

Analysis of Environmental and Social Performance of Sustainability-linked
Bonds and Loans (SLBLs) in the Fashion Industry

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners. I understand that my thesis may be made electronically available to the public.

Abstract

The fashion industry has been criticized for its adverse effects on the environment and society. To address this, fashion retailers and brands are increasingly using Sustainability Linked Bonds and Loans (SLBLs) which aim to fund their operations in sustainability related activities and goals. However, there is a lack of academic research on the sustainability objectives targeted by these financial tools. Moreover, they are criticized for being driven by market participants rather than addressing sustainability concerns. This study aims to analyze the environmental and social performance of these SLBLs issued by fashion retailers and brands, using the Higg BRM, which is a comprehensive sustainability assessment tool which, using a set of questions and guidelines, helps companies measure and improve their sustainability performance solely for the apparel and footwear industry. The study used an exploratory sequential mixed method research approach, conducting content analysis of bond, sustainability and loan reports of SLBLs issuing fashion brands and retailers and coding based on the Higg BRM guideline. The findings suggest that three main sections of the Higg BRM namely brand, store, operations and logistics are primarily addressed through sub-sections related to the environment. 100% of SLBLs focus on reducing Greenhouse Gas (GHG) emissions, and nearly 65% focus on sustainable materials used in products. Other factors such as packaging and water and wastewater management are covered in around 30% and 20% respectively. However, other environmental issues like water usage, wastewater management, post-consumer waste, and social and human rights issues associated with the fashion industry have the lowest coverage on the Higg BRM scale.

In comparing information from sustainability reports, bond reports, and loan reports, the reports' respective adherence to the Higgs BRM questions was explored. It was found that sustainability reports covered 2% more Higgs BRM questions overall compared to bond or loan reports. Regarding specific topics, bond or loan reports covered 53% of the questions related to GHG emission reduction, while sustainability reports covered 47%. In the product section, sustainability reports addressed 33% of the related questions, while bond or loan reports covered 26%. Similarly, in terms of water and wastewater, sustainability reports had slightly over 30% coverage, which was 10% higher than that of bond or loan reports. Finally, in terms of packaging and other sections, both reports had the same coverage numbers, 35% and 100% respectively.

Utilizing the study's findings will help the decision-makers who develop SLBLs in the fashion industry to develop SLBLs that emphasize broader material sustainability concerns. Furthermore, this research can aid institutional and private investors in gaining a clear understanding of the current emphasis placed on SLBLs within the fashion industry and be a catalyst to help bridge the gap between sustainability concerns addressed by SLBLs. This research will enhance the existing literature on sustainability finance within the fashion industry by presenting a comprehensive overview of Sustainable Linked Bonds and Loans (SLBLs) in this sector. Future researchers can leverage this study as a foundation for conducting in-depth investigations into investor behavior within the realm of SLBLs.

Key Words: Sustainability linked Bonds and Loans (SLBLs), fashion industry, Higg Brand and Retail Module (Higg BRM), corporate sustainability goals

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Dedication

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Chapter 1: Introduction

The fashion industry is a highly intricate and interconnected network of numerous actors around the world and their activities, including design, production, distribution, and consumption (Buchel et al., 2022). It is critically viewed for its negative impacts on society and the environment, particularly for its extensive resource use, the short life span of products, excessive consumption, and social issues throughout their supply chain (Arrigo, 2015; Esben Rahbek et al., 2018). The fashion industry's numerous sustainability challenges are incredibly complex, interconnected and wide-reaching (Boström & Micheletti, 2016). Upstream, the intensive use of energy, water, chemicals and pesticides pose numerous environmental risks, resulting in a major contribution to global greenhouse gas emissions around 8-10%, as well as consequential water consumption after agriculture sector (Esben Rahbek et al., 2018; Young, 2021). Alongside the environmental implications of the fashion industry, social externalities also exist in the form of poor labor practices and inadequate health and safety protocols resulting in low pay, child labor and occupational hazards (Esben Rahbek et al., 2018). Furthermore, downstream in the fashion industry, issues are linked to consumers' purchasing, usage and disposal habits (Esben Rahbek et al., 2018). The complexity of the fashion sector's supply chain often obscures traceability and transparency for stakeholders and greenwashing is a common concerns (Esben Rahbek et al., 2018; Global Ethical Finance, 2022).

The fashion industry with market size of USD \$2 trillion presents substantial opportunities for sustainability transformation (Apparel Impact Institution and Fashion for good, 2021). It has been estimated that the fashion industry requires approximately USD \$20 to \$30 billion yearly, which

is around 0.5% of the total global SDG investment requirement to develop and scale up innovative technology and business models (Kaiser, 2020). The expansion of sustainability considerations and the rise in sustainability reporting by companies indicate a growing recognition of sustainability's importance among both corporate management and investors (Kaiser, 2020). Sustainable investing, commonly known as socially responsible investing, entails integrating environmental, social, and governance (ESG) considerations into the process of making investment choices. Sustainable investing is a great way to make a financial return while also contributing to a better world. Many investors have found this type of investment to be beneficial, both financially and socially. Investors in Europe and the United States are closely examining the environmental, social, and governance practices of the apparel and footwear industries (Young, 2021). Additionally, ESG factors are considered in credit evaluations by S&P, Moody's, and Fitch ratings agencies. (Neville, 2019). The sustainability-linked bank debt (SLBD) market is growing rapidly and approaching the size of the existing green bond market (Wilkins & Bendersky, 2019). Furthermore, the apparel industry is facing increasing scrutiny from consumers, regulators, and other stakeholders regarding its negative environmental and social impact. To avoid accusations of greenwashing, brands must demonstrate that they are implementing meaningful and credible measures to address sustainability issues while adhering to emerging regulatory standards (Mckinsey & Company, 2022).

In 2019, the global fashion industry was valued at approximately \$600 billion with an expected growth rate of 11.5% annually. By 2023, the industry is projected to reach a value of \$900 billion, making it a compelling investment opportunity (Lazarich, 2020). Transitioning to a sustainable

future necessitates flowing finance towards environmental and social well-being. One approach used in the fashion industry to promote sustainability is the use of Sustainability-Linked Bank Debts. The bonds and loans markets commonly known as Sustainability Linked Bank Debts (SLBDs) play a crucial role in attracting capital for sustainability initiatives (Global Banking and Finance Review, n.d.). Sustainability Linked Bonds and Loans are a type of financial instrument designed to encourage sustainable practices by aligning the objectives of borrowers and lenders. These instruments come in several forms, including Green Bonds, Sustainability Bonds, and Sustainability-Linked Bond, Sustainability-Linked Loans, Climate Bonds and Social Bonds (ICMA, 2022; LSTA, 2022).

The growth of "green," "social," and "sustainable" (GSS) bonds in the bond market reached a tipping point in 2020 and is expected to continue in the future (Giráldez & Fontana, 2021). The growing demand for sustainability is driving leading global fashion retailers, such as Adidas, Burberry, Chanel, H&M, Prada, M&S, Tesco, VF Corporation, Walmart, and Salvatore Ferragamo, to issue sustainability-linked bank debts (M&S, 2021; Nanda, 2021; Walmart, 2021; Salvatore Ferragamo, 2020; Turner, 2021; TFL Media, 2021). In 2020, VF Corporation became the first fashion company to issue a green bond. European companies such as Burberry, Adidas, and H&M were also pioneers in sustainability finance, issuing the first sustainability linked bonds in the region. (Young, 2021).

The aim of this research is to assess the environmental and social performance of SLBLs issued by fashion retailers and brands using Higg Brand and Retailer Module (Higg BRM) guideline. According to the American Marketing Association (AMA), a brand can be defined as a unique identifier such as a name, term, sign, symbol, or design, or a combination of these elements. It is

specifically created to distinguish the products or services of one seller or a group of sellers from those offered by competitors in the market (Keller, 2016). A retailer is a business that procures and consolidates products or services from various suppliers and sells them to customers. They add value by providing a diverse range of products and services in a single location, and they offer competitive prices by purchasing items in bulk at lower individual costs (BDC, n.d.). The study will utilize content analysis and measure the SLBLs against the Higg BRM guideline. This includes evaluating Sustainability linked bonds, Sustainability linked loans, and green bonds issued by the fashion retailers and brands. There are several sustainability standards used in the fashion industry, including the Global Organic Textile Standard (GOTS), the Sustainable Apparel Coalition's Higg Index, and the Bluesign Standard. The Higg Index, in particular, is a comprehensive sustainability assessment tool that helps apparel and footwear brands companies measure and improve their sustainability performance. The Higg BRM is a module developed by the Sustainable Apparel Coalition (SAC), a global non-profit alliance comprised of over 250 leading fashion brands, retailers, suppliers, trade associations, and academic institutions. The aim of SAC is to minimize environmental impact and advance social justice throughout the fashion industry's global value chain. The Higg BRM is one of four modules created by SAC, which is a comprehensive guideline that established methods for apparel and footwear brands and retailers to assess, disclose and improve environment and social performance across their global value chains (SAC, n.d.). This 300-page manual, comprising 500 questionnaires, tackles sustainability concerns within the apparel and footwear industries (SAC,n.d.).

This chapter will introduce sustainability issues in the fashion industry, basic concepts of sustainability Linked Bank Debts, basic introduction of Higg BRM module. The problem statement is addressed at the end of the chapter and research objectives are laid out thereafter.

1.1 Sustainability Issues in Fashion Industry

Fashion is a broad and cross-sector concept that encompasses several industries, including apparel, footwear, leather goods, jewelry, perfumes, and cosmetics (Amed et al., 2022). However, the primary focus of this paper is on the apparel industry. The apparel industry is a significant and globally prominent industry with an annual revenue of around 2.5 trillion dollars. The industry also provides employment opportunities for around 300 million people throughout the value chain, including manufacturing, design, marketing, retail, and distribution (Amed et al., 2020). According to McKinsey's fashion forecasts, the fashion market (excluding luxury) is predicted to experience sluggish sales growth in 2023, ranging from negative 2 percent to positive 3 percent, primarily due to a decline in the European market. On the other hand, China and the United States are expected to perform better, with projected growth rates ranging from 2 percent to 7 percent and from 1 percent to 6 percent, respectively (Mckinsey & Company, 2022).

Along with the growth, the apparel industry faces significant challenges in terms of social and environmental sustainability throughout the value chain. These challenges are often the result of asymmetric power distribution across the value chain, social injustice, and environmental impacts (Buchel et al., 2022). The industry heavily relies on external partners to produce its products and sources raw materials from various distant locations. Different manufacturing

processes, such as milling, dyeing, weaving, finishing, cutting, and sewing, are often subcontracted to suppliers across the globe. This complex supply chain allows for a wide variety of products at lower costs, but also presents challenges in managing suppliers and ensuring ethical and environmental standards are met (Caniato et al., 2012; Feng & Ngai, 2020).

Environmental sustainability is a significant concern for researchers and practitioners, as achieving a balance between business and environmental needs is a critical challenge (Caniato et al., 2012). Fashion retailers and brands are responsible not only for their direct environmental impact but also for the indirect environmental impacts that originate from their suppliers. In upstream, the production of key raw materials like cotton and wool, which are used in the fashion industry, requires significant amounts of fresh water and pesticides. In addition, synthetic fibers used in clothing production are extracted from non-renewable sources and use large amounts of energy (Caniato et al., 2012). Production processes such as dyeing, washing, drying, and finishing in the fashion industry are highly chemical and resource-intensive, resulting in significant negative environmental impacts. These processes generate high levels of pollution, such as water contamination, and require significant amounts of energy, contributing to climate change. (Caniato et al., 2012). In addition, the fashion industry's increasing frequency of raw materials and finished products transportation across different regions and countries results in increased greenhouse gas emissions (Caniato et al., 2012).

The fashion industry is responsible for one-fifth of the 300 million tons of plastic produced globally each year. This is largely due to the use of polyester and other synthetic fibers, which contribute significantly to micro plastic pollution that is harmful to marine life. Production of garments has doubled since 2000, with nearly 90% of the fiber used in fabric production being

incinerated or sent to landfills. Unsold clothing is often destroyed and sent to the global south, contributing to the industry's environmental impact. Textiles account for 15% of all petrochemical products, making it the second-largest product group made from petrochemical plastics after packaging (Dottle & Gu, 2022). The fashion industry is responsible for generating 20% of global wastewater and consuming 93 billion metric tons of clean water annually, which is half of what the United States drinks in a year (RENEE, 2021). Cotton production, in particular, requires a significant amount of water, around 10,000 liters of water are necessary to manufacture 1kg of cotton, which is used to create a single pair of jeans (Granskog, Anna; Laizet, Franck ; Lobis, Miriam and Sawers, 2020). In addition, the use of insecticides and pesticides in cotton production contaminates the soil, and runoff from cotton fields with excessive nutrients contributes to eutrophication and algal blooms. The dyeing process used in fabric production involves toxic chemicals that are responsible for 17-20% of global industrial wastewater pollution (Granskog, Anna; Laizet, Franck ; Lobis, Miriam and Sawers, 2020). This process is water-intensive and contributes to water pollution through hazardous chemical runoff and the disposal of non-biodegradable liquid waste (Granskog, Anna; Laizet, Franck ; Lobis, Miriam and Sawers, 2020). The European Union has identified 165 hazardous chemicals out of the 1900 chemicals used in textile processing (Granskog, Anna; Laizet, Franck ; Lobis, Miriam and Sawers, 2020). Washing synthetic clothes releases microplastics into wastewater, which can end up in the sludge used as fertilizer for agriculture and enter the food system. Microplastics also end up in rivers and oceans, harming marine life, birds, and turtles. Studies have found microplastics in food, water, and air, with Americans estimated to consume 74,000 microplastic particles each year (RENEE, 2021). The fashion industry is responsible for 35% of microplastics in the ocean, with limited effective

polyester recycling resulting in most garments ultimately ending up in landfills where they continue to shed microfibers (RENEE, 2021). Some brands use recycled polyester from PET bottles, which emits fewer emissions than virgin polyester, but recycling options for polyester are limited (RENEE, 2021). Polyester, a prevalent fabric in clothing, is derived from fossil fuels and accounts for an annual consumption of 70 million barrels of oil. Furthermore, plastic is extensively utilized for packaging and hangers (RENEE, 2021).

The impact of the fashion industry on biodiversity, despite its crucial role in providing food, energy, fresh water, air, and soil, is a topic that has received relatively little attention. The fashion industry plays a significant role in the loss of biodiversity as its supply chains are directly linked to soil degradation, natural ecosystem conversion, and water pollution. Climate change and biodiversity loss are mutually dependent and accelerate one another. The production of raw materials, material preparation and processing, and post-consumer wastage are the primary contributors to the negative impacts. For instance, cotton, which is one of the largest users of non-synthetic fibers, is grown with heavy use of insecticides and pesticides, accounting for around 23% of insecticide and 10% of pesticide use globally, even though it is grown on only 2.4% of cropland. Man-made cellulose fibers (MMCFs), such as rayon and viscose, which rely on wood pulp, are responsible for the logging of 70-150 million trees each year, with this number expected to double by 2034, exacerbating deforestation in some of the world's most endangered forests. Although the vast majority of MMCFs are sustainably sourced from certified forests, approximately 30% of MMCFs still come from natural and endangered forests, leading to soil and water pollution from chemicals used in plantation forests and pulp processing, resulting in

habitat loss and the endangerment of species unless strict measures are implemented (Granskog, Anna; Laizet, Franck ; Lobis, Miriam and Sawers, 2020)

Currently, only 12% of textile waste is repurposed, while less than 1% of discarded clothing is recycled to create new products. This is mainly due to the degradation of fibers after use and the limitations of textile-to-textile recycling technologies, which struggle to separate dyes, contamination, and mixed fiber types (such as cotton and polyester). As a result, a staggering 53 million metric tons (73%) of clothing waste are either burned or deposited in landfills each year. (Granskog, Anna; Laizet, Franck ; Lobis, Miriam and Sawers, n.d.). Clothing made from natural fabrics like cotton and linen can degrade within a month when disposed of in a landfill. However, synthetic fabrics take up to 200 years to degrade and produce methane, a potent greenhouse gas that contributes to climate change (RENEE, 2021) and contribute to habitat loss. Approximately 30 to 300 species loss might occur during construction of landfill (Granskog, Anna; Laizet, Franck ; Lobis, Miriam and Sawers, 2020).

