ECO-LABELS IN THE FASHION INDUSTRY

Developing a framework for classification

Master’s Thesis
to confer the academic degree of

Master of Science Global Business
in the Joint Master’s Program

Global Business – Russia/Italy
Sworn declaration

I hereby declare under oath that the submitted Master’s Thesis has been written solely by me without any third-party assistance, information other than provided sources or aids have not been used and those used have been fully documented. Sources for literal, paraphrased and cited quotes have been accurately credited.

The submitted document here present is identical to the electronically submitted text document.

Steyr, 19th May 2021
Abstract

Ethical fashion, which has become more important in the last decades, tries to address the problems of the fast fashion industry. Eco-labels with independent monitoring are an effective instrument that should help consumers identifying ethical clothes. Nevertheless, the high number of labels makes it hard for people to identify the most ethical one. This thesis aims to understand eco-certifications better and therefore, provides a framework for classification. Based on a qualitative content analysis, suitable categories are developed and five selected eco-labels are analysed to show what they cover and how the classification can be used for further certifications. It is also investigated which information about eco-labels is available for consumers. The results show that most can be found on the labels websites and that OEKO-TEX Made in Green is a good choice as it fulfils many aspects. Moreover, it is found out that labels should concentrate on not only the raw material stage but also on the production of garments and finished clothes as well as the use stage. This thesis provides a reduced version of the classification for consumers too, which they can use for a more ethical purchase decision.
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1. Introduction

1.1 Problem

Ethics in the textile industry has gained more importance, especially since the Rana Plaza scandal in Bangladesh in 2013, where the production building was destroyed. This scandal rose the awareness of the bad working conditions in the textile industry and many companies started investigations of their production processes (Fifka, 2018). In general, this phenomenon is quite new as green fashion and sustainability are an important topic in the fashion industry since about ten years (van de Pol, 2018). Nevertheless, the social or human component is not the only problem in the textile industry because the negative ecological impact of the production has to be taken into account too. Not only that dangerous chemicals are used for dyeing, which is a problem for the disposal but also, the immense need of water for cotton fields as well as for dyeing is problematic. The long transport from the production facilities, which are mostly located in the east or southeast of Asia, to Europe, the U.S. and other countries means a lot of emissions, which harm the environment (Fifka, 2018).

Studies show that consumers are more willing to buy eco-friendly clothes that address these problems. For example, in a survey by Niinimäki (2010), 94.6% of the participants would decrease the negative impact of their consumption behaviour and buy more expensive but high-quality clothes which last longer. Morgan and Birthwistle (2009) found that awareness of the consequences might change peoples’ consumption habits to act more environmentally friendly. To inform consumers about the impact of the clothes they buy, ecolabeling is very helpful. It makes them aware of which products are harmful for the environment or are produced under problematic working conditions. This might even encourage brands and their manufacturers to compete in terms of sustainable clothing and improve their social and environmental impact (Hahn-Petersen, 2018).

Nevertheless, it is not easy for consumers to identify the exact features of every label due to the high number and diversity of them (Hahn-Petersen, 2018). According to the Ecolabel Index (2020), there exist 457 eco-labels in 199 countries and 25 industry sectors while in the 1990s, there were only about ten of them (Delmas / Nairon-Birch / Balzarova, 2013). There already exist some studies which try to categorise and give an overview about selected eco-labels (e.g. Horne, 2009 / Targosz-Wrona, 2009 / Henninger, 2015), which is an important basis that enables a comparison by consumers. Nevertheless, they are mostly not focused on the textile industry or do not address social issues. Another problem is that some information is not easy to find for consumers which makes a comparison hard and time-consuming.
The non-profit organisation Greenpeace, the Austrian “Arbeiterkammer” (2019) and the website “Siegelklarheit” (BMZ, 2021) by the German government are some examples of platforms which offer information about existing eco-labels in order to support consumers. People can look for textile labels, some aspects they cover and an overall rating of their reliability. Joergens (2006) states that consumers often lack information to buy ethical fashion. It is questionable if websites like “Siegelklarheit” (BMZ, 2021) or other platforms are able to help consumers because they are either too narrow or too detailed and they mostly do not compare labels directly. Therefore, more research in this area would be needed to develop a framework for classifying labels in order to help consumers understanding and comparing eco-labels.

1.2 Objectives

As eco-friendly clothing becomes more important (van de Pol, 2018), certifications should inform consumers about the impact on the environment and the working conditions in the production of the clothes they buy (Hahn-Petersen, 2018). The problem is that while certain standards already exist for eco or bio food, this is not the case for textiles since there is no legislation which defines the conditions that make clothes officially ecological. Therefore, although many eco-labels exist in the fashion industry, they fulfil different criteria and quality assurances, which makes it very hard to compare them (Schaus, 2014). To be able to understand eco-labels for textiles better, the most important ones are analysed in this paper and it is investigated if and to which extent they cover environmental and social aspects.

This Master thesis aims to help consumers classifying eco-labels for clothes in order to know which aspects they fulfil and how ethical the certified products are. Retailers should provide the public with information to make them buy more ethical products (Shen / Wang / Lo / Shum, 2012). Nevertheless, it is questionable if the quantity of provided information is the underlying problem. There already exist a lot of eco-labels in the textile industry but they cover different aspects, which makes it hard for consumers to identify the most “responsible” brand. Therefore, they might feel confused and sceptical about eco-labels and what they really stand for (Hahn-Petersen, 2018). This thesis wants to find out more about labels and how they can be classified.

Explaining the most important eco-labels and which quality standards they have, is important to understand them better. The information they offer can then be compared to other labels in order to make them more comparable for consumers. Knowledge about how labels can be rated might enable consumers to identify which of them are trustful and cover the aspects that
are important to themselves. Additionally, understanding labels better might make consumers buy more ethically products.

In order to address this topic, the following research questions were formulated:

- Which information do eco-labels in the fashion industry offer to the consumers?
- How can eco-labels in the fashion industry be categorised based on this information?
- How can eco-labels in the fashion industry be compared?

1.3 Structure

To be able to answer the research questions, the thesis starts with the theoretical background that is discussed in two main chapters. The first one investigates ethics in the fashion industry in general to understand this topic in a broader sense and why this makes eco-labels in this industry different to the food industry. Firstly, the environmental and social problems of the textile industry are described to understand what can be addressed by eco-labels. Then a definition of ethical fashion and its difference to fast fashion are mentioned to explain this topic better and what belongs to it. Lastly, the hindering factors of buying ethically are analysed, which includes internal and external reasons. This makes clear which characteristics of eco-labels lead to a more ethical buying behaviour and what might be improved.

The second main chapter of the literature review deals with eco-labels in the textile industry to provide a basis of understanding and to present possible ways of classifications. At first, they are defined and then the problems of implementation as well as the consumer perspective about labels are presented in order to know what is seen as important and might be included in future eco-labels. Lastly, possible classifications that can be found in literature are analysed in order to develop an own classification in the empirical part.

Afterwards, the methodology of this thesis is explained which includes the description of the research process. A qualitative content analysis is used to develop categories for rating eco-labels in the fashion industry. Five well-known eco-labels that cover environmental as well as social aspects were selected for assessing the developed categorisation. Finally, the findings of the research are presented where the fulfilment of the categories by the five selected eco-labels is described. The discussion then analyses the results and links them to the theory to be able to interpret the selected labels and provide practical implications for consumers. The conclusion summarises the paper by answering the research questions and outlines its limitations and ideas for further research.
2. Literature review in the context of the fashion industry

2.1 Ethics in the fashion industry

In this section, the term ethical fashion that is the basis for understanding the topic, is defined which includes the problems of traditional (or fast) fashion that are related to the life cycle of clothes. Then, other important terms like slow, ecological, green and eco fashion as well as ethical consumption, are explained. Afterwards, some hindering factors why consumers do not buy ethically are explained. This helps to understand consumers and their preferences in order to know how ethical fashion and eco-labels can be improved.

2.1.1 Problems of the fast fashion industry

2.1.1.1 Definition of fast fashion

The so-called fast fashion means that clothes are produced and designed within a very short time. In less than two weeks, they can be bought in stores. The fact that the garments and the production process in general are still done manually makes clear that the working conditions cannot be fair. The labour costs are low in developing countries and employees are flexible which has advantages for retailers but is linked to bad conditions for workers. The price for clothes falls, while the profit of retail companies rises and they demand the production to be faster (Koszewska, 2011). This is problematic as the textile industry is dependent on the growth of cotton and manual work like dyeing and bleaching that cannot be done faster. Therefore, producing quicker is not possible without exploiting the labour force and natural resources (Fletcher, 2007).

Compared to the household incomes, garments are cheaper now compared to the 1990s which was investigated in Western countries and especially between 1995 and 2005 (Niinimäki, 2011). The high incomes and cheap prices let consumers more often buy low-priced clothes that they only own for a short time (Jackson / Shaw, 2009). As a result, many Western consumers possess a lot of clothes that they do not wear often (Niinimäki, 2015).

2.1.1.2 Life cycle of clothes

There are different definitions of the stages of the textile production but this section gives a general overview about which problems exist in which part of the life cycle of clothes. As a result, it is easier to understand which issues are addressed by different labels. Table 1 summarises the findings of Madsen, Hartlin, Perumalpillai, Selby and Aumônier (2007) which is very detailed and gives a good overview about the environmental and social problems of every life cycle stage. Another possibility would be to list the resources or inputs that are needed for every life cycle stage.
<table>
<thead>
<tr>
<th>Life cycle stage</th>
<th>Environmental impacts</th>
<th>Social impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials (growth, acquisition and processing)</td>
<td>Resource consumption</td>
<td>Worker rights</td>
</tr>
<tr>
<td></td>
<td>GHG emissions</td>
<td>Worker health and safety</td>
</tr>
<tr>
<td></td>
<td>Air/water pollution &amp; toxicity</td>
<td>Poverty alleviation</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>Resettlement</td>
</tr>
<tr>
<td></td>
<td>degradation/contamination</td>
<td>Community health</td>
</tr>
<tr>
<td></td>
<td>Biodiversity/land use</td>
<td>Cultural impacts</td>
</tr>
<tr>
<td></td>
<td>Solid and hazardous waste</td>
<td></td>
</tr>
<tr>
<td>Fibre production (natural and synthetic)</td>
<td>GHG emissions</td>
<td>Worker rights</td>
</tr>
<tr>
<td></td>
<td>Air/water pollution &amp; toxicity</td>
<td>Worker health and safety</td>
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<tr>
<td></td>
<td>Soil</td>
<td>Poverty alleviation</td>
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<td></td>
<td>degradation/contamination</td>
<td>Community health</td>
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<td></td>
<td>Biodiversity/land use</td>
<td>Cultural impacts</td>
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<td></td>
<td>Solid and hazardous waste</td>
<td></td>
</tr>
<tr>
<td>Clothing production and garment assembly</td>
<td>GHG emissions</td>
<td>Worker rights</td>
</tr>
<tr>
<td></td>
<td>Air/water pollution &amp; toxicity</td>
<td>Worker health and safety</td>
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<td></td>
<td>Soil</td>
<td>Poverty alleviation</td>
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<td>degradation/contamination</td>
<td>Community health</td>
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<td>Biodiversity/land use</td>
<td>Cultural impacts</td>
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<td></td>
<td>Solid and hazardous waste</td>
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</tr>
<tr>
<td>Packaging</td>
<td>Solid and hazardous waste</td>
<td></td>
</tr>
<tr>
<td>Distribution</td>
<td>GHG emissions</td>
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</tr>
<tr>
<td>Retail</td>
<td>Solid and hazardous waste</td>
<td></td>
</tr>
<tr>
<td>Use</td>
<td>Resource consumption</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GHG emissions</td>
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<tr>
<td>End of life management</td>
<td>GHG emissions</td>
<td></td>
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<tr>
<td></td>
<td>Solid and hazardous waste</td>
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</tbody>
</table>

Table 1: Life cycle stages with environmental and social impacts (own table based on Madsen / Hartlin / Perumalpillai / Selby / Aumônier (2007), p. 39)

Madsen, Hartlin, Perumalpillai, Selby and Aumônier (2007) have analysed the environmental and social impact of every stage in the life cycle of textiles. The social issues are dominant in the first three stages of production which are the raw materials, production of fibres and production of clothes including the garments. In these three stages, the rights and health of workers, poverty alleviation, influences on their culture and community are a problem. Resettlement is an additional problem for growing the raw materials like cotton. Most of the environmental problems can be found in this first stage as resources and land are used as well as greenhouse gas emissions and waste are produced. Moreover, the water and air are polluted and the ground is contaminated. As the life cycle of clothes continues, the bad impacts
on the environment continue but with different main problems. The waste is most problematic for the third and fifth stage which are packaging and retailing, while the greenhouse gas emissions are dominant in all other phases. Distribution is the fourth stage and the last two stages are the use and end of life management (Madsen / Hartlin / Perumalpillai / Selby / Aumônier, 2007). The listed problems are further defined in the following section.

An example of adding inputs to the stages is displayed by Pruzan-Jorgensen (2010) who also includes the outputs that are created for the environment. For raw materials, processing and production, water and chemicals are needed as inputs as well as people. Transporting and retailing the finished clothes need personal resources and washing them requires water. After the consumer decides to throw textiles away, workers are again needed for the waste management. Regarding the outputs, nearly every stage – except production and transport – produces waste and every stage leads to greenhouse gas emissions. Doing the laundry also results in chemicals (Pruzan-Jorgensen, 2010).

2.1.1.3 Social and ecological problems
There are different problems in the textile industry which can be categorised into social and ecological ones. **Ecological problems** arise due to the use of pesticides for cotton, chemicals in the production process and waste management (Koszewska, 2011). Madsen, Hartlin, Perumalpillai, Selby and Aumônier (2007) list greenhouse gas emissions, the consumption of resources, waste, the pollution of water and air, contamination of the ground and the damage of biodiversity as problematic environmental impacts of the textile industry. In the following paragraphs, they are described in more detail.

The greenhouse gas emissions are an environmental problem that is relevant in the growth, production and use. Transportation consumes greenhouse gas emissions too but in a lower amount, compared to the other life cycle stages (Madsen / Hartlin / Perumalpillai / Selby / Aumônier, 2007). In the stage of use, the needed fossil fuel for heating the water to do the laundry is the highest. Fuel is also needed in a high amount in the production process for electricity and machines for agriculture (University of Cambridge, 2006).

The consumption of resources means that water and oil are needed. Water is important for growing cotton and during the production, while oil is used for growing and acquiring cotton, producing clothes and distributing them (Madsen / Hartlin / Perumalpillai / Selby / Aumônier, 2007). The most energy is used in the consumption stage while a person washes and dries her or his clothes (American Fiber Manufacturers, 1993) and the highest amount of water is needed in the raw material stage (Dahllöf, 2003). Furthermore, nearly 90% of the total waste is produced in the use and disposal and includes dirty water from doing the laundry, generating
energy, the waste resulting from detergent and the disposal (American Fiber Manufacturers, 1993).

Toxic substances like chemicals for production and pesticides for growing are reasons why water and air get polluted by the textile industry (Madsen / Hartlin / Perumalpillai / Selby / Aumônier, 2007). Nearly 93 % of the total toxic substances appear in the growing of cotton due to the used pesticides. For organic cotton, where pesticides are forbidden, the chemicals used in production are still problematic (University of Cambridge, 2006).

