was interesting to notice that attitudes of people were significantly affected by the nudges, as was to be expected on the basis of the literature (Grappi, Romani, & Barbarossa, 2017; Kim, Forney, & Arnold, 1997), they did not offer proper operationalization of the dependent variable in the research question. Although the main dependent variable 'likeliness to buy' was still included in the survey, this seems like a missed chance which, considering the significant effect on this variable, could have further strengthened the results.

In addition to that, the Likert scale used to measure the respondents' feelings, also may not have been clear enough. The distinction between 'slightly describes my feelings' (2) and 'moderately describes my feelings' (3) is quite vague, possibly confusing respondents. Also 'mostly describes my feelings' (4), which was below 'clearly describes my feelings' (5), while mostly can easily be interpreted as 'the most', is not clear. Such flaws in the survey design may have influenced the results, while they could easily have been avoided. On a positive note, the scale for 'likeliness to buy', which was the most important, was quite clear. Overall it would have been better if the same scale were used for all questions that served as indicators for the dependent variable, for example the traditional 'Agree – Disagree' scale. On the control variables, the intervals were not equal, making them less suitable for the OLS regression. For example, for age 2=18-24, 3=25-30 and 4=31-40. Similar situations were present for income and shopping frequency. This also could have been easily avoided. Unfortunately, the pilot survey did not lead to anyone pointing this out, but the author arguably could also have realized this independently as it is clearly stated in the literature on ideal survey design (Saunders, Lewis, & Thornhill, 2016; Foddy, 1993). The author's limited experience with this type of research may also have played a role here.

Furthermore, the Qualtrics online software automatically counts also unfinished responses, making it seem that 280 people had responded while in reality, only 219 had. If that had been clearer, more effort may have been undertaken by the author to increase the response rate. This confirms again the author's limited experience with this type of research, but is also a flaw in the Qualtrics software. The reason why so many people (60, so about 20% of people reached) immediately gave up their participation, remains unclear. In future research, it might be worthwhile to do a pilot survey on a small sample in a real life setting,

and then immediately afterwards, discuss the experiences of the respondents. That way, the pilot survey could be a more useful tool to really optimize the survey.

Naturally, the validity of the results is limited due to the convenience bias of the sample, which included 70% university-educated people, while fast fashion is actually characterized by the fact the it is accessible to nearly everyone, especially also low-income, lower-educated people (Politt, 2012). Since the results of this experiment present a strong significant effect, a study using a sample which is a closer reflection of the actual population, would be interesting. In light of the literature that stated that more heterogenic populations are harder to influence through nudges (Busic-Sontic, Czap, & Fuerst, 2017), this could provide valuable insights. More suggestions for future research are described below.

6.2 Suggestions for future research

Given the many limitations of this study, a more professional repetition of it would already be an interesting suggestion for future research, with a broader sample and a better survey design. However, as noted above, also a study about the effect of more saliently designed nudges would be interesting to see what kind of nudge would be the most appropriate to use in actual public policy regarding this topic. The social nudge in the experiment demonstrated to have a much stronger effect on the dependent variable, than the environmental nudge. This is likely associated with the fact that it used the words ‘child labour’, a very concrete example, while ‘environment’ is much more vague. It could be interesting to see how different phrases for both social and environmental nudges would influence behaviour. For example, a less salient phrase for a social nudge could be ‘factories used by this brand do not allow workers’ unionization’, and a more salient phrase for environment could be: ‘pesticides used on the cotton for these jeans, leads to prevalence of brain cancer among cotton farmers’. Many variations can be thought of, and an interesting study would also be to test why specific phrases have more effect than others.

Possible differences in the effectiveness of nudging could also be associated with nationality. This experiment did measure nationality, but as the vast majority of respondents was Dutch, it was left out of the analysis. Dickson & Shen (2001) show that people from different cultures have different attitudes toward unethical clothing consumption. Considering the growth economies such as China or India, who also increasingly consume fast fashion products, it could be interesting to see how they respond to nudging policies.

Other research could, as many libertarian paternalist scholars do, consider the ethical side of these nudges. Using them on all brands that refuse transparency, while probably

effective, does come close to a kind of manipulation that criticasters of this theory would likely oppose. While it is interesting, and promising even, that this appears to really be a way to influence behaviour of fast fashion consumers, the implementation of such negative nudges is complex. How would that work? Under what circumstances might governments be open to considering such a policy, which could also negatively impact a large industry? Which countries might be open to it, which are likely to be less enthusiastic? What could be the role of intergovernmental organizations, such as the EU? Scholars in the field of political science, law and (behavioural) economics could work together, to find a comprehensive answer to these questions.