The fashion industry is a labor-intensive sector that often employs young and poorly educated workers. This is because manufacturing skills are easily transferable and the regulations are often relaxed, particularly in developing countries with high levels of corruption (Köksal et al., 2017; Feng & Ngai, 2020; RENEE, n.d.). Due to the labor-intensive nature of the fashion industry and the relaxed regulations in many manufacturing countries, workers are often exposed to unfavorable labor conditions and inadequate compensation (Feng & Ngai, 2020). It is estimated that out of the approximately 75 million factory workers around the world, only 2% of them are earning a wage that can sustain a decent living. (RENEE, 2021). Numerous notable labor concerns exist within the fashion industry's supply chain, encompassing breaches of political and economic

rights, hazardous work environments, exploitation of child labor, inadequate compensation, extended work hours, and risks to health and safety. In addition, many factory workers are located in areas with polluted water bodies, resulting from the textile processing factories in the region (RENEE, 2021). The occurrence of events such as the Rana Plaza disaster between 2013 and 2015 led to a greater focus on addressing social issues in the fashion industry supply chain (Köksal et al., 2017). As a result of these concerns, many fashion brands have adopted various strategies such as Codes of Conduct (CoC), social audits, multi-tier cooperation, and offering incentives to suppliers to encourage social sustainability and manage social risks in their supply chains (Feng & Ngai, 2020). Majority of the sourcing countries forming trade unions and bargain for right is difficult or/and unsafe. Many of the garment production countries such as Bangladesh, India, Pakistan, Nepal and SriLanka are affected by complex caste and ethnicity based discrimination which is deeper in the supply chain. This discrimination can also be exacerbated by the gendered nature of the fashion industry, with women often facing additional barriers to accessing their rights and protections. (Fashion Revolution, 2022). The fashion industry relies heavily on female workers in its supply chain. However, the power imbalance between men and women is prevalent in the industry, particularly in senior roles such as factory owners and managers who make decisions that affect the working environment of workers. This power imbalance has contributed to the harmful impact of gender-based violence, including bullying, abuse, and harassment, which is often used to increase the pace of work. Despite the significant profits earned by brands through the hard work of these workers, the vast majority of them are not provided with a living wage (Fashion Revolution, 2022).

Child labor is a pervasive issue in the fashion industry, particularly countries with weak or poorly enforced labor laws (Köksal et al., 2017; Campos Franco et al., 2020; Kozłowski et al., 2015). Children are often employed at different stages of the supply chain, ranging from the production of raw materials such as cotton and leather to the manufacturing of clothing and accessories (Köksal et al., 2017). The fashion industry presents a particular risk for child exploitation, given the vulnerability of children due to their age and the lack of legal protections (Köksal et al., 2017). Children may be compelled to work long hours under hazardous conditions and receive inadequate pay, resulting in adverse effects on their physical and mental health and depriving them of educational and other opportunities (Köksal et al., 2017).

The fashion industry is characterized by a business model that contributes to the accumulation of excessive amounts of unsold and unused clothing, as well as a culture of excessive consumption and frequent disposal of clothing. These factors are at the heart of the fashion system, resulting in the generation of vast quantities of clothing waste, which has been commonly referred to as a "clothing mountain" (Buchel et al., 2022). The worldwide apparel consumption is currently around 62 million tons annually, and it is projected to double by 2030. In response to the increasing demand, fashion brands have doubled their production from 2000 to 2014. (Andrew Morlet et al., 2019; McKinsey & Company, 2016). This leads to fast fashion business model which is based on low-priced and trendy products. Studies from countries in the global north, such as the UK and Norway, demonstrate that disposal of clothing after minimal use has become prevalent due to impulsive purchasing, on an average garment use time has reduced to nearly 40% compared with 2005 (Andrew Morlet et al., 2019; Niinimäki et al., 2020). It is also assumed that high economic and population growth in emerging economics leads to higher

consumption and taste for western style clothing toward Global South (Niinimäki et al., 2020). As mentioned earlier in the paper, a negligible portion of clothing is either resold or down cycled or recycled and retailers dispose of unsold stock contributes to waste. Repairing, reusing, and reselling clothing and textiles is not a common practice, resulting in most of these items being either landfilled or incinerated (Buchel et al., 2022).

One of the main obstacles in addressing sustainability challenges in the fashion industry is the fragmented supply chain and unequal power dynamics, which contribute to a sense of collective irresponsibility and push accountability down the supply chain. Additionally, the unregulated global market allows industry players to avoid social and environmental responsibility, promoting a culture of fast and cheap production at the expense of sustainability. The industry's focus on growth and extraction leads to intense price competition and a dependence on nonrenewable and virgin resources. Finally, the industry's disposable nature and constant demand for new, trendy products further exacerbate these issues (Buchel et al., 2022).

The fashion system and its predominant sustainability challenges are studied using Multi-level Perspective (MLP) of transition analysis. The current fashion system is locked in nature of the fashion regime such a current structure and practices as well as fashion culture. Therefore, niches which have been divided into four categories eg. technology and fiber, business model, value chain model and partnership and consumer awareness provides opportunity for change. Simultaneously, landscape pressure such as growing middle class population, global climate action, social justice disasters, digitalization and social media and Covid 19 pandemic challenge the status quo and urge actors for change. However, 'disconnection, uncontrollability, extraction, growth-focus and disposability' are the road blocks towards transitioning to sustainable fashion.

Therefore, this study proposes six transitional pathways towards creating a sustainable fashion namely new value chain model, workers exercising their rights, industry accountability, product and manufacturing innovation, natural capital approaches and new business model (Buchel et al., 2022).

To address these challenges, the fashion industry is working towards more sustainable and equitable practices throughout the value chain, including fair labor practices, responsible sourcing, and reduced environmental impact. One of such initiatives are assessing sustainability using common guideline such as Higg BRM module which is developed by SAC. The SAC is a well-known collaboration among major fashion brands aimed at improving sustainability in the industry (Mohajeri et al., 2020). Walmart and Patagonia brought together industry leaders in 2009-2010 to create a universal sustainability performance measurement standard for the sector, which led to the founding of SAC in 2011. SAC now comprises over 250 leading apparel, footwear, and textile brands, retailers, suppliers, service providers, trade associations, non-profits, NGOs, and academic institutions, all of whom aim to reduce environmental impact and promote social justice throughout the global value chain of the sector. The Higg BRM, along with two other modules, was launched by SAC in 2012 specifically for fashion retailers to assess the environmental and social impacts of their products from development to the end of their life. The initiative has brought together several reputable fashion brands, retailers, industry groups, and humanitarian organizations to improve working conditions in apparel manufacturing worldwide. Although the initiative has faced some controversies, it has the potential to reduce audit redundancy in the industry (Mohajeri et al., 2020).

1.2 Different types of Sustainability Linked Bonds and Loans (SLBLs)

Sustainable finance has a vital function in guiding the allocation of investments towards sustainable businesses, entities, and initiatives, while supporting the process of transitioning towards a more sustainable global economy. (Cleary, n.d.). There has been a growing interest among investors in sustainable investing, which has resulted in the emergence of various sustainable investment products that aim to promote sustainability, responsibility, and positive impact (Kölbel et al., 2020). SLBLs have been identified as a sustainable financial product that can effectively address sustainability concerns within the fashion industry as growing number of companies are issuing such products in terms of Sustainability Linked Bond and Loans, Green Bonds and Sustainability Bonds and Loans.

Sustainability-linked Bonds and Loans refers to a category of bonds and loans that are designed to promote environmental and social benefits. The Sustainability Debt Market encompasses two primary structures: Performance-based bonds and loans, and Use of Proceeds bonds and loans. The latter category, also known as "Use of Proceeds" bonds and loans, is specifically aligned with financing or refinancing projects that have a positive impact on the environment, society, or both, through the issuance of green, social, or sustainability bonds and loans (ICMA, 2022; Loan Market Association (Hrsg.), 2021; Loan Market Association, 2018). In contrast to Use of Proceed debt instruments, Performance-based Sustainability Debts, such as Sustainability Linked Bonds (SLBs) and Sustainability Linked Loans (SLLs), are linked to the issuers' or borrowers' objectives for achieving ambitious Sustainability Performance Targets (SPTs) in the future. These types of bonds or loans are designed to be target-linked, with the issuers having pre-defined Key Performance

Indicators (KPIs) related to the sustainability targets they aim to accomplish (ICMA, 2022; LSTA, 2022). The Sustainability-linked bonds (SLBs)'s features, including coupon, maturity, and repayment amount, are subject to change based on whether the issuer meets the predefined Sustainability Performance Targets (SPTs) for the selected Key Performance Indicators (KPIs) (Vulturius et al., 2022). Sustainability-linked bonds (SLBs) use a step-up mechanism to increase the bond's interest rate if the issuer fails to meet the agreed sustainability target within the given timeline (ECLAC - United Nations, 2022). Conversely, if the sustainability target is achieved, the issuer's cost of capital decreases (Vulturius et al., 2022). SLBs can finance projects that are not necessarily green, but issuers must improve their overall sustainability performance. (Vulturius et al., 2022). These bonds are used for general corporate purposes and are accessible to many borrowers and issuers in the sustainable finance market (Thompson, 2021). In accordance with International Capital Market Association's (ICMA) Sustainability-linked Bond Principles (SLBP), issuers are required to publicly disclose the performance of key performance indicators (KPIs) in relation to the Sustainability Performance Targets (SPTs) and the resulting impact on the financial and structural characteristics of the bond. This disclosure should include information on the timing of the impact. (ICMA, 2020). ICMA asserts that Sustainability-linked bonds (SLBs) serve to advance the capacity of bond markets to provide funding and incentivize corporate stakeholders to demonstrate social and environmental responsibility, while also making a positive impact on sustainability (McMillan LLP, 2021). Similarly, Sustainability Linked Loans (SLLs) refer to any type of loan instrument or contingent facility, such as bond lines, guarantee lines, or letter of credits, that incentivize borrowers to attain ambitious and predefined sustainability performance objectives. (LSTA, 2022). The Sustainability Linked Loan Principles (SLLP) offer guidance to market

participants to ensure the sustainability-linked loan product's integrity and to encompass its essential characteristics (LSTA, 2022).

Sustainability-linked bank debts have experienced remarkable growth, with issuance totaling US\$355 billion in the first nine months of 2021, representing a 150% increase from the previous year's total. Sustainability-linked bonds are a particularly fast-growing segment, with issuance increasing by more than 500% in 2021 to reach US\$72 billion by 2030. Corporate issuers have dominated the sustainability bond market since 2015, outpacing sovereign and government issuers, with total issuance rising from USD 46 billion and USD 17 billion in 2015 to USD 575 billion and USD 406 billion in 2021. Europe accounts for more than half of the sustainability bond market (54%), followed by the Americas (22%) and Asia Pacific (18%).

Since the Sustainability-Linked Bond Principles were introduced by the International Capital Market Association (ICMA) in June 2020, approximately \$36 billion worth of Sustainability-Linked Bonds (SLBs) have been issued. In the second quarter of 2021, there has been a notable increase in both the volume and value of SLBs issued, particularly in Europe. Canadian bond issuers are also beginning to take notice of this trend. (McMillan LLP, 2021). Similarly, the sustainability loan market experienced significant growth in 2021, increasing by over 300% and reaching a record high of \$717 billion, surpassing the 2015 record. Corporate green bonds have gained significant popularity in recent years, with a surge in issuance from \$5 billion in 2013 to \$95.7 billion in 2018, commonly referred to as the "green bond boom" by Morgan Stanley. The rationale behind issuing green bonds lies in three main motivations. Firstly, green bonds serve as a credible signal to investors regarding a company's commitment to the environment, which may not be easily discernible otherwise. Secondly, companies may use green bonds to portray a green image

without taking substantive environmental action, which is known as greenwashing. Lastly, companies may choose to issue green bonds as a means of obtaining less expensive financing for projects that benefit society. Corporate green bonds are particularly prevalent in Europe, China, and the USA, where environmental considerations are significant to companies' operations (Flammer, 2021; Nguyen, 2022).

The International Capital Market Association (ICMA), comprising of banks, issuers, insurance companies, asset and fund managers, investors, and law firms, developed a set of guidelines and non-binding recommendations known as the "Green Bond Principles" (GBP) to encourage the adoption of best practices in the market (ICMA, 2023) . The initial internal standard was instrumental in driving market growth and served as a foundational reference for the existing green bond market. (Cortellini & Panetta, 2021). This framework is built upon principles of transparency, disclosure prior to issuance, post-issuance reporting, and third-party verification, which assist investors in evaluating the sustainability of the bond and the reliability of the issuer. The Climate Bond Initiative has gone further by establishing a clear classification system for eligible green projects and requiring pre- and post-issuance verification to certify bonds as Climate Bonds. In addition to the GBP as a foundation, multiple regional standards have emerged to define eligibility criteria for green projects and provide external verification. Examples of such regional frameworks or guidelines include the Climate Bond Standard, EU Green Bond Standard, China Green Bond Endorsed Project Catalogue, and ASEAN Green Bond Standard (Cortellini & Panetta, 2021).

1.3 Problem Statement

In recent times, Sustainability Linked Bonds and Loans (SLBLs) have emerged as a new financial instrument and have garnered attention in academic research from various perspectives. Academic literature has extensively examined the financial aspects of green bonds, such as their yield differential with conventional bonds, stock market reactions, regulatory policies and types of sustainability projects they finance. Additionally, the academic literature has examined the supply and demand dynamics surrounding green bonds. The another types of SLBLs; such as sustainability-linked bonds have been compared with conventional bonds in the European market, focusing on yield differentials and the dynamics of supply and demand. The literature on SLLs focuses on two main aspects: determining whether the economic incentives of these loans benefit the borrowers or the issuers, and examining the primary purposes for which borrowers utilize SLLs. Additionally, the research demonstrates the significance of disclosure quality in enhancing the effectiveness of ESG-linked loans, while also highlighting the potential risk of greenwashing in such loan structures. The literature review chapter 2 will provide a comprehensive examination and analysis of the existing academic literature concerning all these aspects of green bonds, sustainability-linked bonds, and sustainability-linked loans.

Given that Sustainability Linked Bonds and Loans (SLBLs) primarily target the achievement of sustainability goals by providing financing for industry-specific programs and projects, it is crucial for the academic literature to concentrate on evaluating the extent to which these SLBLs effectively address the key sustainability concerns within various industries. However, to the best of my knowledge, currently no academic literature specifically that examines the Sustainability Linked Bonds and Loans (SLBLs) in terms of their effectiveness in addressing the sustainability

aspects of any industry. This gap has been addressed through this thesis as it assesses the SLBLs in terms of their performance in addressing sustainability issues in the fashion industry.

1.4 Research Objectives and Question

The objective of the thesis is to analyze the SLBLs issued by fashion brands and retailers from 2017 to 2022. Here, the Higg BRM module as guiding principle to assess the environmental and social issues of the fashion industry. Furthermore, the objectives have been divided into two sections;

1. To identify the specific sustainability issues addressed in SLBLs for examples Green Bonds, Sustainability Bonds, Sustainability-Linked Loans and Bonds; using Higg BRM module guideline
2. To compare bond, sustainability, and loan reports of the SLBL issuing brands and retailers with regards to the Higg BRM module questionnaires to assess the consistency of information reporting

Research Question

Do the Sustainability Linked Loans & Bonds (SLBLs) issued by fashion brands address the environmental and social issues of the industry according to the Higg BRM module?

Chapter 2: Literature Review

The subsequent sections provide the literature on sustainability approaches of the fashion industry, green bond, sustainability linked bond and loans, criticism of the SLBLs and investors interest on SLBLs. Moreover, this section highlights the research gap identified in the review of existing literature.

