

# Sustainability Reporting in the Fashion Industry

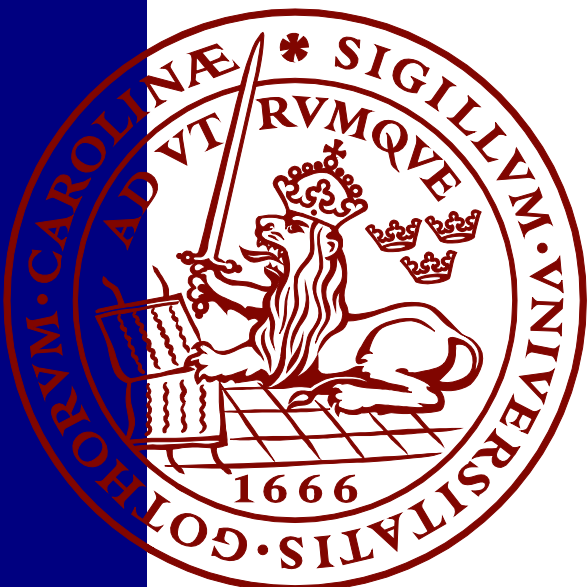
A tool towards environmentally and socially just textile production?

*Charlotte Limbach*

---

Master Thesis Series in Environmental Studies and Sustainability Science,  
No 2022:001

A thesis submitted in partial fulfillment of the requirements of Lund University  
International Master's Programme in Environmental Studies and Sustainability Science  
(30hp/credits)



## LUCSUS

Lund University Centre for  
Sustainability Studies



**LUND**  
UNIVERSITY

---

## **Sustainability Reporting in the Fashion Industry**

A tool towards environmentally and socially just textile production?

Charlotte Limbach

A thesis submitted in partial fulfilment of the requirements of Lund University International  
Master's Programme in Environmental Studies and Sustainability Science

Submitted May 10, 2022

Supervisor: Elina Andersson, LUCSUS, Lund University



## **Abstract**

The list of occupational and environmental hazards in the fashion industry is long. Chemicals used in production cause many harms to workers and the environment. Drawing on a content analysis of sustainability reports and a thematic analysis of interviews with key informants, this thesis investigates to what extent chemical hazards are measured and managed by companies and how actors perceive the role of sustainability reporting to address these and thereby create a more just textile production. Key findings are that there is an imbalance between environmental and occupational issues caused by chemicals and that the latter are often not adequately addressed in reporting. However, sustainability reporting and transparency can raise awareness on pressing justice issues, potentially creating the needed change. Furthermore, education, obligatory guidelines and strengthened corporate responsibility need to improve to realize the potential of sustainability reporting as a tool towards more environmentally and socially justice in textile production.

**Keywords:** Sustainability Reporting, Content Analysis, Environmental Justice, Textile Industry, Occupational Hazards, Environmental Hazards

**Word count:** 11,992

## **Acknowledgements**

First of all, I would like to thank my supervisor Elina Andersson for her support and feedback during the last couple of months. The feedback was very much appreciated and helpful in guiding me in this thesis process.

Moreover, I would like to deeply thank all my interviewees. Not only for making the time but also for the interesting and profound insights they gave me during the interviews.

Last but not least, I would like to thank my mum and my brothers for giving me emotional support from far away and especially my oldest brother Lukas for taking the time in giving me honest, constructive and very valuable feedback.

Table of Contents

- 1 Introduction ..... 1**
  - 1.1 The need for justice in an unjust fashion industry ..... 1
  - 1.2 Research aim ..... 2
  - 1.3 Thesis structure..... 3
  
- 2 Setting the scene..... 4**
  - 2.1 Fashion – a toxic industry ..... 4
  - 2.2 OEHs caused by chemicals in textile production..... 5
    - 2.2.1 *Occupational hazards – the toxic dangers at work*..... 5
    - 2.2.2 *Environmental hazards – toxic dangers for the environment*..... 6
  - 2.3 The road to justice? - CSR, GRI and transparency ..... 7
  
- 3 Theoretical framework..... 9**
  - 3.1 Environmental justice theory..... 9
    - 3.1.1 *Distributive justice*..... 10
    - 3.1.2 *Capabilities* ..... 11
  - 3.2 Sustainability Reporting ..... 12
  
- 4 Methodology .....15**
  - 4.1 Research design ..... 15
  - 4.2 Data selection ..... 16
    - 4.2.1 *Literature review*..... 16
    - 4.2.2 *Sustainability reports* ..... 16

|       |  |    |
|-------|--|----|
| 4.2.3 | <i>Interviews</i> .....                                  | 19 |
| 4.2.4 | <i>Ethical considerations</i> .....                      | 20 |
| 4.3   | <b>Qualitative analysis</b> .....                        | 20 |
| 4.3.1 | <i>Content analysis of sustainability reports</i> .....  | 20 |
| 4.3.2 | <i>Coding approach for content analysis</i> .....        | 21 |
| 4.3.3 | <i>Thematic analysis of interviews</i> .....             | 22 |
| 4.3.4 | <i>Limitations</i> .....                                 | 23 |
| 5     | <b>Results and Discussion</b> .....                      | 24 |
| 5.1   | <b>#1 Transparency on OEHs</b> .....                     | 24 |
| 5.2   | <b>#2 Awareness and education</b> .....                  | 26 |
| 5.3   | <b>#3 Working conditions</b> .....                       | 27 |
| 5.4   | <b>#4 Regulations</b> .....                              | 28 |
| 5.5   | <b>#5 Responsibility</b> .....                           | 30 |
| 5.6   | <b>Needed improvements for impactful reporting</b> ..... | 31 |
| 6     | <b>Conclusion</b> .....                                  | 34 |
| 7     | <b>References</b> .....                                  | 35 |
|       | <b>Appendix A</b> .....                                  | 44 |
|       | <b>Appendix B</b> .....                                  | 48 |
|       | <b>Appendix C</b> .....                                  | 53 |
|       | <b>Appendix D</b> .....                                  | 54 |

## List of Tables

|   |    |
|---|----|
| Table 1. Overview of RQs and data collected (own creation) .....                                    | 16 |
| Table 2. Overview of selected fashion brands (own creation).....                                    | 18 |
| Table 3. Interviewee overview (own creation) .....  | 20 |
| Table 4. Overview of coding categories and characteristics for content analysis (own creation)..... | 22 |
| Table 5. Themes for interview analysis (own creation) .....   | 23 |

## Abbreviations

|        |  |
|--------|--|
| CSR:   | Corporate Social Responsibility                                      |
| EJ:    | Environmental Justice  |
| EPA:   | Environmental Protection Agency                                      |
| GRI:   | Global Reporting Initiative  |
| IGO:   | International Governmental Organisation                              |
| ILO:   | International Labour Organisation                                    |
| MRSL:  | Manufacturing Restricted Substances List                             |
| NGO:   | Non-Governmental Organization  |
| OEHS:  | Occupational and Environmental Hazards                               |
| PFC:   | Perfluorochemicals   |
| PPE:   | Personal Protective Equipment  |
| PR:    | Public Relations   |
| REACH: | Registration, Evaluation, Authorization and Restriction of Chemicals |
| RSL:   | Restricted Substances List   |



RQ: Research Question

SR: Sustainability Reporting

UNEP: United Nations Environment Program

ZDHC: Zero Discharge of Hazardous Chemicals

# 1 Introduction

## 1.1 The need for justice in an unjust fashion industry

Exploitation, environmental pollution, chemical exposure, poor working conditions – the list of devastating environmental and social impacts in the fashion industry is long. The call of stakeholders like NGOs (Non-Governmental Organization) or consumers for a reduction of the impacts is loud but seemingly unheard. With the continuously rising demand for fast fashion, textile supply chains have become increasingly global, shifting raw material and textile production to places of cheap labor where industry practices lead to substantial sustainability issues in form of occupational and environmental hazards (OEHs) (Bick et al., 2018; Feng & Ngai, 2020). This development and the increasing awareness of the global sustainability crisis brings the fashion industry in an increasingly unfavorable spotlight. While employing more than 75 million people worldwide, the fashion industry represents one of the most vivid examples of poor working conditions and environmental regulations, partially to be explained by the absence of respective laws in producing countries (GEN, 2021; Hiba et al., 2021). Especially the inadequate handling of chemicals during textile production processes like dyeing and finishing and the related unequal distribution of OEHs have severe impacts on workers and the environment in producing countries, calling for immediate response (Claudio, 2007a; Niinimäki et al., 2020; Periyasamy & Milityk, 2017). Stakeholders, including consumers, labor organizations, social movements and NGOs demand that companies increase transparency, take responsibility for impacts and stop business as usual to ensure human well-being and ecological integrity (Börjeson & Boström, 2018; Fletcher, 2014; Girard, 2014).

Fashion brands are responding to these issues by increasing their work in sustainability and showing sustainability commitments in form of e.g., sustainability reports. A sustainability report refers to “a company’s voluntary, non-financial disclosure of the social and environmental impacts of their business” and gives information about the company’s sustainability measures and management practices (as cited in Jestratijevic et al., 2021, p.38). Despite such efforts, scholars have criticized sustainability reporting (SR) for missing a common language and regulated framework to disclose company’s environmental and social impacts, how they measure and manage them (Pucker, 2022). Although the application of standards increased during the last two decades, critical voices argue that “the impact of the measurement and reporting movement has been oversold” (Pucker, 2021, p.137). Moreover, transparency, which is often associated with SR, cannot be seen as the final goal. It rather represents a precondition for achieving a systematic behavioral change and a key condition

for reliable disclosure including information that is easily accessible, clear, comparable, accurate and relevant (Bhaduri & Ha-Brookshire, 2017; Mol, 2015; Dando & Swift, 2003).

According to Bick et al. (2018), environmental justice (EJ) and therefore the fair treatment and meaningful involvement of those who produce clothing is essential. However, EJ issues like OEHs are not sufficiently addressed in SR of fashion brands. Moreover, such hazards stay hidden for most parts of the society due to lack of transparency along the often very complex textile supply chains (Pucker, 2022). Bates Kassatly & Baumann-Pauly (2021) further criticize that sustainability is often conflated with environmental impacts by many stakeholders in the industry, leading to EJ issues of affected people being ignored and neglected. This means that textile workers bear an unequal burden of impacts and suffer distributional injustices of hazards and further lack capabilities to make use of their human and workers' rights.

Solutions are desperately needed to create an environmentally and socially just textile production where safe working conditions are guaranteed and chemical impacts reduced. To what extent SR, despite its critiques, can be part of this solution is subject of this thesis.

## **1.2 Research aim**

This thesis aims to identify how fashion brands address environmental and social injustices in the form of OEHs caused by chemicals and evaluates the impact of SR as a tool in creating an environmentally and socially just textile production. The analysis is led by the research question (RQ): **What role does sustainability reporting play in addressing occupational and environmental hazards caused by chemicals and contributing to an environmentally and socially just textile production?** Within the scope of this thesis, an environmentally and socially just textile production is defined as a production in which occupational health and safety measures are enforced and monitored to guarantee that workers are not exposed to toxic hazards. A just textile production raises awareness, educates and communicates with all stakeholders in the supply chain (i.a. brands, suppliers, workers) about chemical hazards and measures taken to prevent hazards and protect workers' well-being. Additionally, a just textile production guarantees workers' rights and makes sure that all stakeholders comply with them. To guarantee that workers and their communities do not have to bear an unequal burden of environmental harms, a just textile production ensures that adequate chemical and water management practices are in place and that regulations are enforced to reduce OEHs. Finally, an environmentally and socially just textile production is one in which all stakeholders take responsibility and aim for improvements in every aspect to change the business as usual and create a just textile production.

The thesis answers the following sub-RQs by applying a mixed method approach. Therefore, a literature review including environmental and occupational impacts of the fashion industry, SR and EJ literature was done. Moreover, a comparative content analysis of sustainability reports and supplementary documents of five fashion brands, representing different sectors in the fashion industry, as well as interviews with key informants representing different actors (NGOs, alliances and supplier) was conducted:

- To what extent are OEHs, caused by chemicals, measured and managed in sustainability reports of fashion brands?
- What is the role of SR in reducing OEHs caused by chemicals and contributing to an environmentally and socially just textile production?
- What improvements are needed in SR to make it more impactful?

This thesis contributes to the field of sustainability science by extending the ongoing discussions surrounding OEHs in the fashion industry. Moreover, the impact of SR to reduce these hazards and create an environmentally and socially just textile production is evaluated, contributing to an underexplored subject in scientific literature (see e.g., Jestratijevic et al., 2020). By critically looking at SR of fashion brands, this thesis bridges the gap between research and practice and evaluates to what extent SR may contribute and what further improvements are needed to enact an environmentally and socially just textile production.

### **1.3 Thesis structure**

Following the introduction, the second part of this thesis provides background information on chemical hazards in the fashion industry and resulting OEHs. Moreover, this section outlines the concept of Corporate Social Responsibility (CSR) as an umbrella term and the Global Reporting Initiative (GRI) as a widely adopted guideline for SR. Then the theoretical framework of EJ and its sub-concepts of distributive justice and capabilities are introduced, followed by describing the field of SR as a highly debated and criticized field in terms of missing impact and positions this thesis within that debate. The methodological approach of a content analysis is then introduced and the choice of material and the coding approach are presented. I then present the analysis of sustainability reports and conducted interviews, which leads to the discussion on the extent to which OEHs are addressed in SR and how chosen actors perceive the role and impact of SR. Finally, this thesis highlights key findings, defining improvement strategies to make SR more impactful in contributing to an environmentally and socially just textile production.

## **2 Setting the scene**

### **2.1 Fashion – a toxic industry**

Together with the rising demand in fast fashion, fashion companies aim to save production costs by producing in locations where environmental and social regulations are loose. This is a concept known as the pollution haven hypothesis (Levinson, 2008). Companies find these conditions mainly in countries of the Global South where their practices imply an unequal distribution of environmental and social impacts by exposing communities and workers to chemical hazards and other forms of pollution (Niinimäki et al., 2020). Moreover, occupational issues like unsafe working conditions and health and safety issues in the form of chemical exposure are major problems in these outsourcing nations and have devastating impacts on textile workers (Feng & Ngai, 2020).