This thesis emphasizes the importance to not neglect the possible economic risks that could accompany a drop in the consumption of fast fashion. Further research on how a change in consumption behaviour might influence the producing economies, is also necessary in order to be able to adequately deal with those risks. Combining that with more research on what the ideal nudge for the fast fashion industry looks like, could make a contribution to the development of a policy for the global apparel sector that is aimed at countering climate change and supporting sustainable development of developing nations.

VII. Conclusion

This thesis sought to answer the question '*how can 'nudging' be used to counter the negative impact that is made, socially and environmentally, by the fast fashion industry?'*. On the basis of the experiment that was conducted, it can be concluded that negative nudges can be used as a tool to stimulate people to refrain from buying clothes that have a negative social or environmental impact. What does this imply?

The negative impact of the global fast fashion industry, environmentally and socially, is problematic. The exploitation of workers in low-wage countries, the health and environmental risks they run, occurrence of child labour, unsafe working conditions, the GHG emissions caused by the high level of consumption of clothes as a whole: five years after the Rana Plaza collapse killed over a thousand people, improvements made are still not enough. Although efforts undertaken by companies themselves are numerous, no fast fashion business willingly risks its turnover by rising prices to ensure better conditions in the factories, or adopt environmentally sustainable policies. Economic sustainability comes before any other form of sustainability (Pal & Gander, 2018), and the lack of transparency in the fast fashion supply chains remains an issue that stands in the way of a comprehensive solution for the problems associated with this industry.

This thesis argued that in addition to the existing public policies which focus on regulation and legislation, which are slow and dependent on local regimes that struggle with corruption and the fear to lose their competitive position, a libertarian paternalist approach can be used to stimulate change in the fast fashion industry. This is supported by the results from the experiment conducted for this thesis. A libertarian paternalist approach can be valuable, for example when the European Commission is reluctant to strengthen legislation, as is the case for this industry (European Parliament, 2018).

While this reluctance may seem like an obstacle in solving a problem which would benefit from stronger legislation, it presents an opportunity for libertarian paternalism. This thesis experiment shows that when made aware of negative impact of a brand during the shopping experience, consumers are likely to refrain from buying that brand. Boycotting a brand has proven effective to create change within companies in the past, and in that sense could also stimulate companies to increase the transparency of their supply chains, so they do not qualify for such a negative nudge. Without turning to regulatory options, or taking away choices, this can contribute to change, notwithstanding that legislation still is necessary. As Thaler and Sunstein argue, nudging is a relatively cheap, fast policy option, which really can

make a difference (Thaler & Sunstein, 2008). These 'informational nudges' fall in the transparent, type-2 category nudges as distinguished by Hansen & Jespersen (2013). While minimizing the risks of libertarian paternalism turning into hard paternalism, and without intentionally manipulating choices, these are suitable policy options for many of today's liberal democracies. In fact, the European Commission's Science Hub has a department that focuses completely on such behavioural insights and publishes similar research on choices about food and health as have been discussed in this thesis. These behavioural insights are used to advise policies of all European Commission Directorates, and further research on the possibilities of nudging in the clothing industry could be added to that (European Commission, 2016).

What makes this different from the existing value labels that were discussed in this thesis? First of all, research suggested that their effectiveness is marginal (Grunert, Hieke, & Wills, 2014). Secondly, value labels from private regimes, such as the FSC, are voluntary and numerous, leaving companies the possibility to join whichever one suits them best (Hira, 2017). These labels do not provide the kind of transparency that is necessary for consumers to be instigated to change their behaviour, while these negative nudges in this thesis experiment do target the lack of transparency that is considered the biggest problem.

Many scholars (a.o. Fletcher, 1998; Lee, Seifert, & Cherrier, 2017) who have written about this topic, argue the only solution is a drastic cut-back in consumption and a change of the perception of the value of clothes (as well as other consumption goods). These scholars, however, do not consider the complete picture. While a general decrease in consumption is likely to benefit the environment, it would significantly harm the economies of many developing countries. Earlier it was discussed that a marginal increase in price, could already lead to a significant increase in wages (Heintz, 2002). These are the kind of changes that can be accomplished, and nudges, as they can change consumer behaviour, can stimulate consumers to simulate companies to make that happen, just as nudges can stimulate consumers to stimulate companies to adopt more sustainable business models. These are changes that can contribute to meeting the COP21 goals, and as such to protecting people around the world from the threats posed by climate change.