2.1 Sustainability Approaches of the Fashion Industry

In the apparel sector, sustainability has been characterized through diverse interpretations. Moreover, the sector comprises diverse retail segments, including luxury fashion brand and mass fashion & sportswear brand, each with unique sustainability challenges (Kozlowski et al., 2015). Luxury brands are primarily recognized as heritage brands with a rich brand legacy, offering exclusive and limited products that possess longevity in terms of their desirability and durability (Fionda & Moore, 2009; Lo & Ha-Brookshire, 2018). It is expected that exclusivity would contribute to a decrease in the excessive consumption of natural resource however, the unsustainable choices made by luxury brands regarding the selection of raw materials and their use of endangered animal skins in the production of apparel products are major concern. Moreover, luxury brands have been accused of maintaining hazardous working environments within their factories, offering disproportionately low wages, and perpetuating gender-based discrimination (Campos Franco et al., 2020; Joy et al., 2012). Conversely, mass fashion brands are characterized by their affordability, quick production and distribution cycles, and use of lower quality materials and manufacturing techniques to offer inexpensive trendy clothing options (Lo

& Ha-Brookshire, 2018). This particular business model has been criticized for promoting impulsive buying and the disposal of products due to their limited durability, leading to excessive textile waste and a detrimental environmental impact across the entire supply chain, often referred to as "McFashion" (Joy et al., 2012; Kozlowski et al., 2015). As such, there is no single approach that can achieve sustainability across the entire industry (Kozlowski et al., 2015). Sustainable fashion requires consideration of financially material factors throughout the value chain, including design, production, and end-of-life management. These include reducing impacts on natural capital such as water pollution and greenhouse gas emissions, waste management and human capital such as fair labor practices (Morgan Stanley, 2022).

There are several drivers such a mitigation of negative media exposure, customer boycotts, activist campaigns, reduced risk of fines as well as stakeholders' scrutiny leads companies to mitigate corporate pressure and protection of corporate image thus fashion companies implement sustainability initiative through risk mitigation approach (Köksal et al., 2017, Pedersen et al., 2018; Wren, 2022). Undertaking social and environmental initiatives can bring about both internal and external advantages, which are likely to lead to a favorable outcome for the company's financial performance in the long run me(Weber, 2008; Pedersen et al., 2018). Additionally, some companies wish to be ethical leaders along with fashion leaders and aims to improve operational performance and productivity such as employee turnover, cost, quality as well as motivate employee by being socially responsible. One of the key enabler is embedding CSR practices in companies to a company's 'ethos and practice' and taking proactive approach from brands (Köksal et al., 2017).

Brands have implemented various initiatives to tackle sustainability issues in the fashion industry. Numerous fashion companies are taking steps to mitigate the adverse social and environmental effects associated with their supply chain by enhancing their control over it (Todeschini et al., 2017, Wren, 2022). As most of the impacts are in the production countries, taking sustainability strategies around this stage will be most efficient (Peters et al., 2021). One key aspect of sustainable supply chain management is evaluating suppliers for both risk mitigation and sustainability performance tracking to safeguard the brand's reputation and enhancing overall sustainability performance (Todeschini et al., 2017, Wren, 2022). Another important aspect is managing the supply chain for sustainable products, which includes activities such as selecting and ensuring compliance with suppliers. This can be further broken down into three areas: improving supplier practices, establishing effective communication with suppliers, and establishing clear criteria for supplier selection (Pedersen et al., 2018; Wren, 2022). To minimize potential risks, fast fashion companies employ various essential strategies. These approaches include actively engaging in networking initiatives like forming partnerships with prominent industry organizations such as the Sustainable Apparel Coalition, the International Labor Organization (ILO), and the Global Fashion Agenda. Additionally, they participate in sustainability campaigns and adhere to external sustainability benchmarks like the LEED Certification (Pedersen et al., 2018; Wren, 2022). Furthermore, engaging with their community through corporate social responsibility (CSR) initiatives, and enhancing information transparency regarding suppliers. To track the sustainability performance of fashion brands focusing on resource efficiency such as emission and water reductions, use of renewable energy and recycling materials (Rathore, 2022; Todeschini et al., 2017; Wren, 2022) (Todeschini et al., 2017, Wren, 2022). Simultaneously,

socially responsible practices include human rights, labor practice, code of conducts such as SA 8000 implementation to ensure workplace safety and social audits (Köksal et al., 2017). Furthermore, in order to ensure sustainable products within their supply chain, brands are focusing on improving their suppliers by implementing various measures (Wren, 2022). This includes monitoring compliance through third-party certifications, such as Higg FEM and FLSM, providing training, establishing and enforcing codes of conduct, and incentivizing good practices by rewarding suppliers (Köksal et al., 2017, Wren, 2022). To maintain effective communication with their suppliers, brands undertake measures such as conducting field visits, involving suppliers in research activities, and carrying out third-party audits. This ensures that close and continuous engagement is maintained with suppliers. In the absence of stringent regulations, companies establish their own sustainability criteria for their suppliers and enforce compliance with these standards (Wren, 2022). Furthermore, some responsible brands are working with suppliers and various initiatives has been taken through brand partnership for instance environment profit and loss accounting, publicly disclosing the suppliers that brands are working with, and through IT based traceability through block chain technology (Köksal et al., 2017). Though sustainable packaging has received attention in recent days, this is not a focus for the fashion brands (Jestratijevic, 2022). Jestratijevic et al. (2021) found that apparel and footwear brands use the "7R's sustainable packaging framework" to improve packaging sustainability. The seven approaches in this framework include reevaluating packaging solutions, reducing size, avoiding plastic packaging, promoting reuse, recycling, and repurposing of packaging and its components, and encouraging composting or decomposition of the package. A study finds that the challenges in sustainable packaging include uncertainty and limited knowledge, lack of

transparency, higher costs, intricate supply chains, and packaging having lower priority in sustainability efforts(Enlund & Nilsson, 2021).

Another approach is used by the fashion brands and retailers to address the sustainability is business model innovation. Transforming to circular business model from linear business model while changing the sustainability approach or developing a new products or technologies is regarded as crucial to address sustainability (Pedersen et al., 2018). Business model should be aligned with culture and value of the company (Pedersen et al., 2018).These niche practices targets to reduce waste in design, sampling and production stage using laser cutting, digital sampling, 3D knitting and reuse of leftovers. Simultaneously, it helps to extend the lifespan a garment by reusing, repairing and upcycling (Buchel et al., 2022). Moreover, innovative technologies like dyeing with bacteria, enzyme and nanotechnology reduces harmful impacts of water, energy and chemical use in the dyeing process(Buchel et al., 2022). Beside, innovative technologies for textile recycling such as automated sorting, chemical recycling and new fiber from recycled plastic makes the recycling a viable option. Besides, some startups and designers uses produce fiber such as fruit leather, algae, and fungi to manufacture alternative materials(Buchel et al., 2022). Besides, new innovative business model considers fashion as a service product, and customer as suppliers develop long term relationship with customers through rental, swap, lease clothing, producing garments on demand, allowing personalization, produce garments on demand (Buchel et al., 2022; Pedersen et al., 2018). Fashion brands and retailers, with competitive advancement are willing to develop sustainable business models, whereas start-ups struggle to skill up the innovation in sustainability (Todeschini et al., 2017).

One of the most prevalent practices for brands to share information about their sustainable practices is through sustainability reporting (Kozlowski et al., 2015). Although the use of indicators for sustainability reporting is increasing, concerns remain about the reliability and comprehensiveness of the claims due to the absence of standardization, verification, and the voluntary nature of sustainability disclosures (Garcia-Torres et al., 2017; Köksal et al., 2017; Kozlowski et al., 2015). A study conducted on the analyzing the Fashion Transparency Index from 2017 to 2020 to analyze the transparency in sustainability reporting finds out that the overall transparency score of each brand showed a gradual rise, indicating a positive trend towards greater transparency among the examined fashion brands. However, among the five explored topics transparency regarding sustainability issues were the second lowest though over the year social issues such as fair wage, workplace violence related issues disclosure increased gradually same as environmental issues such as water, chemical and energy related issues among the 98 studied brands (Jestratijevic et al., 2022).

2.2 Literature on Green Bonds

Several studies have pointed out that conforming to the various green bond frameworks and guidelines, as well as obtaining green certification, can impose additional costs on issuers, typically ranging from 0.3 to 0.6 basis points of the total amount. For smaller issuers, this could present a challenge, especially given the limited geographic reach of each framework and the difficulty in attracting a significant number of investors (Hachenberg & Schiereck, 2018; Cortellini & Panetta, 2021). A considerable body of literature has examined the concept of "green bond premium," also referred to as a "greenium," which suggests that green bonds carry a lower interest rate than conventional bonds with comparable risk profiles. One study, which analyzed

a sample of 82 corporate green bonds and compared them to similar corporate bonds, found that the credit yield spread of green bonds was 63 basis points (0.63%) lower than that of comparable corporate bonds (Nanayakkara & Colombage, 2019). A separate study analyzing the Chinese green bond market observed that green bonds exhibited a yield spread that was 34 basis points less than that of conventional bonds. The study identified several factors that contribute to this greenium, including Climate Bond Initiative (CBI) certification, companies with high scores on corporate social responsibility (CSR), a less concentrated ownership structure, and long-term institutional lenders (Wang et al., 2020). This study provides evidence that the issuance of third-party certified green bonds and those certified by a Climate Bond Initiative (CBI) result in a yield premium of 6 basis points and 15 basis points, respectively (Hyun et al., 2020). Other studies have found that green bonds have a negative yield premium compared to conventional bonds, ranging from -2 to -19 basis points. This premium is linked to the ESG rating of the issuer, with higher ratings associated with larger negative premiums. The primary driver of the observed yield premium is the governance practices of the issuer (Immel et al., 2021; Zerbib, 2019). The secondary market trading of corporate and financial issuer green bonds exhibit a narrower spread compared to non-green bonds (Hachenberg & Schiereck, 2018). Conversely, existing studies provided evidence of a yield premium for green bonds when compared to traditional bonds in the European Union green bond market, energy commodity market, and for third-party verified green bonds (Bachelet et al., 2019; Gianfrate & Peri, 2019; Kanamura, 2020). One study identified mixed findings with regards to yield differentials for green bonds compared to conventional bonds, with some instances showing a positive yield premium and in other instances no significant difference to other bonds. Similarly, another study found variable results

with regard to yield differentials between green bonds and their conventional counterparts (Tang & Zhang, 2020; Wulandari et al., 2018).

2.2.1 Stock Response on Green Bonds

A study of a global sample of 118 publicly traded companies that issued green bonds found that, on the day of the announcement, the average abnormal return (AAR) of stock prices was 1.166% above the market return. However, the cumulative AR over market return was -2.198% on the day before and the day of the announcement (Cortellini & Panetta, 2021). A research study on the decision-making process of Chinese green bond issuers in relation to regulatory policies has indicated that increased monitoring can improve the possibility of green bond issuance. Furthermore, an increase in the proportion of expenses directed towards green projects results in a higher inclination for firms to issue additional green bonds (Dou & Qi, 2019).

Analyzing information from 54 corporate-issued self-identified green bonds, the study concludes that price of the share of issuers had a CAR of nearly 1.5% in between 21days window (-10 to +10 days) along with stakeholders' consideration is a value added financing tool (Chen et al., 2022). Chinese firms exhibited a strong positive correlation between their stock prices and their issuance of green bonds. Furthermore, the researchers identified a favorable impact on long-term corporate profitability, operational effectiveness, innovation potential, corporate reputation, and CSR activities (Zhou & Cui, 2019). Some other studies found the similar result on stock price and green bond (Tang & Zhang, 2020; Wang et al., 2020). The issuance of green bonds by European insurance companies has been found to have a positive impact on their equity prices (Jakubik & Uguz, 2021). Conversely, a study observed negative CAR the range of -0.5–0.2%

upon issuing green bond (Lebelle et al., 2020). A comparative study utilizing the event study method was conducted on the Mainland China and Hong Kong stock markets over the period from 2016 to 2019, in order to examine investor reactions to the issuance of green bonds. The results revealed a positive response from both markets towards green bond announcements. Furthermore, institutional dynamics, such as strategic framing and source credibility strength, were found to be significant factors affecting a firm's institutional legitimacy and, ultimately, investor reactions(Chen et al., 2022). An additional research study examined the response of green bond issuances to top-down regulatory policies implemented after 2014. Utilizing the difference-in-difference model, the study found a direct positive correlation between green bond regulatory policies and the amount of issuances. Moreover, specific types of issuers, including government-owned organizations, green industry firms, and financial issuers, were found to have responded more positively to the regulatory obligation and issued a greater number of bonds(Saravade et al., 2022).

2.2.2 Green Bond Supply Demand

The authors of a global corporate bond analysis have examined the issuance of green bonds from the point of the issuing entities. They have discovered that the coupon rate, or the interest paid to bondholders, has a negative correlation with the size of the green bond issuance and the issuance amount denominated in Euros. On the other hand, there is a positive correlation between the coupon rate and the bond's credit rating and availability of collateral. In addition, there is a greater propensity among utility issuers to release larger-sized green bonds in comparison to industrial and real estate issuers. The authors illustrate that the notable expansion

of the green bond market is primarily attributable to increased rates of market involvement, as opposed to a magnification in the scale of issuances (Barua & Chiesa, 2019). Various studies concentrated on Chinese companies have identified that issuers can decrease their financial costs through third-party verification, obtaining a higher credit rating, increasing the issue size and maturity of the bond, as well as obtaining a higher corporate social responsibility (CSR) score (Hyun et al., 2022; Wang et al., 2020).

After examining 306 corporate bonds, the study has concluded that the performance of a green bond is influenced by the types of projects financed. The projects focused on sustainable natural resource management, water management, and biodiversity conservation have a positive impact on the bond's performance. Conversely, endeavors linked to clean transportation and addressing climate change adaptation exhibit an adverse impact. Additionally, a higher sustainability performance by the host country and issuing firm leads to better performance of the green bond (Russo et al., 2021).

Corporate green bonds show an inverse relationship between credit rating and yield spread. Unlabeled green bonds have higher yields (by 24-36 basis points) than labeled green bonds. A business case analysis suggests that green bond financing offers higher returns for shareholders compared to bank loans (Alonso-Conde & Rojo-Suárez, 2020; Cortellini & Panetta, 2021; Hyun et al., 2022).

2.2.3 Green bond market performance analysis

A study found that investors seek returns and volatility within the green bond market, with this trend being more resilient in the short term as opposed to the long term (Pham and Huynh, 2020). Green bonds exhibit higher liquidity when contrasted with conventional bonds, as evidenced by factors such as bid-ask spread and LOT liquidity measure. Additionally, a positive correlation is observed between the liquidity matrix and the performance of green bonds, while the influence of the LOT measure is diminishing over time (Febi et al; 2018). Investors opt for sustainable companies as a defensive approach to investment due to their reduced volatility during economic downturns. Furthermore, when comparing international green indices with widely recognized stock indices, green bonds display a greater defensive quality in comparison to conventional bonds (Shaydurova et al., 2018).

2.3 Literature on Sustainability Bonds

A study found widespread negative reactions in stock market to sustainability bond issue announcements. Moreover, it found significant negative abnormal returns before the publication of The Sustainability Bond Guidelines by the International Capital Market Association in June 2018. The bond issue's size, callable status, single-day announcement, company's Return on Assets, social disclosure score, and issuance timing (before or after June 2018) were identified as statistically significant factors affecting the stock returns of issuers (Mocanu et al., 2021).

2.4 Literature on Sustainability linked Bonds

The literature has thoroughly examined green bonds from various perspectives, but there is limited research on sustainability-linked bonds (SLBs), which represent a relatively novel form of

debt instrument. A study examines Tesco's SLBs aimed at reducing greenhouse gas emissions using 56 empirical data points. The results indicate that the yield differential between SLBs and their conventional counterparts issued by Tesco is negative, providing evidence of a sustainability price premium for these SLBs (Liberadzki et al., 2021). A study investigates whether sustainability-linked bond (SLB) issuers' or investors' bear the costs of sustainability improvements. The study includes 102 SLBs and non-sustainable counterfactuals issued, and the results indicate that the yield difference between these two groups is on average -29.2bps, which is lower than the average coupon step-up of 26.6bps. Therefore, companies in the sample benefit from a net average benefit of 3.5 million USD. This implies that issuers benefit from a sustainability premium while investors pay for the sustainability improvement. Additionally, the average coupon step-up is lower than the sustainability premium, and there is a time lag until the coupon step-up, which means that issuers benefit from a lower cost of capital when they fail to achieve sustainability performance targets. This paper finds out that sustainability premium and low cost of capital is the main motivation behind the issuance of SLBs (Kolbe, Julian F. and Lambillon, 2022). On the demand side, ESG and sustainability linked financial products are in high number in Europe therefore European investors might willing to pay more for sustainability (Bloomberg 2021). Another study demonstrates that when SLBs are issued at a higher price than their true value, they experience negative returns in the secondary market. This results in a significant positive reaction in the stock price at the time of issuance, indicating a transfer of wealth from bondholders to shareholders. This study also found a significant non-linear correlation between the degree of mispricing and the ESG rating of the issuing firms(Berrada et al., 2022). However,the increasing focus of institutional investors, such as Blackrock, on climate change

highlights a significant emphasis on the demand for sustainable financial instruments among investors (Giráldez & Fontana, 2021).