The contamination of the ground is linked to pesticides and chemicals too. Water contamination, deforestation and a damaged landscape are a result of them (Kalliala. / Nousiainen, 2000), which is most problematic in the growth stage (Madsen / Hartlin / Perumalpillai / Selby / Aumônier, 2007). Moreover, the biodiversity is damaged through pesticides and farming practices that harm the ground (Kooistra / Termorshuizen, 2006). Moreover, genetical modifications for crops and the extraction of oil are additional actions that negatively affect the diversity of the flora and fauna (Madsen / Hartlin / Perumalpillai / Selby / Aumônier, 2007).

The social issues are linked to the bad working conditions of the manufacturing facilities that are located in developing countries. This includes child and forced labour, low payment, long working hours, discrimination, harassment and dangerous conditions at work (Koszewska, 2011). Madsen, Hartlin, Perumalpillai, Selby and Aumônier (2007) list not only worker rights, health and safety as problematic. They also address poverty alleviation, community health, resettlement, cultural and economic impacts (Madsen / Hartlin / Perumalpillai / Selby / Aumônier, 2007). The retailers who have contracts with the manufacturers are often not exactly aware about the working conditions or where they are producing because the manufacturers are highly dispersed (Koszewska, 2011).

The rights of workers, their safety, the alleviation of poverty, resettlement, the health of the community as well as cultural and economic effects are identified as the most important social impacts of the textile industry (Madsen / Hartlin / Perumalpillai / Selby / Aumônier, 2007). The rights of workers include forced and child labour, bargaining, payment, holidays and working hours. A lot of them are young, migrated women that are not highly educated and therefore do not know their rights. (University of Cambridge, 2006). In countries without formal or applied regulations, these problems occur in the growth and production stage while fair trade tries to address these issues (Madsen / Hartlin / Perumalpillai / Selby / Aumônier, 2007).

In addition, the health and safety of workers is problematic during production and growth because of the use of pesticides (Madsen / Hartlin / Perumalpillai / Selby / Aumônier, 2007).
Most of the production issues like dust and loud noises could be improved by using machinery like in developed countries (Kooistra / Termorshuizen, 2006). However, poverty alleviation is a positive effect of the textile production as it brings jobs to developing countries and to people with limited education. Nevertheless, the negative aspect is that development through training is mostly not possible for them. This is an issue for the growth and fabric production (Madsen / Hartlin / Perumalpillai / Selby / Aumônier, 2007).

Community health is related to harmful chemicals and odour that are dominant in the production stage. Resettlement means losing land or other assets linked to biodiversity and is dominant in the growth stage (Madsen / Hartlin / Perumalpillai / Selby / Aumônier, 2007). In addition, cultural impacts refer to the change of land use and gender roles as women work in roles that were dominated by men before. These impacts are relevant in the growth, production, retail and consumption stage. Regarding the economic impact of the textile industry, the production and retail are important for many countries, as it increases their employment rate and GDP (Madsen / Hartlin / Perumalpillai / Selby / Aumônier, 2007).

2.1.2 Definition of Ethical Fashion and its related concepts

2.1.2.1 Corporate Social Responsibility (CSR) in the fashion industry
Due to globalisation, the increasing international competition and the growing interest of the media about social issues, it became important for companies to engage in Corporate Social Responsibility (CSR) activities (Luo / Bhattacharya, 2006). For about 50 years, CSR is in the focus of interest and therefore, only concentrating on financial aspects is not enough to stay competitive nowadays. Social issues should be in the focus of businesses as well (Belu / Manescu 2013).

Although there exists no general definition of Corporate Social Responsibility (CSR), some common characteristics can be identified. In a content analysis, Dahlsrud (2008) found that most definitions include five dimensions, namely the environmental, social, economic, stakeholder and voluntary dimension. This means that CSR actions are not obligatory by law but still related to a firm’s business and can be related to the interests of stakeholder, society or environment (Dahlsrud, 2008).

Todeschini, Cortimigli, Callegaro-de-Menezes and Ghezzi (2017) define CSR as a trend that increases sustainability for businesses. They identify three major components that are part of Corporate Social Responsibility. The first one is that no sweatshop conditions are involved, which stands for working conditions that are transparent and fair. Fair trade is the second component which includes that wages are fair, the work environment is healthy and the
community in the country is supported. Sourcing locally is the third component and refers to a production that is in a country near to the final consumers which also reduces the emissions of transportation.

For the fashion industry, CSR is important as its supply chain is complex and consists of lots of suppliers that are distributed worldwide. Especially for fast fashion, that was already defined and mentioned in the section before, the production is outsourced to low-labour cost countries. In these nations, labour standards are very low and fair trade or similar movements want to change these bad conditions and motivate firms to act against these problems. Therefore, fashion brands use CSR actions to change their negative image. Examples of such actions are reports about sustainability acts, codes of conduct, actions to increase transparency and labour standards in the supply chain, monitoring through different stakeholder and auditing by independent organisations like the Fair Trade Association (Todeschini / Cortimiglia / Callegaro-de-Menezes / Ghezzi, 2017).

2.1.2.2 Greenwashing in the fashion industry
In general, firms might do greenwashing which means that they advertise engaging in green initiatives but that is not true or misleading (Delmas / Burbano, 2011). Communicating transparently about CSR initiatives aims to be objective and true about them which might also include actions that do not have a fully positive result. Otherwise, transparency claims might end in greenwashing (Niinimäki, 2015). One impact of greenwashing is that consumers are at first sceptical about the CSR actions of a company and it takes long for them to trust a firm’s actions (Rahmen / Park / Chi, 2015).

A too narrow focus on only one issue of the production process might result in greenwashing. Using for example eco-labels or other initiatives only for one collection of clothes will not result in a big change for producers or the supply chain. The general problem of the negative impact of the fast fashion industry would still be there. Another example would be using paper bags that only change a small part of the bigger problems in the textile industry. Sustainability acts and principles should be incorporated in the whole strategy of a firm and for all functions (Niinimäki, 2015).

Another aspect that might result in greenwashing is not relying on independent monitoring. Eco-labels from organisations that are objective and use standardised instruments are more trustworthy than a fashion brand’s own monitoring systems. In general, confusing or not relevant information should not be communicated to the public (Niinimäki, 2015).
2.1.2.3 Ethical consumption and consumer awareness in the fashion industry

Ethical consumption addresses fair trade as well as organic materials, labour conditions and resources. Ethical purchase behaviour means that consumers have ethical considerations when they buy products (Bray / Johns / Kilburn, 2010). One of the reasons why ethical fashion becomes more important is the rising consumer awareness (Todeschini / Cortimiglia / Callegaro-de-Menezes / Ghezzi, 2017).

Sustainable consumption can be defined as buying less clothes that are important to the consumer and last longer due to the better quality and style that is not short-term-oriented. Clothes should also be worn more often, and the disposal should be postponed due to repairing or upgrading clothes instead of throwing them away. (Niinimäki, 2013). Services that increase the lifetime of clothes are valuable in this context (Niinimäki, 2014). In the use stage, clothes that are preferable from organic material and eco-labelled, should be washed fewer times (Niinimäki, 2013). Therefore, investments in durable and high-quality clothes are important to support ethical consumption and decrease the pace of fast fashion (Niinimäki, 2014).

Consumer awareness about ethics in fashion started in 1960 (Jung / Jin, 2014) but with a negative image. Since the end of 1990, ethical fashion becomes fashionable and interesting for the wider public (Henninger / Alevizou / Oates, 2016). In contrast, in 1970/80, it was important to look different and to not fit the conventional fashion. This is the reason why ethical clothes still have the image of being not fashionable but baggy, made of itchy materials like linen and are produced in brown or grey colours. Nevertheless, since the 2000s, sustainable clothes are fashionable and available in a greater variety (Diekamp / Koch, 2010).

Some examples of rising consumer awareness are the slow fashion movement that is described in the next chapter or lowsumerism, which means only owning a small number of clothes for a limited time like a season in order to buy less and more consciously. These two movements are examples for changes in behaviour and have an impact on fashion brands and their business models. Nowadays, the trend of sustainable fashion is increasing due to changing consumer attitudes that include the search for different approaches to the fast fashion. Consumers behave differently than in the past as they are interested in environmentally friendly clothes. In general, for younger people owning clothes is not so important anymore – they favour experiences. They are more interested in making clothes on their own or share them. Therefore, fast fashion brands like H&M or C&A started sustainability actions like a circular economy to not lose their consumers (Todeschini / Cortimiglia / Callegaro-de-Menezes / Ghezzi, 2017).

According to a survey by Fashion Summit (2019) which was done in Hong Kong, London, New York, Shanghai and Tokyo, consumers support sustainable fashion particularly when they are
between 18 and 24 years old, go shopping more often or have a higher income. Tokyo had a support of 49%, which was very similar to London (54%) and New York (55%), while Hong Kong had 71% supporters. In Shanghai, even 90% said that they were very or quite supportive of sustainable fashion. Regarding the consideration of buying sustainable clothes, in Shanghai, 55% have considered sustainability sometimes and 20% always when buying clothes, while in London 40% have sometimes and only 6% have always considered it (Fashion Summit, 2019).

2.1.2.4 Slow fashion movement
The environmental and social problems of the fast fashion led to the slow fashion movement. Firms already started to address these issues by reducing their environmental and social impact through various practices. Examples are recycling and reusing, sourcing locally and engaging in fair trade (Todeschini / Cortimiglia / Callegaro-de-Menezes / Ghezzi, 2017). The slow fashion movement exists since 1960 because consumers started to realize that the fashion industry has negative effects on the environment. Therefore, they wanted the industry to improve their practices (Jung / Jin, 2014). At first, ecological fashion had a negative image but in 1980 and 1990, campaigns against fur changed that image. At the end of 1990, the topic got more interest in the wider public (Henninger / Alevizou / Oates, 2016).

Slow fashion is described as involving the opposite practices of production in relation to fast fashion. It is similar to the slow food movement that is a social movement that arose because of the growing number of big fast food brands (Fletcher, 2010). For the fashion industry, this means a different way of production that involves more transparency and a long-term orientation (Ertekin / Atik, 2014). Henninger, Alevizou and Oates (2016) describe the slow fashion movement not as the counterpart of fast fashion but as having sustainability as the most important goal in mind. This includes social and environmental issues (Henninger / Alevizou. / Oates, 2016). The intention of slow fashion is not only a slower production that reduces the pressure of manufacture workers. It also includes giving the workers a voice and makes change possible (Clark, 2008).

2.1.2.5 Ethical and sustainable fashion
Sustainable or ethical fashion belongs to the slow fashion movement (Jung / Jin, 2014). In literature, ethical fashion is often used interchangeably with sustainable-, eco- or green-fasion (Carey / Cervellon, 2014). According to Fashion Summit (2019), consumers perceive sustainable fashion as having a high quality, which lasts long and is produced without harming the environment. Joergens (2006) points out that it is not easy to define ethical fashion as there does not exist a common standard in the industry. Nevertheless, the author tries to specify the term by putting together more perspectives and common characteristics. As a result, Joergens (2006) describes ethical fashion as clothes that are fashionable and produced under fair
working conditions. The environment and workers are not harmed due to the use of organic cotton. Fair trade is another part of ethical fashion.

In the study of Henninger, Alevizou and Oates (2016) they identified some aspects of sustainable fashion and investigated that they are differently important to people. While consumers rate materials that do not harm the environment as most important, organisations rate sourcing locally as most important. Another identified aspect of sustainable fashion includes tracing, which means knowing the processes and origin of the materials. Transparent sourcing and production as well as social issues regarding the labour standards are mentioned in addition (Henninger / Alevizou / Oates, 2016).

The term ethical fashion consists of several sub-concepts that are part of this broad topic. These are ethical clothing, eco clothing, recycled or re-used clothing, organic clothing and fair trade. Ethical clothing means that the negative impact of clothes is considered. This includes how they are produced and traded and how this affects the environment and workers. Eco clothing refers to a production process that is environmentally friendly and therefore, organic fibres and sustainable materials are used. Recycled plastic or bamboo also belong to such materials as well as clothes made from recycled textiles. Recycled or re-used clothing stand for the use of recycled materials like fibres. Organic clothing refers to fashion that is produced by using as little chemicals as possible to not harm the environment. Fairtrade focuses on better labour conditions, especially for the farmers and factory workers in developing countries (Magnussen, 2009).

Niinimäki (2015) divides ethical fashion into three parts that should be addressed. Firstly, sustainability is important for the environment and society at large. Secondly, the human component should be addressed which focuses on the reduction of chemicals. As a result, the use stage would be more sustainable and the production safer for workers. Thirdly, the use of resources should be minimised by considering recyclable or renewable sources.

The Ethical Fashion Forum (2016) defines ten principles of ethical fashion. Firstly, it works against the so-called fast fashion and its negative effects. Secondly, fair working conditions and wages are treated that make it possible for workers to have a safe living and job. Chemicals that can harm workers are banned and material that does not harm the environment is used. The amount of water in the production is reduced and materials are recycled. Energy is used as efficiently as possible and sustainability in the fashion industry has a very high priority. Consumers should be made more aware of ethics in the fashion industry and animal rights are also focused according to this definition.
This definition by the Ethical Fashion Forum (2016) will be used for this thesis because it incorporates ecological and social aspects. The exact aspects that can be covered by an eco-label in the fashion industry are described in the chapter 2.2.1 Definition, problems and aspects of eco-labels. The described principles help to understand and classify eco-labels in the fashion industry as they provide an overview of which aspects are covered and which are not.

2.1.3 Hindering factors of ethical consumption in the fashion industry

2.1.3.1 General hindering factors and the attitude-behaviour gap
It is stated that in the fashion industry, ethical considerations are not in the focus of interest of a consumer who looks more at the price, style, quality and brand (Carey / Cervellon, 2013). According to a study done by Koszewska (2011), Polish consumers mainly do not buy ethical clothes because they do not have all relevant information they would need (55%). Moreover, they feel that they cannot see the difference of various textiles (32.8%) and they do not (fully) trust the information (22%). Price was only mentioned as fourth most important reason (Koszewska, 2011).

Joergens (2006) found out that all German participants of her study have never looked at the CSR policy of their favourite brand. Most of them also do not fully trust the information which is provided by the company on its website. Another reason why consumers might not be so motivated to buy ethically clothes is that it does not directly affect their health like food. They would only think about it if the used chemicals would hurt their skin. Moreover, they are often not aware of the health risks workers have to face in the production process. It is more important for them that they feel comfortable in their clothes and that they can wash it without shrinking (Joergens, 2006).

One important issue to consider when talking about ethical buying behaviour is the difference between what consumers say and what they do. Many people state that they care about ethics but do not act accordingly. This is called attitude-behaviour gap and is a phenomenon that can be found in ethical consumption in general but is an important issue for ethical fashion as well (Wiederhold / Martinez, 2018). The most essential factors are described in this section to get insights into why consumers behave not ethically although they intend to. The classification into internal and external factors as proposed by Kollmuss and Ageyman (2002) is used as a basis and added with the results of other authors.

2.1.3.2 Internal and external hindering factors of buying ethical fashion
The external factors consist of price, institutional, social as well as cultural issues and have an influence on why consumers do not buy ethically (Kollmuss / Ageyman, 2002). The
difference between a person’s attitude to buy sustainably and her or his actual buying behaviour can be explained with the desire to minimise effort and time. As people tend to have too much information and only a limited time when they buy clothes, they look for only a few facts like the price and not for ethics. If the justification for a higher price is not seen by the consumer, ethical alternatives are normally not bought and seen as too costly. It is therefore the most critical barrier (Wiederhold / Martinez, 2018) which is supported as well by Carrigan and Attalla (2001) or Bray, Johns and Kilburn (2010).