This thesis argues that nudging can be considered an effective way to stimulate consumers of the fast fashion industry to make more responsible choices, both socially and environmentally. Through those choices, consumers can stimulate the change within an industry which desperately needs to change, in order for it to remain sustainable throughout the years. In the end, the consumer has the ultimate decision: to buy, or not to buy. The

possibility to influence that decision for the benefit of individual people, society as a whole and the environment, without taking away any freedom or choices, offers a promising policy tool in an increasingly complex world order. Although much more research is needed, this thesis suggests that libertarian paternalism could add to the creation of a genuinely sustainable global apparel industry, and possibly nudge the ‘fight against fast fashion’ toward becoming a ‘win-win’ situation.

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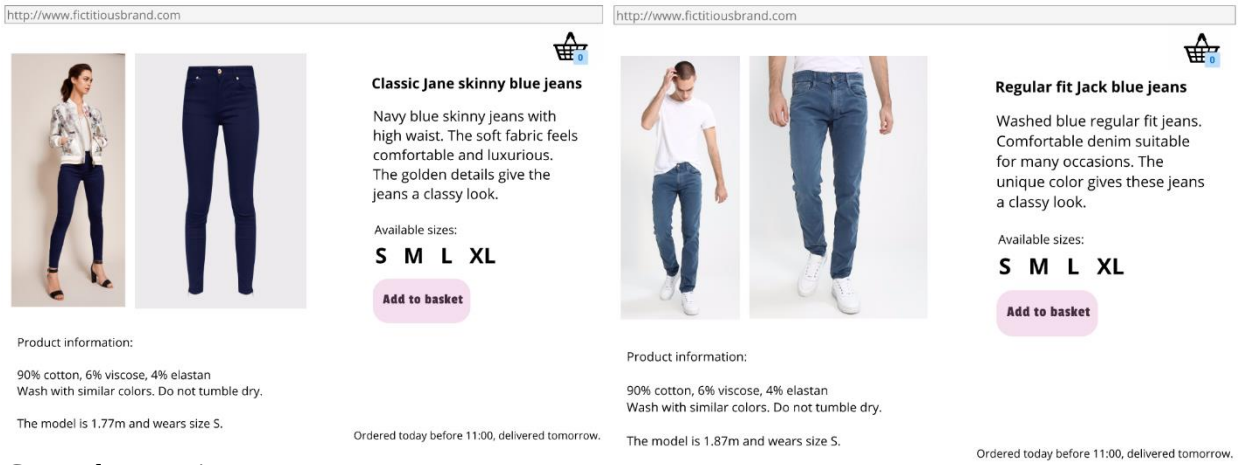
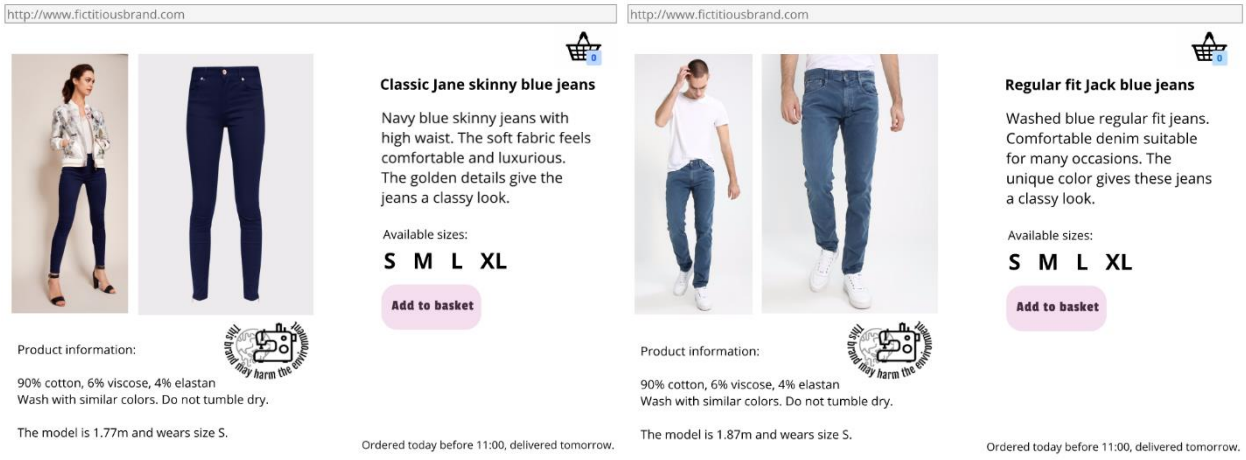
Appendix