2.5 Sustainability Linked Loan (SLL)

The popularity of sustainability linked loans has grown significantly in the past four years, with the total amount increasing from \$2.26 billion in 2017 to \$634.86 billion in 2021. This represents a remarkable increase of nearly eight times in terms of the percentage of total corporate loans issued during this period (Du et al., 2022). SLL helps banks to enlarge their banking portfolio and commitment towards sustainable finance, incentive corporate clients to improve sustainability performance, better customer relationship, stakeholder pressure (Du et al., 2022; Sustainalytics, 2021). Borrowers have the opportunity to enhance their overall sustainability performance, exhibit their commitment to sustainability to stakeholders, and foster better relationships with lenders. Additionally, there is the possibility of reducing the cost of debt.

A study was conducted to assess the economic incentives of sustainability linked loans, using a dataset of 1,606 such facilities across 53 countries from January 2017 to December 2021. The results indicate that these loans do not lead to lower loan spreads or improved ESG performance for the borrower. However, SLL lenders are found to be able to attract more deposits and consequently increase their lending activity post-issuance. Additionally, there was no evidence that SLL lenders preferentially lend to safe borrowers. As a result, the study concludes that the main beneficiaries of sustainability linked loans are the lenders (Du et al., 2022). Borrowers utilize sustainability linked loans for three primary purposes: firstly, to demonstrate their commitment to sustainability to external stakeholders; secondly, to potentially access cheaper debt finance as

a result of either the lenders being interested in sustainability issues and offering lower rates, or the lenders obtaining cheaper financing from sustainability-focused investors; and finally, borrowers or lenders may engage in "greenwashing," whereby they give false assurances to stakeholders about their sustainability efforts while not actually implementing them in reality (Guthrie, 2022). The study examined the issue of greenwashing in ESG-related loans and found that there is a notable and favorable association between ESG lending and the ESG scores of both lenders and borrowers before the assurance of ESG loans. However, ESG scores decline after the assurance of ESG-linked loans, especially for firms with inadequate disclosure quality, while those with higher disclosure quality maintain their consistent performance. Additionally, the stock market reacts positively to ESG-linked loans with high-quality disclosure, whereas poor disclosure leads to negative or insignificant stock response. To summarize, the study provides evidence of the importance of disclosure quality in the effectiveness of ESG-linked loans and highlights the risk of greenwashing in these types of loans (Kim et al., 2021).

2.6 Criticism of SLBs & SLLs

The ICMA's SLBP specifies that key performance indicators (KPIs) should be "relevant, core and material to the issuer's overall business, and of high strategic significance to the issuer's current and/ or future operations; measurable or quantifiable on a consistent methodological basis; externally verifiable; and able to be benchmarked, i.e. as much as possible using an external reference or definitions to facilitate the assessment of the SPT's level of ambition" (ICMA, 2020). However, certain definitions like 'material' and 'ambitious' KPIs and/ or SPTs of specific sectors or sustainability issues are not defined so far. To establish KPIs and ambitious SPTs that are

region-specific, it is recommended to refer to the EU taxonomy of sustainable economic activities, which serves as a guiding principle. The taxonomy, which came into effect in 2020 (Regulation (EU) 2020/852), defines six environmental objectives that can be used as selection criteria, and technical screening criteria that can be employed as a benchmark for measuring sustainability performance, indicators, and targets. Currently, more than 80% of the total value of SLBs is directed towards reducing greenhouse gas emissions, whereas circularity, recycling, and gender equality account for only 6%, 7%, and 4% of the value, respectively (Tuhkanen & Vulturius, 2020). Bond issuers have recently started linking their bond offerings to specific environmental and social targets. These targets can include water management and treatment, conservation and reintroduction of threatened species, construction of environmentally-friendly structures, investment in green initiatives, and catering to niche markets with sustainable products. In addition, corporate issuers are also aiming to improve their social impact by setting targets related to diversity, inclusion, and other relevant metrics. (Giráldez & Fontana, 2021). According to the Sustainability-Linked Bond Principles established by the ICMA, the sustainability performance of bond issuers should be evaluated using key performance indicators (KPIs), which can be either internal or external. However, issuers often prefer internal KPIs over external ones, which can limit the overall impact and achievement of sustainability performance targets (SPTs) to specific aspects of their operations rather than considering the broader effects of their activities (McMillan LLP, 2021). Firstly, green bonds serve as a credible signal to investors regarding a company's commitment to the environment, which may not be easily discernible otherwise. Secondly, companies may use green bonds to portray a green image without taking substantive environmental action, which is known as greenwashing. Lastly, companies may

choose to issue green bonds as a means of obtaining less expensive financing for projects that benefit society. Corporate green bonds are particularly prevalent in Europe, China, and the USA, where environmental considerations are significant to companies' operations (Flammer, 2021; Nguyen, 2022). In terms of SLLs, clear, objective, measurable criteria that influences interest rate reduces the possibility of greenwashing(Kim et al., 2021).

2.7 Literature Review on Prior Research Methods

Previous studies extensively employed content analysis to collect qualitative data from publicly accessible corporate documents, particularly focusing on sustainability-related information (Gallego-Álvarez, 2006; Roca & Searcy, 2012; Feng & Ngai, 2020). Previous researchers also conducted comparative analysis by examining documents and other information from company websites (Mann et al., 2014; Battisti & Perry, 2011; Woo & Jin, 2016).

Previous studies employed coding schemes to analyze sustainability reports and compare them with established general frameworks such as ISO 26000. These enabled researchers to gain a better understanding of the content and structure of sustainability reports, as well as to assess their compliance with international standards (Feng & Ngai, 2020; Woo & Jin, 2016; Mann et al., 2014).

2.6 Identification of Gaps in the literature

Sustainability-linked Bonds and Loans (SLBLs) focuses on a company's commitment to sustainability through Sustainability Performance Targets (SPTs) and tracks progress using pre-defined Key Performance Indicators (KPI) (ICMA, 2021). However, there is a lack of consistent

and transparent sustainability standards for SLBLs (Yong, 2021). One of the major challenges faced by the sustainable finance market is "greenwashing." This refers to the risk of funds intended for sustainable purposes not being consistently used for that purpose and companies falsely claiming their policies and activities are environmentally responsible (Global Banking and Finance Review, n.d.). According to the principles of green bonds, investors are not held responsible if the issuer fails to adhere to their commitments. Additionally, the loan is not considered in default if the recommended guidelines are not followed, and the funds raised will not be impacted. (Global Banking and Finance Review, n.d.). Sustainability-linked bonds are a type of financial instrument that are linked to specific sustainability performance indicators (KPIs). The KPIs can be either external, such as industry standards, or internal, allowing issuers the flexibility to focus on specific aspects of sustainability rather than taking holistic approach. In addition, the challenge in the market is to select ambitious KPIs and calibrate them against external benchmarking standards. This requires careful consideration and a thorough understanding of sustainability performance metrics to ensure that the KPIs chosen accurately reflect an issuer's sustainability efforts and progress. Furthermore, the negligible difference in coupon rates associated with a failure to meet sustainability performance targets (SPTs) and the presence of an escape clause in the bond structure in certain circumstances, such as a material change or drastic regulatory shift, leave room for the acquisition of unsustainable resources while still being able to maintain a favorable sustainability-linked bond status. Additionally, the lack of yearly disclosure of bond status by issuers raises concerns about their true motivation, as they may be seeking to achieve a "green premium" rather than actual improvements in sustainability (McMillan LLP, 2021). Academic literature on green bonds has primarily focused on the financial

aspects, such as the comparison between green bonds and conventional bonds in terms of yield differences and the stock market response to green bond issuances in various markets. Additionally, the impact of regulatory policies on the growth and development of the green bond market has also been a topic of interest. Moreover, green bonds have been analyzed from both supply and demand perspectives. In a similar vein, sustainability-linked bonds have been compared to conventional bonds in terms of yield differences from a financial perspective. The supply and demand of these bonds in the European market has also been investigated. It has been noted that many issuers link their sustainability-linked bonds to targets for reducing greenhouse gas emissions (Cortellini & Panetta, 2021). The fashion industry has been a focus of concern of stakeholders due to its impact on sustainability, and further research is needed to explore the sustainability impact created by these types of bonds in this industry (Wilkins & Bendersky, 2019, Yong, 2021; Chan, 2021).

2.7 Connection to Sustainable Finance Theory

Sustainable finance has been explained in the literature from different points of view. According to ICMA (2020), sustainable finance involves financial activities that encompass climate, environmentally-friendly, and socially conscious finance. It also extends to broader evaluations of the prolonged economic viability of funded organizations and the stability of the encompassing financial system. Sustainable finance is described as the process of gathering and distributing capital to facilitate the shift toward a more environmentally responsible economy (Sommer, 2020). Sustainable finance considers ESG factors when determining investment choices within the financial industry (Ozili, 2021). Furthermore, sustainable finance entails investment choices

that consider the ESG factors associated with an economic undertaking or project (Bakken, 2021). As found in our literature review that private sectors are extensively supporting the sustainable finance initiatives; therefore, the issuance of SLBLs in the fashion industry towards achieving the sustainable performance targets of the companies' can be explained through two theories of sustainable finance; namely; peer emulation and positive signaling theory.

The theory of peer emulation in sustainable finance suggests that economic entities replicate the actions, policies, and strategies of their peers as they strive to achieve sustainable financial objectives. In the absence of standardized guidelines for pursuing sustainable financing, economic agents tend to adopt analogous approaches or measures taken by the peers they respect, imitate, or look up to. Consequently, economic entities are inclined to pursue specific sustainable finance aims due to the precedent set by their emulated peers (Ozili, 2022). In addition, mimicking of peers becomes logical when there is a shared perspective and alignment on sustainability among economic agents (Cowett, 2008). In this study, as all the SLBLs are oriented towards the shared objective of reducing Greenhouse Gas (GHG) emissions. Furthermore, given that the fashion brands or retailers under examination are primarily situated in Europe, where uniform regulations and political contexts prevail, they emulate their counterparts to attain their sustainable finance aims.

Positive signaling theory proposes that economic actors are motivated to reveal positive information about their commitment to sustainable finance goals, in order to signal to external parties that can support their objectives. This can be achieved through public announcements in the media or by providing extra voluntary financial and non-financial information in their annual reports. According to Ozili (2022), by doing so, firms can attract investors who are interested in

green bonds and other sustainable financial instrument. Within this research, every examined fashion brand demonstrates their dedication to accomplishing sustainability objectives by issuing SLBLs and providing relevant details in their sustainability, annual, and news reports along with their climate risk assessment according to Task Force on Climate-Related Financial Disclosures (TCFD) and Science Based Targets (SBTi).

Chapter 3: Methodology

3.1 Higg BRM Module

The Higg Brand and Retail Module (Higg BRM) is a comprehensive framework for assessing and enhancing the environment and social sustainability of any brand and retailer. The Higg BRM enables brands and retailers to demonstrate their progress in various industry-wide programs such as the Science Based Targets, the UN Sustainable Development Goals, and the G7 Fashion Pact. It is divided into six sections, namely company profile, management system, retail, brand, store and operations, and logistics (SAC, n.d.). These sections are further categorized into subsections focusing on the environment and social aspects.

The company profile intends to cover basic financial information about the company, as well as information on environmental and social regulatory compliances. The management system evaluates value chain operation, identifies environmental and social risks, impacts and opportunities, including outlines strategies and commitments to minimize the risks. It also covers employee and management involvement on sustainability strategy and activities, involvement in community wellbeing and public information disclosure on environment and social issues, as well as internal audit and grievance mechanism(SAC, 2022).

As it shows in figure 1, the retail section provides information on product, supply chain (product and textile) and use and end use of product. The product section outlines the evaluation of environmental impacts of all brands' products, as well as the social and human rights standards that must be adhered to by all brands. It also covers the sale of sustainable products,

communicating sustainability and human rights or social attributes and certificates with customers. The supply chain product and textile covers involvement with brand partners on environmental sustainability performance, social and human rights-aligned policies, standards, and target improvement, as well as involvement with other organizations regarding this issue. The use and end use considers brands' initiatives to provide repair and recycled facilities to customers (SAC, 2022).

The brand section provides information on product design, use and end of the use of products and responsible purchasing, including supply chain product & textile, chemical and packaging. The product section details choosing materials and other components with environmentally friendly and social or human right attributes, quality assurance and stakeholder engagement (SAC, 2022).

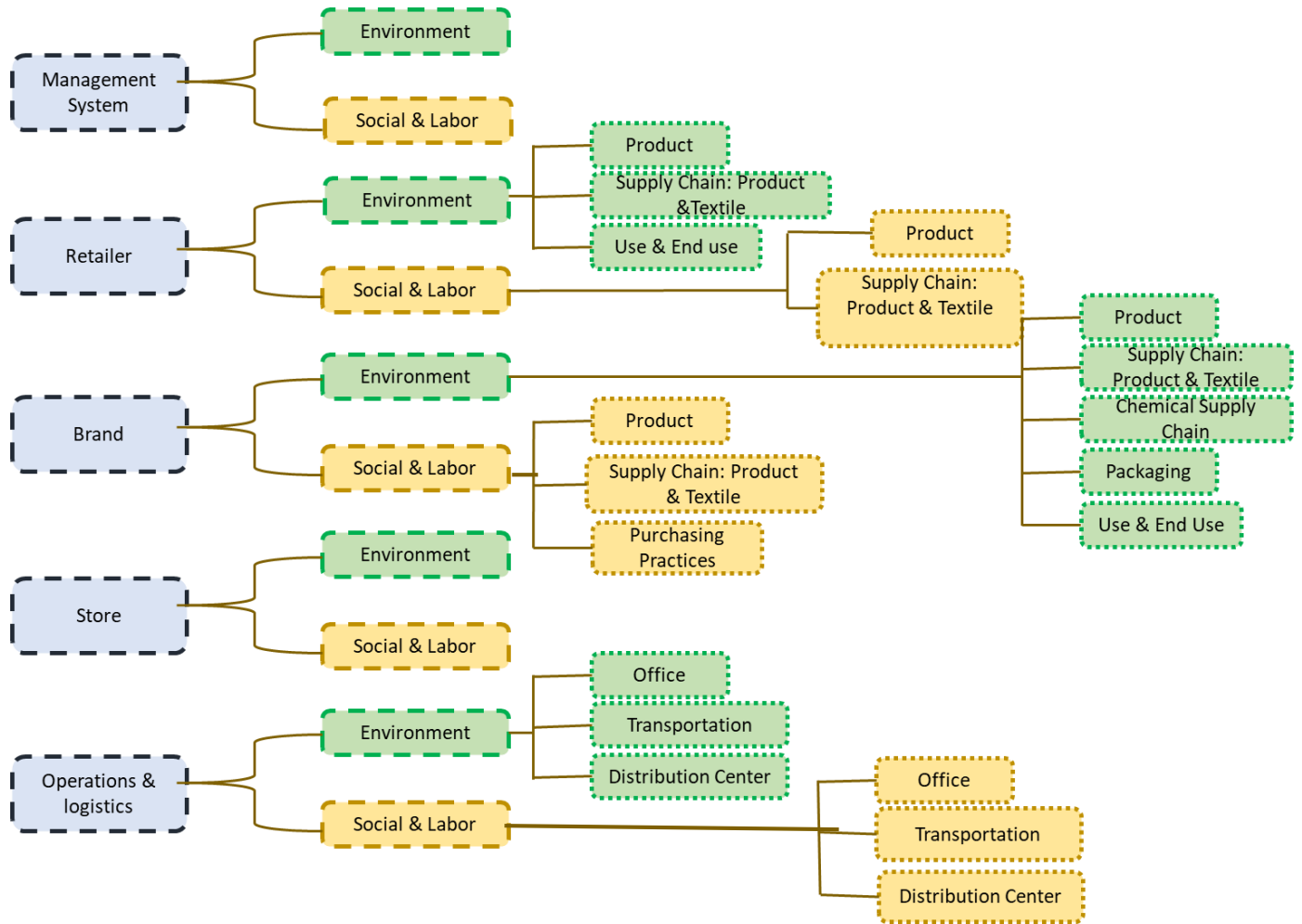


Figure 1 Higg BRM Module Sections at a Glance (Adopted from SAC, 2022)

The Supply Chain section details the product and textile parts of the value chain and emphasizes transparency regarding sourcing locations and suppliers, initiatives to reduce negative impacts on resources such as energy and water, and mitigating the risks from key concern areas such as chemicals, wastewater, and grievances. Furthermore, the relationship between brands and suppliers to drive impact is also addressed in the section. The chemical section solely focuses on mitigating chemical-related risks when choosing any chemical substance, different compliance

standards during manufacturing and in wastewater, and stakeholder engagement specifically related to chemical and wastewater quality management. The packaging section addresses consumer and transport packaging reduction, introducing a circular economy approach to the packaging, and stakeholder engagement regarding it. The use and end of use section encompass initiatives taken by the company to reduce the environmental impact of post-consumer waste. Additionally, it also covers consumer education to increase the product's lifetime, research and development to improve the lifespan of the product and stakeholder engagement. The segment on conscientious procurement procedures outlines potential challenges linked to predicting production and deliveries, along with initiatives aimed at enhancing social and human rights aspects throughout the product sourcing process(SAC, 2022).