According to Joergens (2006), most people favour having more clothes over less but ethical ones. Some consumers may not only be unwilling to pay the higher price for ethically products but also be unable to afford them because of their low budget (Fliess / Lee / Dubreuil / Agatiello, 2007). Moreover, they might buy an ethical product once but then switch again to other cheaper alternatives because they regard them as too expensive for regular purchases. The perceived quality plays a role too (Bray / Johns / Kilburn, 2010) and consumers might question the quality of ethical products (Fliess / Lee / Dubreuil / Agatiello, 2007).

The institutional factors include that ethical products should be available but this is often limited. For example, they cannot be bought in mainstream shops and people might not want to buy them in specialised ones. The shortage of ethical products can be divided into two separate issues. Firstly, there is a missing recall of the brand as it is difficult for consumers to name ethical brands and secondly, there are only a few alternatives that are mostly for women (Wiederhold / Martinez, 2018). The culture and social settings play an important role for ethical purchase decisions (Kollmuss / Ageyman, 2002). For example, ethics in countries vary which influences individuals and their values (Wiederhold / Martinez, 2018). Social factors also include pester power (Papaioikonomou / Ryan / Ginieis, 2010), which means that children desire certain brands and influence their parents (Gunter / Furnham, 1999).

Internal factors that influence ethical purchase decisions are motivation, knowledge, perceived locus of control, attitudes and values (Kollmuss / Ageyman, 2002). Bray, Johns and Kilburn (2010) mention demographics as an additional category. The motivation to change the own buying behaviour affects how ethically a person shops (Wiederhold / Martinez, 2018). Kollmuss and Ageyman (2002) state that people might be motivated to act environmentally friendly but other motivations like convenience or spending less money often override them.

Scepticism about the claims of companies to be ethically, the lack of knowledge and not having ethics in mind when buying products are additional explanations for the attitude-behaviour gap (Fliess / Lee / Dubreuil / Agatiello, 2007). Consumers do not feel well-informed and want to have more data available from firms (Wiederhold / Martinze, 2018) to avoid buying
from very unethical ones (Bray / Johns / Kilburn, 2010). This information should also be credible as consumers are very sceptical about the ethical claims of firms (Wiederhold / Martinze, 2018). Bray, Johns and Kilburn (2010) call this cynicism, which indicates that consumers often believe that companies just claim that they act ethically for marketing purposes.

Personal experience that is related to knowledge is identified as an important factor too. Only news which affect consumers directly are taken into consideration and they do not see which consequences their buying behaviour has (Bray / Johns / Kilburn, 2010). Kollmuss and Ageyman (2002) state that people are often confused about ethical alternatives. As the offered information seems to be too much and detailed, they tend to focus on negative news about firms in the media rather than looking for information on their own (Wiederhold / Martinez, 2018). Furthermore, it is stated that knowledge about the environment does not directly affect if someone behaves environmentally friendly (Kollmuss /Ageyman, 2002).

Moreover, consumers might not feel that their actions and individual purchase decisions can make a difference (Wiederhold / Martinez, 2018), which is examined by Kollmuss and Ageyman (2002) as well. They call it external locus of control which means that other people make decisions and are able to change something while they themselves cannot. People with an external locus of control do not think that one single individual like them can affect the CSR policies of a company and other actors like the media, government or firms should take the initiative instead (Fliess / Lee / Dubreuil / Agatiello, 2007).

Attitudes stand for a person's negative or positive perceptions for something (Wiederhold / Martinez, 2018). If a person has the attitude to behave environmentally friendly, she or he is more likely to do so if the costs and effort are not too high. Otherwise, they might act in a more convenient and not perfectly ethical way (Kollmuss / Ageyman, 2002). The habits of buying a certain brand and feeling convenient also make it less likely that people change their consumption behaviour (Wiederhold / Martinze, 2018) which is stated by Papaoikonomou, Ryan and Ginieis (2010) as well. Bray, Johns and Kilburn (2010) refer to this phenomenon as inertia to change one's buying habits. Kollmuss and Ageyman (2002) state that the degree of loyalty to a certain brand plays an important role too as it influences how information about it is processed. For example, negative facts about one's favourite brand are often ignored.

The values a person has in regard to the environment emerges from a number of factors like family, experiences in nature, friends, education and firms that want to protect the environment (Chawla, 1999). This highlights that feelings in relation to nature influence if someone is concerned about the environment (Kollmuss /Ageyman, 2002). Moreover, although people
might have an ethical obligation to behave accordingly, they might find other reasons not to do so (Bray / Johns / Kilburn, 2010). Fliess, Lee, Dubreuil and Agatiello (2007) state that some people might not care about the conditions and ethics of production but do not want to be honest about that when they are asked about their opinion. Furthermore, ethical fashion has an unfavourable image as being not fashionable and boring (Wiederhold / Martinez, 2018).

Bray, Johns and Kilburn (2010) suggest that there are exogeneous variables and impeding factors that influence if consumers buy ethically. The impeding factors are already mentioned in the external and internal factors. Exogeneous variables represent the diversity of consumers. Age, gender, beliefs, confidence, education, moral and affluence are examples that influence a person’s buying behaviour as well. Kollmuss and Ageyman (2002) state that two demographic variables have an impact on ethical consumption, namely the gender and level of education. Women tend to know less than men about environmental issues but are more worried about them. Furthermore, a longer education means that more is known about problems of the environment. Wiederhold and Martinez (2018) point out that the age has an impact as well because especially young people favour brand image.

2.2 Eco-labels in the fashion industry

In this section, eco-labels in the fashion industry are explained to understand the main topic of this thesis. At first, a definition of labels, its problems for producers and consumers and the social and environmental aspects they cover, are discussed. Then, the consumers' knowledge about eco-labels as well as the effect on their buying behaviour are presented. Some suggestions about how these labels can be more successful are made too in order to make a label reach more consumers. Afterwards, some classifications are presented that are the basis for the empirical part. Eco-labels can be categorised into mandatory or voluntary (Horne, 2009), social or environmental labels, that can be further classified into ISO I, II or III. Some eco-labels are specifically for textiles or for a certain geographical area (Koszewska, 2011).

2.2.1 Definition, problems and aspects of eco-labels in the fashion industry

2.2.1.1 Definition of eco-labels

Fliess, Lee, Dubreuil and Agatiello (2007) suggest four ways to inform consumers about CSR initiatives, namely reports, guides for consumers, marketing as well as labels and certifications. According to UNEP (2005), labels are the tool that is appreciated the most for communicating about environmental standards. Furthermore, the advantage for consumers is that they are simple and visible. They do not have to look for product attributes and can directly see if a product meets environmental standards (UNEP, 2005).
The OECD (1991) defines environmental labelling as voluntarily providing labels which are from a public or private source and aim to give information to consumers that their products are more environmentally friendly than other comparable ones. According to the Commerce Équitable France (2019), fair trade labels have four characteristics. They use controls, implement standards, use a logo which is visible for consumers and they can be used by different firms. Moreover, organisations as well as products can be labelled. This thesis concentrates on social and eco-labels for clothes.

Eco-labels are symbols or labels which specify environmental aspects of production or of the product in general. In the fashion industry, there are more than 100 eco-labels (Henninger, 2015). Social labels only exist since the 1990s and there are fewer of them. There are no national initiatives like there are for eco-labels and they concentrate on aspects that have no direct effect on the end product (Fliess / Lee / Dubreuil / Agatiello, 2007).

Labels are trustworthy if the certification and standards are so and some of them have already gained the trust of many people worldwide. Increasingly, firms use eco-labels which indicates the high interest and will to use labels for informing consumers (Fliess / Lee / Dubreuil / Agatiello, 2007). The Commerce Équitable France (2019) focuses on fair trade labels and state that they are very different to another because they have other goals. Another point of view is whether to increase fair trade products and supporting large farms or to support small farms. There is also a debate about the amount of commitment and how much a firm should invest in fair trade.

One problem of labels for clothes is that no certain standards exist for them which makes them different to labels for eco or bio food. There is no legislation that defines which conditions make clothes officially ecological. Therefore, many eco-labels which fulfil different criteria and quality assurances exist in the fashion industry. Consequently, it is very hard to compare them (Schaus, 2014) and for a better understanding of the general problems of eco-labels for clothes, the following subchapter defines the most important ones of them.

### 2.2.1.2 Problems of implementing eco-labels

Although eco-labels do have some advantages and are the most appreciated tool for communicating environmental standards (UNEP, 2005), there are some problems or challenges associated with them as well. This includes problems for the retailer, producer and consumer. For the producers and retailers, the transparency of assessing their products’ life cycle is low and therefore, the costs for meeting the label’s standards might be high (Kijek, 2015). These additional costs are one reason why the acceptance of firms for labels is still small and especially problematic for manufacturers in poorer countries. Small producers in
developing countries might not be able to pay the costs of certifications or do not have the facilities for the standardised procedures. Furthermore, eco-labels might be used to protect the own market (Fliess / Lee / Dubreuil / Agatiello, 2007), which is also stated by The Voice of Business in Europe (UNICE, 2003). They underline that eco-labels might be more expensive and harder to realise for foreign than for domestic producers, which leads to an international barrier to trade (UNICE, 2003).

The long production process in the textile industry makes it very difficult to certify clothes. The process involves growing the cotton, making the garments, processing the fibres, dyeing it, cutting and sewing the fabric. The accessories like buttons and their production have to be mentioned too (Koszewska, 2011). The sustainability principles have to be the same for the whole supply chain and knowledge as well as resource sharing should be used (Todeschini / Cortimiglia / Callegaro-de-Menezes. / Ghezzi, 2017). The United Nations (2005) mention that suitable incentives to all actors in the value chain of clothes are needed to make sure that they comply with the standards of an eco-label. Moreover, assessment tools to monitor if the set standards of the label are met would be needed. The methodology of assessment should be standardised to make a comparison possible (United Nations, 2005).

Nevertheless, it also poses some challenges to retailers to monitor if the requirements for a label are covered as consumers might not trust certain information sources like those from companies. Furthermore, the provided amount of information should be balanced and not too detailed. Confusion and not understanding certain labels or why there are more for one single product are problematic as well (Fliess / Lee / Dubreuil / Agatiello, 2007) and it is a challenge for retailers to communicate in the right and most suitable way.

Other problems are associated with consumers. In general, eco-labels are mostly for the final and not the intermediate product and the information about the production is only available in a limited way to consumers. Moreover, there is only a small number of products that are certified which makes them a niche. On the one hand, the number of labels increases, which means that there are more available but on the other hand, more labels lead to more confusion for consumers and a reduced trustworthiness due to possible fraud. Therefore, a label can only be successful if consumers know and understand them as well as firms accept them (Fliess / Lee / Dubreuil / Agatiello, 2007).

Although the awareness of consumers for sustainable products has risen (Fliess / Lee / Dubreuil / Agatiello, 2007), they still have to be more educated about sustainability and its importance. Wang and Song (2010) indicate that most aspects of slow fashion are not seen as valuable by consumers. Therefore, more knowledge is needed to also motivate them to
prolong the life span of clothes as long as possible (Wang / Song, 2010). Some possibilities are to buy less, recycle or borrow clothes (Todeschini / Cortimiglia / Callegaro-de-Menezes / Ghezzi, 2017) and consumers need the knowledge and resources to realise these options.

The sustainability expectations of consumers are related to their education and can be problematic for retailers if they are too high. Especially a traditional firm that was seen as a fast fashion company before will therefore have problems when changing their strategy to a more sustainable one. Although certifications help in communicating its new ethical strategy, much effort is needed to convince consumers (Ansett, 2007). Firms that started with a sustainability focus already have an innovative supply chain strategy (Todeschini / Cortimiglia / Callegaro-de-Menezes / Ghezzi, 2017) while traditional firms would have to adapt their strategy which might be costly and time-consuming. It also seems challenging for consumers to identify which firms really have a new and more sustainable focus and which of them only claim to have changed. The problem of greenwashing was already covered in chapter 2.1.2.2.

2.2.1.3 Aspects of eco-labels

According to a survey by Fashion Summit (2019), sustainable fashion is seen very differently by consumers and might have varying characteristics. The respondents named environmental aspects like not using dangerous chemicals, no pollution, reduced logistics, using organic, biodegradable and recycled materials, trying to have a minimal negative impact, biodegradable and reduced packaging as well as using technology that saves resources in the production. Aspects of the life cycle of clothes like sharing, renting, reselling, donating or repairing them were mentioned as well as second-hand, upcycling, take-back programmes and durability. Furthermore, social aspects like supporting local people and fair trade were also named by the respondents of the study (Fashion Summit, 2019), which shows how differently and wide sustainable fashion is seen. In the following paragraphs, the most important aspects are explained.

Vegan means not using leather or other animal products (Diekamp / Koch, 2010). Wool, silk, fur and feather are examples of animal products that are normally used for clothes (Black, 2011). Todeschini, Cortimiglia, Callegaro-de-Menezes and Ghezzi (2017) state that veganism reduces the needed energy because the extraction as well as the finishing of leather or other animal products consume lots of energy. Not using animal products prevents that large farms with problematic living conditions are needed for producing clothes. Wool production can be harmful too because of painful practices like mulesing that imply that some of the skin of the tail of the sheep is removed (Black, 2011).

Bio cotton indicates that no toxic non-gradable pesticides are used for growing and therefore solid and ground water are not polluted. Genetical modified crops are forbidden as well and no
toxic substances are allowed from harvesting to spinning, dyeing, finishing and the final clothing. Alternative fibres like synthetic ones are an opportunity to reduce the use of natural resources. **Natural materials** do not mean that they are necessarily organically grown. Wool, silk, cashmere, cork, bamboo, hemp, soya and alpaca are some examples for natural materials (Diekamp / Koch, 2010). Todeschini, Cortimiglia, Callegaro-de-Menezes and Ghezzi (2017) call them sustainable raw materials and list fibres that are recycled and therefore environmentally friendly in addition.

Furthermore, textiles and accessories can be produced by using **recycled materials** like plastic bottles or blankets. Another option for recycling is that textiles are reused after they were disassembled (Diekamp / Koch, 2010). **Upcycling** is another method where material that would otherwise have been thrown away, is used for a new product with at least the same quality, use and value than it had before (Dissanayake / Sinha, 2015). Clothes can be redesigned by, for example, cutting them and designing them to new textiles (Diekamp / Koch, 2010). This reduces the amount of needed resources (Todeschini / Cortimiglia / Callegaro-de-Menezes / Ghezzi, 2017).

**Second-hand** refers to already used or discarded clothes are used by different people. (Diekamp / Koch, 2010). **Take-back programmes** of shops and more durable clothes support the circular economy that (Todeschini / Cortimiglia / Callegaro-de-Menezes / Ghezzi, 2017) aims to preserve the highest possible value and use of a product or material (Webster, 2015). **Lending** and not owning clothes for a specified time is another opportunity to save resources (Todeschini / Cortimiglia / Callegaro-de-Menezes / Ghezzi, 2017).

Products can be **handmade**, which means that old and traditional handcraft techniques are pursued that are not mass-produced. Companies might develop own **projects** or support existing projects in developing or developed countries that improve the living standards of their employees or society at large. Examples are support for switching to organic farming, supporting small businesses, improving education or medical care (Diekamp / Koch, 2010).