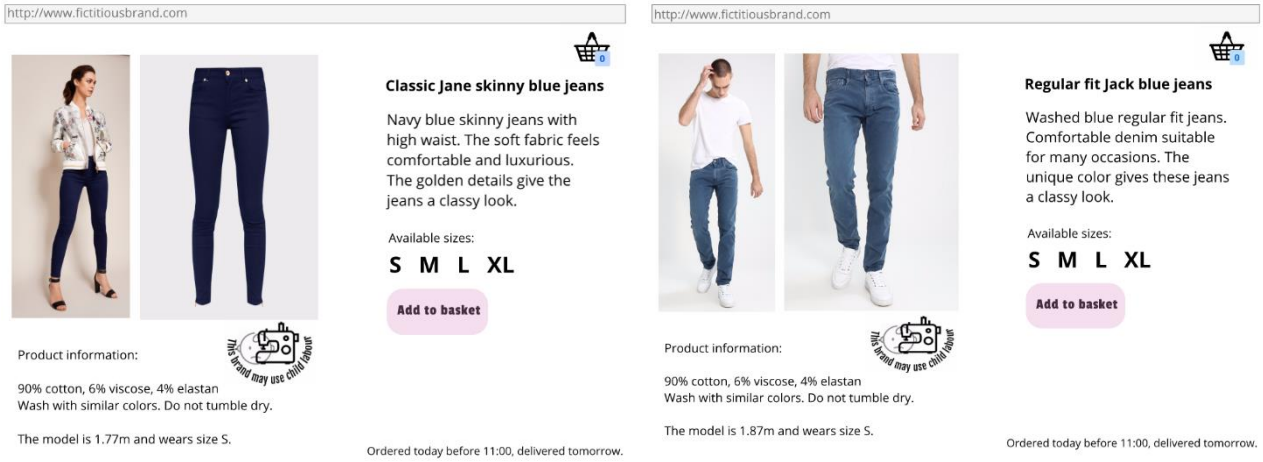
a. Experimental scenarios



Control scenarios.



Scenarios with environmental nudge.



Scenarios with social nudge.

b. Qualtrics survey design with original coding

Thesis experiment_official version

Start of Block: Preface

Welcome Dear Sir/Madam,

Welcome to this survey, which is conducted as part of an MSc thesis in International Relations & Diplomacy at Leiden University. I highly appreciate you are taking the time to participate in this experiment.

The survey is anonymous and confidential, and results will be used for academic purposes only. Please answer the questions as honestly as possible. This survey will take no more than 5 minutes. You can terminate it at any time.

DISCLAIMER: All situations depicted in the experiment are fictional. Please note that this experiment does not in any way reflect the actual vision of the brands the photos are borrowed from.

For comments and questions, you can contact me at debeer.pauline@gmail.com.

Paula de Beer

Faculty of Governance and Global Affairs
Leiden University

End of Block: Preface

Start of Block: Gender question

X→ X→

Gender What is your gender?

- ○ Male (0)
- ○ Female (1)

Page Break

Exp_1 How did this shopping environment make you feel?

	Does not describe my feelings (1)	Slightly describes my feelings (2)	Moderately describes my feelings (3)	Mostly describes my feelings (4)	Clearly describes my feelings (5)
Good (Feel_good)	○	○	○	○	○
Bad (Feel_bad)	○	○	○	○	○
Guilty (Feel_guilty)	○	○	○	○	○
Happy (Feel_happy)	○	○	○	○	○
Sad (Feel_sad)	○	○	○	○	○
Enthusiastic (Feel_enthusiastic)	○	○	○	○	○

Page Break

Exp_2 How likely is it that you will buy a product from this brand?

- ○ Extremely likely (1)
- ○ Moderately likely (2)
- ○ Neither likely nor unlikely (3)
- ○ Moderately unlikely (4)
- ○ Extremely unlikely (5)

Page Break

Display This Question:

If Gender = 1

Exp_3f

What maximum price would you be willing to pay for these jeans?