The store section provides information on the environmental and social impact reduction such as resource consumption reduction, use of renewable resources, labor condition improvement and employee benefits. Finally, the operation and logistics section is divided into three subsections; offices, transportation and distribution center. The environmental area details environmental performance improvement and stakeholder engagement in offices, transportation and distribution centers. The social area details compliance issues, employee benefit and development and stakeholder engagement in offices, transportation and distribution centers (SAC, 2022).

3.2 Research method

The exploratory sequential mixed method research involves a combination of qualitative data sampling and quantitative analysis. According to Creswell & Creswell (2017), initially, the

qualitative data was collected to evaluate the given quantitative feature; then, the quantitative phase was designed based on the results of the qualitative stage for more comprehensive understanding of qualitative findings.

3.2.1 Sample Size of the Study

This study focused on global fashion brands and retailers who issued SLBLs from 2017 to 2022. We found 12 companies met the criteria by conducting the key-word search ‘Sustainability-linked bonds or loans in fashion industry’ on Google, as well as typing the name of the financial tools in the companies’ official website and name of the brands or retailers in the Sustainalytics database (Sustainalytics, 2023) .

The study included brands and retailers that specialize in creating and selling apparel and footwear, as the Higg BRM module specifically concentrates on these sectors of the fashion industry. These brands are VF Corporation, Walmart, Addidas, Chanel, H&M, Tesco, OVS S.p.A., Prada, Burberry, M&S, Mango and Salvatore Ferragamo. The detailed required information such as brand name, bond types, amount issued, purpose of the SLBLs, and time period was collected from sustainability reports, annual reports, and secondary party bonds and loan reports that were available at the companies' official websites and the Sustainalytics database. Regardless of the varied terminology used by different brands and retailers for their sustainability reports, the study considered all reports that aimed to communicate environmental, social, and governance issues. Only information available in English was examined which excluded Salvatore Ferragamo, making the sample size of this study 11.

3.2.2 Qualitative Research Method

During the initial research phase, extensive data were collected from official websites, sustainability reports, annual reports, second-party reports, and official media communication of fashion brands and retailers that issued SLBLs between 2017 and 2022. These data included the name of the company, type of instruments, amount, issuance year, maturity year, duration (in years), coupon rate, and purpose of the SLBLs. Simultaneously, the Sustainable Apparel Coalition website made the Higg BRM 2021 (Version 1.2) guideline publicly accessible in March 2021. Upon providing the researcher's name, official email address and affiliated institution the document was downloaded. After that, the document was carefully examined to identify the questions that were relevant to the issued SLBLs.

Content analysis was used to conduct a comprehensive examination of the content found in the bond, sustainability and loan reports within the SLBLs issued by fashion brands and retailers, along with the questionnaires' outlined in the Higg BRM 2021 (Version 1.2). During the initial screening, it was determined that the sustainability projects and targets discussed in these reports predominantly concentrated on specific sub-sections of the Higg BRM. Moreover, these sub-sections broadly aligned with a few sustainability issues within the fashion industry. Consequently, the targets and projects of SLBLs were categorized into five main groups: product, greenhouse gas emission (GHG), water and wastewater, packaging and others, e.g. wastes. After that, questions from the Higg BRM 2021 (Version 1.2) that fall under each of these categories were shortlisted (Appendix A) and each of the questions were divided into two categories: 'Addressed' and 'Not Addressed'.

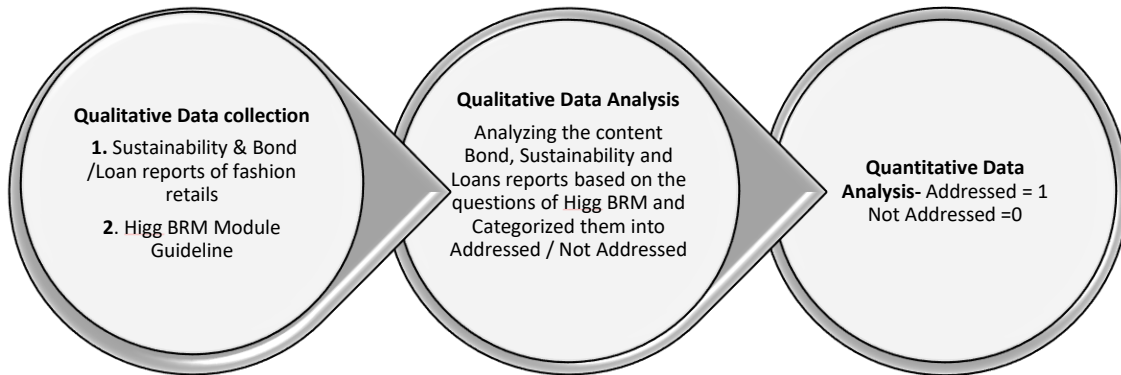


Figure 2 Research Method

3.2.3 Quantitative Research Method

Descriptive content analysis alone was not enough to effectively communicate the results to the relevant audience, as it only identified the main themes of the Higg BRM addressed by fashion brands and retailers in their SLBLs. To determine the tendency and frequency of sustainability-linked bonds and loans to address the sustainability issues of the fashion industry, a structured coding scheme was required.

In this study, coding was based on the Higg BRM module. In the Higg BRM guideline, each of the sections are divided into 1 to 4 subsections and consist of a set of questions. These questions are being assessed based on the categories of yes, partially yes and no. The Sustainable Apparel Coalition (SAC) certified auditors assess the brands and retailers based on brand documents

which are both internal and publicly available. In contrast to the SAC auditors, the analysis of SLBLs to identify addressed sustainability issues solely relied on guideline questions, excluding the detailed descriptions provided under each question.

For this study, two distinct criteria have been developed to evaluate the performance of a given product. These criteria are distinct from the evaluation criteria outlined in the Higg BRM 2021 (Version 1.2). Each relevant question of the brands was assessed as either "Addressed" or "Not Addressed", with "Addressed" denoting a score of 1 and "Not Addressed" denoting a score of 0. "Addressed" indicates that the related information was present in either the bond or loan documents, or the brand's sustainability reports, while "Not Addressed" means the information was not present in any of the publicly available resources considered for this study.

For instance, Chanel issued a sustainability bond that specifically targets reducing its absolute scope 1 and 2 emissions by 50% by 2030 (equivalent to a 66% reduction per unit sold), based on a 2018 baseline. Additionally, they aim to decrease their absolute scope 3 greenhouse gas (GHG) emissions by 10% by 2030 (equivalent to a 40% reduction per unit sold), also from a 2018 baseline. Furthermore, Chanel plans to transition to 100% renewable electricity in its operations by 2025. To identify relevant inquiries pertaining to these goals, both the bond or loan reports and information provided in Chanel's sustainability report were studied. Thereafter, the questions within the environmental sections of the Higg BRM module were studied as well. Subsequently, questions that encompass the subjects addressed in the sustainability-linked bond and loan were pulled out from the module and the questions were marked as 'Addressed' and 'Not Addressed' based on the information found in the studied documents.

Chapter 4: Results

The Results section of the thesis will delve deeper into the outcomes of the study conducted using the methodology outlined in Chapter 3. This section is divided into two sub-sections. The first sub-section identifies the specific sustainability issues addressed in SLBLs in the fashion industry using Higg BRM module guideline. The another section compares bond, sustainability, and loan reports of the SLBL issuing brands and retailers with regards to the Higg BRM module questionnaires to assess the consistency of information reporting for investors.

4.1 Sustainability Issues Addressed by the SLBLs in the Fashion Industry

In order to comprehend the sustainability concerns addressed by the SLBLs, this section will initially present a summary of all the SLBLs, including the names of issuers, duration, monetary value, and focus areas. Subsequently, it will outline the sections of the Higg BRM covered by the SLBLs. Finally, this section will describe the sustainability issues within the industry that are addressed by the SLBLs.

4.1.1 An Overview of SLBLs in the Fashion Industry

Fashion brands primarily utilized Green Bonds, Sustainability Bonds, Sustainability-linked Bonds, and Sustainability-linked Loans between 2019 and 2021 to raise finance to achieve their sustainability goals. Green bonds were issued by VF Corporation and Walmart. Adidas and Burberry issued Sustainability Bonds, while Chanel, H&M, Tesco, and OVS S.p.a issued

Sustainability-linked Bonds. Prada, Salvatore Ferragamo, M&S, and Mango issued Sustainability-linked Loans. The majority of these brands opted for tenures ranging from 5 to 15 years, and the amounts raised varied between 140 to 2,000 million euros per company. Total 12 SLBLs are issued in the fashion industry since 2019 and 11 of them are part of this study (see table 1). Among the 11 SLBLs, 4 SLBLs were issued in the year 2020, 3 were issued in 2021, and the remaining ones were issued either in 2019 or 2022.

Table 1 An Overview of SLBLs in the Fashion Industry from 2017-2022 adopted from (BNP Paribas, 2021; Fashion Network, 2022; H&M Group, 2022; M&S-Clothing & Home, 2021; M&S, 2022; Mango, 2020; Nanda, 2021; Prada S.p.A, 2022; Prada Spa and Credit Agricole Corporate & Investment Bank, 2019; Salvatore Ferragamo, 2020; Tesco, 2021; Tesco PLC, 2022; TFL Media, 2021; Turner, 2020; UniCredit Group, 2021; Walmart Inc., 2021)

Types of SLBLs	Name of the Brand	Number of SLBLs	Amount (in million)	Issued Date	Maturity Date	Duration (in Years)	Focus Area
Green Bond	VF Corporation	1	€ 493	Feb 2020	Feb 2028	8	13 projects related to recycled material, sustainable cotton, green building, energy efficiency and reforestation
	Walmart	1	€ 2000	Feb 2020	2031	11	projects related renewable energy, high performance buildings, sustainable transport, zero waste and circular economy, water stewardship, habitat restoration and conservation
Sustainability bond	Adidas	1	€ 1,000 (500 each)	2020	2024 & 2035	4&15	Reduce greenhouse gas emissions Sustainable Material Community Engagement
	Burberry	1	€ 352 (300 million pounds)	Jan-2020	Jan-2025	5	Climate positive within 2040. emissions reductions across its extended supply chain (Scope 3) by 46% by 2030 and becoming net zero by 2040, 10 years ahead of the 1.5°C pathway set out in the Paris Agreement including refurbishing properties across its portfolio which are certified by LEED or BREEAM and ensuring natural resources are sourced sustainably and pollution from packaging is prevented.
Sustainability linked bond	Chanel	2	€ 704 (600 pounds)	Jul-2021	Jul-2026 Jul-2031	5	Decrease CHANEL's absolute scope 1 and 2 emissions by 50% by 2030 (equivalent to 66% per unit sold), from a 2018 base year; Decrease CHANEL's absolute scope 3 GHG emissions by 10% by 2030 (equivalent to 40% per unit sold), from a 2018 base year; Shift to 100% renewable electricity

							in its operations by 2025
	H&M	1	€ 500	Feb-2021	Aug-2029	8.5	Increase the share of recycled materials used to 30 percent by 2025; Reduce emissions from the Group's own operations by 20 percent by 2025; Reduce absolute Scope 3 emissions from fabric production, garment manufacturing, raw materials and upstream transport by 10 percent by 2025
	Tesco	1	€ 750	Oct-2020	Apr-2029	9	Reducing Scope 1 and 2 Group Greenhouse Gas (GHG) Emissions by 60% by 2025 against Tesco's 2015 Baseline.
	OVS S.p.A.	1	€ 200				Reduce absolute scope 1 and 2 GHG emissions by 21% by 2024 Reduce absolute scope 3 GHG emissions related to house brand apparel by 21% by 2024 a) Achieve 100% of suppliers on Higg platform by 2024 b) Purchase at least 80% of the production volume from suppliers with both Higg FEM and FSLM modules verified by a third party by 2024
Sustainability linked Loan	Prada	2	€ 50 & € 90	Nov 2019 & Feb 2021	Nov 2024 & Feb 2026	5 & 7	number of stores assigned of a LEED Gold or Platinum Certification; amount of training hours for the employees and the use of Prada Re-Nylon (regenerated nylon) for the production of goods; Regeneration and reconversion of production waste & Increasing the share of self-produced energy
	Salvatore Ferragamo	1	€250	Not Available	Not Available	Not Available	Support the Florence-based company's specific Environmental, Social and Governance targets and to finance general cash-flow needs, reducing risks from the current market situation
	M&S	1	€ 997	Dec-2021	2026	5	Zero deforestation, sustainable fibre sourcing,

			(850 pound)				<p>packaging reduction and reducing our property emissions scope 3</p> <ul style="list-style-type: none"> – 100% of polyester sourced from verified recycled sources by 2025/6; – 100% physically certified deforestation and conversion free soy by 2025/6; – Scope 1 and 2 emissions reductions in UK and ROI property (annual reduction /tonnes CO2e); – Removal of plastic packaging units per year from the company’s packaging portfolio.
	Mango	2	€ 200 (150 +50)	Apr-2022	a. 2027 b. 2028	5&6	The company must achieve 100% use of sustainable cotton, recycled polyester and cellulose fibers by 2025, as well as reduce scope 1 and 2 CO2 emissions by 10%

4.1.2 Sections in the Higg BRM addressed by the SLBLs

Content analysis of the bond, sustainability and loan reports within the SLBLs issued by fashion brands and retailers, along with the questionnaires' outlined in the Higg BRM 2021 revealed that among the total 6 sections of the Higg BRM; brand, store, and operations and logistics sections are largely addressed by the SLBLs (see figure 3). The brand section, in particular, focuses on the brand: environment, with lifecycle stages such as product and supply chain: product & textiles being addressed. The brand: social section covers social aspects through the product lifecycle stage (see figure 3). The store: environment section is addressed through the store lifecycle stage, while the operations and logistics: environment section is covered through offices, transportation, and distribution centers (see figure 3). Therefore, three main sections namely brand, store, operations and logistics are primarily addressed the environment subsections of the Higg BRM.