Practices in the textile production require intensive use of chemicals. More than 8,000 different chemicals are used in various processes along the supply chain. For instance, there are 3,600 different substances used in dyeing only (Kant, 2012; Khattab et al., 2019; Singha et al., 2021). Many of them are hazardous and have severe impacts on humans and the environment (Uddin, 2021). A study in Sweden tested 2,450 chemicals used in textile manufacturing for their hazardous properties and found out that 10% of these pose a high potential concern for human health (Kemi, 2014). Tested chemicals included direct and acid-type azo dyes, reproductive toxins like brominated flame retardants, stain repellents and phthalates (Kemi, 2014). Another set of chemicals that are continuously criticized because of their toxic nature are Perfluorochemicals (PFCs) which are highly durable hazardous substances that degrade only slowly and remain for long times in the environment (Caterbow, 2018; Umweltbundesamt, 2018). In the following, this thesis focusses not on the chemicals themselves but on the handling of and the exposure to them.

Exposure to chemicals can result in bio accumulation and potentially increase in concentration in organism, causing allergic reactions and diseases (Kemi, 2014). Furthermore, practices like dyeing and finishing require excessive amounts of water that often end up in the environment without adequate wastewater treatment. Chemicals then spread through waterways globally, leading to the fact that 17-20% of industrial water pollution worldwide results from textile dyeing and finishing treatments only, causing health impacts worldwide (Kant, 2012).

## **2.2 OEHS caused by chemicals in textile production**

### **2.2.1 Occupational hazards – the toxic dangers at work**

Together with ongoing globalization, a continuing flood of negative headlines exposing hazardous working conditions, human rights violations and severe accidents outweighs any reporting of positive efforts made to reduce OEHS in the fashion industry (Hiba et al., 2021). Especially minority, low income and immigrant populations that make up the textile work force are disproportionately impacted by occupational hazards (Sokas, 2008). Occupational hazards within this thesis concern the relationship between chemical exposure at work and adverse human health outcomes (Sokas, 2008). It is increasingly needed to create awareness amongst all stakeholders in the supply chain, also including those directly affected, and transparency about these issues from an EJ perspective to reduce the unbearable burden of impacts that affected people must suffer. Occupational diseases caused by exposure to toxic substances and hazardous working conditions are preventable (Friedman-Jimenez, 1994). However, textile workers still suffer daily from occupational hazards. Exposure to hazardous dyes and other chemicals used in manufacturing processes result in severe impacts on workers' health and threat their lives by causing several infectious and chronic diseases (Hiba et al., 2021; Tounsadi et al., 2020). The increasing exposure to chemicals during dyeing practices can cause respiratory diseases like asthma, cough, chronic bronchitis and chest pain, loss of consciousness, skin allergies like allergic contact dermatitis, inflammation of mucous membranes, cancer and irritant dermatitis resulting from direct contact with dyes and chemicals and musculoskeletal disorders (Kant Upadhyay & Pandey, 2016; Uddin, 2021).

Besides the exposure to harmful substances also the absence of basic health and safety measures poses threats to workers' health (Hiba et al., 2021). Seldom and inadequate use of personal protective equipment (PPE), such as safety glasses or gloves, only further intensifies the exposure to chemicals and resulting diseases for textile workers (Hiba et al., 2021; Tounsadi et al., 2020). A study conducted by Kant Upadhyay & Pandey (2016) showed that although textile workers think there should be safe methods to handle and dispose contaminated packaging of dyes, only 20% of workers interviewed had been instructed on safe handling methods. Working conditions need to be improved, especially in terms of adequate use of protective equipment. Furthermore, training needs to be provided to build awareness among workers about the hazards that they are exposed to, so that the hazardous impacts on their health can be further reduced, while workers are also empowered to share this knowledge (Kant Upadhyay & Pandey, 2016; Tounsadi et al., 2020; Padmini & Venmathi, 2012). Moreover, chemical management and chemical practices must be reconsidered

and hazardous chemicals need to be eliminated to manage the hazards in a way they do not pose a threat to workers and the environment.

Besides hazardous working conditions, non-compliance to workers' rights can further intensify environmental injustices of textile workers. Weak bargaining power leaves textile workers vulnerable to unfair working conditions. Attempts to organize or join unions are often blocked and participation in protests can have negative consequences on their working relationship (Hiba et al., 2021; Hilbig et al., 2016). It is important that actors like the International Labour Organisation (ILO) but also brands and suppliers themselves establish fundamental principles of a good work life and workers' rights to create a safe work environment where their rights are recognized and their voices heard (Hiba et al., 2021). Only if textile workers are ensured their rights and provided a safe working environment, occupational impacts can be reduced.

### **2.2.2 Environmental hazards – toxic dangers for the environment**

Closely linked to occupational hazards are environmental hazards caused by chemicals that need to be considered with the same urgency. As previously mentioned, chemical processes in textile production are causing high levels of environmental hazards like excessive water use and water pollution. With 79 trillion liters per year, the fashion industry is a major consumer of water (Niinimäki et al., 2020). Insufficient treatment of wastewater causes high levels of pollution and various chemicals like soaps, acetic acid, nitrates, enzymes chromium compounds, heavy metals including lead, copper and cobalt as well as other toxic substances potentially contaminate different water bodies affecting aquatic ecosystems and threatening public health and biodiversity (Hossain et al., 2018; Kant, 2012). Following Sakamoto et al. (2019), the only option to avoid environmental pollution due to wastewater is to restrict the polluted discharge at the source. However, the same study in Bangladesh showed that low willingness and inadequate monitoring of factories as well as inadequate enforcement by government authorities lead to ineffective environmental compliance and further unregulated discharge of effluents (Sakamoto et al., 2019). Although most textile factories have effluent treatment plants in place, their management do not run them or only during inspections (Yeni Şafak, 2022). Untreated wastewater then flows into the rivers, causing bad smell and black water, posing a threat to biodiversity or soil quality on adjacent agricultural fields, as in the case of Bangladesh (Yeni Şafak, 2022). Another example is the Citarum River in Indonesia at which more than 200 textile factories are located, continuously releasing dyes and other chemical substances into the river making it one of the most polluted in the world (Caterbow, 2018). Released chemicals lead not only to diseases in adjacent communities but have devastating impacts on life in water too; during the last decades around 60% of the fish in the Citarum river became extinct

(Caterbow, 2018). These examples from Bangladesh and Indonesia serve to illustrate how environmental impacts may look like. The list could continue and only further emphasizes the need for implementing new and more sustainable practices.

A common need in the industry is to limit discharge and become more environmentally friendly what requires a more frequent availability and implementation of cleaner technologies with mainstream manufacturers (Kant, 2012). Cleaner production as defined by the United Nations Environment Program (UNEP, 2006) is “the continuous application of an integrated preventive environmental strategy to processes, products, and services, to increase overall efficiency, and reduce risks to humans and the environment” (p.3). Cleaner technologies should be implemented in all sections of textile production to address EJ issues caused by chemically polluted water resulting in environmental hazards.

Concluding the last two sub-sections, occupational hazards in terms of social costs are immense and should be treated equally as environmental hazards to release especially those at the bottom of the supply chain from their burdens (Chinyere, 2020). Only if the aforementioned is given, the textile supply chain can become more just.

### **2.3 The road to justice? - CSR, GRI and transparency**

There is an urgent need to address sustainability issues concerning working conditions and environmental pollution in textile production to fight EJ issues adequately (Amutha, 2017). However, increasingly complex supply chains only further extend existing issues and pose a myriad of challenges in terms of monitoring, reporting and improving sustainable practices among suppliers and distributors (Kozłowski et al., 2015).

One way how fashion brands address these issues is the implementation of CSR. Emerged as a business strategy, CSR assesses the social and environmental impacts of a corporation’s supply chain regarding human rights, child labor and environmental management (Monsma, 2006). Impacts disclosed in CSR through SR can be both negative and positive. However, the extent to which SR results in positive outcomes is disputed and depends on the motives for reporting which are often criticized for lacking action orientation (Garcia-Torres et al., 2017; Thorisdottir & Johannsdottir, 2020). Available guidelines aim to help setting up reports, but since the guidelines are not obligatory, the application differs among reports as well as how OEHs are addressed and reported.

A guideline that is commonly used in the fashion industry, is established from the GRI. Founded in 1997, the GRI created international and standardized guidelines for businesses to disclose



sustainability impacts and improvements through their websites or sustainability reports (Jestratijevic et al., 2021). According to GRI a sustainability report “helps organizations to set goals, measure performance and manage change in order to make their operations more sustainable” (as cited in Gonçalves & Silva, 2021, p. 11). The objective is to provide transparency on how a business aims to contribute to sustainable development and to increase the organizational accountability (GRI, 2021). Recommendations set by GRI are voluntary and encompass guidelines about environmental, financial and social aspects, including impacts on human rights and how the company manages these impacts (Gonçalves & Silva, 2021; GRI, 2021). Appendix A gives an overview of GRI’s topic standard in relation to OEHs which is later used for the analysis.

As previously mentioned, the aim of reporting is to demonstrate transparency on companies’ sustainability efforts. Moreover, it is a tool to publicly provide information showing that companies are exercising diligently (Gardner et al., 2019; Marshall et al., 2015; KPMG, 2021). As cited in Brun et al. (2020), a company can be considered *transparent* when it publishes names of suppliers, their sustainability conditions, purchasing practices and social and environmental challenges. However, increasing supply chain complexity is making this form of transparency almost impossible (Jestratijevic et al., 2021; Niinimäki et al., 2020; Rosenthal, 2007). A study showed that less than 20% of fashion brands interviewed had a comprehensive overview of their stakeholders in the supply chain (KPMG, 2021).

Commitment and leadership are important to enhance supply chain transparency and supplier engagement. Simultaneously, NGO’s and social movements like Fashion Revolution are important in proactively pushing companies to disclose information about their practices and advocate for workers’ rights and EJ issues (Brun et al., 2020). Moreover, international regulations and alliances like REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) and ZDHC (Zero Discharge of Hazardous Chemicals) have been substantial to drive fashion businesses to obtain and disclose information about their chemical practices and restriction of toxic chemicals used (Brun et al., 2020; Uddin, 2021). Transparency can create much needed incentives for companies to improve conditions in supply chains, build compliance, ensure that improvements in working conditions are no longer sporadic (Gehmann, 2016; Girard, 2014). Furthermore, it is needed to make SR reliable and efforts made to reduce OEHs achievable.

### **3 Theoretical framework**

#### **3.1 Environmental justice theory**

EJ deals with questions around unequal distribution of environmental impacts. It is a scholarly approach and movement that began as a community-led grassroots movement around the idea that burdens of environmental pollution should not fall on the world's poor (Monsma, 2006). This thesis extends this concept by also including burdens in form of OEHs caused by chemicals in the fashion industry. Key challenges outlined in previous research consider the environmentally and socially harming business practices leading to disproportionate impacts experienced by textile workers and their communities (e.g., Anguelov, 2016; Bick et al., 2018; Khan & Malik, 2013). This thesis picks up especially on challenges around OEHs, including bad and harmful working conditions through chemical exposure of workers, wastewater and chemical management in textile production.

The Environmental Protection Agency of the United States (EPA, 2021) defines EJ as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies”. Furthermore, they continue that this goal will be achieved when “all people enjoy the same degree of protection from environmental and health hazards and equal access to the decision-making process to maintain a healthy environment in which to live, learn, and work” (EPA, 2021). A ‘healthy environment’, in which OEHs are addressed, is lacking in the fashion industry. Impacts on environment as well as communities and individuals need to be linked to efforts to address existing inequalities (Schlosberg, 2007). Moreover, issues of distribution, procedural justice, recognition and capabilities, of individuals [textile workers] and communities, as central concepts of EJ need to be included too (Schlosberg, 2007). Coolsaet (2020) picks up on these issues and declares them as the four dominant dimensions of EJ.

Considering distributive justice helps to understand how “the distribution of environmental goods and environmental ills follows predictable patterns of domination and oppression in our societies” (Coolsaet, 2020, p.2). In the fashion industry this is present by outsourcing environmentally and socially bad labor practices. How power and influence work in environmental governance is considered by applying procedural justice, while recognition deals with how different people, their cultural practices, identities and knowledge systems are accommodated and respected (Coolsaet, 2020). Lastly, the approach of capabilities helps to link concerns of EJ to questions about human well-being and is closely connected to occupational hazards and resulting health issues for textile workers (Coolsaet, 2020).

In the following, this thesis focuses only on the sub-concepts of distributive justice and capabilities. Both concepts are relevant to link with present OEHs in the fashion industry to further analyze how EJ aspects are measured and managed in SR.

### **3.1.1 *Distributive justice***

Distributive justice is used within this thesis to understand to what extent the unequal distribution of OEHs among textile workers and responsibility among stakeholders in textile production is addressed in SR and helps to evaluate the role of SR to improve distributive justice issues in textile production. The analysis focuses on wastewater and chemical management to reduce environmental impacts as well as the distribution of responsibility in terms of actions taken to reduce impacts.

Theories of distributive justice focus on how benefits and harms are distributed and experienced among communities and individuals (Coolsaet, 2020). Distributive justice analysis measures among others the potential of a facility to pose a certain health risk by evaluating factors like waste sites, other undesirable uses within the chosen area or risk exposure (Mohai et al., 2009; Morello-Frosch & Jesdale, 2006). The insufficient treatment of chemically polluted wastewater and its discharge to the environment not only causes damage to flora and fauna of ecosystems and ground water pollution but also has indirect effects on health of textile workers and surrounding communities (Khan & Malik, 2013). Occupational and safety standards are often not enforced in the producer countries resulting in a myriad of hazards for workers exposed to toxic substances (Anguelov, 2016; Bick et al., 2018). Workers often bear a disproportionate exposure to chemicals and lack of access to health and education services (Claudio, 2007b). Not adequately or non-existent PPE only further exacerbate the distributional injustices.

The failure to enforce environmental laws or ineffective government protections, regulating the use and disposal of chemical substances, lead to disparities in pollution exposure and further intensify issues of distributive justice in terms of equality (Coolsaet, 2020). Equality in that case means that no one should bear more harms than anyone else (Coolsaet, 2020). According to Rawls (1971, p.83) deviations of equality are only justified if compensating benefits are provided for those that bear more harms than others. However, in the fashion industry textile workers bear most of the burdens without profiting from outcomes (Normann et al., 2013).

To address distributive justice issues resulting from chemicals in textile production, it is important to take actions to reduce environmental impacts and exposure of workers; for instance, by implementing water treatment plants or restricting certain chemicals in production. Regarding that, responsibility needs to be defined and equally distributed among stakeholders in the fashion

industry. The adverse environmental and human health outcomes caused by chemicals are preventable, when recognized and addressed (Sokas, 2008). A better surveillance system is also necessary to recognize the hazards at work. To what extent SR can fulfil this role is further investigated in the analysis section.