**Fairtrade** means controlled trade with fair prices for farmers that are normally based on world market prices and should ensure a higher income for them. Also, production standards, fair wages and working hours are covered and discrimination and child labour are forbidden (Diekamp / Koch, 2010). Sweatshop-free includes transparent conditions at work and not exploiting developing countries with low wages (Todeschini / Cortimiglia / Callegaro-de-Menezes / Ghezzi, 2017). Further international social and environmental standards are covered as well (Diekamp / Koch, 2010) like investing in social projects. These social aspects require a new customer relationship management. Therefore, fashion companies often need
to change their practices of the supply chain like selecting partners, monitoring and rewarding them to be fair trade (Todeschini / Cortimiglia / Callegaro-de-Menezes / Ghezzi, 2017).

The reduction of the carbon emissions can be done through not using fossil burning but renewable energy like wind or solar energy for the production of textiles. Moreover, reducing the use of fossil burning and not using air cargo are mentioned as well as the treatment of rain or contaminated water and other environmentally friendly production methods (Diekamp / Koch, 2010). Zero waste refers to minimising waste as much as possible which fosters innovative and efficient production processes to reduce the resources that are needed (Todeschini / Cortimiglia / Callegaro-de-Menezes / Ghezzi, 2017).

Another possibility for reducing carbon emissions, is to minimise the transportation by growing cotton and manufacturing textiles in the same country or area. In addition, the production and distribution could be near to another (Diekamp / Koch, 2010) which also reduces costs that are associated with transportation. Another advantage is that local firms are supported which improves employment rates there (Todeschini / Cortimiglia / Callegaro-de-Menezes / Ghezzi, 2017).

2.2.2 Consumers and eco-labels in the fashion industry

2.2.2.1 Knowledge of eco-labels

According to Koszewska (2011), 70% of Polish consumers, who are able to identify CSR initiatives of textile manufacturers, recognise the name of the labels on clothes. Every fourth consumer in Poland bought clothes with a social or eco-label. The European Union Ecolabel is the most known one as every fifth respondent knew it. The Global Organic Textile Standard was recognised by 19% and the OEKO-TEX label by 18.2% of the Polish consumers (Koszewska, 2011).

According to a study by Fashion Summit (2019) that examined the population of Tokyo, New York, London, Shanghai and Hong Kong, 14% would be very motivated to buy sustainable clothes if they were labelled. Even half of the respondents (51%) would buy ethically to a certain extent and 23% to a small extent. Shanghai and Hong Kong were the strongest proponents in this study (Fashion Summit, 2019). This survey shows how important trustful labels are in the fashion industry as it encourages consumers to buy more sustainably.

A study with British consumers investigated which information they would need to make a better purchase decision. More than half of them (65%) listed that they want to know that children are not involved as workers, what the garments consist of (58%) and that no animal-
testing was involved in the process (53%). They also mentioned fair wages (53%) and the country of origin (46%) as important aspects. In general, 42% of the participants agreed that environmental conditions are essential, while 36% pay attention to social conditions (Market and Opinion Research International, 2005).

The aspects a label can cover according to consumers were already discussed in the section before, where they were asked in a study by Fashion Summit (2019) what sustainable fashion means to them. The Social Market Foundation (2003) found that more than half of the respondents (64%) wish to have more clear labels in order to know which products are produced socially (SMF, 2003) and environmentally responsible. As labels aim to increase the information, consumers have in relation to sellers (Kjek, 2015), they are a good way of providing people with what they need.

Consumer guides like the website “Siegelklarheit” (BMZ, 2021) by the German government, the Austrian Arbeiterkammer (2019) or the non-profit organisation Greenpeace support consumers to rate eco-labels by offering information about them. Koszewska (2011) also lists websites like Ethical Consumer, New Consumer, Ethiscore, Lift the Label or Get Ethical that provide consumers with information about stores with sustainable fashion, organic cotton and fair trade.

2.2.2.2 Effect of eco-labels on consumer behaviour
According to Moon, Costello and Koo (2017), various authors have found different effects of eco-labels. For example, Koos (2011) found that the involvement of the government and the high number of labels do not affect ethical consumption within Europe. Teisl, Rubin and Noblet (2008) found a positive effect of eco-labels as they influence if products are seen as environmentally friendly, while Brécard, Lucas, Pichot, and Salladarré (2012) found a negative one. The authors state that the high number of labels leads to confusion of consumers and they do not know which label is of best quality. Therefore, they are not able to make an educated guess and tend to choose one label based on their associations (Brécard / Luca / Pichot / Salladarré, 2012).

Koszewska (2011) states that the awareness and understanding of consumers as well as the acceptance of the labels by the business community are necessary to have successful labels in the textile industry. Kijek (2015) also points out the importance of making consumers aware of eco-labels to let them consider these brands when they decide for an option. Later on, this will lead to different buying decisions (Kijek, 2015).

Certifications are the most effective tool to make consumers buy ethically but some adaptations should be made to make them more successful (Koszewska, 2011). The OECD (1999) states
that products with eco-labels should be advertised by using better campaigns. This would make consumers more aware of sustainability and more willing to buy environmentally friendly (OECD, 1999). Taxes on harmful products can motivate people to reduce or stop buying them (Kollmuss /Ageyman, 2002) because the price is the most critical factor for a purchase decision (Wiederhold / Martinez, 2018). In general, involvement of the government improves the understanding of labels. They might ban certain products, set standards, give subsidies or increase the responsibility of producers (Horne, 2009).

2.2.2.3 Suggestion for improving eco-labels
How effective an eco-label is, depends on how its information is communicated and if consumers are able to understand and use it (Rohrmann, 2000 / Thøgersen, 2000). Therefore, this subchapter concentrates on how labels can be more successful. In a study done by UBIT and FO.FO.S. (2005), 69% of the questioned people want to be more informed about the production process and whether it is ethical or not as well as if the firm itself behaves responsibly for the society (UBIT and FO.FO.S., 2005). In a British study, 74% of the respondents agreed that their buying behaviour would be influenced to at least some extent if they were more informed about a firm’s ethics (MORI, 2003). While 60% of German interviewees were interested in information about CSR, only 25% have ever looked for it (Wirthgen / Grünewald, 2006).

Ruoh-Nan, Hyllegard and Blaes (2012) state that it would be useful for fashion brands to provide their consumers with information about the environmental-friendliness of their products. Adding this information might improve their brand image and attraction to people who are interested but not entirely engaged in environmentally friendly fashion. Reaching those people would also increase the number of environmental-conscious consumers and can be done by making them aware and getting them to know the advantages of ethical fashion brands. Addressing a higher number of consumers might make the market for eco-friendly fashion more promising and sustainable (Ruoh-Nan / Hyllegard / Blaes, 2012).

According to Lee and Geistfeld (1998) a label is more effective if consumers are able to rank similar products by their main attributes correctly. More information about a sustainability label might help consumers to identify which products are environmentally friendly (Teisl / Roe, 2005; Teisl, 2003). Additionally, more information about a label might increase its trustfulness but certain information might decrease its credibility (Teisl, 2003). The OECD (2011) recommends that the included information on labels should be specified and wrong information about environmental claims should have consequences.

The development of standards for environmental claims could make them more useful (OECD, 2011). To reduce the concerns about social and eco-labels resulting in trade barriers,
the standards of eco-labels can be harmonised. Another possibility would be that the standards for labels which are already used, are mutually recognised in agreements (MRAs). The majority of such agreements are already done for national labels and their schemes (Fliess / Lee / Dubreuil / Agatiello, 2007). Koszewska (2011) also recommends standardising certifications and harmonising the existing labels. The author adds making them more transparent.

Another suggestion is to communicate the various labels differently depending on various factors like culture, the product itself and consumers. In general, CSR actions of a firm should be presented in another way and according to the needs of consumers (Koszewska, 2011). Fliess, Lee, Dubreuil and Agatiello (2007) highlight three possible problems of the communication of eco-labels. Firstly, consumers might doubt the trustworthiness of a firm which communicates about their own sustainability actions. Secondly, the amount of information should be perfectly balanced to not give consumers the feeling of an overload but let them feel informed enough. Thirdly, the understanding of labels and their meaning are crucial and a product that is certified by more than one label (Fliess / Lee / Dubreuil / Agatiello, 2007) might lead to even more confusion.

Mejri and Bhatli (2014) also highlight the importance of communicating about the quality of labels because this increases the perceived quality by consumers. Wiederhold and Martinez (2018) recommend three major initiatives that retailers in the fashion industry could do to increase their sales of ethical clothes. They could focus on certain characteristics of their clothes, make ethical fashion more accessible and communicate in a more efficient and digital way. Making ethical fashion more attractive in terms of price and style would increase demand as well as locating their stores near traditional ones would improve their availability. Being active in social media could inspire people with the styles of the fashion brand (Wiederhold / Martinez, 2018).

2.2.3 Classification of eco-labels in the fashion industry

2.2.3.1 Environmental and social labels
In general, labels can be voluntary or mandatory and the certification can be done by an organisation that is independent or not. Mandatory eco-labels are part of a nation’s law and mostly concern devices which consume energy or water. Some examples are danger symbols, the declaration of contents, research institutions or meeting the standards (Horne, 2009). Additionally, labels can be divided into environmental and social labels (Koszewska, 2011) and both of them aim to differentiate products with higher ethical standards to traditional ones. These products are certified by private or public organisations. Social and eco-labels try to promote more environmentally friendly or social-responsible products that are comparable to
other products in their functionality and usability. Such labels became more important for consumers (Hartlieb / Jones, 2009) and the number of labels is growing (Koszewska, 2011).

Ecological or environmental aspects include a production that is environmentally friendly, recycling and bio or organic materials. (Wear Fair, 2012). The guidelines for **eco-labels** are created by international institutions like the International Organisation of Standardisation (ISO), the World Trade Organisation (WTO), the United Nations Environmental Programme (UNEP) and the European Community. The different ISO standards are described in the following section.

Social aspects include fair trade, responsibility, traceability and independent controls (Wear Fair, 2012). The ILO standards consist of rights and principles that should be ensured at work (ILO, 2021) and are additional social aspects which are also mentioned in the empirical part. **Social labels** are a newer phenomenon and there exist fewer of them in comparison to eco-labels. Social certifications focus on the labour conditions and health issues of workers (Koszewska, 2011) and mostly inform consumers about the production in developing countries. They often address niche products of export markets (Flies / Lee / Dubreuil / Agatiello, 2007) and can be categorised into five categories. They can be self-declared, an industry body, a partnership like the Forest Stewardship Council, official or led by an NGO like Fair Trade (Zadek / Lingayah / Forstater, 1998).

### 2.2.3.2 Voluntary environmental labels: ISO Type I, II and III
For about 30 years, the number of certifications for products beyond the mandatory environmental standards has increased. To make these voluntary labels more consistent (Koszewska, 2011), the International Standards Organisation (ISO), distinguishes between the three different labels Type I, II and III (ISO 1999, 2000, 2007). The ISO types are only for environmental and not for social labels (Koszewska, 2011). They are described in this subchapter as well as third-party monitoring that is an important aspect for ISO type I and III.

Monitoring systems should make sure that standards for labels are met and can be done by a third-party which is mostly the case for fair trade labels. An auditor who is independent checks if the product follows the required standards on the basis of the label’s matrix of criteria. Nevertheless, there are some downsides of third-party monitoring since the power of judging another firm is given to a third organisation and the costs may be high, especially if only a small amount of a companies' products is certified. Third-party monitoring is still seen as a guarantee that the needed standards are actually met (Commerce Équitable France, 2019).

**Type I**-labelled products are certified by a third party and are mostly referred to as eco-labelled (Horne, 2009). Such environmental labels can be used because of a certification program
which is based on certain criteria and provides qualitative information (ISO, 2000). It is mostly used for procurement and uses pass or fail criteria for the life cycle of a product (European Commission, 2008). Koszewska (2011) adds that this ISO 14024 standard includes a simplified analysis of the life cycle of the certified product and is multi-criterial. Moreover, the products can be differentiated ecologically within a product category and its reliability is seen as high (Koszewska, 2011). Examples for a Type I eco-label are the EU Ecolabel (Henninger, 2015) or Blue Angel of the German government (Horne, 2009).

Labels that are ISO Type I-like have identical criteria as Type I labels but they focus on only one aspect (like energy or agriculture) in one sector (like machines that use energy or for agriculture), while Type I labels concentrate on more aspects and sectors. Some examples for ISO Type I-like are the Rainforest Alliance label or organic labels (UNEP, 2020). The Forest Stewardship Certification is another example that only concentrates on one type of product. Other examples are the labels FSC (Forest Stewardship Council), MSC (Marine Stewardship Council), Green Globe or EnergySTAR (Horne, 2009) or not tested on animals (Koszewska, 2011).

Type II means that manufacturers as well as distributors or importers claim that they are environmentally friendly but this is not certified by a third-party that is independent (ISO, 1999). This indicates that the label is self-declared and might be a firm’s own eco-label or it might cover only one aspect (UNEP, 2020). The so-called ISO 14021 standard without an analysis of the product’s life cycle only includes selected characteristics of the product. Moreover, the products cannot be differentiated ecologically within a product category and its reliability is low (Koszewska, 2011). Examples for a Type II label are claims on the packaging of products (Henninger, 2015), CFC-free or recycled content (Horne, 2009).

Type III is defined as providing quantified information and is based on specified parameters that are determined before (ISO 2007). This information is more detailed and organised in a matrix like a nutritional table (UNEP, 2020) and the data are presented in a report that describes the life cycle of a product (Horne, 2009). The ISO 14025 standard involves a third party and the investigated categories are defined for each industry sector. The products can be differentiated ecologically within a product category. Moreover, the data are numerical and the reliability of such labels is high (Koszewska, 2011).

2.2.3.3 Other ways for the classification of eco-labels
Not only products but also the packaging, organisations or a whole industry can be certified. (Koszewska, 2011). Labels might be specific to the textile industry or can be applied to many different sectors and products (Henninger, 2015). Furthermore, Wear Fair (2012) suggests using four criteria to be sure that eco-labels have a high quality. Firstly, it is clear who pays the
costs, secondly, the initiative involves more stakeholders in the evaluation process and thirdly, the wage is high enough to live from it. The fourth aspect is that a firm transparently communicates its progress and what did not go well. Additionally, firms should publish their reports for the public (Wear Fair, 2012).

Labels can be classified according to what they cover, which refers to the addressed environmental problems, its capacity and how many products are covered. Other aspects are if stakeholder can participate, if the outcome of the environmental consumption is high and if the label is independent and accepted (Horne, 2009). The type of covered products is another way of classification as well as its geographical coverage, which means whether the label is applied only in one country, in more countries like the EU or internationally (Koszewska, 2011).

Another possibility of classifying a label is if it is independent or not (Horne, 2009). It might be developed and monitored by different actors like the retailers themselves for ISO Type II labels (ISO, 1999), by the government or by NGOs that are an independent third-party. Normally, third-party labels are developed in several steps. At first, the product is selected, then the first draft of the standards is developed and reviewed. After the final standard is ready, it is applied to the label and tests ensure that the label is certified correctly. Monitoring and licensing follow (Fliess / Lee/ Dubreuil / Agatiello, 2007).

The United Nations (2005) suggest eleven different ways of how eco-labels can be distinguished that were mostly already mentioned in the paragraphs above. They can be mandatory or voluntary, address one or more issues and target different interest groups like consumers, investors or the government. The labels might cover one or more industry sectors, the geographical scope might be local or international and the impact can concern only production, consumption or the whole life cycle of the product. The setting of criteria can be based on information, a rating of leadership as well as on environmental, economic and social aspects. The criteria can be for the outcomes or processes. Another possibility would be to measure the impact of only one product, more activities or a whole production facility. Moreover, the adherence to the standards can be controlled by a firm itself, a third or second party (United Nations, 2005).