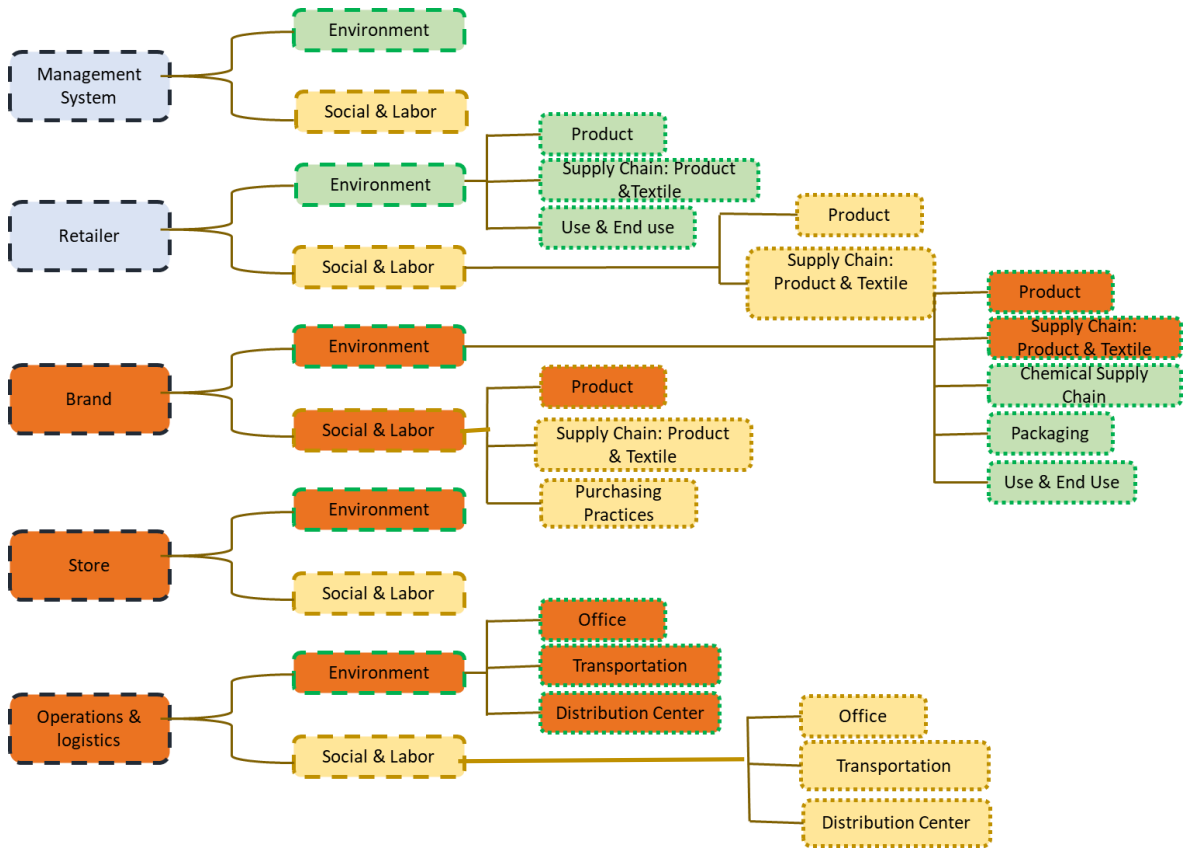


Figure 3 Sections in Higg BRM Addressed by SLBLs

4.1.2 Major Sustainability Issues Addressed by the SLBLs

A more in-depth analysis of the questionnaires in each sub-section addressed by the SLBLs, it has been found that the primary subjects covered by these questions revolve around sustainable material used in products, greenhouse gas emissions, water and wastewater management, packaging, and few other related topics (see figure 4). Therefore, the results by dividing them into different categories, namely: sustainable materials used in the product, greenhouse gas emission, water and wastewater management, packaging, and other criteria (see figure 4). Each

of these categories has its own specific assessment criteria, which are derived from the questionnaires' of the corresponding sections of the Higg BRM (see Appendix A for details). This approach enables a more focused and structured analysis of the sustainability performance of the SLBLs under investigation. It is also important to note that, few projects or initiatives were not able to fit into any of the categories even in other sections such as training hours for employees, promoting businesses owned by individuals of Black identity etc.

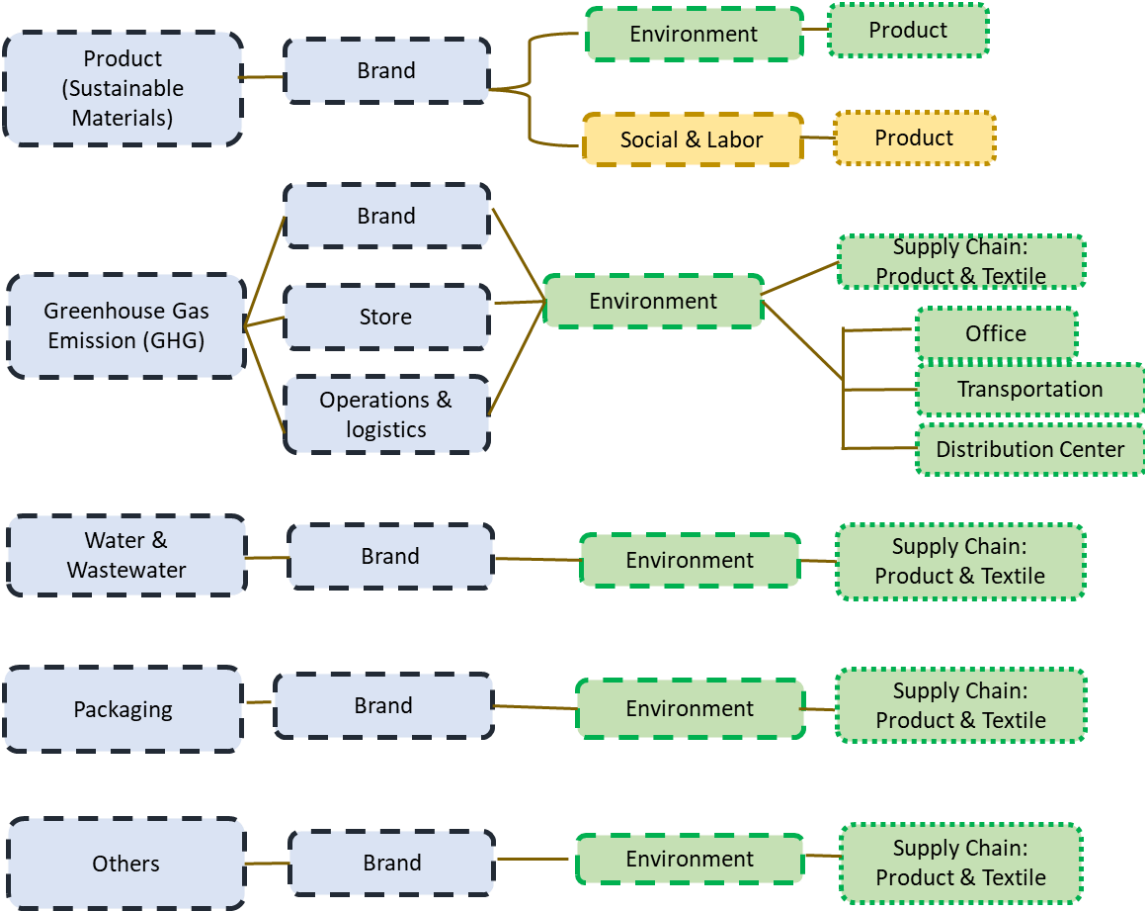


Figure 4 Major Sustainability Topics Covered by SLBLs

7 out of 11 brands have utilized SLBLs to finance initiatives targeted at their preferred materials goals. All of the 11 these initiatives have been designed to reduce the brands' Greenhouse Gas

(GHG) emissions. 2 of the brands have included SLBLs to the initiatives related to water and wastewater, packaging, and other relevant areas.

4.2 Comparison between Bond, Sustainability, and Loan reports of the SLBLs using the Higg BRM Questionnaire

4.2.1 Product (Sustainable Material)

4.2.1.1 *Bond or Loan Reports*

Among 11 brands, 7 of them issued SLBLs on the target that aims towards preferred material. Here, preferred material means fibers or other substances that exhibit enhanced environmental or social sustainability benefits in comparison to traditional manufacturing methods. These materials can either have self-reported environmental attribute or third party certification (SAC, 2022). Based on the Sustainable Apparel Coalition's Higg Material Sustainability Index (MSI) version 3.1, preferred material impacts are measured based on potential environmental benefits associated with the use of preferred renewable or recycle material (Textile Exchange, n.d.).

In the Higg BRM, 27 questions relevant to fiber, material, and product sustainability targets for brands are addressed in the Environment and Social & Labor sections of the product lifecycle stage (SAC, 2022). Out of the total questions, 17 pertain to environmental sustainability and 10 pertain to social sustainability (see Appendix A). In total, 5 of the environment and 2 of the social sustainability questions were addressed by the issued SLBLs.

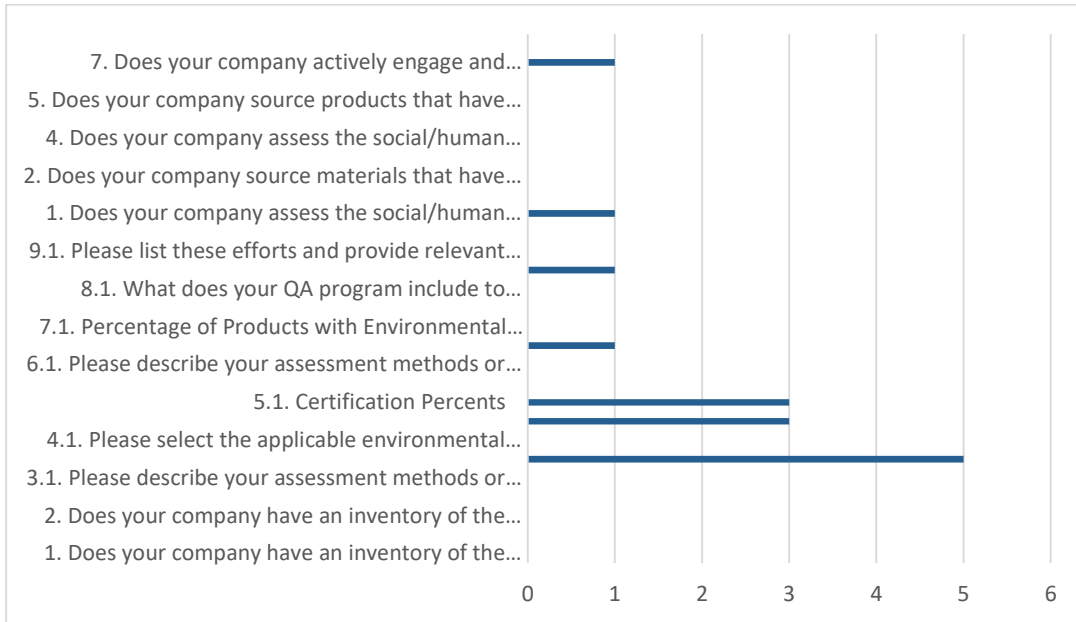


Figure 5 Product Related Section from Higg BRM Covered by SLBLs through Bond Or Loan Reports

Brand: Environment
1. Does your company have an inventory of the primary materials (excluding packaging and trims) that are used create your products?
1.1. Which of the following primary material categories are used in your products?
2. Does your company have an inventory of the trim/component materials that are used in creating your products
3. Does your company assess the environmental impacts of the materials used to create its products? Product LCA
3.1. Please describe your assessment methods or provide supporting documentation
4. Does your company use environmentally preferred materials or materials with environmental attributes to create its products?
4.1. Please select the applicable environmental attribute for your materials:
5. Does your company track the percentage of its materials that have environmentally preferred attributes or certifications?
5.1. Certification Percents
6. Does your company assess the environmental impacts of its products?
6.1. Please describe your assessment methods or provide supporting documentation:
7. Does your company track the percentage of its products that have environmental attributes?
7.1. Percentage of Products with Environmental Certification/Attributes

8. Does your company have a quality assurance (QA) program?
8.1. What does your QA program include to enhance product duration of service (lifetime)?
9. Does your company actively engage and collaborate with communities of practice, NGOs, and/or governments to share information, knowledge, and best practices that accelerate the adoption and development of environmentally sustainable materials or products?
9.1. Please list these efforts and provide relevant URLs that describe them in detail:
Brand: Social & Labor
1. Does your company assess the social/human rights impacts of its materials?
1.1. Please describe or provide documentation of this assessment
2. Does your company source materials that have social/human rights certifications from a credible third party?
3. Does your company track the percentage of materials with social/human rights attributes?
4. Does your company assess the social/human rights impacts of its products?
4.1. Please describe or provide documentation of this assessment:
5. Does your company source products that have social/human rights certifications from a credible third party?
6. Does your company track the percentage of products with social/human rights attributes?
7. Does your company actively engage and collaborate with communities of practice, NGOs, and/or governments to share information, knowledge, and best practices that accelerate the adoption and development of materials or products that promote social responsibility/human rights?
7.1. Please list these efforts and provide relevant URLs that describe them in detail:

Figure 5 indicates that approximately 70% (5 out of 7) of the SLBLs address Question 4 in the Brand: Environment section of the product lifecycle stage. This question assesses whether a company employs a specific proportion of materials with environmentally favorable characteristics or recognized certifications (refer to Appendix A). The second most commonly addressed issue, covered by 42% of the SLBLs, is Question 5, which involves tracking the proportion of materials possessing environmentally desirable traits or certifications (refer to Appendix A). Some other questions, like Questions 7 and 9, are addressed by only one specific bond or loan. These questions involve tracking the percentage of the product with environmental attributes and actively engaging, collaborating and sharing information with external stakeholders. These

stakeholders include communities of practice, non-governmental organizations (NGOs), and governments (refer to Appendix A).

Furthermore, one brand (15%) addresses Questions 1 and 7 in the Brand: Social and labor section of the product lifecycle stage (see figure 5). These questions evaluate whether the company evaluates the social and human rights impacts of its materials and whether the company actively engaging, collaborating and sharing information with external stakeholders. These stakeholders include communities of practice, non-governmental organizations (NGOs), and governments (refer to Appendix A).

Overall, five questions are addressed by issued bonds and loans, with a focus on environmental aspects of materials and fibers. The main emphasis of these SLBLs are on utilizing and tracking the proportion of materials possessing environmentally desirable traits or certifications. Conversely, social aspects of materials and fibers are not a focus area for these issued bonds and loans.

4.2.1.2 Sustainability Reports

In terms of sustainability reports, 7 of the environment and 2 of the social sustainability questions are addressed by the issued SLBLs (see figure 6). Figure 6 demonstrates that 100% of the SLBLs addresses questions 4 and 5 that share top percentage in the sustainability reports (refer to Appendix A). This figure illustrates that all of the SLBLs address questions 4 and 5, which are the most prominent topics in the sustainability reports. The disclosure provided in these reports is approximately 30% and 50% higher, respectively, compared to the disclosure found in the reports

of bonds and loans (see figure 5). Around 60% of brands focus on addressing question 3, while slightly over 40% of brands address question 1 (see figure 6). Both of these questions inquire about whether the company conducts a product Life Cycle Assessment (LCA) and maintains an inventory of the primary materials used, excluding packaging and trims. Around 30% of brands address questions 8 and 9. Question 8 pertains to whether the company has a quality assurance (QA) program. Question 9 examines whether the company actively engages and collaborates with communities of practice, NGOs, and/or governments to exchange information, knowledge, and best practices that expedite the adoption and development of environmentally sustainable materials or products (refer to Appendix A). These questions are not covered in the reports of bonds or loans.

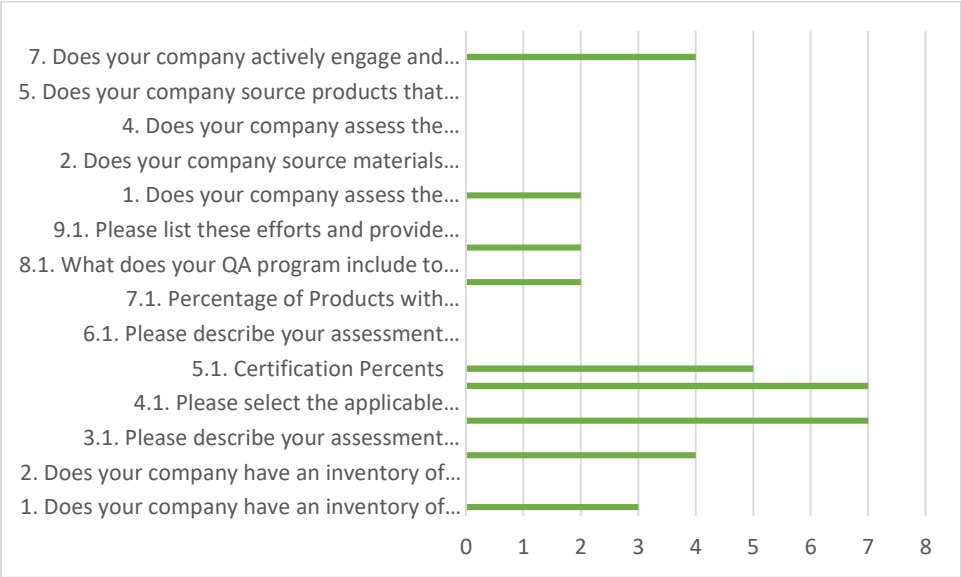


Figure 6 Product Related Sections from Higg BRM Covered by SLBLs through Sustainability Reports

Brand: Environment

1. Does your company have an inventory of the primary materials (excluding packaging and trims) that are used create your products?
1.1. Which of the following primary material categories are used in your products?
2. Does your company have an inventory of the trim/component materials that are used in creating your products
3. Does your company assess the environmental impacts of the materials used to create its products? Product LCA
3.1. Please describe your assessment methods or provide supporting documentation
4. Does your company use environmentally preferred materials or materials with environmental attributes to create its products?
4.1. Please select the applicable environmental attribute for your materials:
5. Does your company track the percentage of its materials that have environmentally preferred attributes or certifications?
5.1. Certification Percents
6. Does your company assess the environmental impacts of its products?
6.1. Please describe your assessment methods or provide supporting documentation:
7. Does your company track the percentage of its products that have environmental attributes?
7.1. Percentage of Products with Environmental Certification/Attributes
8. Does your company have a quality assurance (QA) program?
8.1. What does your QA program include to enhance product duration of service (lifetime)?
9. Does your company actively engage and collaborate with communities of practice, NGOs, and/or governments to share information, knowledge, and best practices that accelerate the adoption and development of environmentally sustainable materials or products?
9.1. Please list these efforts and provide relevant URLs that describe them in detail:
Brand: Social & Labor
1. Does your company assess the social/human rights impacts of its materials?
1.1. Please describe or provide documentation of this assessment
2. Does your company source materials that have social/human rights certifications from a credible third party?
3. Does your company track the percentage of materials with social/human rights attributes?
4. Does your company assess the social/human rights impacts of its products?
4.1. Please describe or provide documentation of this assessment:
5. Does your company source products that have social/human rights certifications from a credible third party?
6. Does your company track the percentage of products with social/human rights attributes?