### **3.1.2 Capabilities**

The capabilities and well-being approach is used to evaluate to what extent workers have the capabilities to sustain and increase their well-being and looks further into how fashion brands disclose structural conditions in terms of working conditions and workers' rights. Moreover, it is used to investigate to what extent workers' well-being is addressed through protection of risk exposure, occupational health and safety measures, trainings and education of workers to enhance workers' well-being and safety.

Understanding capabilities and human well-being and moreover how people are being harmed and why this is not just, is important to address in EJ issues (Coolsaet, 2020). Well-being needs to be conceptualized in connection with capabilities and the ability of people to do things that improve their lives (Coolsaet, 2020). The unfair distribution of OEHs due to chemicals in textile production, can deprive workers of these capabilities and has impacts on their well-being (Coolsaet, 2020; Gupta & Saha, 2009).

Two central dimensions of capability concerns in the context of textile workers are 'bodily health' and by that the ability of having a good health and 'control over one's environment' and the ability of participating in decision-making processes, having free speech, and having the right to join and form associations (Nussbaum, 2003). Turning the focus on well-being at the workplace, the ILO (2009) writes that "workplace wellbeing relates to all aspects of working life, from the quality and safety of the physical environment, to how workers feel about their work, their working environment, the climate at work and work organization". ILO's aim is to complement occupational safety and health measures to give workers the ability of being safe, healthy, engaged and satisfied at work (ILO, 2009). Measures to reduce chemical exposure of textile workers include among others, occupational safety and health measures (e.g., PPE), labor inspections in form of audits and skill development through education and training (Hiba et al., 2021). Additionally, it is important to follow ILO's aim to promote workers' rights, enhance social protection and strengthening debate on work related issues and give workers a voice in decision-making processes that determine their exposure to chemical harms and impact to their environment and health (Coolsaet, 2020; Hiba et al., 2021). Adherence to labor laws

is important as well as communicating the issues publicly and create awareness about occupational hazards of textile workers.

### **3.2 Sustainability Reporting**

SR has its origin in financial reporting, which emerged in the 19<sup>th</sup> century and initially included only reporting about monetary aspects (Herzig & Schaltegger, 2006). As of the 1970s, social aspects were included to inform internal and external stakeholders about a company's products, services and activities, covering related positive and negative impacts (Herzig & Schaltegger, 2006). Together with an increasing critique of economic and technical contributions of companies causing social and environmental problems in the 1980s, an increasing demand to also include non-financial information in form of environmental reports emerged (Şahin & Çankaya, 2020). Around 2000, CSR reports gained more importance and the number of companies reporting about economic, social and ecological aspects increased substantially (Şahin & Çankaya, 2020). Sustainability was no longer optional but a critical expectation to be considered by companies to fulfil stakeholders' demands (Jestratijevic et al., 2021). Following this development, the addressing and implementation of sustainability and sustainable business models transformed from a niche to a necessity. Moreover, companies had to face the rising demand for substantial change in business practices (Kozlowski et al., 2015). Today SR plays an important role in how companies approach sustainability work and how they communicate their social and environmental performance (Higgins & Coffey, 2016). It has become increasingly important as a means of companies to demonstrate and document that companies not only talk but also act (White et al., 2017). By implementing corporate sustainability strategies and publish sustainability reports, companies aim to increase the brand value, reputation, accountability and trust, resulting in increased profits and a competitive advantage (Herzig & Schaltegger, 2006). Companies not only publish sustainability reports on their own account, but they also respond to the increased pressure from media and customers, requesting companies to take action for social and environmental concerns in production (Feng & Ngai, 2020; Gonçalves & Silva, 2021; Turker & Altuntas, 2014).

Simultaneously with the pressure on companies to engage in SR, there is also a rising need to ensure that reporting is reliable. One way of companies to assure that, is by applying guidelines, rules and standards for SR that are publicly renowned (Herzig & Schaltegger, 2006). Various institutions have published guidelines, regulations, standards, etc. that are intended to help to harmonize SR and give guidance for management (Herzig & Schaltegger, 2006). The most common one is the GRI which measures economic, environmental and social aspects of a sustainable supply chain in SR and is

focused on in this thesis (see section 2.3) (Thorisdottir & Johannsdottir, 2020). To evaluate the actual impact of SR and to what extent indicators of standards are addressed and implemented, reports are often analyzed by applying content analysis (e.g., Garcia-Torres et al., 2017) and so is this thesis. More information is given in chapter 4.3.1.

The role and impact of SR is critically discussed both in scholarly and industry internal debate (e.g., Garcia-Torres et al., 2017; Pucker, 2021; Thorisdottir & Johannsdottir, 2020). On the one hand, critical concerns have been raised as environmental damages and social inequalities have continued to rise, implicating that SR may not be a proxy for progress and does not ensure social and environmental improvement (Pucker, 2021). Garcia-Torres et al. (2017), for instance, criticize that SR in fashion lacks action orientation and that there is a worrisome gap between reporting and practice. Moreover, Kozlowski et al. (2015) found out that there is a limited consistency among indicators of SR, which lack procedures for standardization and verification. Most companies follow their own reporting methods or methods created within the industry instead of those created in scientific communities (Gonçalves & Silva, 2021). Criticism continues stating businesses still do not take CSR seriously. Although companies start changing their behavior and take responsibility for their actions, the positive outcome is uncertain and depends highly on the company's reasons for publishing sustainability reports (Thorisdottir & Johannsdottir, 2020). White et al. (2017) criticize those actions taken to improve working conditions and workers' well-being are more related to company reputation than they are to take preventive measures and increase workers' well-being. A study showed that although several companies are adopting and disclosing ILO's workplace human rights standards through their code of conduct, there is a lack in reporting on human rights obligations, resulting in a missed chance to have an impact on working conditions and workers' rights (Islam & McPhail's, 2011).

On the other hand, more positive voices see SR as a key driver in creating transparency about responsibility and accountability for performance and activities of companies (Herzig & Schaltegger, 2006). The practice of reporting demonstrates a willingness to communicate about and deal with societal and environmental issues and may serve as a strategy to deal more systematically and seriously with sustainability. To improve credibility and reliability of SR it can be helpful to assess and verify sustainability information by independent external experts, associations or renowned NGOs (Herzig & Schaltegger, 2006). Moreover, companies should have a responsibility of proving the correctness of their actions and decisions taken and further should be held responsible for these too (Şahin & Çankaya, 2020).

Concluding this section, the concept around SR is highly debated and criticized in terms of lack of measurable actions, responsibility, accountability and comparability. Although SR is by now widely adopted, its non-uniform structure makes it difficult to measure actions and impact and still overlooks aspects of EJ (Daub, 2007; Gray & Milne, 2007; Şahin & Çankaya, 2020).

## **4 Methodology**

### **4.1 Research design**

To pursue this thesis' aim of evaluating the role of SR in creating an environmentally and socially just textile production, the concept of SR in relation to OEHS had to be operationalized. This thesis aims to identify how fashion brands measure and manage EJs in form of occupational and environmental hazard caused by chemicals in their SR (RQ1), how key informants in the fashion industry perceive the role of SR in contributing to an environmentally and socially just textile production (RQ2) and finally what improvements are needed to make SR more impactful (RQ3).

The research strategy is comparative and compares sustainability reports of fashion brands by applying a content analysis. A comparative research strategy is especially useful for the small sample size (n=5) of brands that are compared in this thesis to analyze how companies measure and manage OEHS in their SR (Khagram et al., 2010). The brands chosen represent different sectors of the fashion industry (see table 2, p. 18). In contrast, interviews with fashion industry stakeholders, representing NGOs, alliances and suppliers that are not formally associated with any of the examined brands were conducted to evaluate how these key informants perceive the role of SR in reducing OEHS and creating an environmentally and socially just textile production. Table 1 gives an overview of how empirical material was collected to answer the research aim.



**Table 1.** Overview of RQs and data collected (own creation)

| <b>Research questions</b>  | <b>Data</b>   |
|--|---|
| [1] To what extent are OEHS caused by chemicals, measured and managed in sustainability reports of fashion brands?                           | Sustainability reports and supplementary documents, review of sustainability guideline (GRI)              |
| [2] What is the role of SR in reducing OEHS caused by chemicals and contributing to an environmentally and socially just textile production? | Semi-structured interviews with key informants of a NGO, an alliance and a supplier of dyehouse machinery |
| [3] What improvements are needed to make SR more impactful?  | Literature review, interpretation of results of RQ1 and RQ2   |

## **4.2 Data selection**

### **4.2.1 Literature review**

Data for the literature review was collected by performing a non-systematic literature review via LUBsearch<sup>1</sup>, a literature research tool from Lund University. A combination of the following key words led to different search strings and literature relevant for the thesis: environmental impact, occupational hazards, EJ, fashion industry, SR, transparency, chemical pollution. The literature review was stopped when the articles identified became repetitive. The literature review set the foundation for chapters 1, 2 and 3.

### **4.2.2 Sustainability reports**

Data for the content analysis was collected on the brands' webpages and included sustainability reports from 2020, which was the most recent publication year at time of research. Additionally, supplementary documents referenced in the report were included, giving further insights on company's sustainability efforts. Table 2 gives an overview of the selected brands (Adidas, Hugo Boss, Nudie, Mango and Levi's), the documents collected and sector within the fashion industry. See

---

<sup>1</sup> Link to LUBsearch: <https://lubsearch.lub.lu.se/>

Appendix B for a detailed list of the empirical data and references. The selection of brands was made to represent a wide range of fashion brands such as premium, sports, fast fashion, denim and sustainable brands, and increase the level of variability to make the study more valid (Bryman, 2016). Additionally, by choosing brands from different sectors also differences in chemical management – if existent – could be compared. Further criteria were the publishing language being English and the reporting year of 2020 to make the data more comparable. Ultimately, the focus was on the application of GRI standards within the reports, as these were used as the basis for defining coding categories.

Table 2. Overview of selected fashion brands (own creation)

| <b>Brands (Country)</b>             | <b>Collected documents</b>   | <b>Sector in fashion industry</b> |
|-------------------------------------|--|-----------------------------------|
| <b>Adidas (Germany)</b>             | Annual Report 2020, Code of Conduct, Chemical Footprint, Factory Workers, Supply Chain Approach, Workplace Standards, Progress Report on Chemical Management, Policy for Health, Safety, Environment and Energy, Supplier List | Sport                             |
| <b>Nudie Jeans (Nudie) (Sweden)</b> | Sustainability Report 2020, Code of Conduct, Chemical Policy, Human rights and anti-slavery statement, Sourcing Strategy, Sustainability Policy, Transparency Policy, Supplier List  | Sustainable Denim                 |
| <b>Hugo Boss (Germany)</b>          | Sustainability Report 2020, Supplier Code of Conduct, Human Rights Policy, Health and Safety Commitment, Environmental Policy, Chemical Management Policy, Supplier List, Restricted Substances List                           | Premium                           |
| <b>Mango (Spain)</b>                | Sustainability Report 2020, Code of Conduct, Supplier List   | Fast Fashion                      |
| <b>Levi's (USA)</b>                 | Sustainability Report 2020, Code of Conduct, Sustainability Guidebook, Factory Mill List   | Denim                             |

### **4.2.3 Interviews**

Semi-structured interviews were conducted with key informants representing different stakeholders in the fashion industry that are not formally associated with any of the examined brands. A total of three interviews were conducted. The interviewees included a representative of a German NGO, working internationally on health and EJ issues in relation to chemicals, an employee working for a Dutch multi-stakeholder alliance, working to eliminate the discharge of harmful chemicals in textile production and finally a Bangladeshi key informant who supplies dyehouses with machinery. The rationale of engaging with these specific actors is to gather opinions from people representing different stakeholders in the fashion industry that work independently of the brands. Moreover, they have experiences in OEHS in the fashion industry related to chemicals and on the role of SRs in reducing OEHS and contributing to a more environmentally and socially just textile production. To guarantee that the opinions do not represent a biased company opinion, interviewees are purposefully chosen to not be related with one of the analyzed brands.

Names of the different key informants and their organization remain anonymous and are coded within this thesis (see table 3). The reason for that was to increase the probability of hearing individual opinions and not being exposed to biased company beliefs. The interviews were based on an interview guide consisting of 10 questions (see Appendix C). The interview itself was semi-structured, using on the one hand the interview guide and on the other hand leaving room for upcoming topics. The interviews took approximately 45-60 minutes and were conducted in English or German. Upon request, one interview was done in written form.

**Table 3.** Interviewee overview (own creation)

| <b>Stakeholder</b>                | <b>Perspective</b>  | <b>Date</b>    | <b>Interview method<br/>(duration;<br/>language)</b> | <b>Referenced<br/>as<sup>2</sup></b> |
|-----------------------------------|---|----------------|--|--------------------------------------|
| NGO                               | Health and<br>Environmental<br>Justice  | March 21, 2022 | Recorded<br>(49 min;<br>German)                      | NGO                                  |
| Multi-<br>stakeholder<br>alliance | Transformation<br>of supply chain<br>through<br>sustainable<br>chemical<br>management | March 31, 2022 | Recorded<br>(52 min;<br>English)                     | Alliance                             |
| Supplier                          | Dyeing industry   | March 31, 2022 | Written<br>(n.a.;<br>English)                        | Supplier                             |

#### **4.2.4 Ethical considerations**

Formal written consent was obtained from all interviewees. To assure confidentiality of data a coding system is used to cover up the identities of the interviewees (see table 3).

### **4.3 Qualitative analysis**

#### **4.3.1 Content analysis of sustainability reports**

Content analysis is a commonly used method to evaluate companies' social and environmental disclosures in social and environmental reporting research (Milne & Adler, 1999; Vourvachis &

---

<sup>2</sup> Note from author: The references for the interviewees are only used to improve readability in the discussion section and only represent the key informants' opinions and not an organization's opinion.

Woodward, 2015). A content analysis “seeks to analyze data within a specific context in view of the meanings someone – a group or a culture – attributes to them” (Krippendorff, 1989, p.403) and can be used to identify attitudes, views and interests of individuals or groups of different sizes (Drisko & Maschi, 2016). While there are different forms of content analysis, this thesis conducts an interpretative content analysis which is commonly used to “inform, describe, evaluate, and summarize, as well as provide a basis for advocacy and action (Drisko & Maschi, 2016, p.9). The steps included in a content analysis are:

[1] *design*, including defining the context, explore relevant data and adopt an analytical framework that formalizes the knowledge;

[2] *unitizing*, here units for analysis are defined and identified within the volume of available data (categories);

[3] *sampling* to assure a representative set of data;

[4] *coding*, here prior defined units are described and classified according to the categories of the analytical framework;

[5] *drawing inferences* and apply the knowledge of the data to the RQ;

[6] *validation*, which is the final step and validates the findings of the analysis (Krippendorff, 1989, p. 406f).