The Commerce Équitable France (2019) provides another way of classifying eco-labels that ranks them in four dimensions, namely economic, social, environmental and governance criteria. Economic criteria include traceability, long-term focus of buyers, financing beforehand, a fair price and investing into projects for the group. Social criteria refer to the International Labour Organizations’ standards, fair wages, equal rights for all workers and rules for maternity leave, sick days and retirement. Environmental criteria mean a reduced impact on the
environment, a protected biodiversity and no dangerous substances or genetically modified organisms. The governance criteria include monitoring, collective decision-making, no discrimination and transparency (Commerce Équitable France, 2019). These four dimensions are used as a basis for the own classification.

Henninger, Alevizou and Oates (2016) recommend that firms use a matrix where they can highlight which aspects of sustainable fashion they use for their products. They can also state how important each aspect is for them and if they are monitored by an independent organisation. The aspects they listed, based on literature and a survey, are ethical design, fair trade, no harmful chemicals or substances, environmentally friendly standards and fair conditions for workers. They also mention being innovative, sourcing ethically, producing locally, using certain techniques for production (like recycling or upcycling), being transparent and long-term focused, using renewable or environmentally friendly materials, supporting the community, less transport, but still being profitable (Henninger / Alevizou / Oates, 2016).

Henninger (2015) has developed a scheme that rates if labels are only for textiles or for more industries and then checks if certain aspects are covered by the label. This includes the assessment of the life cycle, supply chain, raw materials and the production. The reduction of used water and energy, CO2 emissions, deforestation, the use of toxic substances, labour conditions, cultivated raw materials, a sustainable production, the treatment of the product at its end-of-life, fair trade, the eco-friendliness of textiles and the protection of the environment are also checked by the author.
3. Methodology

This section explains the methodology of the empirical part, which includes the argumentation and explanation of the chosen research strategy and how the sample was selected. The way of data acquisition and analysis follows and the last chapter describes how the quality criteria are ensured for this thesis.

3.1. Research Strategy

Mayring (2007, 2010) defines four research designs, namely explorative, correlational, causal and descriptive. Saunders, Lewis and Thornhill (2007) divide the research purpose into exploratory, explanatory and descriptive. The last approach means that a phenomenon is described in an objective way (Saunders / Lewis / Thornhill, 2007), which is selected for this thesis, as the categorisation of labels implies describing them in a structured way. The descriptive approach of a content analysis (Sandelowski / Barosso, 2003) was selected because it is a suitable way for developing categories that is the aim of this thesis.

A qualitative approach is chosen because an abstract idea is illustrated and it provides rich and detailed data (Gräbner / Martin / Roundy, 2012). This is very relevant to this thesis because in order to classify labels, qualitative data that are detailed provide a good basis to understand them better. Content analysis can be quantitative or qualitative, depending on what is analysed (Abrahamson, 1983). The qualitative content analysis tries to use the advantages of the quantitative content analysis too which includes analysing the material in an organised way and with rules in mind. Moreover, categories are analysed and the procedure is reliable, comprehensible and therefore also comparable with other studies (Mayring, 2000).

This thesis uses the qualitative content analysis of Mayring (2000) that analyses texts and their context. Possible options for the research design of a qualitative content analysis are explorative, descriptive, relational, causal and mixed designs. As already stated at the beginning of this sub-chapter, a descriptive research design is used. Furthermore, the categories are deductively created (Mayring, 2000) and it is investigated if these categories occur or not (Mayring, 2014). Regarding the analysing technique, Mayring (2003) differentiates between structuring, summary and explication. For this thesis, a structuring qualitative content analysis is used because it tries to structure the investigated material.
3.2. Sample Selection

Mayring (2003) formulates eight steps for a structured qualitative content analysis that are shown in figure 1, which is oriented on quantitative research. The first step is the **definition of the unit of analysis** (Mayring, 2003). For the selection of the eco-labels, purposive sampling is used, which means that it is judged which samples can answer the research question the best (Saunders / Lewis / Thornholl, 2007). The selected eco-labels are well-known and have different characteristics to be able to develop an extensive categorisation scheme. They are only for textiles or more products, are founded in other years, the organisation behind the labels is governmental or independent and social aspects are covered to a small or great extent.

The common characteristics are that the selected labels are all ISO I-classified by an institution and cover social as well as environmental aspects of products. The focus of this thesis is on Europe and the selected voluntary labels are applied internationally. Furthermore, the aim of this thesis is not to put all labels into this categorisation but to provide a scheme that can be applied to eco-labels in general. To make sure the selected labels are well-known, five labels were chosen that appeared very often in the scanned literature (Greenpeace, 2018, Diekamp / Koch, 2010, Henninger, 2015, Koszewska, 2011, Öko test 2010, Hahn-Petersen, 2018, Horne, 2009, Fair Wear Foundation, 2020) and at the website “Siegelklarheit” (BMZ, 2021). The selected labels are:

- GOTS
- EU Ecolabel
- Fairtrade Cotton
- Blue Angel
- OEKO-TEX Made in Green
3.3. Data Acquisition

Qualitative content analysis is able to interpret every communication that is recorded. This includes protocols, transcripts, videos and documents (Mayring, 2000). For this thesis, documents are used as samples because the developed categorisation should be applicable by everyone and information of a label’s website should be accessible. The website “Siegelklarheit” (BMZ, 2021) is also used because it looks for information at the label’s website and puts it in their own scheme and is therefore a good basis for the own categorisation. The information is checked in six steps by independent consultants and therefore seen as reliable. The exact process can be found at the homepage (BMZ (Bewertungsmethodik), 2021).

Step two of Mayring (2003) is the **definition of structural dimensions** that should be based on theory. This thesis uses the dimensions that were identified in the literature review. According to Dahlsrud (2008) CSR should consist of five dimensions: environmental, social, economic, stakeholder and voluntary. All selected labels are voluntary and it is assumed that the retailers that certify their products aim to be still profitable. Moreover, environmental, social
governance and life cycle criteria that ensure that the stakeholder interests are met, were chosen as structural dimensions. These four dimensions consist of categories. For example, the governance dimension consists of independent monitoring, regular monitoring, traceability, consistent standards, transparency and collective decision-making. These categories consist of sub-categories to better evaluate if one category is completely, partly or not fulfilled. For example, transparency consists of three sub-categories – namely the standard is free for public, the proofing entities are transparent and the conformity proof is transparent.

In step three the forms that are based on theory are defined and the category system is developed (Mayring, 2003). The sub-categories can be fully (3), partly (2) or not fulfilled (1) as well as not found (0). For example, ideally, carbon emissions are reduced (completely fulfilled) while only the monitoring of them is a good starting point (partly fulfilled). When some of the sub-categories are fulfilled and some are not, the category is partly fulfilled. This makes it possible to have an overview about the categories and also know the reasoning behind this assessment. There are 29 categories (five for life cycle, six for governance, nine for environmental and nine for social) with one to five sub-categories. For the categories, some that appeared in literature were not used because they cannot be found for any of the five selected labels. The most important skipped categories are described in the discussion section.

In step four Mayring (2003) suggests to formulate coding rules, definitions and anchor examples to every single category. The definitions for every sub-category were formulated in an Excel sheet. The anchor examples were not so important for this research as for most categories the website “Siegelklarheit” (BMZ, 2021) was used which already provides a “yes” or “no” for the sub-categories based on the label’s website. Nevertheless, the wording that led to the categorisation was added for every sub-category to be able to have objective findings. The coding rules were already explained in step three as fully fulfilled, partly fulfilled and not fulfilled. Not found was integrated as well and these coding rules were defined for every sub-category in an Excel sheet. In general, every sub-aspect of one category must be completely fulfilled to make this category completely fulfilled too.

As step five Mayring (2003) defines looking through the material and specify where relevant text passages were found. This includes having a look at the literature review and marking the relevant text passages that are the basis of the dimensions and categories. Some categories and especially the sub-categories were then added after looking through “Siegelklarheit” (BMZ, 2021) because the data can be easily found there and are provided in a structured way. Therefore, it can be assured that the sub-categories are found for the labels.
The used sub-categories of “Siegelklarheit” (BMZ, 2021) were presented in a diagram to see which information was used from the website.

3.4. Data Analysis

Categories for content analysis can be inductive, deductive or both (Strauss, 1987). Abrahamson (1983) describes inductive coding as studying the selected documents and name the themes which seem important. Deductive means that categories are identified in theory and the selected documents are put into these categories. In many cases, the strategies are combined (Abrahamson, 1983). Saunders and Alvesson (2011) suggest to at first look for already existing theories and then base the research on this categorised information. This thesis starts with deductive categories that are based on the literature review. In the next step, the website “Siegelklarheit” (BMZ, 2021) that uses the information of the label’s homepages itself, is scanned for additional inductive categories, which then were added.

The sixth step is looking through material again and extract and work through the relevant text passages (Mayring, 2003). Saunders, Lewis and Thornhill (2007) suggest that data are shown in tables and graphs which was done for the labels themselves as well as to show which categories are fulfilled the most and least by all labels. According to Berg (2001) there are different units of analysis like phrases, words, paragraphs, writers or subject topics. This thesis concentrates on the last aspect as topical structuring is needed to understand labels and what they cover.

Step seven is the revision of the category system and definition (Mayring, 2003). It can be possible that an adaption of the instruments or the research question itself is needed during research. Nevertheless, it is important to note that the same accuracy is needed for the new research setting (Mayring, 2014) and therefore, this thesis started with two labels and then modified the categorisation again to make it more suitable. The last step is the presentation of results (Mayring, 2003) that is done to answer the research question. For a better overview, spider charts are used to show the fulfilment of the categories for the five selected eco-labels. The values can be only 0, 1, 2 or 3 but they were relocated a bit to prevent that they overlap.

3.5. Quality Criteria

Mayring (2014) mentions validity, objectivity and reliability as important quality criteria in general. Validity is not seen as problematic in qualitative research as it is theory-based and
tends to be close to daily life which increases validity. Objectivity indicates that the results are independent of the researcher, which is difficult to ensure in qualitative research. Reliability is ensured by using clear rules for the research procedure. The documentation of the process of this thesis aims to make the analysis more reliable. The inter-coder reliability and intra-coder agreement are mentioned as most important quality criteria for qualitative content analysis (Mayring, 2014) and were also ensured for this thesis. **Inter-coder reliability** refers to reproducible results which means that different conditions lead to equal results. It can be ensured by an accurate and clear description about the research process which would also make the results independent of the person who interprets the data. **Intra-coder agreement** implies stable results and can be ensured if the research instruments are used for a second time to analyse the material again. Hence, the reliability can be increased (Mayring, 2014) which was why this strategy was used for this thesis.
4. Findings for the investigated labels

This chapter describes what was found for the five investigated eco-labels and which categories they fulfil. A short overview about the key facts of the labels helps to understand them better and then the fulfilment of the structural dimensions for the eco-labels follows. These dimensions consist of life cycle, governance, environmental and social categories that are described as well as the fulfilment of their sub-categories. The figures of this section aim to give the reader a better overview about the eco-labels and which categories they fulfil.

4.1 Overview

As already defined in the methodology, the five selected eco-labels are GOTS, the EU Ecolabel, Fairtrade Cotton, Blue Angel and OEKO-TEX Made in Green. Two of the labels are textile-specific, namely GOTS and OEKO-TEX Made in Green, and the other three labels certify other products as well. Blue Angel and the EU Ecolabel are both ISO Type I labels (Koszewska, 2011), which is assumed for the other labels too but not found in literature. All labels are internationally applied and founded in different years. According to their homepages, Blue Angel exists since 1978 (RAL / Blue Angel, 2020), the EU Ecolabel since 1992 (Koszewska, 2011) and the other labels are quite new. The label OEKO-TEX Made in Green exists since 2014 but the organisation OEKO-TEX was founded in 1992 (OEKO-TEX Service GmbH, 2021). Fairtrade Cotton exists since 2007 in Germany (Fairtrade International, 2020) and GOTS, which stands for Global Organic Textile Standard, was founded in 2002 (Global Standard gGmbH, 2020).

Fairtrade Cotton is owned by the Fairtrade Labelling Organizations International and the label OEKO-TEX Made in Green belongs to the OEKO-TEX Association. Blue Angel is owned by the German Federal Environment Ministry and the EU Ecolabel is implemented by the European Commission and the EU member states (Siegelklarheit, BMZ, 2020). The Global Standard non-profit limited liability company owns the label GOTS (Global Standard gGmbH, 2020). Table 2 summarises these findings for a better overview.

The rating of “Siegelklarheit” (BMZ, 2021) indicates the coverage of an eco-label regarding the environmental, social, governance and overall aspects. For OEKO-TEX Made in Green, it is rated very good for social, environmental and governance aspects as well as in total. GOTS and Blue Angel fulfil the social acceptability category with the rating good and the other categories as very good. Fairtrade Cotton is very good in every category except for environmentally friendliness where it does not cover all minimum requirements. The EU Ecolabel does not fulfil all needed requirements for social acceptability but is rated very good for all other aspects.
In total, the governance dimension for all categories and labels is 2.91 which is very high and means that nearly all categories are completely fulfilled by all labels (3 means completely fulfilled). The total mean for the environmental aspects is 2.25 and for the social aspects it is 2.32 which is quite high. The mean for the five stages of the life cycle that are identified at the “Siegelklarheit” website (BMZ, 2021) is 2.04 which is medium. The rating of “Siegelklarheit” (BMZ, 2021) that is based on a governance, environmental, social and overall rating for all labels is 2.75 in total which is very high. The five dimensions are summarised for the five eco-labels in figure 2. The life cycle, governance, environmental and social aspects are covered in more detail in the next sections and are the basis for the categorisation of the labels.