7. Does your company actively engage and collaborate with communities of practice, NGOs, and/or governments to share information, knowledge, and best practices that accelerate the adoption and development of materials or products that promote social responsibility/human rights?

7.1. Please list these efforts and provide relevant URLs that describe them in detail:

Additionally, 30% of brands address Questions 1 and 7 in the Brand: Social and labor section of the product lifecycle stage, which are the same questions as that addressed in bond or loan reports. However, the number of brands that disclose this information in their sustainability reports are twice as high as the number of brands that report it in bond or loan documents.

In summary, the section related to product (sustainable material) shows that out of the 11 brands, 7 have included information related to sustainable materials in their bond/loan reports, while 6 of them have included such information in their loan reports. When comparing the contents of bond and loan reports to sustainability reports, In the product section, sustainability reports addressed 33% of the related questions, while bond or loan reports covered 26%. In terms of information disclosure, question 4 & 5 of the environment section was most frequently addressed by bond, sustainability and loan reports to evaluate whether a company employs a specific portion of materials with environmentally favorable traits or certifications, while also monitoring the utilized percentage.

4.1.2 GHG Emission

4.1.2.1 Bond or Loan Reports

All the SLBLs are linked with either Green House Gas (GHG) or energy reduction goals of the brands. Figure 7 illustrates GHG emission reduction and energy related questions of the Higg

BRM module that has been addressed by the SLBLs. The Higg BRM module consists of 51 questions from different life stages such as supply chain, store, office, transport and distribution center that are related to natural resource uses. Among them, 27 questions are addressed by the bond or loan reports of the SLBLs specially focusing on GHG reduction through energy efficiency and renewable energy uses.

In total, the supply chain section consists of 6 questions and 4 of them are covered by the bonds or loans reports (see figure 7). Around half of the brands (5 out 11) address the supply chain section of the Higg BRM which are questions 15 and 15.1 (see figure 7). These questions evaluate whether the company has implemented measures to decrease the utilization of resources in crucially affected areas within its supply network, with a focus on determining the adoption of measures aimed at lowering energy consumption and greenhouse gas emissions throughout the supply chain (refer to Appendix A). However, the specific sections of the supply chain which are considered for GHG reduction initiatives are not covered by the bonds or loans reports. In contrast, only 3 SLBLs address the details of the program taken in supply chain considering the 15.1.2 and 15.2 (see figure 7). These questions inquire about the components of the company's

energy and GHG reduction program for its suppliers and whether the company has introduced

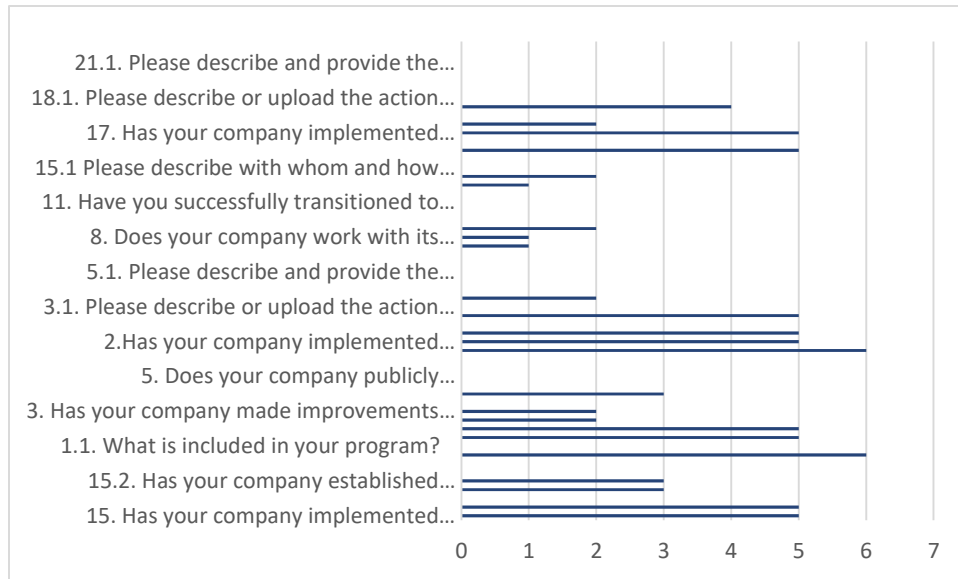


Figure 7 GHG related Section from Higg BRM Covered by SLBLs through Bond or Loan Reports

<i>Brand: Supply Chain</i>
<i>15. Has your company implemented practices to reduce resource consumption in key impact areas in its supply chain?</i>
<i>15.1. Have practices been implemented to reduce energy use and Greenhouse gas (GHG) emissions in its supply chain?</i>
<i>15.1.1. In which supply chain segments is action being taken? Specify percentage of each supply chain segment included</i>
<i>15.1.2. What is included in your energy and GHG reduction program for your suppliers?</i>
<i>15.2. Has your company established programs to promote the use, installation, or purchase of renewable energy (wind or solar) by your suppliers?</i>
<i>15.2.1. In which supply chain segments does this program apply? Specify percentage of each supply chain segment include</i>
<i>Store</i>
<i>1. Has your company established a program aimed at improving environmental performance within its stores?</i>
<i>1.1. What is included in your program?</i>
<i>2. Has your company implemented practices to reduce resource consumption in key impact areas in stores?</i>
<i>2.1. Have practices been implemented to reduce energy consumption in stores?</i>
<i>2.1.1. What practices have you implemented to reduce energy consumption?</i>
<i>3. Has your company made improvements in store environmental performance over the last calendar year?</i>
<i>3.1. Please describe the improvements made over the last calendar year:</i>
<i>4. Have your stores received recognized third-party certifications for reduced environmental impact (multi-attribute certifications ONLY)?</i>

4.1. Which certifications have they received?
5. Does your company publicly communicate the key environmental impacts, policies and programs associated with store operations?
6.1. Please describe and provide the relevant URLs:
Office
1. Has your company established a program aimed at improving the environmental performance within its offices?
2. Has your company implemented practices to reduce resource consumption in key impact areas in offices?
2.1. Have practices been implemented to reduce energy consumption in offices?
2.1.1. Please indicate what practices you have implemented to reduce energy consumption:
3. Does your company have an action plan to improve the environmental performance of its offices?
3.1. Please describe or upload the action plan:
4. Do your offices carry recognized third-party certifications for reduced environmental impact (multi-attribute certifications ONLY)?
4.1. Which certifications apply?
5. Do you publicly communicate your key environmental impacts, policies and programs associated with your offices?
5.1. Please describe and provide the relevant URLs:
Transportation
6. Does your company have documentation of its current inbound transportation flows?
7. Does your company have documentation of its current outbound transportation flows?
8. Does your company work with its suppliers and logistics providers to use the most efficient modes of transportation for your inbound shipments (e.g. ships instead of planes; rail instead of trucks)?
9. Does your company work with its distribution centers and logistics providers to use the most efficient modes of transportation for its outbound shipments (e.g trucks instead of planes)?
10. Does your company have an integrated scorecard upon which logistics providers are chosen and existing logistics providers are rated?
10.1. Please select all practices included in your integrated scorecard:
11. Have you successfully transitioned to low or no carbon fuels for any portion of your inbound logistics?
11.1. Which modes of transportation are using them?
14. Does your company help consumers make choices that help reduce environmental impact from product transport?
15. Does your company participate in or invest in activities with other stakeholders to jointly address systemic challenges in order to improve the environmental conditions of its fleets?
15.1 Please describe with whom and how your company engages
Distribution Centers

<i>16. Has your company established a program aimed at improving environmental performance in distribution centers?</i>
<i>6.1. What is included in this program?</i>
<i>17. Has your company implemented practices to reduce resource consumption in key impact areas in distribution centers?</i>
<i>17.1. Have practices been implemented to reduce energy consumption in distribution centers?</i>
<i>17.1.1. What practices have been implemented to reduce energy consumption?</i>
<i>18. Does your company have an action plan to improve the environmental performance of distribution centers?</i>
<i>18.1. Please describe or upload the action plan:</i>
<i>19. Has your company made improvements in the environmental performance of distribution centers over the last calendar year?</i>
<i>19.1. Describe the improvements made over the last calendar year</i>
<i>20. Do distribution centers carry recognized third-party certifications for reduced environmental impact (multi-attribute certifications ONLY)?</i>
<i>21.1. Please describe and provide the relevant URLs:</i>
<i>21. Does your company publically communicate the key environmental impacts, policies and programs associated with its distribution centers?</i>
<i>21.1 Please describe and provide the relevant URLs</i>

efforts to promote the usage, establishment, or acquisition of renewable energy sources (like wind or solar power) among its suppliers (refer to Appendix A).

The store section of the Higg BRM includes a total of 11 questions, of which 6 are covered by the bonds or loans (see figure 7). 60% of SLBLs address Question 1, which focuses on whether the company has a program to improve environmental performance in its stores (refer to Appendix A). In addition, 50% of the SLBLs address questions 2 and 2.1, which seek information related to practices implemented to decrease energy consumption in stores and the specific measures taken to reduce energy consumption. Furthermore, 20% of the SLBLs address questions 2.1.1 and 3 (see figure 7). These questions encompass the practices implemented to reduce energy consumption and whether the company has achieved improvements in store environmental

performance within the past year (refer to Appendix A).

The offices section of the Higg BRM comprises 10 questions, of which 50% are addressed by the SLBLs (see figure 7). Among the SLBLs that address this section, 60% of them primarily concentrate on addressing question 1 (see figure 7). 50% of the brands address questions 2, 2.1, and 3 (see figure 7). These inquiries about enacting strategies aimed at lessening resource usage in significant areas of influence within office spaces, with specific emphasis on curbing energy consumption, and formulating a roadmap to elevate the environmental efficiency of the offices (refer to Appendix A). Furthermore, 20% of the SLBLs address question 4, which inquires whether the offices hold recognized third-party certifications specifically focused on reduced environmental impact (see figure 7).

The transport section includes both inbound and outbound transportation, with a total of 11 questions, 5 of which are addressed by the SLBLs (see figure 7). 20% of the SLBLs address questions 9 and 15 (see figure 7). These questions center around the company's engagement with its distribution centers and logistics partners to optimize transportation methods for outbound shipments and working together with external partners to tackle systemic issues and improve the environmental sustainability of its vehicle fleets. (refer to Appendix A). 10% of the SLBLs address questions 7, 8, and 14 (see figure 7). These questions are related to whether the company has documentation of its current inbound and outbound transportation flows and assists consumers in making choices that contribute to reducing environmental impact from product transport (refer to Appendix A).

In the distribution section, there are a total of 16 questions, out of which 4 are addressed by the SLBLs (see figure 7). 50% of the SLBLs cover questions 16 and 17 (see figure 7). Here, question 16 asks whether the company has implemented a program specifically targeted at enhancing environmental performance in distribution centers, while question 17 inquires about the implementation of practices to reduce resource consumption in critical impact areas within distribution centers (refer to Appendix A). 40% of the brands address question 18 (see figure 7), which inquires about the existence of a strategy to improve the environmental efficiency of the company's distribution centers (refer to Appendix A). Finally, 20% of the brands address question 17.1(see figure 7), which focuses on implementation of measures aimed at reducing energy usage within distribution centers (refer to Appendix A).

To summarize, the supply chains section has the highest question coverage, encompassing 67% of the SLBLs. The store and office sections follow closely behind, covering 54% and 50% of the questions, respectively. When considering the frequency of brands addressing these sections, the majority, around 50-60%, focus on reducing energy consumption at stores and offices. Supply chain and distribution centers also receive similar attention. In contrast, the transportation section has the lowest number of brands addressing it, accounting for only 20% of the SLBLs.

4.1.2.2 Sustainability Reports

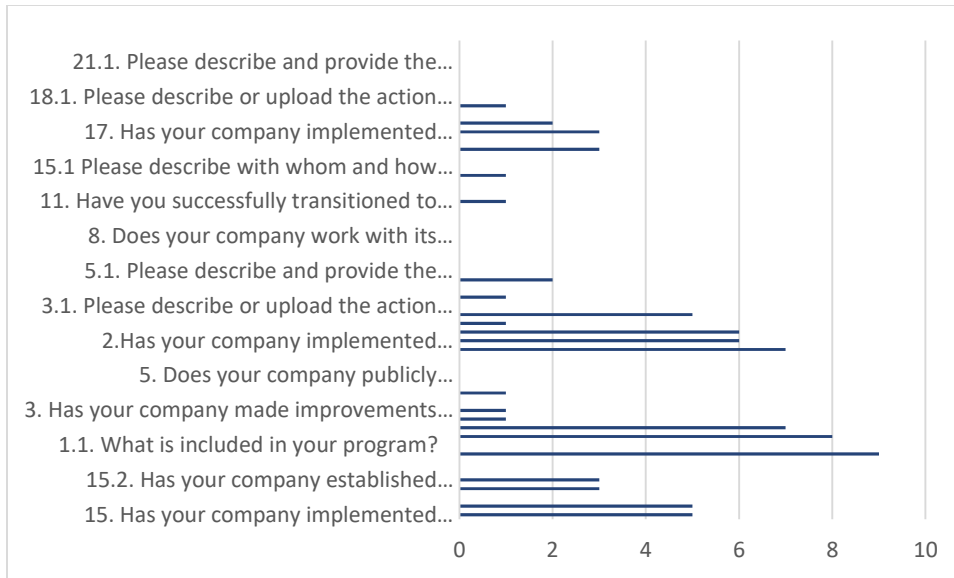


Figure 8 GHG Related Section from Higg BRM Covered by SLBLs through Sustainability Reports

<i>Brand: Supply Chain</i>
<i>15. Has your company implemented practices to reduce resource consumption in key impact areas in its supply chain?</i>
<i>15.1. Have practices been implemented to reduce energy use and Greenhouse gas (GHG) emissions in its supply chain?</i>
<i>15.1.1. In which supply chain segments is action being taken? Specify percentage of each supply chain segment included</i>
<i>15.1.2. What is included in your energy and GHG reduction program for your suppliers?</i>
<i>15.2. Has your company established programs to promote the use, installation, or purchase of renewable energy (wind or solar) by your suppliers?</i>
<i>15.2.1. In which supply chain segments does this program apply? Specify percentage of each supply chain segment include</i>
<i>Store</i>
<i>1. Has your company established a program aimed at improving environmental performance within its stores?</i>
<i>1.1. What is included in your program?</i>
<i>2. Has your company implemented practices to reduce resource consumption in key impact areas in stores?</i>
<i>2.1. Have practices been implemented to reduce energy consumption in stores?</i>
<i>2.1.1. What practices have you implemented to reduce energy consumption?</i>
<i>3. Has your company made improvements in store environmental performance over the last calendar year?</i>
<i>3.1. Please describe the improvements made over the last calendar year:</i>
<i>4. Have your stores received recognized third-party certifications for reduced environmental impact (multi-attribute certifications ONLY)?</i>