The analytical framework is based on the literature review and GRI standard and includes coding categories that comprise different characteristics related to OEHS and is applied on the sampled data. The coding categories make use of connotation and are therefore not only based on explicit words but also on the overall or symbolic meaning of phrases and passages in the text (Drisko & Maschi, 2016). To facilitate the manual analysis, color codes for each characteristic group were created.

#### **4.3.2 Coding approach for content analysis**

To facilitate the coding of the sustainability reports, first coding categories based on the research aim and literature review were defined (see table 4). All categories set the focus on chemical exposure/pollution during production but also give insights on a company’s general view on ensuring a sustainable, safe and just textile production. Moreover, for each category a set of characteristics was defined based on the literature review and GRI standard. For a detailed overview and description of the categories see Appendix D.

**Table 4.** Overview of coding categories and characteristics for content analysis (own creation)

| <b>Category</b>                       | <b>Characteristics</b>  |
|---------------------------------------|---|
| Occupational hazards                  | Health and safety measures, PPE, training and awareness, workers' rights              |
| Environmental hazards                 | Water management, chemical management   |
| Brand responsibility                  | Risk assessment, targets and actions taken  |
| Supplier relations and collaborations | Publication of supplier information, auditing/inspection of suppliers, collaborations |

#### **4.3.3 Thematic analysis of interviews**

For the analysis of the interviews a thematic analysis was conducted. The analysis was structured around emerging themes (see table 5) from the interviews and are informed by initial findings of RQ1 and elements of RQ2. They aim to understand opinions and thoughts on the role of SRs in terms of raising awareness around OEHS within brands and among actors, incentivize chemical and wastewater management, create and share knowledge about health and safety measures and requirements to prevent OEHS and environmental pollution. Furthermore, to evaluate the role of SR in contributing to an environmentally and socially just textile production, perceived difficulties and obstacles were part of the analyzed themes as well as how SRs can create incentives for better and safer working conditions and improve workers well-being. Finally, a category about responsibility aims to find answers to the question of who is responsible to create a safe and just textile production.

Table 5. Themes for interview analysis (own creation)

| <b>Role of SR in reducing environmental and occupational hazards</b> | <b>Role of SR in creating an environmentally and socially just textile production</b> |
|--|---|
| Create awareness   | Obstacles/difficulties  |
| Chemical and wastewater management                                   | Working conditions and workers well-being   |
| Health and safety measures   | Question of responsibility  |
| Prevention of occupational hazards/<br>environmental pollution       |   |

#### **4.3.4 Limitations**

In this section, limitations of the applied research method are outlined. The data available was limited and since SR does not follow obligatory guidelines, the data disclosed can vary in how brands describe and approach their sustainability actions. The limitation was managed by only selecting reports that applied the GRI standards and therefore increased the comparability of data and the research quality. The analysis only made use of publicly available data and therefore does not include efforts potentially made by brands to address OEHS that are not reported on. Also, a potential discrepancy between reported actions and real actions could not further be investigated. Therefore, the results cannot be generalized for the entire sustainability approach of the brand and are only valid for the given data (Krippendorff, 1989).

The small sample size (n=5) limits analytical rigor and generalizability of results (Khagram et al., 2010). However, the thesis provides important initial insights on OEHS caused by chemicals and aims to give incentives for further research that is needed in addressing OEHS as EJ issues to create more justice in textile production. This can include the consideration of reports over a longer time span to evaluate the impact of measures taken over time, identify reported actions that are implemented and evaluate their degree of success. Also, the small number of interviews limits analytical rigor and generalizability of results. However, the limitation is reduced by purposefully selecting actors from different sectors within the fashion industry which created a variety of opinions. Research quality can be further improved by interviewing more actors, including textile workers themselves.



## **5 Results and Discussion**

The following section evaluates to what extent sustainability reports of fashion brands measure and manage OEHS caused by chemicals, as part of broader efforts to contribute to a more environmentally and socially just textile production. The following discussion is structured around five key themes that resulted from the analysis of the interviews. Each section discusses first to what extent the theme is measured and managed, related to OEHS caused by chemicals, in selected sustainability reports and gives answer to RQ1. Then how key informants perceive these themes and their role in SR in contributing to an environmentally and socially just textile production is discussed, answering RQ2. Finally, section 5.6 answers the main RQ and outlines necessary improvements to make SR more impactful, answering RQ3.

### **5.1 #1 Transparency on OEHS**

My analysis of SRs shows that the focus among all brands is more on environmental than on occupational hazards. Looking at data covering chemical and wastewater management, they seem easily available and measurable and are made transparent through publishing lists of restricted chemicals or data on reduced discharge of wastewater as in the case of Adidas, Hugo Boss, Levi's and Nudie. Only Mango does not report on wastewater management. The companies that manage wastewater show awareness about these issues by reporting on measures taken to increase water efficiency and quality, contributing to reducing distributive injustices in producing countries resulting from the chemical pollution of water. Reporting mainly includes wastewater treatment plants, wastewater guidelines in place to avoid polluted discharge as well as regulations and legislations that are followed to protect the environment. Wastewater management is often linked to chemical management within the reports. All analyzed brands show their concern about hazardous chemicals by publishing Restricted Substances List (RSL) and Manufacturing Restricted Substances List (MRSL), showing transparency about the prohibition of toxic chemicals like PFC or phthalates in their production. Compliance to these lists is assured by conducting tests, although mainly of finished products rather than in production where most hazards occur. I argue that to address EJ aspects, especially distributive injustices in terms of environmental harms, it is important to conduct tests on production sites to measure the impact adequately. Nudie, Adidas, Hugo Boss and Levi's provide chemical policies, guiding their suppliers on handling, storing and disposing chemicals safely and environmentally friendly. This indicates that, they aim to work on further reductions of

environmental hazards caused by chemicals by providing necessary information and knowledge about safe handling.

A precondition to address occupational hazards is to make data covering occupational health and safety more transparent, but that is more difficult to obtain. Examples of data that could be included are health check-ups of workers or conducted safety trainings and inspections like the control of PPE usage. However, this is not done sufficiently if at all. The success of managed health and safety issues for the selected brands is therefore difficult to measure and often neglected. While brands like Nudie and Levi's report more extensively, Adidas, Hugo Boss and Mango report less extensively about health and safety measures in place, such as creating a safe and hygienic work environment by providing PPE or safe handling measures of chemicals by for instance correct storage of chemicals to protect workers from exposure and reduce occupational hazards. To what extent companies measure and monitor the success of taken measures is not transparently reported on, making it difficult to evaluate their impact. Comparing all five brands on their reporting of OEHS and needed health and safety measures, it becomes evident that Mango as a fast fashion brand is barely reporting on OEHS which only further strengthen the common negative image of fast fashion brands, their insufficient addressing of OEHS and lacking transparency.

As transparency is a precondition when speaking about transforming the fashion industry into a safe and just industry, it was also a recurrent theme in the interviews, both in terms of data on practices and in terms of supplier information. The NGO highlighted that although SR is always conducted in retrospective, companies are required to investigate specific areas in their supply chain more closely and back them up with data to explain their practices to stakeholders, investors as well as to the public, and make the supply chain therefore more transparent. In relation to that, guidelines like the GRI are available, to guarantee that transparency is increased on all aspects in the supply chain. However, they are not as much used as they should be and if used, companies can select reported topics randomly. This implies risk that reporting only transparently covers aspects where companies have easy access or can easily measure data, as is even more so for environmental than occupational data. Regarding that, SR is criticized by the NGO to only satisfy stakeholders and works as a PR (Public Relations) activity in which only the good sides are discussed, missing the chance of having an impact on OEHS. Nevertheless, the alliance argues that there are brands that are not reluctant to be transparent about their complete supply chain and report about mistakes or issues that still need improvement. In that regard, the alliance highlights that honest transparency is important to create an environmentally and socially just textile production and only if these are met, SR can have an impact in terms of justice.

## 5.2 #2 Awareness and education

Education on OEHs is discussed among different brands including Levi's, Hugo Boss, Nudie and Adidas. The brands emphasize that especially in terms of chemicals it is necessary to inform workers about hazards, share knowledge and create awareness. However, this responsibility is often assigned to suppliers and not taken by the brands themselves. Companies like Nudie require from their suppliers to train and educate workers to increase their awareness and knowledge of how to use PPE and handle chemicals safely to avoid personal injury. Although all companies see the need for education and communication of hazards, the implementation looks different among them. Mostly, education is only offered to suppliers and not to textile workers themselves as in the case of Adidas and Levi's. To what extent suppliers share this knowledge is difficult for companies to monitor, what makes me argue that the impact is difficult to measure. Especially knowledge transfer on adequate chemical handling is important to be monitored by brands. They need to ensure that every worker exposed to chemicals is educated about harms and knows how to reduce or avoid them by e.g., wearing PPE. Only Levi's and Nudie clearly emphasize the importance of educating employees and ensuring that workers understand and abide requirements that are designed to protect them from harm. However, measures taken to communicate to suppliers and educate employees taken so far are not sufficient to reduce chemical hazards. As the results show, responsibility of brands in that regard is not taken and only further intensifies distributive injustices.

Raising awareness and educating suppliers and workers is also a recurrent theme among the interviewees. As the alliance highlights, communication to suppliers and workers about chemical hazards and how they can be avoided is key in creating a more just textile production and SR has an important role in this regard. In line with that, the NGO also argues that communication in form of education is important and needs further development. The alliance further emphasized that communication on issues and harms can create awareness and awareness can bring change. To enable that change, reports must not only become more accessible and readable externally, but also internally for employees of brands and workers of producing facilities (Alliance). It triggers and directs people's attention on occupational health and safety issues that need improvement. However, with increased complexity of the supply chains, communication with suppliers and their workers becomes more challenging. Especially with suppliers on tiers where most OEHs occur. The resulting missing exchange of concerns about OEHs creates a lack of insights into production facilities, making the creation of a safer environment for workers more difficult too. All interviewees agree that education of workers is crucial in reducing the distributive injustices of OEHs in textile production. Especially education on chemicals is important as many suppliers do not know what

ingredients certain chemical products have and what harm they could cause to workers as it is not required by law to inform on hazards. A consequence of the missing education of textile workers is the intensification of exposure to OEHs and therefore the intensification of EJ issues.

### **5.3 #3 Working conditions**

Working conditions and related topics of workers' rights and protection are reported by all brands and are further outlined in the following paragraph. All brands but Mango report on implementing health measures to prevent exposure to chemical hazards. Regarding that, brands focus on safe and hygienic working environments, the responsible use of chemicals in manufacturing processes and ensuring special health and safety measures to reduce the exposure and guarantee safe handling of chemicals (e.g., safety showers or signs indicating that PPE is required). Creating a safe environment builds an important cornerstone for reducing OEHs and therefore EJ issues. All brands consider creating better working environment and safeguarding health and safety as basic workers' rights. Furthermore, they require their suppliers to guarantee their workers a safe and healthy workplace. Considering how companies want to ensure all this and monitor that all these measures are implemented, only Hugo Boss and Levi's refer to a health and safety committee for monitoring. Also, with broad consent amongst the brands and high importance for the reduction of occupational hazards, is the providing of PPE to improve working conditions and safeguard workers' well-being and therefore their capabilities. This is expressed in the reference to PPE such as safety shoes, aprons or air purifying respirators, for employees exposed to chemical hazards. However, all companies assign responsibility of compliance in use of PPE to their suppliers. The extent of compliance is not clearly reported and perhaps not adequately monitored of brands. Regular supplier audits are referenced in the reports but fall short on exposing any results on shortcomings or non-compliance detected.

Providing a safe working environment is one dimension of creating good working environments, the other is to guarantee workers' rights. Worker's rights are discussed in all analyzed reports, in which companies emphasize the need to give workers a voice and to comply with worker's rights. Moreover, they require from their suppliers to guarantee their workers freedom of association and collective bargaining. This means that companies pass their responsibility of enforcing workers' rights to suppliers and intensify issues of distributive justice. Related to guaranteeing safe and fair working conditions, companies are committed to respect human rights and internationally recognized labor and social standards (e.g., ILO). All companies set up a code of conduct which is a document that all suppliers are required complying with, to ensure conditions of work and social protection and

ultimately guarantee that workers and their rights are protected. Despite all brands somehow commit to work on occupational issues and reduce the risks to health, safety and well-being through code of conduct, human rights policy or chemical policy, reported actions taken mostly concern environmental improvements like the usage of water saving technologies or reducing chemical usage in production. It should be critically looked at by brands themselves but also external actors like auditors to what extent measures and management approaches are successfully implemented and monitored or if it is just spreading of nice words.

Opinions about the impact of SR on working conditions and therefore capabilities differ among interviewees. On the one hand the alliance and supplier see SR as a tool to create awareness on occupational health and safety issues. Moreover, reports can create pressure in that regard and help to reinforce certain regulations on the country level. It should be mentioned that this is of course in some countries more the case than in others, but the alliance states that when there is public awareness about occupational health and safety issues, responsible actors (brands/suppliers) will act upon it. One example that supports this claim is the Bangladesh ACCORD which was established after the Rana Plaza collapse in 2013. "An organization was established, a discussion was opened with politicians, policymakers, industry associations and improvement plans were set up and a whole movement started to [...] be active [...] impacting the actual occupational health and safety situation" (Alliance). However, I argue that it needs to be discussed if awareness is really followed by action. I perceive the level of awareness about chemical hazards as already high but related occupational hazards persist. On the other hand, the NGO is not quite as optimistic and only hopes that reporting can create the necessary incentives for safer working conditions and improve workers' well-being when companies learn more about their impact and start feeling responsible. The feeling of responsibility is criticized by the supplier, arguing that responsibility continues to be pushed down the supply chain. To reduce resulting injustices thereof, it is necessary to clearly distribute responsibility among all stakeholders along the supply chain as argued by the supplier. The question around responsibility is more discussed in section 5.5.