- ○ I would not want a product by this brand (0)
- ○ Less than €20 (1)
- ○ Up to €50 (2)
- ○ Up to €70 (3)
- ○ Up to €100 (4)
- ○ Up to €200 (5)
- ○ More than €200 (6)

Display This Question:

If Gender = 0

Exp_3m

What price would you be willing to pay for these jeans?

- I would not want a product by this brand. (0)
- Less than €20 (1)
- Up to €50 (2)
- Up to €75 (3)
- Up to €100 (4)
- Up to €200 (5)
- More than €200 (6)

Exp_4 What criteria did you consider when deciding the price you would be willing to pay for this brand? (multiple options possible)

- [ ] Attractiveness of shopping experience (1)
- [ ] (Apparent) quality of clothing (2)
- [ ] Social value of brand (9)
- [ ] Fabric (3)
- [ ] Personal style (4)
- [ ] Beauty of model (5)
- [ ] Wearability to multiple occasions (6)
- [ ] Environmental value of brand (8)
- [ ] Other: (7) _____

Page Break

Manipulation check Did you notice any information about the social and/or environmental impact of this brand on the **"webpage"**? (thus, the **first** picture you were presented with)

- ○ Yes (1)
- ○ No (2)
- ○ I do not remember (3)

End of Block: QUESTIONS EXP

Start of Block: Control Block

Control_intro You have finished the experimental part of the survey. Next are some general questions. Please answer them as truthfully as possible.

Age What is your age?

- ○ (1)
- ○ 18-24 (2)
- ○ 25-30 (3)
- ○ 31-40 (4)
- ○ 41-50 (5)
- ○ 50-65 (6)
- ○ >65 (7)

Page Break

Income What is your average net income per month? Please include student loans and/or other stipends.

- ○ Below €1,000 (1)
- ○ €1,000 - €1,500 (2)
- ○ €1,500 - €2,500 (3)
- ○ €2,500 - €3,500 (4)
- ○ €3,500 - €5,000 (5)
- ○ €5,000 - €10,000 (6)
- ○ Above €10,000 (7)

Nationality What is your nationality?

_____

Education What the highest level of education you have completed?

- ○ Elementary school (1)
- ○ High school (3)
- ○ Secondary Vocational Education (MBO) (4)
- ○ University of Applied Sciences (HBO) (5)
- ○ University bachelor (WO) (6)
- ○ University master (WO) (7)
- ○ PhD (8)

Shopping_frequency How often do you buy new clothes (both in stores and online)?

- ○ Every day (1)
- ○ At least once a week (2)
- ○ At least once a month (3)
- ○ At least once every 2-3 months (4)
- ○ At least once every 6 months (5)
- ○ At least once every 7-9 months (6)
- ○ At least once a year (7)
- ○ Less than once a year (8)

Control_shopping When you buy an item of clothing, aside from whether it looks good on you and you like it, what feature is MOST important to you?

- ○ price (1)
- ○ quality (2)
- ○ the fashion label (3)
- ○ the brand's impact on the environment (4)
- ○ fabric (5)
- ○ the brand's production process (6)
- ○ an item's wearability to multiple occasions (7)
- ○ whether your friends will like an item (9)
- ○ Other: (8) _____

Importance_criteria When shopping for clothes, how important is ${Control_shopping/ChoiceGroup/SelectedChoicesTextEntry} to you?

- ○ Extremely important (1)
- ○ Very important (2)
- ○ Moderately important (3)
- ○ Slightly important (4)
- ○ Not at all important (5)

End of Block: Control Block

c. Pilot survey results

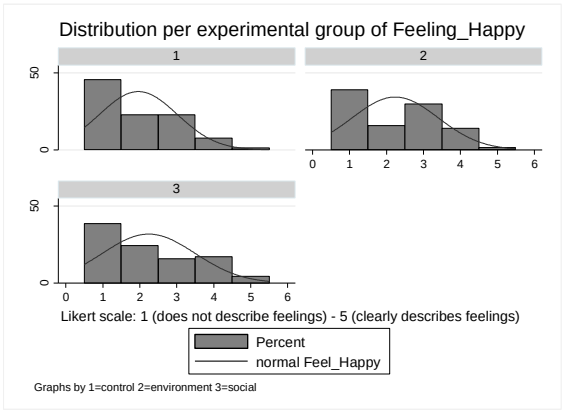
Source	SS	df	MS
Model	4.37256778	2	2.18628389
Residual	52.0484848	16	3.2530303
Total	56.4210526	18	3.13450292