<table>
<thead>
<tr>
<th>Owning organisation</th>
<th>Fairtrade Cotton</th>
<th>GOTS</th>
<th>Blue Angel</th>
<th>OEKO-TEX Made in Green</th>
<th>EU Ecolabel</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Owning organisation</strong></td>
<td>Fairtrade Labelling Organizations International (Siegelklarheit, BMZ, 2020)</td>
<td>Global Standard non-profit limited liability company (GOTS Homepage)</td>
<td>German Federal Environment Ministry (Siegelklarheit, BMZ, 2021)</td>
<td>OEKO-TEX Association (Siegelklarheit, BMZ, 2021)</td>
<td>European Commission and member states (Siegelklarheit, BMZ, 2021)</td>
</tr>
<tr>
<td><strong>Year of foundation</strong></td>
<td>2007 (in Germany)</td>
<td>2006</td>
<td>1978</td>
<td>2014</td>
<td>1992</td>
</tr>
<tr>
<td><strong>Textile-specific label</strong></td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Table 2: Overview of the investigated eco-labels (own illustration based on the label’s homepages and “Siegelklarheit” (BMZ, 2021))

Figure 2: Overview of five structural dimensions of the eco-labels (own illustration based on findings)
4.2 Life cycle categories

In the literature review, three different ways of classifying the life cycle of the textile industry were presented with seven or eight stages. Madsen, Hartlin, Perumalpillai, Selby and Aumônier (2007) have analysed the environmental and social impact of every stage of the life cycle of textiles. Their eight stages were reduced to five according to “Siegelklarheit” (BMZ, 2021) by putting together the two stages fibre production as well as clothing production and garment assembly into one stage, namely production of garments and finished clothes. The packaging, distribution and retail is only one stage in the empirical part. The reduced number of stages makes it easier to identify which are covered by the investigated label. This is very important for having an overview about a label because some of them might only cover one aspect. The following five life cycle stages emerged with the mean value for the five selected labels:

- Raw material production (mean: 1.4)
- Production of garments and finished clothes (mean: 2.6)
- Transport/retail (mean: 2.1)
- Use (mean: 1.8)
- Recycle/waste (mean: 2.2)

When the labels are compared, the covered stages of the life cycle are the most different dimension (mean ranges from 1.4 to 2.6). No label fulfils all stages but at least one and not more than four. Fairtrade Cotton only covers the raw material production because it is only about the growing of cotton. Transport/retail is only covered by GOTS and not by the other four eco-labels. Moreover, all labels except OEKO-TEX Made in Green cover the raw material production. The second stage, the production of garments and finished clothes as well as the use stage, are covered by all labels except Fairtrade Cotton. Recycle/waste is not covered by any label. The figure below gives an overview about the fulfilment of the five life cycle stages by the labels. They are displaced for a better overview but can only be 1 (not fulfilled) or 3 (completely fulfilled) for this dimension.
4.3 Governance categories

Governance is the second structural dimension that was defined beforehand and is based on the Commerce Équitable France (2019). They identified monitoring, collective decision-making, no discrimination and transparency as governance criteria. These criteria were then modified by excluding discrimination as it is already part of the social dimension, and including traceability, which was identified by the Commerce Équitable France (2019) as an economic dimension. The problem that retailers often do not know which working conditions exist in the production facilities of their contractors (Koszewska, 2011) is included in the category traceability. It should be ensured that information about the supply chain units exists to make it easier to monitor and control them. Consistent standards that can be interpreted in a consistent way were added after reviewing the “Siegelklarheit” website (BMZ, 2021). Monitoring was separated into two categories: independent and regular monitoring at least every five years after scanning “Siegelklarheit” (BMZ, 2021). The final six categories with their mean values are:

- Independent monitoring (mean: 3)
- Regular monitoring (mean: 3)
- Traceability (mean: 3)
- Consistent standards (mean: 3)
- Transparency (mean: 3)
- Collective decision-making (mean: 2.73)
Independent monitoring refers to the implementation by a third-party, which means that an independent auditor checks if the required label standards are followed (Commerce Équitable France, 2019). For the empirical part, it was investigated, if the conformity proof is done by an independent third-party as well as if the standard-setting and certified firms are independent (BMZ, 2021). Regular monitoring states that the standard requirements are proofed at least every five years and changed if necessary (BMZ, 2021). Traceability refers to a system that makes it possible to have information about the single units of the supply chain (BMZ, 2021). Consistent standards means that the standard requirements ensure a consistent interpretation and the requirements consist of precise information about the needed proof to fulfil them (BMZ, 2021). These four categories do not consist of sub-categories and were completely fulfilled by all five eco-labels.

Transparency consists of three sub-categories. Firstly, if the standard requirements (with criteria of contracting and all relevant supporting documents for a conclusive interpretation) are accessible. Secondly, if a list of the approved authorities is accessible and thirdly, if the methodology and processes of the conformity proof are transparent (BMZ, 2021). These three sub-categories were completely fulfilled by all five labels. Figure 4 summarises these findings as well as the fulfilment of the other five categories by all labels. For the collective decision-making, the lines in the figure were displaced to show that four of the labels completely fulfil this category.

OEKO-TEX Made in Green does not completely fulfil the sixth category, collective decision-making which consists of three sub-categories. Firstly, if interest groups can participate in the standard setting process, which is completely fulfilled by every investigated label. Secondly, if those who are directly affected by the standard can participate and thirdly, if the voting processes for adopting standards includes balanced interest groups (BMZ, 2021) to make sure that the interests of all stakeholders are met. The second and third sub-category were completely fulfilled by every label except OEKO-TEX Made in Green that did not cover these two aspects. This category as well as the three sub-categories are shown in figure 5.
4.4 Environmental categories

4.4.1 Environmental main categories

The third structural dimension consists of the environmental aspects, which are described in nine categories. Most of the categories are part of the chapter 2.2.1.3 Aspects of eco-labels and only three of them were not used as a category. Second-hand and vegan were not relevant for the investigated labels and to produce near the retailer (minimise transportation) was not found. Two additional categories were added from the chapter 2.1.1.3 Social and ecological problems in the textile industry, namely dirty water management and resource-efficiency of energy and water. In general, the ecological problems of the literature review are addressed
in the categorisation. After analysing “Siegelklarheit” (BMZ, 2021), two additional categories were added, namely environmental management and the high quality of the product which was also identified as an important aspect of sustainable fashion for consumers (Fashion Summit, 2019). Therefore, the nine identified categories and their mean value for the five labels are:

- No dangerous chemicals (mean: 3)
- High quality (mean: 3)
- Materials used (mean: 2.54)
- Dirty water management (mean: 2.33)
- Resource-efficiency (mean: 2)
- Waste in general (mean: 1.95)
- Recycling (mean: 1.9)
- Reduced emissions (mean: 1.8)
- Environmental management (mean: 1.74)

In general, OEKO-TEX Made in Green is rated the highest for the environmental dimension (2.75 in total), while the other labels are between 1.88 and 2.22 in total. The highest rated category is no dangerous chemicals which is completely fulfilled by all labels. High quality was covered by every label except Fairtrade Cotton which does not certify the end product in general. The used materials are rated very high (2.54 in total) as well although only Blue Angel uses more than 90% bio cotton and therefore is the only label that completely fulfils this sub-category.

The lowest rated category is environmental management (1.74 in total) and the EU Ecolabel does not cover any of the sub-categories. OEKO-TEX Made in Green covers nearly every sub-category completely and the other three labels only completely fulfil one sub-category. Reduced emissions are very differently covered by the labels (1.8 in total). Recycling is rated very low in general (1.9 in total) too and Blue Angel and the EU Ecolabel only cover one sub-category. Only OEKO-TEX Made in Green fulfils all four sub-categories of recycling completely.

The other three categories are medium rated (1.95-2.33 in total). The category waste in general (in total: 1.95) is not covered at all by Blue Angel and nearly completely fulfilled by OEKO-TEX Made in Green as the burning of waste is only reduced and not forbidden and therefore partly fulfilled. Resource-efficiency (2.0) is not fulfilled by Blue Angel as well, while OEKO-TEX Made in Green fully covers this category. Dirty water management (2.33) is completely fulfilled by OEKO-TEX Made in Green and nearly fully covered by the EU Ecolabel.

Figure 6 gives an overview about the nine environmental categories and their fulfilment by the
investigated eco-labels. As the used material and quality could not be found for Fairtrade Cotton, they are rated with 0.

![Environmental categories](image)

**Figure 6: Environmental categories for the eco-labels (own illustration based on findings)**

### 4.4.2 Environmental sub-categories

**High quality** is the only category without sub-categories and stands for testing the product for friction, sweat, light and water durability. **Reduced emissions** consist of the reduction of emissions and the application of the criteria for the whole production (BMZ, 2021). If the criteria are only for some production steps, it is partly fulfilled. The emissions are reduced for Blue Angel but only monitored for the EU Ecolabel, which means it is partly fulfilled. The other three labels do not cover this sub-category. The second sub-category is not covered by GOTS and not found for Fairtrade Cotton. It is partly fulfilled by Blue Angel, which indicates that the criteria are applied only for some parts of the production. OEKO-TEX Made in Green and the EU Ecolabel completely fulfil this sub-category.

**Resource-efficiency** is divided into two sub-categories, namely the efficient use of water and efficient use of energy in the production stage (BMZ, 2021). Efficient use of water (mean: 1.6) was only fully covered by OEKO-TEX Made in Green and partly fulfilled by Fairtrade Cotton, which means that it is only a recommendation. The other three labels do not cover this sub-category. For energy-efficiency (mean: 2.4), only Blue Angel does not cover this sub-category and Fairtrade Cotton partly fulfils it because it is only for a transition period and not immediately binding. The other three labels completely fulfil this aspect. Figure 7 summarises the findings for the eco-labels in the three categories high quality, reduced emissions and resource-efficiency. They are in one figure because these categories have only two or no sub-category
and separate figures are not suitable for this kind of presentation. Some values are below 1 which means that the information could not be found.

The category **no dangerous chemicals** consists of four sub-categories, namely the ban of chemicals that harm the environment, the health or other dangerous chemicals as well as the proof of chemical residues (BMZ, 2021). Every label fulfils every sub-category except Fairtrade Cotton where the proof of chemical residues was not found because the label does not certify end products. Another very highly rated category is the **used materials** which consists of three sub-categories. Bio indicates that more than 90% are bio cotton (mean: 1.75), which is fulfilled
by Blue Angel. If it is between 50% and 90%, it is partly fulfilled, which was found for GOTS. The EU Ecolabel and OEKO-TEX Made in Green do not fulfil this sub-category and it was not found for Fairtrade Cotton. The use of natural materials and synthetic fibres are the other two sub-categories and are fulfilled by every label but not found for Fairtrade Cotton. Figure 8 summarises the findings for the sub-categories of the used materials.

The lowest category is the **environmental management** which consists of three sub-categories. Firstly, there are criteria to ensure that all relevant environmental laws (of the country, region) are followed (BMZ, 2021) (mean: 2.2), which is not fulfilled by GOTS and the EU Ecolabel but completely fulfilled by the other three labels. Secondly, there should be an assessment of the environmental risk of production (BMZ, 2021) (mean: 1.4) which is only completely fulfilled by OEKO-TEX Made in Green and not fulfilled by the other four labels. The last sub-category means that criteria to minimise the negative effects for the environment exist before production starts (BMZ, 2021) (mean: 1.6). This is partly fulfilled by OEKO-TEX Made in Green which indicates that it is only a recommendation and completely fulfilled by GOTS. The other three labels do not fulfil this sub-category. Figure 9 shows the fulfilment of the three sub-categories of the environmental management for the investigated eco-labels.

**Recycling** consists of four sub-categories. Firstly, recycled fibres can be used, which is completely fulfilled by every label except Fairtrade Cotton, where it does not seem to be relevant. Secondly, recycled packaging is used (mean: 2), which is very different as it is fulfilled for GOTS and OEKO-TEX Made in Green but not covered by Blue Angel and the EU Ecolabel. For Fairtrade Cotton, it is not found. Thirdly, criteria for waste separation exist, which is completely fulfilled by OEKO-TEX Made in Green and partly fulfilled for Fairtrade Cotton, which means that it is only for a transition period and not immediately binding. The other three labels do not fulfil this sub-category. The last sub-category are the criteria for the recycling of waste (BMZ, 2021) which are mostly not covered as this sub-category is only completely fulfilled by OEKO-TEX Made in Green. This is shown in figure 10 that summarises the four sub-categories of recycling for the selected eco-labels.
Waste in general consists of four sub-categories and reducing the amount (mean: 2.2) is not covered by Blue Angel but fully covered by GOTS and OEKO-TEX Made in Green. Fairtrade Cotton and the EU Ecolabel partly fulfil the sub-category as they only monitor the amount of waste. Secondly, the amount of toxic waste should be reduced which is fulfilled quite differently by the labels. Blue Angel does not fulfil it, while Fairtrade Cotton and GOTS partly fulfil it because they only monitor the amount. OEKO-TEX Made in Green and the EU Ecolabel completely fulfil the reduction of toxic waste. Thirdly, criteria for waste management in general are fully covered by OEKO-TEX Made in Green and are partly fulfilled by Fairtrade Cotton, which means that it is only for a transition period and not immediately binding. The other three labels do not cover this sub-category. Lastly, burning waste should be forbidden which is not
covered by Blue Angel and partly covered by the other four labels because it is only limited. Figure 11 summarises the findings for the sub-categories of waste in general.

**Dirty water management** indicates that the volume of dirty water (per production unit) is limited (mean: 1.8) which is completely fulfilled by OEKO-TEX Made in Green and only monitored by Fairtrade Cotton and the EU Ecolabel. GOTS and Blue Angel do not fulfil this subcategory. Secondly, the limit of dirty water parameter should be for all production steps. This is fulfilled for all labels except for Fairtrade Cotton, where it was not found and does not seem relevant. Moreover, the third sub-category dirty water is made drinkable again (mean: 2.4) is not covered by GOTS while Fairtrade Cotton only covers it for a transition period which means that it is not immediately binding (partly fulfilled). The other three labels completely fulfil this third sub-category which can be seen in figure 12 that summarises the findings for dirty water management.

![Figure 11: Waste in general and its sub-categories for the labels (own illustration based on findings)](image)

Figure 11: Waste in general and its sub-categories for the labels (own illustration based on findings)
4.5 Social categories

4.5.1 Social main categories

The fourth structural dimension covers the social aspects that consist of nine categories. Like the environmental dimension, they are based on the literature review and focusing on the chapter 2.2.1.3 Aspects of ethical labels. Only the aspect handmade was not used as a category as it seemed not essential and was not found. The additional category worker rights was added from the chapter 2.1.1.3 Social and ecological problems in the textile industry. In general, most of the social problems of the literature review are addressed in the categorisation. After analysing “Siegelklarheit” (BMZ, 2021), two additional categories were added, namely no forced labour as well as legality and no corruption, as they seemed essential to be socially acceptable. This means that the following nine categories emerged:

- No Child labour (mean: 3)
- No forced labour (mean: 3)
- Worker rights (mean: 2.87)
- Working hours (mean: 2.6)
- No discrimination (mean: 2.47)
- Legality and no corruption (mean: 2)
- Labour conditions and safety (mean: 1.98)
- Fair wages (mean: 1.8)
- Social projects (mean: 1.12)
In general, OEKO-TEX Made in Green is rated the highest for the social dimension (2.72 in total) and Fairtrade Cotton is also rated very high (2.63 in total). The lowest rated label is the EU Ecolabel with 1.74 while GOTS (2.39) and Blue Angel (2.09) are medium rated which underlines that the labels are very different in total. The **highest rated** categories are no child and no forced labour that are fully covered by every label. The worker rights are very highly rated too (2.87 in total) and every sub-category is completely fulfilled except the written contract that is not covered by the EU Ecolabel. The limit of working hours (2.6 in total) is fully covered by every label except the EU Ecolabel that does not cover it. The category no discrimination (2.47 in total) consists of three sub-categories and the two most important ones (same wages and no discrimination in general) are completely fulfilled by every label.

The **lowest rated** category is social projects (mean: 1.12) because most sub-categories are not fulfilled. Fair wages (mean: 1.8) as well as labour conditions and safety (mean: 1.98) are covered very differently. While the EU Ecolabel does not cover any category and Blue Angel only one sub-category, OEKO-TEX Made in Green covers nearly all of them completely. Legality and no corruption (2.0 in total) are not fulfilled at all by Blue Angel and the EU Ecolabel but are completely fulfilled by Fairtrade Cotton and OEKO-TEX Made in Green. All categories and their fulfilment by the eco-labels can be seen in figure 13.