#### **5.4 #4 Regulations**

Analyzing the reports shows that companies comply to different laws related to their business practices in textile production. Of all analyzed brands, only Nudie applies EU legislations to their production partners outside of the EU, which are considered as stricter than regulations in producing countries. Other brands like Mango for instance confirm that they comply to national laws and regulations in producer countries. To what extent companies see these as sufficient in terms of

reducing OEHS is not discussed in the analyzed sustainability reports. Again, it can be noticed that brands push responsibility on suppliers to comply to national legislation. Here again suppliers bear a bigger share of responsibility, further intensifying EJ issues of distributive justice. By considering the perceptions of the interviewees or common knowledge about bad working conditions and environmental harms in the fashion industry, that are frequently reported in the news, it becomes clear that national legislations in producer countries are in most cases not sufficient. They rather support the continuing of bad labor practices and further intensify occupational hazards textile workers are exposed to. Nevertheless, companies, including Levi's, Nudie and Adidas, show additional commitment to create better and safer conditions in textile production collaborating with different industry actors like ZDHC to restrict the use of hazardous chemicals or ILO to create better and safer working conditions and therefore work towards reducing OEHS.

All interviewees emphasize that legally binding regulations are needed to reduce OEHS comprehensively. Although structures are in place and companies know what data is needed and how they must report it, SR risks to be a routine used for PR or stakeholder satisfaction instead of making actual impact, as stated by the NGO. It further argues that what is missing in performance measurement is the implementation of tools to measure occupational hazards and resulting health implications. I take up on that and argue that to improve performance measurement, it would be important to on the one hand conduct regular health check-ups of textile workers and on the other hand regularly check the implementation of health and safety measures that aim to reduce health implications for textile workers. But since companies are not legally obliged to report about performance measurement their willingness to do it voluntarily is very limited as argued by the NGO. The alliance calls for regulations on EU level but also worldwide that are needed to enforce transparency on all issues around occupational health and safety. Especially, to prevent OEHS through chemicals "all chemicals that are not absolutely necessary for social survival but are dangerous for the environment and health should simply no longer be used, i.e. by law" [own translation] as argued by the NGO. Even better would be to prohibit the production of hazardous chemicals and change technologies to alternatives that do not need to use hazardous chemicals (NGO). Besides EU and worldwide legislations also national legislations need to change. They often neglect addressing OEHS occurring during production and therefore miss the chance of addressing EJ issues. There is not only a need for political action but also brands should lobby in that matter to ensure that legislations, guaranteeing safe and environmentally friendly working conditions, are enforced.

## 5.5 #5 Responsibility

With increasingly complex supply chains answering the question around responsibility for environmental and occupational impacts and who must take it becomes more difficult. The previous sections of this chapter already touched several times on questions of responsibility which seem often to be pushed to suppliers. My analysis of the reports confirms this by highlighting that all companies report about requiring their suppliers to comply with the code of conduct to guarantee health and safety of their workers and implement necessary changes. To monitor if suppliers fulfil their responsibilities, Adidas for instance conducts risk mapping, including the identification of activities that have potential adverse impacts on for instance human rights, to ensure that all suppliers produce in a socially and environmentally responsible way. Moreover, all companies report on performing audits, either internally or externally through third parties, in which suppliers participate in health and safety inspections and incident investigations. The audits are used to rate suppliers according to social and environmental compliance performance. They are usually performed announced to build trust to suppliers, but some companies also perform unannounced audits which help them to assess factories on their ability to provide healthy and fair workplace conditions. In case non-compliance to the code of conduct or other policies is detected, conditions need to be improved from suppliers and non-improvements can result in termination of contract. In most cases, as for Adidas, Nudie, Mango and Levi's the suppliers are responsible to make the necessary changes. However, Hugo Boss is the only brand to support its suppliers to implement a corrective action plan which is then followed by additional audits to ensure improvements are successfully implemented. In terms of chemicals Levi's for instance requires their suppliers to regularly review tasks, operations and conditions to determine whether the nature of work involves exposure to chemicals and if so, to include those chemicals in an industrial hygiene monitoring plan to monitor them annually. Regularly revisiting hazardous business practices will help to reduce occupational hazards as EJ issues in the long-term. As already touched upon, the analysis shows that a lot of responsibility is on the supplier side. However, SR and with it the disclosure of companies' practices could create a form of peer pressure when companies see how other companies report about their improvements. Moreover, when companies know that they are in the spotlight due to published reports they can be more motivated to take responsibility and manage their impacts. However, this will only be the case when reporting becomes obligatory as discussed in the section before.

All interviewees agree that there is not only one stakeholder who is responsible for the entire impacts along the supply chain but rather all involved stakeholders need to take responsibility.

However, the NGO argues that most of the responsibility is on the brand side as they have the most power to make changes, more than factory owners in producing countries at least. The supplier further draws on that by arguing that brands are responsible for designing the products which is in the end what guides the production process. Simultaneously, the supplier argues that suppliers also have a responsibility to have the best knowledge about their practices, implement the needed changes, be open about what is happening in their facilities and share data with brands. A third party that also carries a part of the responsibility are governments and policymakers, who need to put policies in place that support a sustainable environment and monitor that these are also applied. Brands in turn have then the responsibility to communicate these regulations to their suppliers and have an open conversation with them on issues and engage and support suppliers in implementing more sustainable practices as argued by the alliance. Only if responsibility is equally shared, distributive injustices can successfully be reduced.

## **5.6 Needed improvements for impactful reporting**

SR of fashion brands is widely discussed and criticized of lacking action orientation. This thesis cannot refute this. However, SR still plays a major role in addressing OEHs caused by chemicals and create an environmentally and socially just textile production. As discussed before, SR has a lot of potential in creating awareness about issues and the chance that this leads to improvements. However, there is still a lot to improve to make SR meaningful in terms of having a measurable impact on OEHs and creating a just textile production. The following aspects need to be considered to give SR the chance of having the meaningful role it could have.

To improve the impact of SR on OEHs, an adequate and all-embracing use of available reporting tools, like the GRI, can create transparency in terms of occupational health and safety and could start a chain reaction by measuring the issues and increasing awareness. Furthermore, it is important to know the supply chain and to know the suppliers and their practices precisely. Companies publish data about their suppliers, however, in most cases only names down to Tier2<sup>3</sup> but not about sustainability conditions or practices. It is necessary to increase transparency and have this information to know where more management, regarding safer working conditions, fair treatment of workers but also the minimization of the unequal burdens textile workers and the environment in producing countries are facing, is needed or good practices are in place already. To be effective here,

---

<sup>3</sup> Note from author: Tier2 describes a level of the textile supply chain and includes manufacturing processes of textiles such as finishing. (Subic et al., 2012).



it is also important that companies improve the exchange with their suppliers and extend it to include workers to gather more data on their health and concerns. Direct exchange with workers about their needs and how they perceive and face the harms needs to be considered to create a just textile production and to define where immediate response and action is needed. But as long as transparency is insufficiently covered in textile production, “[...] the impact also of the reporting and the things that we say about it will be limited” (Alliance).

Improvements in education and exchange can reduce the exposure to OEHs and will improve workers well-being in the long-term. The aim should be to involve every brand, supplier and worker as equally as possible to make these improvements. Especially brands should take responsibility here to implement better education on all levels in their business practices. Brands must realize that it is important to work with suppliers and textile workers to improve the overall status on justice issues. Unions and NGOs could play an important role here to support brands and extend the exchange with suppliers and to educate employees about hazards. Only if suppliers and, even more importantly, textile workers are educated about the harms they are exposed to and how they can protect themselves, injustices can be reduced and capabilities, in terms of well-being of workers, improved. In that regard also stricter regulations and the enforcement of legal frameworks are needed to guarantee the adequate education and instruction of textile workers who are exposed to hazardous substances.

Aspects covering working conditions and workers’ rights are of high importance in creating an environmentally and socially just textile production. Regular monitoring is crucial to ensure that suppliers on all levels not only comply with workers’ rights but human rights in general. Attention in that regard is only created when monitoring gains higher importance and audits are conducted announced and unannounced to guarantee that these happen under real conditions. Moreover, only if good and safe working conditions are implemented, workers can make best use of their capabilities and further improve their well-being. International Governmental Organizations (IGO) like the ILO can play an important role in relation to corporate accountability for human rights by building alliances with NGOs, developing global standards and use media to pressurize companies and their suppliers and therefore improve working conditions in the long-term.

In line with Girard (2014) and Bick et al. (2018) this thesis calls for a framework that discloses labor information, is adopted industry wide and internationally recognized. Unfortunately, only few companies report and work extensively on EJ issues voluntarily and to change this behavior SR must become mandatory. Mandatory reporting on all OEHs that occur in the fashion industry can create a better surveillance system as companies are regularly required to measure occurring hazards.

Furthermore, to incentivize improvements and actions to reduce hazards, performance management needs to be followed up through these frameworks. Consequently, not only reporting must be obligatory but also taking action needs to become mandatory. Efforts are made by the European Commission with its recently proposed due diligence policy that “aims to foster sustainable and responsible corporate behaviour throughout the global value chain” and requires companies to identify, prevent, end or mitigate their impacts on humans (e.g., human rights and exploitation of workers) and the environment (e.g., pollution) (European Commission, 2022). By implementing such a policy, companies are urged to take responsibility by preventing, mitigating or ending their impacts, monitor the effectiveness and publicly communicate their due diligence efforts (European Commission, 2022). This is a first step to create general regulations for all actors in the industry and to start urgently needed focusing on OEHs. Reporting needs to be obligatory as otherwise there is the risk that companies do not feel the need to take responsibility in that aspect since they do not see a benefit but only additional costs. The enforcement of laws on all tiers in the supply chain is crucial to actively prevent OEHs to address the unequal burden that workers in producing countries must bear.

Furthermore, to improve EJ issues like distributive injustice it is necessary to distribute responsibility for the impacts as equally as possible among stakeholders. While it is important to use SR as a tool to create awareness and show commitment, issues of distributive justice and capabilities can only be enhanced when there is knowledge created about these issues, actions are taken and actors, including brands, suppliers and governments take responsibility to make necessary changes for long-term improvements. Every one of them must play a role in creating an environmentally and socially just textile production and none of them can do it alone.

SR can only be part of the solution and is not the panacea for addressing all EJ issues. However, it can contribute towards more justice and reducing OEHs caused by chemicals. It can be argued that some people will always suffer from injustices and some textile workers will always be exposed to OEHs. But that should not be an excuse to make them suffer even more by neglecting to make improvements on OEHs. SR can create awareness among stakeholders about these issues and can encourage change to implement measures or technologies that keep workers healthy and the environment safe. The elimination of impacts is difficult but investing in sustainable technologies can stimulate changes in business as usual and reduce impacts, as also argued by the supplier. Companies need to be aware of their responsibility regarding workers and the environment. Companies cannot change fundamental problems of justice. However, they also do not have to make them worse through their practices and carelessness.

## 6 Conclusion

In order to create an environmentally and socially just textile production business practices must change, transparency needs to be increased and responsibility must be taken by fashion brands. This thesis has focused on the role of SR in addressing OEHs caused by chemicals and creating a more just textile production. Through conducting a content analysis of sustainability reports of five fashion brands and a thematic analysis of interviews of fashion industry actors, the thesis investigated to what extent OEHs caused by chemicals are measured and managed by companies (RQ1) and how actors perceive the role of SR (RQ2) and what improvements are needed (RQ3) to bring the needed change for creating a more environmentally friendly and just textile production. This thesis contributes three key findings. Firstly, there is an imbalance between reported environmental and occupational issues related to chemicals among all brands independently of their sector. While Nudie and Levi's address OEHs most extensively, Mango addresses OEHs least extensively. However, only if improvements are made to address these equally, more justice can be created. Secondly, as agreed by all interviewees, SR and transparency on practices can raise awareness among brands, suppliers, workers and other stakeholders about pressing issues of EJ. Awareness is, in turn, crucial for managing OEHs and improve practices. Equally important is the education of suppliers and workers through brands or other stakeholders on safe and environmentally friendly handling of chemicals. Only when workers are adequately educated about the hazards they are facing and health and safety measures are put in place, improvements in the unequal burdens textile workers face can be made. Thirdly, questions around responsibility and neglected issues hinder SRs from the impact it could have. There is a need in creating obligatory reporting frameworks on all aspects of OEHs to guarantee a long-term improvement in creating safe and just textile production in which no worker must bear an unequal burden of hazards and gets deprived of their capabilities. Furthermore, brands need to take responsibility for their impacts, take action and monitor them to make improvements realistic. This must happen now to reduce environmental injustices in textile production as soon as possible and make SR impactful.

Further research is needed to identify necessary improvements to make SR more effective in reducing EJ issues and avoid OEHs in textile production. In that regard it is especially important to emphasize occupational issues by including workers' needs and perspectives on how to create a safer and more just textile production.

## 7 References

- Amutha, K. (2017). Environmental Impacts of Denim. In S. S. Muthu (Ed.), *Sustainability in Denim* (pp. 27–48). essay, Woodhead Publishing.
- Anguelov, N. (2016). *The dirty side of the garment Industry: fast fashion and its negative impact on environment and society*. CRC Press.
- Bates Kassatly, V., & Baumann-Pauly, D. (2021). *The Great Green Washing Machine Part 1: Back to the roots of Sustainability*. Eco Age. Retrieved January 14, 2022, from [https://eco-age.com/wp-content/uploads/2021/09/REPORT\\_Final\\_72dpi2.pdf](https://eco-age.com/wp-content/uploads/2021/09/REPORT_Final_72dpi2.pdf)
- Bhaduri, G., & Ha-Brookshire, J. (2017). The role of brand schemas, information transparency, and source of message on apparel brands' social responsibility communication. *Journal of Marketing Communications*, 23(3), 293–310.
- Bick, R., Halsey, E., & Ekenga, C. C. (2018). The global environmental injustice of fast fashion. *Environmental Health*, 17(1). <https://doi.org/10.1186/s12940-018-0433-7>
- Börjeson, N., & Boström, M. (2018). Towards Reflexive Responsibility in a Textile Supply Chain. *Business Strategy & the Environment (John Wiley & Sons, Inc)*, 27(2), 230–239. [https://doi-org.ludwig.lub.lu.se/10.1002/bse.2012https://issuu.com/fashionrevolution/docs/fashiontransparencyindex\\_2021](https://doi-org.ludwig.lub.lu.se/10.1002/bse.2012https://issuu.com/fashionrevolution/docs/fashiontransparencyindex_2021)
- Brun, A., Karaosman, H., & Barresi, T. (2020). Supply Chain collaboration for transparency. *Sustainability*, 12(11), 4429. <https://doi.org/10.3390/su12114429>
- Bryman, A. (2016). *Social research methods* (Fifth edition). Oxford University Press.
- Caterbow, A. (2018). Die purpurnen Flüsse [The purple rivers]. *Forum Umwelt & Entwicklung. Rundbrief*, 4, 11-13. [https://hej-support.org/wp-content/uploads/2019/01/FORUM\\_Rundbrief418\\_Flu%CC%88sse-pages-114-15.pdf](https://hej-support.org/wp-content/uploads/2019/01/FORUM_Rundbrief418_Flu%CC%88sse-pages-114-15.pdf)
- Chaturvedi, S. & G. Nagpal. (2003). WTO and product-related environmental standards: Emerging issues and policy options. *Economic and Political Weekly* 38(1), 66–74.