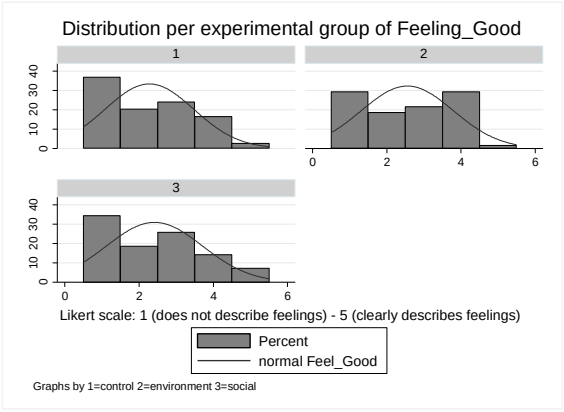
Number of obs = 19
F(2, 16) = 0.67
Prob > F = 0.5245
R-squared = 0.0775
Adj R-squared = -0.0378
Root MSE = 1.8036

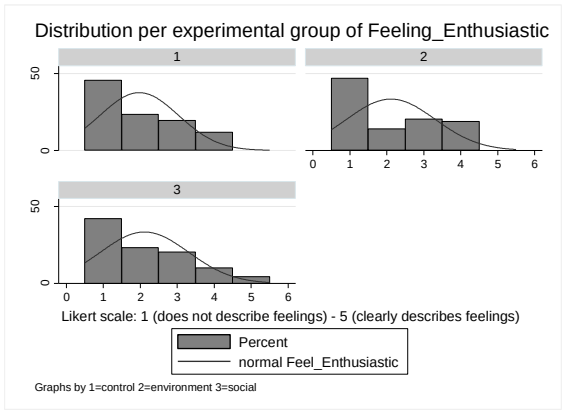
likelinessbuy	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
experimentalgroup						
2	-.7333333	1.317175	-0.56	0.585	-3.525619	2.058953
3	-1.127273	.9727981	-1.16	0.264	-3.189513	.9349671
_cons	4.4	.8066016	5.45	0.000	2.690081	6.109919

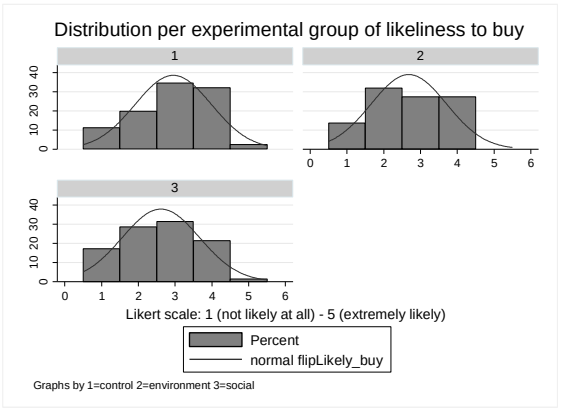
Table 10. Regression table for pilot survey: effect of experimental groups on likeliness to buy.

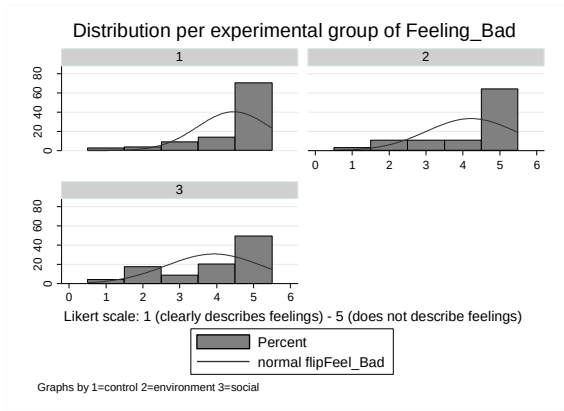
d. Descriptive statistics: distribution of all dependent variables per experimental group