![Social categories](image)

**Figure 13:** Social categories for the eco-labels (own illustration based on findings)

### 4.5.1 Social sub-categories

For three categories, no sub-categories were defined: working hours, no forced and no child labour. **Working hours** mean that the maximum average working time is 8 hours daily, 48 hours weekly and maximum twelve voluntary and paid overtime hours per week (BMZ, 2021).
No forced and no child labour mean that they are forbidden which is defined in ILO paragraphs (BMZ, 2021). Legality and no corruption is divided into two sub-categories, namely criteria for preventing corruption and criteria which make sure that the business is legal (BMZ, 2021). The first aspect is fully covered by Fairtrade Cotton, GOTS as well as OEKO-TEX Made in Green and not covered at all by Blue Angel and the EU Ecolabel. Legality criteria are only completely fulfilled by Fairtrade Cotton and OEKO-TEX Made in Green. The other three labels do not cover this sub-category. The two categories working hours as well as legality and no corruption are shown for the eco-labels in figure 14 to show the different coverage.

The worker rights, one of the highest-rated categories, consists of three sub-categories. The two sub-categories freedom of association and collective bargaining should be fulfilled according to ILO and are covered by all five labels. The third sub-category, a written and legal contract, should exist for the employees (mean: 2.6) and is not covered by the EU Ecolabel. No discrimination means that everyone gets the same wage, no discrimination exists according to ILO and thirdly, the right for maternity leave exists. The last sub-category is partly fulfilled by Fairtrade Cotton and OEKO-TEX Made in Green, which implies that some aspects of ILO are fulfilled. The other three labels do not cover maternity leave at all. The different coverage of the worker rights can be seen in figure 15 while figure 16 shows this difference for the category no discrimination.

![Working hours, legality and no corruption](image)

Figure 14: Working hours and legality and no corruption for the labels (own illustration based on findings)
Social projects, the lowest category, consists of four sub-categories. Three of them are preferred buying of local materials, preferred recruiting of local people and preventing negative effects regarding the availability and access to the resources for the local community (especially water and land). These three sub-categories are not fulfilled by any of the five eco-labels. The fourth aspect is investing in the development of the local community and is partly fulfilled by Fairtrade Cotton and OEKO-TEX Made in Green. This is shown in figure 17.

Fair wages consists of five sub-categories and a wage that secures the living (mean: 1.2) is only partly fulfilled by OEKO-TEX Made in Green because it is a recommendation and not fulfilled at all by the other four labels. A statutory minimum wage is not covered by Blue Angel as well as the EU Ecolabel and fully covered by the other three labels. The same coverage can be seen regarding the punctual payment of the wages (mean: 2.2). The fourth sub-category, paid vacation or sickness, is only completely fulfilled by OEKO-TEX Made in Green and partly fulfilled by Fairtrade Cotton, which covers only one of the two aspects. The other three labels do not cover this sub-category at all. The payment of extra hours is the fifth sub-category and fully covered by GOTS and OEKO-TEX Made in Green but not covered by the other three labels. This category and their sub-categories are summarised in figure 18.
Labour conditions and safety is described in four sub-categories. Ensuring safety at work indicates that activities for protecting the workers and preventing accidents at work exist (BMZ, 2021). This is fully covered by Blue Angel and not covered by GOTS and the EU Ecolabel. Fairtrade Cotton and OEKO-TEX Made in Green partly fulfil this sub-category as they only cover some aspects of ILO (mean: 1.8). Criteria for the building safety are mostly not covered. OEKO-TEX Made in Green is the only label that completely fulfils this sub-category and it was not found and relevant for Fairtrade Cotton (mean: 1.5). The third aspect, basic hygiene means that access to water and a toilet are guaranteed which is not covered by Blue Angel and the EU Ecolabel but completely fulfilled by the other three labels (mean: 2.2). The prohibition of harassment at work (mean: 2.2) is not fulfilled by Blue Angel and the EU Ecolabel, not found.
for Fairtrade Cotton and completely fulfilled by GOTS and OEKO-TEX Made in Green. The ratings for the eco-labels of these four sub-categories are shown in figure 19.

![Fair wages](image1)

**Figure 18: Fair wages for the labels (own illustration based on findings)**

![Labour conditions and safety](image2)

**Figure 19: Labour conditions and safety for the labels (own illustration based on findings)**
5. Discussion of the results

This section analyses the findings and tries to interpret the categories, eco-labels and how the categorisation can be used by consumers. At first, the categories that were completely or not at all fulfilled are described as well as the ones that could not be found. The Kano model is then applied to the categories as an alternative way of interpreting them and the second sub-chapter interprets the investigated eco-labels. Moreover, the opportunities of the developed categorisation and how it might be useful for consumers, are also discussed.

5.1 Interpretation of categories for eco-labels in the fashion industry

5.1.1 Categories that are completely or not at all fulfilled

Based on the findings, there are some categories that are fulfilled by all labels and some are not fulfilled by any label. For example, the life cycle stage raw material production is covered by every label and recycle/waste by none of them, while the stage transport/retail is only covered by GOTS. This makes the three life cycle stages raw material production, production of garments and finished clothes as well as use to the most covered ones.

The governance categories independent and regular monitoring, consistent standards transparency and traceability are fulfilled by every label, which is especially important as they are the basis for a trustful eco-label. If the monitoring is not independent, labels are not as trustworthy as it might be for greenwashing (Niinimäki, 2015) and there is no guarantee that the needed standards are actually met (Commerce Équitable France, 2019). One example would be labels by the retailers themselves where consumers are sceptical about their claims (Wiederhold / Martinez, 2018). Hence, if the monitoring is not done regularly and the standards are not consistent, the quality of the label is reduced. Furthermore, transparency is important to prevent greenwashing (Niinimäki, 2015) and not being traceable means that important information for consumers is missing.

For the environmental aspects, the category no dangerous chemicals is covered by every investigated label. It is one of the most important categories since it also includes the ban of any harmful chemicals and therefore improves the working conditions. Testing the end product for its quality is another important aspect that is covered by every label except Fairtrade Cotton that does not consider the end product in general. As most of the waste is produced in the use and disposal stage (American Fiber Manufacturers, 1993), high-quality and durable clothes (Niinimäki, 2014) can decrease this negative effect on the environment because of their extended lifespan. The sub-categories natural fibres that are tested for agrochemical residues and the use of recycled fibres are fulfilled by every label. There is no category that is fulfilled
by no label but two sub-categories are only fulfilled by one label, namely recycling waste and environmental risk assessment.

For the social aspects, the two important categories no child and no forced labour are fully covered by every label. Some categories are completely covered by every label except the EU Ecolabel that does not seem to be focusing on social aspects according to their homepage (RAL / EU Ecolabel, 2020). These categories are the worker rights and the limit of the working hours that are assumed to be essential for ensuring good labour conditions. The sub-categories no discrimination and same wages are fully covered by every label. There is no category that is fulfilled by no label but for social projects only two labels partly fulfil one sub-category. Wages that secure the living are only partly covered by the label OEKO-TEX Made in Green and not at all covered by the other four labels. This was very surprising because it is expected to be fulfilled by a fairtrade label that ensures fair prices and a higher income (Diekamp / Koch, 2010). Building safety is only fulfilled by one label as well.

5.1.2 Information that was not found

In general, the information of the sub-categories could be found quite fast at “Siegelklarheit” (BMZ, 2021) for every label except for Fairtrade Cotton where some sub-categories were missing. One explanation might be that the homepage is differently structured as it is a label that focuses on the raw material production and not on the evaluation of the end product. Although the selected labels cover social as well as environmental aspects, most labels are focusing on the environment (Koszewska, 2011) which was also rated as more important by consumers (Market and Opinion Research International, 2005).

Regarding the homepages of the labels, the key information could be found quite fast. Nevertheless, detailed information about the standard and what exactly it covers was more difficult to find but was available for every investigated label. For organisations with more labels (like Fairtrade Cotton or OEKO-TEX Made in Green) or that do not concentrate only on textiles (EU Ecolabel and Blue Angel), it took some minutes to find the exact standards for the product category or label. For example, as the label OEKO-TEX Made in Green is not the only one of the OEKO-TEX institution, the website has to be scanned for the aspects that are only valid for this eco-label. For the EU Ecolabel, the requirements that are specifically for textiles and not for the labelled products in general, had to be found too.

For the label OEKO-TEX Made in Green, detailed information about the governance structure was not found on the homepage but at “Siegelklarheit” (BMZ, 2021) where they refer to personal correspondence as the information is available if requested. The organisations that
certify the labels, how companies can be certified and which retailers are certified could be found on every homepage of the investigated labels too. This shows that although many information about eco-labels can be found on their homepage, it can take time too and platforms like “Siegelklarheit” (BMZ, 2021) help to make labels more comparable. Nevertheless, this thesis offers an interpretation in addition and provides consumers in chapter 5.2.3 with a reduced version of only five categories they can use for a short comparison.

As included in the findings, most of the aspects that are covered in the chapter 2.2.1.3 Aspects of ethical labels are used as categories. Nevertheless, as consumers have different reasons for buying ethical fashion (Fashion Summit, 2019), everybody might decide on their own which categories they perceive as most important. The category second-hand that was found in literature was excluded for the categorisation because this would mean that retailers or firms in general would be certified. As this thesis concentrates on labels that certify textile products, this was not relevant for the categorisation. However, there are shops or platforms for second-hand clothes and retailers might also have take-back programs (Todeschini / Cortimiglia / Callegaro-de-Menezes / Ghezzi, 2017) that can be found on their website. Pesticides were not covered at “Siegelklarheit” (BMZ, 2021) by most of the labels, except Fairtrade Cotton with a focus on the raw material stage, and is therefore excluded to make them more comparable. For a more detailed analysis, pesticides could be included as well.

Producing near the retailer to minimise transportation and emissions (Diekamp / Koch, 2010) was identified in literature but not found on the label’s homepages or “Siegelklarheit” (BMZ, 2021). Nevertheless, it would be an interesting aspect to include for future eco-labels. One possibility of minimising transportation would be to have production facilities in the U.S., where already half of the worldwide cotton is produced (Madsen / Hartlin / Perumalpillai / Selby / Aumônier, 2007). This might increase the working standards as well. Another possibility for countries without a cotton production would be to use other natural materials instead like wool, hemp (Diekamp / Koch, 2010) or recycled fibres (Magnussen, 2009) that could be grown or produced near the retailer or consumer. The country of origin and the material of garments which British consumers mentioned to be important too (Market and Opinion Research International, 2005) could be more clearly labelled and explained by an eco-label.

Vegan which was mentioned by Diekamp and Koch (2010) in the literature review as an aspect for ethical clothes, was not found for the investigated eco-labels. Even though there are some labels like peta certified vegan and the vegan food label which is applied to clothes as well, a new eco-label could incorporate these standards. Another option would be to label clothes as vegan and use the eco-label in addition. Shops that offer vegan clothes can be found at the Utopia website (Schauberger, 2020). Not animal-tested clothes were also important for many
consumers (Market and Opinion Research International, 2005), but this aspect was not covered by the investigated labels either. Therefore, this would be an important category for future labels.

5.1.3 Alternative way of interpreting the categories
An alternative way of interpreting the developed categories is applying the Kano model. Although it is used for assessing consumer satisfaction and this thesis concentrates on acceptance, it provides an interesting way of how important the single categories are for consumers. The model is applied on the categories based on own assumptions and what was found in theory. It is important to note that individuals might perceive the significance of a category differently because they have other interpretations about sustainable fashion (Fashion Summit, 2019). Therefore, the categories might be assessed in another way depending on the consumer’s preferences.

The Kano model states that there exist three different structures of consumer satisfaction. The fulfilment of customer requirements differs according to the importance of a product attribute and therefore, the effect on consumer satisfaction is varying as well. Depending on the degree of fulfilment and satisfaction of a product attribute, it can be distinguished between must-be, one-dimensional, and attractive requirements. Must-be requirements mean that if they are not fulfilled, customers are highly unsatisfied. If they are fulfilled, these requirements do not lead to satisfaction (Hölzing, 2008). Gailevičiūtė (2011) state that consumers will be even extremely dissatisfied because these are the main functions of the product and they will not buy it.

One-dimensional requirements refer to fulfilment proportionally linked to consumer satisfaction. This means that they can lead to satisfaction if they are fulfilled and to dissatisfaction if they are not (Hölzing, 2008). They are clear requirements for the customer who are more pleased if their fulfilment is higher (Gailevičiūtė, 2011). The third requirement, the attractive one, links product attributes to satisfaction but not to dissatisfaction if they are not fulfilled (Hölzing, 2008). They are not expected or urgent to the customer but lead to very high satisfaction and delighted customers (Gailevičiūtė, 2011).

The must-be requirements are the basis of a trustful eco-label and it is assumed that each label fulfils them. The one-dimensional requirements are covered by some or most eco-labels but lead to dissatisfaction or satisfaction if it is fulfilled as they are an important part of ethical fashion. The attractive requirements are not anticipated because they are not covered by many labels but are important to a person and can therefore be used to compare different labels.
The following classification of the developed categories into these three requirements provides an alternative way of thinking about them. Table 3 summarises these assumptions.

The **must-be requirements** for the governance dimension of eco-labels are assumed to be independent and regular monitoring as well as transparency, consistent standards and the traceability of the supply chain. These aspects were chosen because if they are not fulfilled, an eco-label will not be trustful at all and all investigated eco-labels fulfil them. No dangerous chemicals is also assumed to be a must-be requirement as it would otherwise harm workers and the environment. It is also fulfilled by all five labels and cited by various authors (Ethical Fashion Forum, 2016 / Niinimäki, 2015) as part of ethical fashion in the literature review. High quality is seen as a must-be requirement as it is assumed to be a characteristic of sustainable fashion by consumers (Fashion Summit, 2019) and fulfilled by nearly every of the five labels. For the social aspects, no child or forced labour seem to be the basis for working conditions that are not harmful. They were fulfilled by every label and forbidding child labour was also identified as part of fair trade (Diekamp / Koch, 2010).

The **one-dimensional requirements** which lead to satisfaction or dissatisfaction (Hölzing, 2008) would be the fulfilment of certain life cycle stages, because it is assumed that the more stages the label covers the more satisfied people will be. It also does not seem to be an unexpected aspect for consumers. Recycling, environmental management, reduced emissions, waste in general, resource-efficiency and dirty water management would lead to higher environmental standards and therefore consumer satisfaction but they do not seem to be unexpected or extremely satisfying. Moreover, they were also very differently covered by the five investigated eco-labels. Regarding the social aspects, labour conditions and safety was very differently covered by the investigated eco-labels but is an essential part of ethical consumption (Bray / Johns / Kilburn, 2010). Worker rights is seen as a one-dimensional requirement as it ensures a good work environment and can be regarded as labour conditions in a broader sense. No discrimination, limited working hours and fair wages are part of fair trade (Diekamp / Koch, 2010) and were fulfilled by some eco-labels. Legality and no corruption was not included in the literature review but seen as essential and not unexpected but nevertheless, it was only fully covered by two of the five labels.

Collective decision-making might be an **attractive requirement** since it might not be assumed to be fulfilled but can lead to high satisfaction and is seen as a positive attribute by consumers. It was also not mentioned for the definition of sustainable fashion in this literature review and therefore, seems not expected by consumers. The used materials, especially bio cotton, are seen as attractive since not many labels fulfil this aspect and it ensures that no toxic or non-gradable pesticides are used (Diekamp / Koch, 2010). Social projects are put into this category.
as they are not fulfilled by most of the investigated eco-labels and therefore, it might be unexpected for consumers.