- Chinyere, C. (2020). *An opportunity for radical change: Fast fashion, social change and environmental justice*. The Organization for World Peace. Retrieved January 13, 2022, from <https://theowp.org/reports/an-opportunity-for-radical-change-fast-fashion-social-change-and-environmental-justice/>
- Claudio, L. (2007a). Waste couture: Environmental impact of the clothing industry. *Environmental Health Perspectives*, *115*(9). <https://doi.org/10.1289/ehp.115-a449>
- Claudio, L. (2007b). Standing on Principle: The Global Push for Environmental Justice. *Environmental Health Perspectives*, *115*(10), A500–A503.
- Coolsaet, B. (2020). *Environmental justice: Key issues*. Routledge.
- Dando, N., & Swift, T. (2003). Transparency and assurance minding the credibility gap. *Journal of Business Ethics*, *44*(2–3), 195–200.
- Daub, C.-H. (2007). Assessing the quality of sustainability reporting: an alternative methodological approach. *Journal of Cleaner Production*, *15*(1), 75–85. <https://doi-org.ludwig.lub.lu.se/10.1016/j.jclepro.2005.08.013>
- Drisko, J. W., & Maschi, T. (2016). *Content analysis*. Oxford University Press.
- Environmental Protection Agency (EPA). (2021). *Learn about Environmental Justice*. United States EPA. Retrieved January 21, 2022, from [https://www.epa.gov/environmentaljustice/learn-about-environmental-justice#:~:text=Environmental%20justice%20\(EJ\)%20is%20the,environmental%20laws%2C%20regulations%20and%20policies.](https://www.epa.gov/environmentaljustice/learn-about-environmental-justice#:~:text=Environmental%20justice%20(EJ)%20is%20the,environmental%20laws%2C%20regulations%20and%20policies.)
- European Commission. (2022, February 23). *Just and sustainable economy: Commission lays down rules for companies to respect human rights and environment in global value chains*. European Commission - European Commission. Retrieved March 3, 2022, from [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_22\\_1145](https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1145)
- Feng, P., & Ngai, C. S.-b. (2020). Doing more on the Corporate Sustainability Front: A longitudinal analysis of CSR reporting of Global Fashion Companies. *Sustainability*, *12*(6), 2477. <https://doi.org/10.3390/su12062477>
- Fletcher, K. (2014). Introduction. In *Sustainable fashion and Textiles Design Journeys* (2nd ed., pp. 1–4). essay, Earthscan from Routledge.

- Friedman-Jimenez, G. (1994). Achieving Environmental Justice: The Role of Occupational Health. *Fordham Urban Law Journal*, 21(3), 605–632.
- Garcia-Torres, S., Rey-Garcia, M., & Albareda-Vivo, L. (2017). Effective disclosure in the fast-fashion industry: From sustainability reporting to action. *Sustainability*, 9(12), 2256. <https://doi.org/10.3390/su9122256>
- Gardner, T. A., Benzie, M., Börner, J., Dawkins, E., Fick, S., Garrett, R., Godar, J., Grimard, A., Lake, S., Larsen, R. K., Mardas, N., McDermott, C. L., Meyfroidt, P., Osbeck, M., Persson, M., Sembres, T., Suavet, C., Strassburg, B., Trevisan, A., Wolvekamp, P. (2019). Transparency and sustainability in global commodity supply chains. *World Development*, 121, 163–177. <https://doi.org/10.1016/j.worlddev.2018.05.025>
- Gehman, L. (2016). Achieving Transparency: Use of Certification Marks to Clean up the Fashion Industry's Supply Chains. *Drexel Law Review*, 9(1), 161–192.
- Geneva Environment Network (GEN). (2021). Environmental sustainability in the fashion industry. Geneva Environment Network. Retrieved January 14, 2022, from <https://www.genevaenvironmentnetwork.org/resources/updates/sustainable-fashion/>
- Girard, B. (2014). Corporate Transparency through the SEC as an Antidote to Substandard Working Conditions in the Global Supply Chain. *Georgetown Journal on Poverty Law and Policy*, 21(2), 317–340.
- Global Reporting Initiative (GRI). (2021). *Consolidated Set of the GRI Standards 2021*. Global Reporting Initiative.
- Gonçalves, A., & Silva, C. (2021). Looking for sustainability scoring in apparel: A review on environmental footprint, social impacts and transparency. *Energies*, 14(11), 3032. <https://doi.org/10.3390/en14113032>
- Gray, R., & Milne, M. (2007). Future prospects for corporate sustainability reporting. *Sustainability Accounting and Accountability*, 184–207. <https://doi.org/10.4324/noe0415384889.ch10>
- Gupta, R., & Saha, D. (2019). Assessing livelihood and well-being of textile industry workers in Serampore region, West-Bengal. *IAHRW International Journal of Social Sciences Review*, 7(1), 63–71.

- Herzig C. & Schaltegger S. (2006) Corporate Sustainability Reporting. An Overview. In: Schaltegger S., Bennett M., Burritt R. (eds) *Sustainability Accounting and Reporting*. Springer, Dordrecht. [https://doi.org/10.1007/978-1-4020-4974-3\\_13](https://doi.org/10.1007/978-1-4020-4974-3_13)
- Hiba, J. C., Jentsch, M., & Zink, K. J. (2021). Globalization and working conditions in international supply chains. *Zeitschrift Für Arbeitswissenschaft*, 75(2), 146–154. <https://doi.org/10.1007/s41449-021-00258-7>
- Higgins, C., & Coffey, B. (2016). Improving how sustainability reports drive change: A critical discourse analysis. *Journal of Cleaner Production*, 136, 18–29. <https://doi.org/10.1016/j.jclepro.2016.01.101>
- Hilbig, s, Koch, H., Lincoln, S., & Marí, F. (2016). *Mein Auto, mein Kleid, mein Hähnchen. Wer zahlt den Preis für unseren grenzenlosen Konsum. [My car, my dress, my chicken. Who pays the price for our limitless consumption.]*. Retrieved February 2, 2022, from [https://www.brot-fuer-die-welt.de/fileadmin/mediapool/2\\_Downloads/Fachinformationen/Analyse/Analyse\\_55\\_MeinAutoMeinHaehnchenMeinKleid.pdf](https://www.brot-fuer-die-welt.de/fileadmin/mediapool/2_Downloads/Fachinformationen/Analyse/Analyse_55_MeinAutoMeinHaehnchenMeinKleid.pdf)
- Hossain, L., Sarker, S. K., & Khan, M. S. (2018). Evaluation of present and future wastewater impacts of textile dyeing industries in Bangladesh. *Environmental Development*, 26, 23–33. <https://doi.org/10.1016/j.envdev.2018.03.005>
- International Labour Organization (ILO). (2009, June 15). Workplace well-being. Retrieved February 11, 2022, from [https://www.ilo.org/safework/areasofwork/workplace-health-promotion-and-well-being/WCMS\\_118396/lang--en/index.htm](https://www.ilo.org/safework/areasofwork/workplace-health-promotion-and-well-being/WCMS_118396/lang--en/index.htm)
- Islam, M. A. & McPhail, K. (2011). Regulating for corporate human rights abuses: The emergence of corporate reporting on the ILO's human rights standards within the global garment manufacturing and retail industry. *Critical Perspectives on Accounting*, 22(8), 790–810. <https://doi-org.ludwig.lub.lu.se/10.1016/j.cpa.2011.07.003>
- Jestratijevic, I., Ohisei Uanhoro, J., & Creighton, R. (2021). To disclose or not to disclose? Fashion brands' strategies for transparency in sustainability reporting. *Journal of Fashion Marketing and Management: An International Journal*, 26(1), 36–50. <https://doi-org.ludwig.lub.lu.se/10.1108/JFMM-09-2020-0182>

- Jestratijevic, I., Rudd, N. A., & Uanhoro, J. (2020). Transparency of sustainability disclosures among luxury and mass-market fashion brands. *Journal of Global Fashion Marketing*, 11(2), 99–116. <https://doi.org/10.1080/20932685.2019.1708774>
- Kant Upadhyay, K. & Pandey, A. C. (2016). Occupational exposure and awareness of Occupational safety and health among cloth dyeing workers in Jaipur India. *Iranian Journal of Health, Safety and Environment*, 3(2), 540–546.
- Kant, R. (2012). Textile dyeing industry an environmental hazard. *Natural Science*, 04(01), 22–26. <https://doi.org/10.4236/ns.2012.41004>
- KEMI Swedish Chemicals Agency (KEMI). (2014). Chemicals in Textiles – Risks to human health and the environment. Report 6/14. *Kemi.se*. Retrieved March 03, 2022, from <https://www.kemi.se/en/publications/reports/2014/report-6-14-chemicals-in-textiles>
- Khagram, S., Nicholas, K., Bever, D. M., Warren, J., Richards, E. H., Oleson, K., Kitzes, J., Katz, R., Hwang, R., Goldman, R., Funk, J., & Brauman, K. A. (2010). Thinking about knowing: conceptual foundations for interdisciplinary environmental research. *Environmental Conservation*, 37(4), 388–397. <https://doi-org.ludwig.lub.lu.se/10.1017/S0376892910000809>
- Khan, S., & Malik, A. (2013). Environmental and health effects of textile industry wastewater. *Environmental Deterioration and Human Health*, 55–71. [https://doi.org/10.1007/978-94-007-7890-0\\_4](https://doi.org/10.1007/978-94-007-7890-0_4)
- Khattab, T. A., Abdelrahman, M. S., & Rehan, M. (2019). Textile dyeing industry: Environmental impacts and remediation. *Environmental Science and Pollution Research*, 27(4), 3803–3818. <https://doi.org/10.1007/s11356-019-07137-z>
- Kozlowski, A., Searcy, C., & Bardecki, M. (2015). Corporate Sustainability Reporting in the apparel industry. *International Journal of Productivity and Performance Management*, 64(3), 377–397. <https://doi.org/10.1108/ijppm-10-2014-0152>
- KPMG. (2021, November 11). *Majority of apparel firms plan to increase supply chain transparency by 2027 but obstacles remain, a global survey by KPMG and Serai finds*. KPMG. Retrieved January 14, 2022, from <https://home.kpmg/cn/en/home/news-media/press-releases/2021/11/majority-of-apparel-firms-plan-to-increase-supply-chain-transparency-by-2027-but-obstacles-remain-a-global-survey-by-kpmg-and-serai-finds.html>



- Krippendorff, K. (1989). Content analysis. In E. Barnouw, G. Gerbner, W. Schramm, T. L. Worth, & L. Gross (Eds.), *International encyclopedia of communication*, 1, 403-407. New York, NY: Oxford University Press. Retrieved from [http://repository.upenn.edu/asc\\_papers/226](http://repository.upenn.edu/asc_papers/226)
- Levinson A. (2018). Pollution Haven Hypothesis. In: Macmillan Publishers Ltd (Eds.) *The New Palgrave Dictionary of Economics*. Palgrave Macmillan, London. [https://doi.org/10.1057/978-1-349-95189-5\\_2693](https://doi.org/10.1057/978-1-349-95189-5_2693)
- Marshall, D., McCarthy, L., McGrath, P., & Claudy, M. (2015). Going above and beyond: How sustainability culture and entrepreneurial orientation drive social sustainability supply chain practice adoption. *Supply Chain Management: An International Journal*, 20(4), 434–454. <https://doi.org/10.1108/scm-08-2014-0267>
- Milne, M. J., & Adler, R. W. (1999). Exploring the reliability of social and environmental disclosures content analysis. *Accounting, Auditing & Accountability Journal*, 12(2), 237–256.
- Mohai, P., Lantz, P. M., Morenoff, J., House, J. S., & Mero, R. P. (2009). Racial and Socioeconomic Disparities in Residential Proximity to Polluting Industrial Facilities: Evidence from the Americans' Changing Lives Study. *American Journal of Public Health*, 99(S3), S649–S656. <https://doi-org.ludwig.lub.lu.se/10.2105/AJPH.2007.131383>
- Mol, A. P. (2015). Transparency and value chain sustainability. *Journal of Cleaner Production*, 107, 154–161.
- Monsma, D. (2006). Equal Rights, Governance, and the Environmental Justice Principles in Corporate Social Responsibility. *Ecology Law Quarterly*, 33(2), 443–498.
- Morello-Frosch, R. & Jesdale, B. M. (2006). Separate and Unequal: Residential Segregation and Estimated Cancer Risks Associated with Ambient Air Toxics in U.S. Metropolitan Areas. *Environmental Health Perspectives*, 114(3), 386–393.
- Niinimäki, K., Peters, G., Dahlbo, H., Perry, P., Rissanen, T. & Gwilt, A. (2020). The environmental price of fast fashion. *Nature Reviews Earth Environment* 1, 189–200. <https://doi.org/10.1038/s43017-020-0039-9>
- Normann, U., Ellegaard, C., & Munkgaard Møller, M. (2017). Supplier perceptions of distributive justice in sustainable apparel sourcing. *International Journal of Physical Distribution & Logistics Management*, 47(5), 368–386. <https://doi-org.ludwig.lub.lu.se/10.1108/IJPDLM-01-2016-0028>