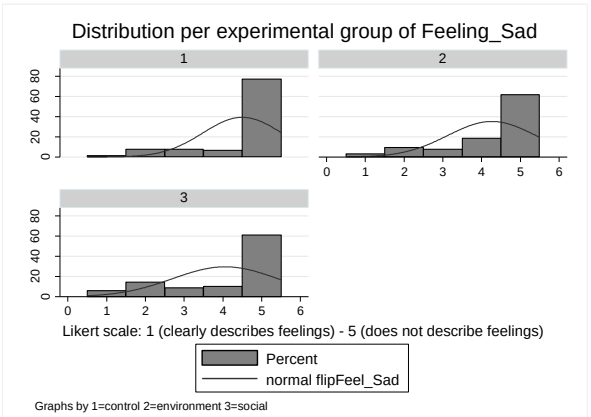


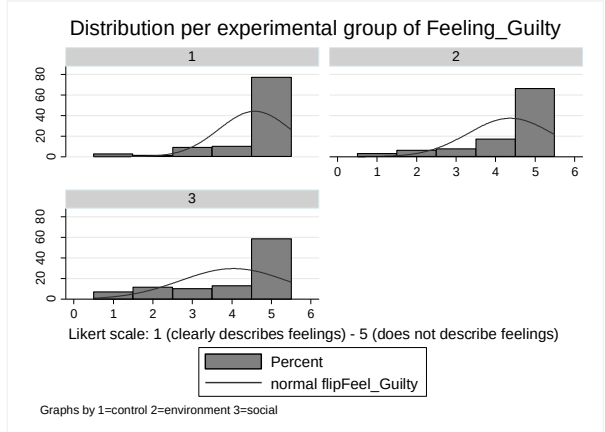


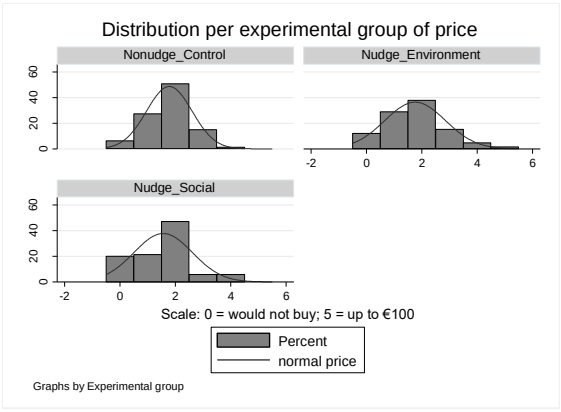












e. Results – detailed statistics

Source	SS	df	MS	Number of obs =	98
Model	25.1673791	3	8.38912638	F(3, 94) =	9.95
Residual	79.2407841	94	.842987065	Prob > F =	0.0000
				R-squared =	0.2410
				Adj R-squared =	0.2168
Total	104.408163	97	1.07637282	Root MSE =	.91814

flipLikely_buy	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Experimentalgroup						
Nudge_Environment	-.6761154	.2213311	-3.05	0.003	-1.115573	-.2366572
Nudge_Social	-1.019243	.2311952	-4.41	0.000	-1.478286	-.5601994
Shop_Environ	-1.622082	.5418329	-2.99	0.004	-2.697904	-.5462601
_cons	2.96183	.1374074	21.56	0.000	2.689004	3.234655

Table 11. Regression table of model 5: likeliness to buy including nudges and controlling for dummy variable 'importance of environmental value'.

	Feel good 1 Likert 1-5	**Feel good 2** Likert 1-5	**Feel good 3** Likert 1-5
Nudge Environment	0.275	0.388	0.346
	(1.33)	(1.52)	(1.29)
Nudge Social	0.136	-0.684*	-0.714*
	(0.67)	(-2.54)	(-2.57)
Gender, female =1			-0.286
			(-1.10)
Age, scale 1-7			-0.154
			(-0.99)
Income euros, scale 1-7			0.118
			(1.17)
Education scale 1-7			0.0835
			(0.91)
Shopping frequency			0.0385
			(0.39)
Constant	2.278***	2.184***	1.934*
	(16.32)	(14.16)	(2.61)
Observations	214	101	98
R^2	0.008	0.117	0.148

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 12. Compact regression table for multiple models of feeling 'good'.

	Feeling sad 1 Likert 1 - 5	**Feeling sad 2** Likert 1 - 5	**Feeling sad 3** Likert 1 - 5
Nudge Environment	0.238 (1.21)	0.843** (3.00)	0.831** (2.82)
Nudge Social	0.442* (2.29)	1.667*** (5.71)	1.611*** (5.30)
Gender, female =1			0.292 (1.03)
Age, scale 1-7			0.148 (0.79)
Income euros, scale 1-7			-0.108 (-0.96)
Education, scale 1-7			0.0550 (0.52)
Shopping frequency			-0.0486 (-0.46)
Constant	1.500*** (11.33)	1.417*** (8.41)	1.056 (1.30)
Observations	212	99	96
R^2	0.025	0.261	0.270

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4. Compact regression table for multiple models of feeling 'sad'.