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<tr>
<th>Must-be requirements</th>
<th>One-dimensional requirements</th>
<th>Attractive requirements</th>
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Table 3: Kano model for the classification (based on own research)

5.2 Implications of the developed classification

5.2.1 Comparison of selected eco-labels
When the investigated labels are directly compared, OEKO-TEX Made in Green is clearly rated the highest in the social and environmental categories. It is rated the best by “Siegelklarheit” (BMZ, 2021) as well although it does not cover the whole life cycle. Especially the raw material production which is covered by the other labels would have been important. However, according to their homepage (OEKO-TEX Service GmbH, 2021), OEKO-TEX Made in Green is planning to adapt its label and will cover the whole life cycle, including the raw material stage, in April 2021. This label seems to be very trustworthy, as it has such a wide focus which helps to prevent greenwashing (Niinimäki, 2015).

For the environmental aspects, especially recycling and environmental management are not covered by most of the labels except OEKO-TEX Made in Green, which completely fulfils recycling and nearly completely covers environmental management, as well as the category waste in general. The other labels do not fulfil the category waste in general entirely and the other categories only to a small extent. OEKO-TEX Made in Green is the only label which
completely fulfils dirty water management and resource-efficiency. For the other environmental categories, the label has mean values compared to the other investigated labels.

Regarding the social categories, OEKO-TEX Made in Green nearly covers all sub-categories for fair wages and completely fulfils labour conditions while the other four eco-labels do not at all or only partly cover them. OEKO-TEX Made in Green also has the highest values for the further categories in comparison to the other investigated labels. One possible reason why OEKO-TEX Made in Green has such a high rating might be that it is the newest among the investigated labels in this thesis and therefore, it was able to include many aspects that were proven to be important. Another reason might be that OEKO-TEX has several labels and Made in Green is the most recent one. Thus, the organisation used its experiences and knowledge about what aspects are important to customers for its newest label.

The investigated label which covers the least categories is Fairtrade Cotton regarding the environmental aspects (2.02 in total) and the EU Ecolabel for the social aspects (1.74 in total). Although the EU Ecolabel covers the social categories child and forced labour as well as discrimination and worker rights (except a written contract), the categories fair wages, working hours, labour conditions, legality and no corruption are not covered at all. Therefore, if social aspects are an important issue for a consumer, the EU Ecolabel is not the best choice, while OEKO-TEX Made in Green would be a good alternative. Concerning the environmental aspects, Fairtrade Cotton is quite similar rated than Blue Angel (mean: 2.11), GOTS (mean: 2.15) and the EU Ecolabel (mean: 2.22). This means that most labels cover the basic requirements for this structural dimension. In general, it is not easy to evaluate if one label is better than another as they are so similarly rated. Hence, this choice is left to the consumer, depending on which aspects are important for her or him.

5.2.2 Advantages of the classification
The internal and external factors which lead to the attitude-behaviour gap in the ethical consumption of clothes can be addressed by eco-labels and especially by using the categorisation of this thesis. As people tend to minimise their effort and time when buying something (Wiederhold / Martinez, 2018), labels should be simple and understandable. Once analysing a label makes it possible to know what it covers and the time needed to decide for an ethical product can be minimised at later purchases. Furthermore, by using the categorisation of eco-labels, not only the justification for a higher price becomes clearer (Wiederhold / Martinez, 2018), but consumers are also able to make a well informed buying decision and take everything into account that is important to them. In addition, the quality test
of eco-labels can provide consumers with a proof of high quality and the consumers’ problem of not having all relevant information (Koszewska, 2011), can be addressed with the categorisation where nearly all information was found for every label.

According to Wiederhold and Martinze (2018), consumers wish to have more and credible information of firms in the clothing industry. They are very sceptical about ethical claims of firms themselves (Wiederhold / Martinez, 2018) which is why an independent monitoring of eco-labels is so important. These labels are able to give consumers a credible information source that the product is ethical. The confusion about ethical alternatives (Kollmuss / Ageyman, 2002) due to the detailed information about them (Wiederhold / Martinez, 2018) can be decreased by shortly looking at the most important categories of a label that are defined in the next sub-chapter. This makes it possible to quickly find out, if an eco-label is trustful and covers certain aspects. Also, it will make it easier for retailers to reach their regular buyers when deciding to offer more ethical buying choices and to apply for the certification by an independent eco-label.

To make the eco-labels more effective, they should be communicated with a focus on consumers between 18 and 24 years who have an income above average and go shopping more often because they support sustainable fashion the most (Fashion Summit, 2019). As millennials, who are defined as being born between the years 1981 and 1996 (Fry, 2017), regard CSR as even more important than the price and quality of a product (Anderson / Dahlquist / Garver, 2018), they are an important age group to focus on. Furthermore, eco-labels should have a higher focus on women as they tend to be more worried about environmental issues (Kollmuss / Ageyman, 2002). To make consumers aware and able to understand labels (Koszewska, 2011), they should be advertised with better campaigns (OECD, 1999). For instance, social media campaigns would be an effective way (Wiederhold / Martinez, 2018) as young consumers could be reached there. Since labels are more effective if consumers are able to rank them (Lee / Geistfelf, 1998), the provided categorisation is an important tool to enable consumers to do so by comparing eco-labels and their main characteristics. Ranking labels would also make it easier to understand the meaning of them, which is a crucial aspect (Fliess / Lee / Dubreuil / Agatiello, 2007).

A label needs to be understood to be successful and accepted by firms (Fliess / Lee / Dubreuil / Agatiello, 2007). Therefore, the categorisation of this thesis is an important way of proofing which aspects are fulfilled in order to understand an investigated label better. If a traditional retailer starts to be more ethical, independent certificates and the right communication are needed to convince sceptical consumers (Ansett, 2007). As eco-labels are mostly for the final product (Fliess / Lee / Dubreuil / Agatiello, 2007), clothes can be labelled with more than one
certificate to be more trustful. A label which focuses on raw material production in combination with a label that concentrates on the whole life cycle would be an option to ensure that the final as well as the intermediate product are covered.

5.2.3 Implications for consumers
Based on the findings, it is suggested to look at the homepage of one’s favourite fashion brand to find out if and which eco-labels they use and afterwards, the label’s homepage should give a short overview about the main features of the eco-label. An external homepage like “Siegelklarheit” could then be checked in addition if the needed information cannot be found easily or if it is difficult to compare with other labels. Then the consumer would have an overview about which of one’s favourite brands are ethical and which use the most ethical label. If a person does not have a favourite brand, she or he could look at the shops’ websites that they visit the most instead and could then follow the other steps. If the visited shops vary a lot, consumers could also look at the three most known eco-labels (that might be included in this thesis) to have them in mind before they buy clothes the next time. On the label’s homepage, the certified retailers might be found too, which was the case for the five selected eco-labels. Then consumers could easily and fast decide for an ethical option as the most important eco-labels are known and more likely to be kept in mind during the buying decision.

If consumers want to concentrate on certain aspects of ethical fashion, they might have a look at the categorisation of this thesis and pick the three to five aspects that are most important to them (like three social and two environmental categories). Concentrating either on social, environmental or both aspects is possible. Another option would be to use the five suggested categories for a short comparison that are described in the next paragraph. In general, it is important for consumers to know who does the rating and if it is done by an independent institution. When consumers have a look if the aspects are fulfilled or not, they would already have a good overview about an eco-label. The sub-categories are included for understanding the main categories and to determine whether they are completely fulfilled or not. Therefore, only checking the main categories and not the sub-categories could be an option for consumers too.

Nevertheless, when a label is only shortly checked for comparison, it is suggested to use the five chosen categories listed below. Not only do they belong to the most important categories but they are also covered by only some of the labels of this thesis and therefore, the different coverage can be assumed for most of the other eco-labels. Chemicals and quality are essential but covered by every investigated label and are therefore not included. Basic categories that
should be fulfilled by every eco-label, like the governance dimensions, were not included too. Waste in general was chosen because it gives an overview about the general policy. The other categories are very differently covered by the labels and combine different aspects (two social and two environmental aspects as well as the life cycle). In order to buy ethical clothes, it is suggested to use a label that covers more than only one stage of the life cycle of textiles or is certified with more than one eco-label. Consequently, these are the five categories for a short comparison:

- Life cycle stages
- Bio cotton
- Waste in general
- Fair wages
- Legal and no corruption
6. Conclusion and further research

6.1 Conclusion

As a summary of the main findings, the fulfilment of the developed categories as well as a short comparison of the five selected eco-labels is presented here. The five governance categories independent and regular monitoring, transparency, consistent standards and traceability that are fulfilled by every investigated label are the basis for a trustful label. Independent monitoring and transparency help to prevent greenwashing (Niinimäki, 2015), regular monitoring and consistent standards ensure the quality of an eco-label and traceability provides important information for consumers. The environmental categories no dangerous chemicals and high quality were covered by every investigated label except Fairtrade Cotton which is not testing the quality of the end product as it only covers the raw material. The social aspects that were covered by every label are no child and no forced labour which are very important to be fulfilled. The two sub-categories that were fulfilled by every label are no discrimination and same wages. There was no category that was not covered at all.

The general comparison of the five eco-labels made clear that OEKO-TEX Made in Green covers the most social and environmental aspects. According to its homepage (OEKO-TEX Service GmbH, 2021), the raw material production is covered as well since April 2021, which means that the label then covers the three most important life cycle stages that were also mostly fulfilled by the other four eco-labels. All investigated labels cover many of the environmental aspects and are therefore a good choice. As they are so similarly rated in general, it is not easy to evaluate if one of them is better than the other. It depends on which aspects are important to the consumer her- or himself. Nevertheless, if social aspects are important to a person, the EU Ecolabel would not be the best choice because it covers the least aspects.

The three research questions could be answered based on the empirical part.

- Which information do eco-labels in the fashion industry offer to the public?

The information about the sub-categories and their fulfilment can be found at “Siegelklarheit” (BMZ, 2021) as well as at the label’s homepages and is therefore offered to the public. Only for Fairtrade Cotton that only covers the raw material stage, information about some sub-categories was not found. On the label’s homepages, the key information could be found fast too but searching for detailed information took some minutes. The list of certified retailers that was found for the five selected eco-labels might be useful for consumers as they would not need to look at the certification when they are in a shop. Therefore, it can be assumed that the
most important information for rating an eco-label can be found publicly available on the label’s homepages.

- How can eco-labels in the fashion industry be categorised based on this information?

The developed framework for classification can be used to categorise eco-labels in the fashion industry. It is divided into life cycle, governance, environmental and social dimensions that can be further divided into different categories. The life cycle consists of the five stages raw material production, production of garment and finished clothes, transport/retail, use and recycle/waste. Furthermore, independent monitoring, regular monitoring, traceability, consistent standards, transparency and collective decision-making are the six governance categories. The nine environmental categories are high quality, reduced emissions, resource-efficiency, no dangerous chemicals, materials used, environmental management, recycling, waste in general and dirty water management. The nine selected social categories are legality and no corruption, working hours, no forced labour, no child labour, worker rights, no discrimination, social projects, fair wages and labour conditions and safety. Nearly all of this information could be found publicly available for all five eco-labels like it is indicated in the first research question.

- How can eco-labels in the fashion industry be compared?

The second research question describes the developed categorisation in this thesis and is an effective way of comparing different eco-labels in the fashion industry. The visual presentation of the sub-categories is a way of giving a short overview about their fulfilment and would be a good opportunity for consumers as well if more labels are compared. This classification makes it possible to know which label fulfils which aspects due to the availability of the information. This fulfilment can then be used as a basis for comparing different eco-labels in the fashion industry. It depends on the time available and the aspects of the classification that are important for consumers which of them are used for a comparison. Moreover, it is assumed that the developed classification for eco-labels in the fashion industry provides a good basis for people to know how ethical labels are.

**6.2 Implications**

It is recommended that consumers use the categorisation while the sub-categories might be skipped for a faster analysis. Consumers could select the most important categories for themselves or concentrate on the five that were suggested for a short comparison in chapter 5.2.3 to compare eco-labels. The five suggested categories in this thesis are the most important and differently covered categories, namely the covered stages of the life cycle, bio
cotton, fair wages, legality and no corruption as well as waste in general. Also, it is recommended to select a label that covers more than one life cycle stage. The information about the categories can be found at the label’s homepage, at “Siegelklarheit” (BMZ, 2021) or another external homepage. The eco-label’s list of certified retailers provides useful information for consumers as they can quickly find out if their favourite brands are certified and which ethical options exist.

This thesis provides a basis for analysing and understanding eco-labels in the fashion industry which could be improved by further research through expert interviews or consumer questionnaires. Therefore, some categories might be skipped while others that would be important could be added. Suggestions for future eco-labels could be made too based on this thesis as they might cover categories that are mostly not covered by the existing ones. Hence, a new label can be more valuable and extensive. For business and especially retailers, the categorisation helps them to understand what an eco-label stands for. If they want to apply for a certification, it might provide them with additional information in order to help them decide for a certain eco-label. They can then apply for the label that covers the aspects that they want to focus on according to their strategy. This would mean that certified retailers can better incorporate the labels and their aspects in their CSR communication or marketing strategy.

For politics, the categorisation can be used for the standards of new eco-labels or for modifying existing ones that are monitored by governmental organisations, like Blue Angel by the German government (RAL / Blue Angel, 2020). One possibility would be to use subsidies for retailers if the product is certified with certain eco-labels. The categorisation can be the basis for deciding which eco-labels are suitable for supporting them. Standards for environmental claims (OECD, 2011) or harmonising existing labels (Koszewska, 2011) can also be based on the categories.

### 6.3 Limitations

Although the research questions were answered, this thesis has some limitations that are based on the methodology. Some categories that were not included in the research because they were not found, might be available if requested. This includes pesticides, the country of origin, minimised transportation, vegan and not animal-tested clothes. The organisational structure that is only available if requested according to the “Siegelklarheit” homepage (BMZ, 2021) might be checked as well for a better overview about an eco-label.
Regarding the research design, the categorisation is based on a literature research and does not include expert interviews, which means that some categories might be missing. Although the research process is clearly documented, it is difficult in qualitative research to ensure that the results are completely objective and independent from the researcher (Mayring, 2014). The purposive sampling of the investigated eco-labels made it possible to select well-known ones that cover social and environmental aspects. Nevertheless, the sample is not extensive or representative, as the aim was the categorisation scheme itself. It provides aspects that can be covered by a label based on well-known labels that cover lots of aspects. Moreover, the website “Siegelklarheit” (BMZ, 2021) that was used for comparing the labels, is in German and therefore an English equivalent would be useful.

6.4 Outlook

For the categorisation, the website “Siegelklarheit” (BMZ, 2021) and the labels’ homepages were used and especially for “Siegelklarheit” (BMZ, 2021) the question how often it is updated arose. The time it takes to rate a new label or to do a regular check would also be interesting. Moreover, as the assessment of the Kano model is applied on the categories based on own assumptions and theory, it is questionable how it is perceived by consumers. Consumers interpret the meaning of sustainable fashion differently (Fashion Summit, 2019) and therefore, its definition is different for every consumer. Further research can concentrate on the effect of the developed categories on the consumer satisfaction and the question which categories are rated as must-be, one-dimensional or attractive requirements by most of them. Cultural differences of the categories might be interesting for future research too.

As the consumer opinion was not investigated in this thesis and the categorisation are based on literature, there could be a starting point for further research. In a quantitative questionnaire, it could be investigated if consumers would use the developed categorisation and which aspects are the most important for them. In addition, the need for a new and extensive eco-label could be investigated. Furthermore, expert interviews with retailers or certifying institutions could be done to find additional categories and revise the classification. Further research can also concentrate on single categories, how they can be improved and monitored.
7. References


Social Market Foundation (SMF) (2003): Race to the Top: how government, business and consumers can drive CSR.