- Nussbaum, M. (2003). Capabilities as fundamental entitlements: Sen and social justice. *Feminist Economics*, 9(2-3), 33-59, DOI:10.1080/1354570022000077926
- Padmini, D. S., & Venmathi, A. (2012). Creating awareness on occupational health and safety among workers employed in Garment Industries. *International Journal of Scientific Research*, 2(12), 275–277. <https://doi.org/10.15373/22778179/dec2013/80>
- Periyasamy, A. P., & Militky, J. (2017). 7 - Denim processing and health hazards. *Sustainability in Denim*, 161–196. <https://doi-org.ludwig.lub.lu.se/10.1016/B978-0-08-102043-2.00007-1>
- Pucker, K. P. (2021). Overselling Sustainability Reporting. *Harvard Business Review*, 99(3), 134–143.
- Pucker, K. P. (2022, January 14). *The myth of sustainable fashion*. Harvard Business Review. Retrieved January 15, 2022, from <https://hbr.org/2022/01/the-myth-of-sustainable-fashion>
- Rawls, J. (1971). *A theory of justice*. Boston. Belknap Press.
- Rosenthal, E. (2007, January 25). *Can polyester save the world?* The New York Times. Retrieved February 9, 2022, from <https://www.nytimes.com/2007/01/25/fashion/25pollute.html>
- Şahin Z., Çankaya F. (2020) The Importance of Sustainability and Sustainability Reporting. In: Çaliyurt K. (eds) *New Approaches to CSR, Sustainability and Accountability*, Volume I. Accounting, Finance, Sustainability, Governance & Fraud: Theory and Application. Springer, Singapore. [https://doi.org/10.1007/978-981-32-9588-9\\_4](https://doi.org/10.1007/978-981-32-9588-9_4)
- Sakamoto, M., Ahmed, T., Begum, S., & Huq, H. (2019). Water pollution and the textile industry in Bangladesh: Flawed corporate practices or restrictive opportunities? *Sustainability*, 11(7), 1951. <https://doi.org/10.3390/su11071951>
- Schlosberg, D. (2007). Defining environmental justice. *Defining Environmental Justice: Theories, Movements, and Nature*, 3–10. <https://doi.org/10.1093/acprof:oso/9780199286294.003.0001>
- Singha, K., Pandit, P., Maity, S., & Sharma, S. R. (2021). Chapter 11 - Harmful environmental effects for textile chemical dyeing practice. *Green Chemistry for Sustainable Textiles*, 153–164. <https://doi-org.ludwig.lub.lu.se/10.1016/B978-0-323-85204-3.00005-1>

- Sokas, R. K. (2008). Environmental justice and work. *Environmental Justice*, 1(4), 171–176.  
<https://doi.org/10.1089/env.2008.0539>
- Subic, A., Shabani, B., Hedayati, M., & Crossin, E. (2012). Capability Framework for sustainable manufacturing of sports apparel and footwear. *Sustainability*, 4(9), 2127–2145.  
<https://doi.org/10.3390/su4092127>
- Thorisdottir, T.S. & Johannsdottir, L. (2020). Corporate Social Responsibility Influencing Sustainability within the Fashion Industry. A Systematic Review. *Sustainability*, 12(21), 9167.  
 Available at: <https://www.mdpi.com/2071-1050/12/21/9167/htm>.
- Tounsadi, H., Metarfi, Y., Taleb, M., El Rhazi, K., & Rais, Z. (2020). Impact of chemical substances used in textile industry on the employee’s health: Epidemiological study. *Ecotoxicology and Environmental Safety*, 197, 110594. <https://doi-org.ludwig.lub.lu.se/10.1016/j.ecoenv.2020.110594>
- Turker, D. and Altuntas, C. (2014). Sustainable supply chain management in the fast fashion industry: An analysis of corporate reports. *European Management Journal*, 32(5), 837–849.  
 Available at: <https://www.sciencedirect.com/science/article/pii/S026323731400022X>.
- Uddin, F. (2021). Environmental hazard in textile dyeing wastewater from local textile industry. *Cellulose*, 28(17), 10715–10739. <https://doi.org/10.1007/s10570-021-04228-4>
- Umweltbundesamt. (2018, August 7). *Per- und Polyfluorierte Chemikalien (PFC) [Per- and Polyfluorochemicals (PFC)]*. Umweltbundesamt. Retrieved April 1, 2022, from <https://www.umweltbundesamt.de/themen/chemikalien/chemikalien-reach/stoffgruppen/per-polyfluorierte-chemikalien-pfc#was-sind-pfc>
- United Nations Environment Program (UNEP). (2006). *Environmental agreements and cleaner production*. UNEP. Retrieved February 8, 2022, from <https://www.unep.org/resources/report/environmental-agreements-and-cleaner-production>
- Vourvachis, P. & Woodward, T. (2015). Content analysis in social and environmental reporting research: trends and challenges. *Journal of Applied Accounting Research*, 16(2), 166–195. <https://doi-org.ludwig.lub.lu.se/10.1108/JAAR-04-2013-0027>
- White, C.L., Nielsen, A.E. and Valentini, C. (2017). CSR research in the apparel industry: A quantitative and qualitative review of existing literature. *Corporate Social Responsibility and*

*Environmental Management*, 24(5), 382–394. Available at:  
<https://www.onlinelibrary.wiley.com/doi/10.1002/csr.1413>.

Yeni Şafak. (2022, March 14). *Chemicals, industrial waste contamination turn six Bangladesh rivers untreatable*. Yeni Şafak. Retrieved March 19, 2022, from  
<https://www.yenisafak.com/en/world/chemicals-industrial-waste-contamination-turn-six-bangladesh-rivers-untreatable-3591562>

## Appendix A

The table gives an overview of GRI standards related to the thesis' research questions (GRI, 2021).

| GRI Standard                                   | Thesis relevant disclosure   | Background  |
|--|--|---|
| GRI 303 Water and Effluents 2018               | 303-4 Water discharge  | "Quantifying the volume of water discharge can help an organization understand its negative impacts on the receiving waterbody." (GRI, 2021, p. 347)  |
| GRI 308 Supplier Environmental Assessment 2016 | 308-2 Negative environmental impacts in the supply chain and actions taken | "This disclosure informs stakeholders about an organization's awareness of significant actual and potential negative environmental impacts in the supply chain." (GRI, 2021, p.433)   |
| GRI 403: Occupational Health and Safety 2018   | 403-1 Occupational health and safety management system                     | "Requires the reporting organization to list any legal requirements it has followed in implementing the occupational health and safety management system." (GRI, 2021, p. 471)  |
|  | 403-2 Hazard identification, risk assessment, and incident investigation   | "Processes used to identify hazards and assess risks on a routine and non-routine basis" (GRI, 2021, p. 472)<br><br>"Protecting workers against reprisals involves putting policies and processes in place that provide them with |

|  |   |   |
|--|---|---|
|  |   | <p>protection against intimidation, threats, or acts that could have a negative impact on their employment or work engagement, including termination, demotion, loss of compensation, discipline, and any other unfavorable treatment.” (GRI, 2021, p. 472)</p> <p>“Workers have the right to remove themselves from work situations that they believe could cause them or another person injury or ill health.” (GRI, 2021, p. 472)</p>  |
|  | 403-3 Occupational health services  | <p>“Occupational health services aim to protect the health of workers in relation to their work environment.” (GRI, 2021, p.473)</p>  |
|  | 403-4 Worker participation, consultation, and communication on occupational health and safety | <p>“A common form of worker participation in occupational health and safety is through joint management-worker health and safety committees.” (GRI, 2021, p. 474)</p> <p>“Agreements at the local level typically include topics such as provision of personal protective equipment; participation of workers’ representatives in health and safety inspections, audits, and incident investigations; provision of training and education; and protection against reprisals.” (GRI, 2021, p. 474)</p> |

|  |   |  |
|--|---|--|
|  | 403-5 Worker training and occupational health and safety  | “A description of any occupational health and safety training provided to workers, including generic training as well as training on specific work-related hazards, hazardous activities, or hazardous situations.” (GRI, 2021, p. 476)  |
|  | 403-6 Promotion of worker health  | “Workers’ access to non-occupational medical and healthcare services might be facilitated, for example, through company clinics or disease treatment programs, referral systems, or health insurance or financial contributions.” (GRI, 2021, p. 477)  |
|  | 403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships | “A description of the organization’s approach to preventing or mitigating significant negative occupational health and safety impacts that are directly linked to its operations, products, or services by its business relationships, and the related hazards and risks.” (GRI, 2021, p. 479) |
|  | 403-8 Workers covered by an occupational health and safety management system  | “This disclosure indicates what proportion of an organization’s employees, and workers who are not employees but whose work and/or workplace is controlled by the organization, are covered by an occupational health and safety management system   |

|                                     |   |  |
|-------------------------------------|---|--|
|                                     |   | based on legal requirements and/or recognized standards/guidelines.” (GRI, 2021, p. 480)   |
|                                     | 403-9 Work-related injuries   | <p>“This disclosure covers work-related injuries. Data on work-related injuries are a measure of the extent of harm suffered by workers; they are not a measure of safety.” (GRI, 2021, p. 483)</p> <p>“This disclosure covers work-related hazards that pose a risk of high-consequence injury if not controlled, even when there are control measures in place. The hazards might have been identified proactively through risk assessment, or reactively as a result of either a high-potential incident or a high-consequence injury.” (GRI, 2021, p. 484)</p> |
|                                     | 403-10 Work-related ill health                                      | “Work-related ill health can include acute, recurring, and chronic health problems caused or aggravated by work conditions or practices.” (GRI, 2021, p. 486)  |
| GRI 414: Supplier Social Assessment | 414-2 Negative social impacts in the supply chain and actions taken | “This disclosure informs stakeholders about an organization’s awareness of significant actual and potential negative social impacts in the supply chain.” (GRI, 2021, p.608)   |



## Appendix B

Overview of empirical data collected for content analysis of sustainability reports and supplementary documents.

| Brand  | Document   | Reference  |
|--------|--|--|
| Adidas | Annual Report 2020   | Adidas. (2020). <i>Annual Report 2020</i> . Adidas. <a href="https://www.adidas-group.com/media/filer_public/af/5a/af5a09d6-aacc-49d7-bddb-f3677a71248f/adidas_ar20_en.pdf">https://www.adidas-group.com/media/filer_public/af/5a/af5a09d6-aacc-49d7-bddb-f3677a71248f/adidas_ar20_en.pdf</a>  |
|        | Workplace Standards  | Adidas. (2016). <i>Workplace Standards</i> . Adidas. <a href="https://www.adidas-group.com/media/filer_public/23/b4/23b41dce-85ba-45a7-b399-28f5835d326f/adidas_workplace_standards_2017_en.pdf">https://www.adidas-group.com/media/filer_public/23/b4/23b41dce-85ba-45a7-b399-28f5835d326f/adidas_workplace_standards_2017_en.pdf</a>   |
|        | Fair Play Code of Conduct  | Adidas. (n.a.a). <i>Fair Play Code of Conduct</i> . Adidas. <a href="https://www.adidas-group.com/media/filer_public/d9/05/d9051875-01f3-4d17-a98b-31017b9d97ed/adidas_fair_play_code_of_conduct_english.pdf">https://www.adidas-group.com/media/filer_public/d9/05/d9051875-01f3-4d17-a98b-31017b9d97ed/adidas_fair_play_code_of_conduct_english.pdf</a>  |
|        | Integrated Management System Policy for Health, Safety, Environment and Energy | Adidas. (2021a). <i>Integrated Management System Policy for Health, Safety, Environment and Energy</i> . Adidas. <a href="https://www.adidas-group.com/media/filer_public/b7/ac/b7ac6cd1-df8e-4105-8d3f-eb2411ef86c6/2021_adidas_integrated_management_system_global_policy.pdf">https://www.adidas-group.com/media/filer_public/b7/ac/b7ac6cd1-df8e-4105-8d3f-eb2411ef86c6/2021_adidas_integrated_management_system_global_policy.pdf</a> |
|        | Progress Report on Chemical Management   | Adidas. (2019). <i>Progress Report on Chemical Management</i> . Adidas. <a href="https://www.adidas-group.com/media/filer_public/ac/b1/acb125e2-3eeb-49ff-aa58-e06a124a4829/april_2019_progress_report_on_chemical_management.pdf">https://www.adidas-group.com/media/filer_public/ac/b1/acb125e2-3eeb-49ff-aa58-e06a124a4829/april_2019_progress_report_on_chemical_management.pdf</a>  |

|                    |  |  |
|--------------------|--|--|
|                    | Adidas Policy for the Control and Monitoring of Hazardous Substances | Adidas. (2021b). <i>Adidas Policy for the Control and Monitoring of Hazardous Substances</i> . Adidas. <a href="https://www.adidas-group.com/media/filer_public/b7/a2/b7a253d4-450d-4d37-9225-aeed593873c7/a-01_sept_1st_2021_final_handout.pdf">https://www.adidas-group.com/media/filer_public/b7/a2/b7a253d4-450d-4d37-9225-aeed593873c7/a-01_sept_1st_2021_final_handout.pdf</a> |
|                    | Supply Chain Approach  | Adidas. (n.a.b). <i>Supply Chain Approach</i> . Adidas. <a href="https://www.adidas-group.com/en/sustainability/managing-sustainability/human-rights/supply-chain-approach/#/enforcement-dealing-with-non-compliances/">https://www.adidas-group.com/en/sustainability/managing-sustainability/human-rights/supply-chain-approach/#/enforcement-dealing-with-non-compliances/</a>    |
|                    | Factory Workers  | Adidas. (n.a.c). <i>Factory Workers</i> . Adidas. <a href="https://www.adidas-group.com/en/sustainability/people/factory-workers/#/fair-compensation/">https://www.adidas-group.com/en/sustainability/people/factory-workers/#/fair-compensation/</a>  |
|                    | Chemical Footprint   | Adidas. (n.a.d). <i>Chemical Footprint</i> . Adidas. <a href="https://www.adidas-group.com/en/sustainability/managing-sustainability/environmental-approach/chemical-footprint/">https://www.adidas-group.com/en/sustainability/managing-sustainability/environmental-approach/chemical-footprint/</a>   |
|                    | Adidas Global Supplier List  | Adidas. (2022). <i>Adidas Global Supplier List</i> . Adidas. <a href="https://www.adidas-group.com/media/filer_public/74/28/74282e62-fb55-4cac-a7b0-9f8e6c131bac/2022_adidas_global_supplier_list.xlsx">https://www.adidas-group.com/media/filer_public/74/28/74282e62-fb55-4cac-a7b0-9f8e6c131bac/2022_adidas_global_supplier_list.xlsx</a>   |
| <b>Nudie Jeans</b> | 2020 Nudie Jeans Sustainability Report                               | Nudie Jeans. (2021). <i>2020 Nudie Jeans Sustainability Report</i> . Nudie Jeans. <a href="https://cdn.nudiejeans.com/media/files/Nudie-Jeans-Sustainability-Report-2020.pdf">https://cdn.nudiejeans.com/media/files/Nudie-Jeans-Sustainability-Report-2020.pdf</a>  |
|                    | Sourcing Strategy  | Nudie Jeans. (2021a). <i>Sourcing Strategy</i> . Nudie Jeans. <a href="https://cdn.nudiejeans.com/media/files/Nudie-Jeans-sourcing-Strategy-May-2021.pdf">https://cdn.nudiejeans.com/media/files/Nudie-Jeans-sourcing-Strategy-May-2021.pdf</a>  |
|                    | Sustainability Policy  | Nudie Jeans. (2021b). <i>Sustainability Policy</i> . Nudie Jeans. <a href="https://cdn.nudiejeans.com/media/files/Nudie-Jeans-Sustainability-Policy-May-2021.pdf">https://cdn.nudiejeans.com/media/files/Nudie-Jeans-Sustainability-Policy-May-2021.pdf</a>  |