	Feeling guilty 1 Likert 1 - 5	**Feeling guilty 2** Likert 1 - 5	**Feeling guilty 3** Likert 1 - 5
Nudge Environment	0.208 (1.11)	0.847** (3.31)	0.866** (3.40)
Nudge Social	0.534** (2.91)	1.917*** (7.20)	1.866*** (7.10)
Gender, female =1			0.600* (2.44)
Age, scale 1-7			0.355* (2.18)
Income euros, scale 1-7			-0.261** (-2.68)
Education, scale 1-7			-0.0597 (-0.65)
Shopping frequency			-0.0635 (-0.69)
Constant	1.423*** (11.27)	1.375*** (8.95)	1.255 (1.79)
Observations	213	99	96
R^2	0.039	0.354	0.426

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5. Compact regression table for multiple models of feeling 'guilty'.

	Enthusiastic 1 Scale 1 - 5	**Enthusiastic 2** Scale 1-5	**Happy 1** Scale 1 -5	**Happy 2** Scale 1-5
Nudge Environment	0.0880	0.0789	0.294	0.238
	(0.37)	(0.32)	(1.21)	(0.95)
Nudge Social	-0.417	-0.439	-0.188	-0.232
	(-1.70)	(-1.73)	(-0.74)	(-0.90)
Income euros, scale 1-7		0.00394		0.126
		(0.04)		(1.33)
Gender, female =1		-0.295		-0.362
		(-1.24)		(-1.51)
Education scale 1-7		0.0842		0.152
		(0.95)		(1.69)
Age, scale 1-7		-0.152		-0.256
		(-0.97)		(-1.61)
Shopping frequency		0.106		0.0178
		(1.19)		(0.20)
Constant	1.875***	1.561*	1.854***	1.680*
	(13.26)	(2.30)	(12.67)	(2.44)
Observations	99	96	99	96
R^2	0.039	0.077	0.030	0.096

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 6. Compact regression table for non-significantly influenced positive feelings: happy & good.

f. Robustness check: ordered logistic regression models

	Price 1 Scale 0-6	**Price 2** Scale 0-6	**Price 3** Scale 0-6
Nudge Environment	-0.119 (-0.39)	-0.488 (-1.12)	-0.472 (-1.05)
Nudge Social	-0.441 (-1.47)	-1.270** (-2.64)	-1.174* (-2.38)
Gender, female =1			-0.420 (-0.90)
Income euros, scale 1-7			0.153 (0.93)
Age, scale 1-7			0.167 (0.66)
Education, scale 1-7			0.110 (0.72)
Shopping frequency			0.00618 (0.04)
cut1 Constant	-2.135*** (-8.08)	-2.005*** (-5.95)	-0.823 (-0.68)
cut2 Constant	-0.654** (-3.11)	-0.538* (-2.03)	0.646 (0.54)
cut3 Constant	1.487*** (6.31)	1.354*** (4.39)	2.635* (2.13)
cut4 Constant	2.981*** (8.04)	2.882*** (5.45)	4.139** (3.12)
cut5 Constant	5.213*** (5.14)		
Observations	217	102	99
R^2			

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 7. Ordered logistic regression table with different models for dependent variable 'price'.

	Good Scale 1 - 5	**Bad** Scale 1 - 5	**Sad** Scale 1 - 5	**Guilty** Scale 1 - 5
Nudge Environment	0.643	1.213*	1.564**	1.696***
	(1.47)	(2.49)	(3.10)	(3.42)
Nudge Social	-1.107*	2.337***	2.656***	3.191***
	(-2.30)	(4.70)	(5.00)	(5.78)
cut1				
Constant	-0.440	0.818**	1.312***	1.182***
	(-1.57)	(2.67)	(3.70)	(3.45)
cut2				
Constant	0.345	1.637***	1.972***	2.304***
	(1.23)	(4.82)	(5.11)	(5.74)
cut3				
Constant	1.693***	2.503***	2.789***	3.240***
	(5.01)	(6.42)	(6.49)	(7.07)
cut4				
Constant		4.238***	4.322***	4.525***
		(7.43)	(7.60)	(7.94)
Observations	101	98	99	99
R^2				

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 8. Strongest ordered logistic models for significant dependent 'feeling' variables.