|                  |   |   |
|------------------|---|---|
|                  | Human rights and anti-slavery statement | Nudie Jeans. (2021c). <i>Human rights and anti-slavery statement</i> . Nudie Jeans.<br><a href="https://cdn.nudiejeans.com/media/files/Nudie-Jeans-Human-Rights-Policy-May-2021.pdf">https://cdn.nudiejeans.com/media/files/Nudie-Jeans-Human-Rights-Policy-May-2021.pdf</a>  |
|                  | Chemical Policy                         | Nudie Jeans. (2021d). <i>Chemical Policy</i> . Nudie Jeans. <a href="https://cdn.nudiejeans.com/media/files/Nudie-Jeans-Chemical-Policy-May-2021.pdf">https://cdn.nudiejeans.com/media/files/Nudie-Jeans-Chemical-Policy-May-2021.pdf</a>   |
|                  | Code of Conduct                         | Nudie Jeans. (2021e). <i>Code of Conduct</i> . Nudie Jeans. <a href="https://cdn.nudiejeans.com/media/files/Nudie-Jeans-Code-of-Conduct-May-2021.pdf">https://cdn.nudiejeans.com/media/files/Nudie-Jeans-Code-of-Conduct-May-2021.pdf</a>   |
|                  | Nudie Jeans Supplier List               | Nudie Jeans. (2021f). <i>Nudie Jeans Supplier List</i> . Nudie Jeans. <a href="https://cdn.nudiejeans.com/media/files/210507-NJCO-Supplier-list-2021.pdf">https://cdn.nudiejeans.com/media/files/210507-NJCO-Supplier-list-2021.pdf</a>   |
|                  | Transparency Policy                     | Nudie Jeans. (2020). <i>Transparency Policy</i> . Nudie Jeans.<br><a href="https://cdn.nudiejeans.com/media/files/Nudie_Jeans_Transparency_Policy_Sept_2020.pdf">https://cdn.nudiejeans.com/media/files/Nudie_Jeans_Transparency_Policy_Sept_2020.pdf</a>   |
| <b>Hugo Boss</b> | Sustainability Report 2020              | Hugo Boss. (2021a). <i>Sustainability Report 2020</i> . Hugo Boss.<br><a href="https://group.hugoboss.com/fileadmin/media/pdf/sustainability/sustainability_reports_EN/Sustainability_Report_2020.pdf">https://group.hugoboss.com/fileadmin/media/pdf/sustainability/sustainability_reports_EN/Sustainability_Report_2020.pdf</a>                               |
|                  | Supplier Code of Conduct                | Hugo Boss. (2020a). <i>Supplier Code of Conduct</i> . Hugo Boss.<br><a href="https://group.hugoboss.com/fileadmin/media/pdf/sustainability/company_commitments_EN/2020_04_HUGO_BOSS_Supplier_Code_of_Conduct_EN.pdf">https://group.hugoboss.com/fileadmin/media/pdf/sustainability/company_commitments_EN/2020_04_HUGO_BOSS_Supplier_Code_of_Conduct_EN.pdf</a> |
|                  | Environmental Policy                    | Hugo Boss. (2020b). <i>Environmental Policy</i> . Hugo Boss.<br><a href="https://group.hugoboss.com/fileadmin/media/pdf/sustainability/company_commitments_EN/2020_HUGO_BOSS_Environmental_Policy_EN.pdf">https://group.hugoboss.com/fileadmin/media/pdf/sustainability/company_commitments_EN/2020_HUGO_BOSS_Environmental_Policy_EN.pdf</a>                   |

|              |   |  |
|--------------|---|--|
|              | Health and Safety Commitment                          | Hugo Boss. (2015). <i>Health and Safety Commitment</i> . Hugo Boss.<br><a href="https://group.hugoboss.com/fileadmin/media/pdf/sustainability/EN/HB_Health___Safety_Co_mmitment_en.pdf">https://group.hugoboss.com/fileadmin/media/pdf/sustainability/EN/HB_Health___Safety_Co_mmitment_en.pdf</a>   |
|              | Human Rights Policy                                   | Hugo Boss. (2021b). <i>Human Rights Policy</i> . Hugo Boss.<br><a href="https://group.hugoboss.com/fileadmin/media/pdf/sustainability/company_commitments_EN/Human_Rights_Policy_EN.pdf">https://group.hugoboss.com/fileadmin/media/pdf/sustainability/company_commitments_EN/Human_Rights_Policy_EN.pdf</a>                                     |
|              | Chemical Management Policy                            | Hugo Boss. (2021c). <i>Chemical Management Policy</i> . Hugo Boss.<br><a href="https://group.hugoboss.com/fileadmin/media/pdf/sustainability/company_commitments_EN/HUGO_BOSS_Chemical_Management_Policy.pdf">https://group.hugoboss.com/fileadmin/media/pdf/sustainability/company_commitments_EN/HUGO_BOSS_Chemical_Management_Policy.pdf</a>  |
|              | Restricted Substances List & Product Compliance Guide | Hugo Boss. (2021d). <i>Restricted Substances List &amp; Product Compliance Guideline</i> . Hugo Boss.<br><a href="https://group.hugoboss.com/fileadmin/media/pdf/sustainability/Restricted_Substances_List_EN.pdf">https://group.hugoboss.com/fileadmin/media/pdf/sustainability/Restricted_Substances_List_EN.pdf</a>                           |
|              | Hugo Boss Supplier List                               | Hugo Boss. (2021e). <i>Hugo Boss Supplier List</i> . Hugo Boss.<br><a href="https://group.hugoboss.com/fileadmin/media/pdf/sustainability/HUGO_BOSS_Supplier_List_EN_2020.xlsx">https://group.hugoboss.com/fileadmin/media/pdf/sustainability/HUGO_BOSS_Supplier_List_EN_2020.xlsx</a>   |
| <b>MANGO</b> | Sustainability Report 2020                            | MANGO. (2021). <i>Sustainability Report 2020</i> . MANGO.<br><a href="https://staticpages.mngbcn.com/edits/SS21/CATSHE042021SUSTAINABILITY/assets/pdfs/MNG-mem-in-2020__name=memIn2020.pdf?rand=98839805">https://staticpages.mngbcn.com/edits/SS21/CATSHE042021SUSTAINABILITY/assets/pdfs/MNG-mem-in-2020__name=memIn2020.pdf?rand=98839805</a> |
|              | Supplier List   | MANGO. (n.d.). <i>Supplier List</i> . Mango.<br><a href="https://shop.mango.com/iframe.faces?state=she_030_IN&amp;ts=1647946663348">https://shop.mango.com/iframe.faces?state=she_030_IN&amp;ts=1647946663348</a>  |

|                               |   |   |
|-------------------------------|---|---|
|                               | Code of Conduct                               | MANGO. (n.a.). <i>Code of Conduct</i> . MANGO.<br><a href="https://st.mngbcn.com/web/oi/servicios/rsc/pdf/IN/projects/conducta.pdf">https://st.mngbcn.com/web/oi/servicios/rsc/pdf/IN/projects/conducta.pdf</a>   |
| <b>Levi Strauss &amp; Co.</b> | Levi Strauss & Co. 2020 Sustainability Report | Levi Strauss & Co (LS&Co). (2021a). <i>Levi Strauss &amp; Co 2020 Sustainability Report</i> . Levi Strauss & Co.<br><a href="https://www.levistrauss.com/wp-content/uploads/2021/09/LSCo.-2020-Sustainability-Report.pdf">https://www.levistrauss.com/wp-content/uploads/2021/09/LSCo.-2020-Sustainability-Report.pdf</a>   |
|                               | Sustainability Guidebook                      | Levi Strauss & Co (LS&Co). (2020) <i>Sustainability Guidebook</i> . Levi Strauss & Co.<br><a href="https://staticpages.mngbcn.com/edits/SS21/CATSHE042021SUSTAINABILITY/assets/pdfs/MNG-mem-in-2020__name=memIn2020.pdf?rand=98839805">https://staticpages.mngbcn.com/edits/SS21/CATSHE042021SUSTAINABILITY/assets/pdfs/MNG-mem-in-2020__name=memIn2020.pdf?rand=98839805</a> |
|                               | Levi Strauss & Co. Factory Mill List          | Levi Strauss & Co (LS&Co). (2021b). <i>Levi Strauss &amp; Co. Factory Mill List</i> . Levi Strauss & Co.<br><a href="https://www.levistrauss.com/wp-content/uploads/2021/06/Levi-Strauss-Co-Factory-Mill-List.xlsx">https://www.levistrauss.com/wp-content/uploads/2021/06/Levi-Strauss-Co-Factory-Mill-List.xlsx</a>   |
|                               | Worldwide Code of Business                    | Levi Strauss & Co (LS&Co). (2019) <i>Worldwide Code of Business Conduct</i> . Levi Strauss & Co.<br><a href="https://www.levistrauss.com/wp-content/uploads/2020/06/Code-of-Conduct-English.pdf">https://www.levistrauss.com/wp-content/uploads/2020/06/Code-of-Conduct-English.pdf</a>   |

## Appendix C

### *Interview guide*

1. What role plays sustainability reporting in overcoming occupational and environmental hazards caused by chemicals?
2. How can sustainability reporting create an environmentally and socially just textile production?
3. What do you consider the greatest obstacle or difficulty to create a safe and just textile supply chain?
4. Does sustainability reporting create awareness for sustainable management approaches and performance measurement? Can it motivate factory owners, employees and politicians to intensify existing efforts in the field of sustainable development?
5. To what extent create sustainability reports incentives for creating better and safer working conditions and improve workers well-being?
6. Focusing on chemical pollution: What impact has sustainability reporting and the demand of stakeholders to be transparent about practices on chemical management and wastewater management?
7. Some reports talk more extensively, some less about health and safety measures taken to reduce occupational hazards caused by chemicals. Do you think it is because there is a lack of it, or they just do not report about it?
8. What is most important to prevent environmental pollution caused by chemicals?
9. What is most important to prevent occupational hazards caused by chemicals?
10. Who has the responsibility to implement these changes? Brands, factory owners, politicians?

## Appendix D

Detailed overview of coding categories, its characteristics and their interpretation within this thesis including their references used to analyze companies' sustainability reports. The coding categories are based on the literature review and the GRI standard.

| Category                    | Characteristic                          | Description   |
|-----------------------------|---|---|
| <b>Occupational Hazards</b> | Occupational health and safety measures | Health services to protect workers' health (GRI, 2021, p.473); Access to medical and healthcare services (GRI, 2021, p.477); work related ill health, including acute, recurring or chronic health problems caused by working conditions or practices (GRI, 2021, p.486); health measures taken to prevent exposure to hazards/chemicals (GRI, 2021, p. 479; Kant Upadhyay & Pandey, 2016); create a safe working environment (Hiba et al., 2021); joint management-worker health and safety committees (GRI, 2021, p.474); company's approach to prevent and mitigate occupational health and safety hazards that are directly linked to operations (GRI, 2021, p.479); measures taken to give workers the ability of being safe, healthy, engaged and satisfied at work (ILO, 2009) |

Personal Protective Equipment

Provide and explain proper use of protective equipment (Hiba et al., 2021; Tounsadi et al., 2020; GRI, 2021, p.474; Claudio, 2007b)

---

Training and awareness

Instruction of safe handling methods (Kant Upadhyay & Pandey, 2016); inform workers about hazards, share knowledge and create awareness (Padmini & Venmathi, 2012); providing training and education of workers, protection against reprisals and participation of representatives in health and safety inspections (GRI, 2021, p.474; Claudio, 2007b, p. A502); Training provided for workers related to work-related hazards and hazardous activities (GRI, 2021, p.476)

---

Workers' rights

Give workers a voice and comply with worker's rights (Hiba et al., 2021); Putting policies and processes in place that protect workers and assure them the right to remove themselves from hazardous situations at work (GRI, 2021, p.472); disclosure of employees and workers who are not employees are covered by occupational health and safety management (GRI, 2021, p.480); conditions of work and social protection (Hiba et al., 2021); workers right to participate in decision making processes related to their exposure to harms and impact



to their environment and health (well-being) (Coolsaet, 2020); reporting related to human rights obligations (Islam & McPhail, 2011)

---

**Environmental hazards**

Water management

Assessment of water pollution during production (Kant, 2012; Niinimäki et al., 2020); Quantify volume of water discharge and its impact (GRI, 2021, p.347); Companies awareness about environmental impacts (GRI, 2021, p.433);

---

Chemical management

Implementation of clean technologies and measures taken to prevent pollution (Kant, 2012; UNEP, 2006; Uddin, 2021); Implementation, enforcement and compliance of standardized guidelines and regulations (Chaturvedi & Nagpal, 2003)

---

**Brand responsibility**

Risk assessment

Company's followed legal requirements to implement occupational health and safety management system and processes used to identify hazards and risks (GRI, 2021, p.471f); Disclosure of work-related injuries and identified hazards through risk assessment (GRI, 2021, p.483f); Recognition of potential chemical hazards (Sokas, 2008)

---

|  |                                     |  |
|--|-------------------------------------|--|
|  | Targets and actions taken           | Disclosure of measurable actions (Thorisdottir & Johannsdottir, 2020); disclosure about company's awareness of its negative social impacts in the supply chain (GRI, 2021, p.608); Disclosure of labor practices and actions taken to improve them (Girard, 2014; Gehmann, 2016) |
| <b>Supplier relations and collaborations</b> | Publication of supplier information | Company publishes name of suppliers, their sustainability condition and practices (Brun et al., 2020); Overview of stakeholders in the supply chain (KPMG, 2021)   |
|  | Auditing/ Inspection of suppliers   | The provision and participation of suppliers in health and safety inspections, audits, and incident investigations (GRI, 2021, p. 474)   |
|  | Collaborations                      | Collaboration with organizations or initiatives that push companies to disclose information about their supply chain and improve their social and environmental impacts (Brun et al., 2020; Uddin, 2021)   |