4.1. Which certifications have they received?
5. Does your company publicly communicate the key environmental impacts, policies and programs associated with store operations?
6.1. Please describe and provide the relevant URLs:
Office
1. Has your company established a program aimed at improving the environmental performance within its offices?
2. Has your company implemented practices to reduce resource consumption in key impact areas in offices?
2.1. Have practices been implemented to reduce energy consumption in offices?
2.1.1. Please indicate what practices you have implemented to reduce energy consumption:
3. Does your company have an action plan to improve the environmental performance of its offices?
3.1. Please describe or upload the action plan:
4. Do your offices carry recognized third-party certifications for reduced environmental impact (multi-attribute certifications ONLY)?
4.1. Which certifications apply?
5. Do you publicly communicate your key environmental impacts, policies and programs associated with your offices?
5.1. Please describe and provide the relevant URLs:
Transportation
6. Does your company have documentation of its current inbound transportation flows?
7. Does your company have documentation of its current outbound transportation flows?
8. Does your company work with its suppliers and logistics providers to use the most efficient modes of transportation for your inbound shipments (e.g. ships instead of planes; rail instead of trucks)?
9. Does your company work with its distribution centers and logistics providers to use the most efficient modes of transportation for its outbound shipments (e.g trucks instead of planes)?
10. Does your company have an integrated scorecard upon which logistics providers are chosen and existing logistics providers are rated?
10.1. Please select all practices included in your integrated scorecard:
11. Have you successfully transitioned to low or no carbon fuels for any portion of your inbound logistics?
11.1. Which modes of transportation are using them?
14. Does your company help consumers make choices that help reduce environmental impact from product transport?
15. Does your company participate in or invest in activities with other stakeholders to jointly address systemic challenges in order to improve the environmental conditions of its fleets?
15.1 Please describe with whom and how your company engages
Distribution Centers

<i>16. Has your company established a program aimed at improving environmental performance in distribution centers?</i>
<i>6.1. What is included in this program?</i>
<i>17. Has your company implemented practices to reduce resource consumption in key impact areas in distribution centers?</i>
<i>17.1. Have practices been implemented to reduce energy consumption in distribution centers?</i>
<i>17.1.1. What practices have been implemented to reduce energy consumption?</i>
<i>18. Does your company have an action plan to improve the environmental performance of distribution centers?</i>
<i>18.1. Please describe or upload the action plan:</i>
<i>19. Has your company made improvements in the environmental performance of distribution centers over the last calendar year?</i>
<i>19.1. Describe the improvements made over the last calendar year</i>
<i>20. Do distribution centers carry recognized third-party certifications for reduced environmental impact (multi-attribute certifications ONLY)?</i>
<i>21.1. Please describe and provide the relevant URLs:</i>
<i>21. Does your company publically communicate the key environmental impacts, policies and programs associated with its distribution centers?</i>
<i>21.1 Please describe and provide the relevant URLs</i>

The sustainability reports of the SLBLs cover a total of 24 questions, which is a lower number of questions when compared to bond and loan reports (see figure 8).

The SLBLs address 4 out of 6 questions in the supply chain section in their sustainability reports (see figure 8). Additionally, 40% of Brands address questions 15 and 15.1, and 20% of Brands cover questions 15.1.2 and 15.2 in their sustainability reports (see figure 8, refer to Appendix A). However, the coverage of these questions in sustainability reports by the studied brands are 10% lower than in bond or loan reports.

In the store section, SLBLs cover 6 out of 11 questions in sustainability reports, which is the same number of questions covered by bond or loan reports (see figure 8). The data shows that

questions 1 and 2 make up the largest share of disclosures in sustainability reports, accounting for 80% of total disclosures in the sustainability reports (see figure 8). These are 20% and 30% higher than the percentage of disclosures in bond and loan reports, respectively. Questions 2.1.1, 3, and 4 have the lowest percentage of disclosure in sustainability reports, accounting for only 10% of total disclosures (see figure 8). These questions are 10% less frequently addressed in sustainability reports compared to bond or loan reports, with the exception of question 2.1.1, which is not addressed in bond or loan reports. This question measures company's initiative taken to minimize energy usage in store (refer to Appendix A).

The offices section has 10 questions and 70% of these questions are addressed in sustainability reports for SLBLs. Questions 1, 2, and 2.1 have the largest share, accounting for 60% of total disclosures followed by question 5 (see figure 8). Questions 2.1.1 and 4 have the lowest percentage of disclosures, each accounting for 10% of total disclosures. Here, questions 2.1.1 and 5 are only addressed in the sustainability reports. These questions cover information about the actions taken to decrease energy usage and process of publicly communicating environmental impacts, policies, and programs related to your offices (refer to appendix A).

Out of the 11 questions related to transportation, 2 questions are covered in sustainability reports which are 11 & 15. Question 11 examines the shift towards using low or zero carbon fuels for a part of the inbound logistics process. Question 15 inquires if the company partners or invests in joint initiatives with stakeholders to collectively address systemic challenges and improve the environmental impact of its fleets. Just one brand discloses information regarding it, which is substantially lower compared to the level of disclosure in bond or loan reports (refer to Appendix

A).

Regarding distribution, sustainability reports cover 4 out of 16 SLBLs, which is consistent with bond or loan reports. 30% of the SLBLs related to questions 16 and 17 are addressed by brands in their reports, which is the highest percentage, but 20% lower compared to the disclosure level in bond or loan reports. On the other hand, question 18 has the lowest percentage, with only 10% coverage, significantly lower than the level of disclosure in bond or loan reports.

In summary, the result of GHG related issues shows that all of the brands mentioned in the study reported their efforts to reduce GHG emission or energy usage, as indicated in Table 1. When comparing the questions covered in bond or loan reports with those in sustainability reports, it was found that bond or loan reports covered 7% more questions than sustainability reports. Both types of reports provided similar coverage in terms of questions related to the supply chain, stores, and distribution centers. However, sustainability reports disclosed 20% more questions in the office section compared to bond and loan reports. Conversely, the coverage of questions related to transportation is significantly lower in sustainability reports (1%) compared to bond and loan reports (45%). Regarding the frequency of addressing these topics, 70-80% of the brands addressed GHG reduction goals through their supply chain, stores, and office sections in sustainability reports, which was 20-30% higher compared to bond and loan reports. However, a lower percentage of brands addressed the topic of transportation in both types of reports, indicating that this area received less attention in the analyzed reports.

4.1.3 Water and Wastewater

4.1.3.1 Bond or Loan Reports

Two SLBLs have been issued in the fashion industry that specifically target water and wastewater related concerns. Out of the 16 questions related to wastewater in the Higg BRM module, only 3 of these are addressed by the SLBLs. In contrast, none of the 6 questions related to water in the Higg BRM module are covered by the SLBLs.

Questions 16.2, 16.2.4, and 16.2.6 are addressed in both SLBLs issued in this area (see figure 9). These inquiries address the implementation of strategies aimed at reducing wastewater in the company's supply chain, as well as the existence of a documented framework to ensure adherence to the wastewater Program. Additionally, they seek to understand the approaches used to verify supplier compliance with wastewater discharge regulations through appropriate documentation at all levels of the supply chain (refer to Appendix A).

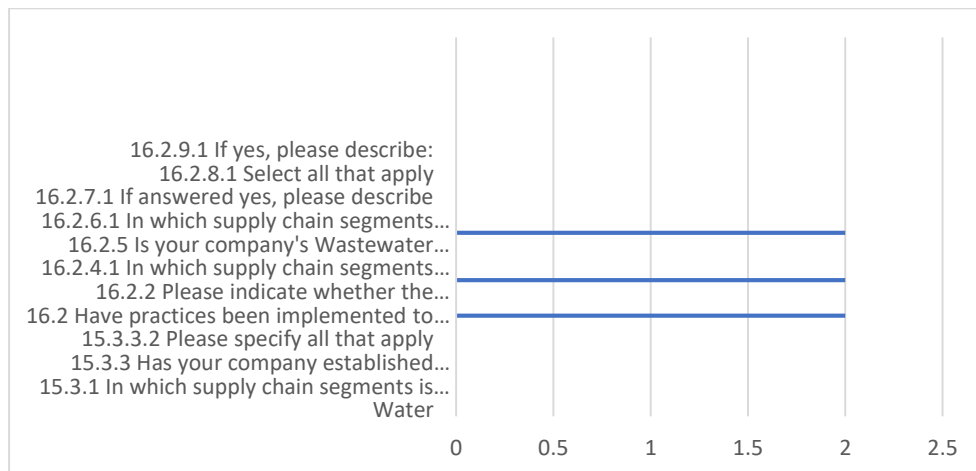


Figure 9 Water and Wastewater Related Section from Higg BRM Covered by SLBLs through Bond or Loan Reports

<i>Water</i>
<i>15.3 Have practices been implemented to reduce water consumption in your company's supply chain?</i>
<i>15.3.1 In which supply chain segments is action being taken? Specify percentage of each supply chain segment included.</i>
<i>15.3.2 What is included in your water reduction program for your suppliers? Please specify all that apply</i>
<i>15.3.3 Has your company established programs to promote the installation of new equipment or processes to reuse or recycle water by your suppliers?</i>
<i>15.3.3.1 In which supply chain segments is action being taken? Specify percentage of each supply chain segment included</i>
<i>15.3.3.2 Please specify all that apply</i>
<i>Wastewater</i>
<i>16.2 Have practices been implemented to reduce or mitigate wastewater in your company's supply chain?</i>
<i>16.2.1 In which supply chain segments does this program apply?</i>
<i>16.2.2 Please indicate whether the expectations communicated to suppliers include the following supplier requirements</i>
<i>16.2.4 Does your company have a documented program to ensure compliance with your Wastewater Program? The program should include monitoring, verification (testing), tracking, and corrective actions when nonconformities are found.</i>
<i>16.2.4.1 In which supply chain segments does this program apply? Specify percentage of each supply chain segment included</i>
<i>16.2.4.2 Can your company provide evidence of corrective action(s) taken as a result of wastewater discharge being found to be out of compliance with your Wastewater Program?</i>
<i>16.2.5 Is your company's Wastewater Program publicly available?</i>
<i>16.2.6 Does your company have a means to confirm that suppliers at each tier of your supply chain identify, manage, and meet compliance with all applicable wastewater discharge regulations in their country/region through appropriate documentation?</i>
<i>16.2.6.1 In which supply chain segments does this program apply? Specify percentage of each supply chain segment included</i>
<i>16.2.7 Does your company have documented business goals and processes, along with recorded specific actions and results, which demonstrate its commitment to advancing innovations in reducing wastewater and improving wastewater treatment</i>
<i>16.2.7.1 If answered yes, please describe</i>
<i>16.2.8 Does your company support its suppliers in reducing wastewater and improving wastewater treatment?</i>
<i>16.2.8.1 Select all that apply</i>
<i>16.2.9 Does your company actively engage with communities of practice to share information, knowledge, and best practices that accelerate the adoption of best in class wastewater reduction and treatment processes, practices, and equipment?</i>
<i>16.2.9.1 If yes, please describe:</i>
<i>16.3 Have practices been implemented to reduce or mitigate other risks in its supply chain?</i>

4.1.3.2 Sustainability Reports

Out of the 16 questions related to wastewater, only five are covered by the SLBLs, and none of the questions related to water are covered by the SLBLs in a manner similar to bond or loan reports (see figure 10).

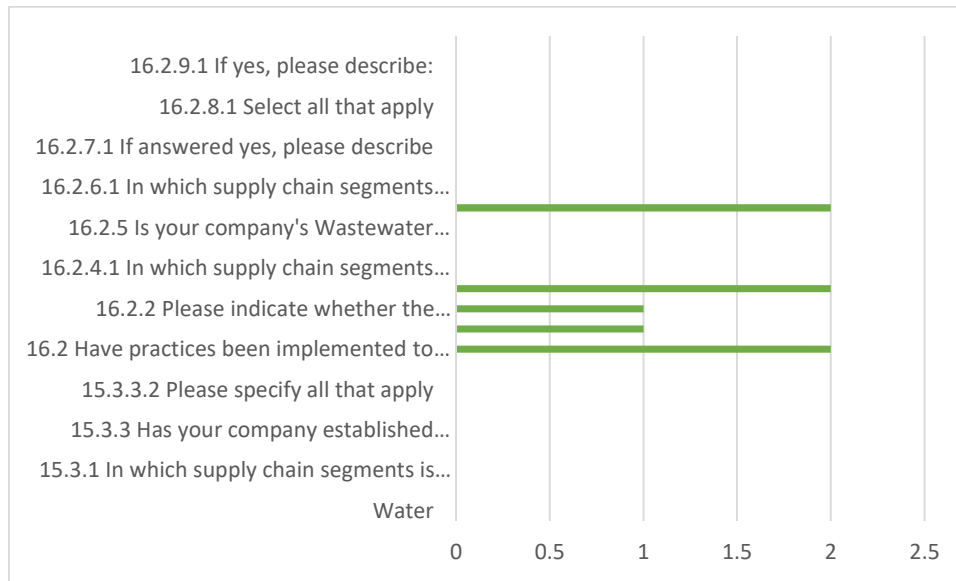


Figure 10 Water and Wastewater Related Section from Higg BRM Covered by SLBLs through Sustainability Reports

Water
15.3 Have practices been implemented to reduce water consumption in your company's supply chain?
15.3.1 In which supply chain segments is action being taken? Specify percentage of each supply chain segment included.
15.3.2 What is included in your water reduction program for your suppliers? Please specify all that apply
15.3.3 Has your company established programs to promote the installation of new equipment or processes to reuse or recycle water by your suppliers?
15.3.3.1 In which supply chain segments is action being taken? Specify percentage of each supply chain segment included
15.3.3.2 Please specify all that apply
Wastewater
16.2 Have practices been implemented to reduce or mitigate wastewater in your company's supply chain?
16.2.1 In which supply chain segments does this program apply?

<i>16.2.2 Please indicate whether the expectations communicated to suppliers include the following supplier requirements</i>
<i>16.2.4 Does your company have a documented program to ensure compliance with your Wastewater Program? The program should include monitoring, verification (testing), tracking, and corrective actions when nonconformities are found.</i>
<i>16.2.4.1 In which supply chain segments does this program apply? Specify percentage of each supply chain segment included</i>
<i>16.2.4.2 Can your company provide evidence of corrective action(s) taken as a result of wastewater discharge being found to be out of compliance with your Wastewater Program?</i>
<i>16.2.5 Is your company's Wastewater Program publicly available?</i>
<i>16.2.6 Does your company have a means to confirm that suppliers at each tier of your supply chain identify, manage, and meet compliance with all applicable wastewater discharge regulations in their country/region through appropriate documentation?</i>
<i>16.2.6.1 In which supply chain segments does this program apply? Specify percentage of each supply chain segment included</i>
<i>16.2.7 Does your company have documented business goals and processes, along with recorded specific actions and results, which demonstrate its commitment to advancing innovations in reducing wastewater and improving wastewater treatment</i>
<i>16.2.7.1 If answered yes, please describe</i>
<i>16.2.8 Does your company support its suppliers in reducing wastewater and improving wastewater treatment?</i>
<i>16.2.8.1 Select all that apply</i>
<i>16.2.9 Does your company actively engage with communities of practice to share information, knowledge, and best practices that accelerate the adoption of best in class wastewater reduction and treatment processes, practices, and equipment?</i>
<i>16.2.9.1 If yes, please describe:</i>
<i>16.3 Have practices been implemented to reduce or mitigate other risks in its supply chain?</i>

Apart from questions 16.2, 16.2.4, and 16.2.6 addressed in bond or loan reports, sustainability reports also address question 16.2.1 (see figure 10), which inquires about the specific supply chain segments to which the wastewater program applies. Additionally, sustainability reports address question 16.2.2, which asks about the inclusion of certain supplier requirements in the communicated expectations (refer to appendix A).

In general, bond, sustainability, and loans reports cover the topics of wastewater, with question coverage percentages ranging around 20% and slightly above 30% respectively. Sustainability

reports address a higher number of questions compared to bond and loans reports, with a difference of 12%. However, none of the six questions specifically focus on water-related issues in the supply chain.

4.1.4 Packaging

4.1.4.1. Bond or Loan Reports

In total, 3 out of 11 brands have utilized SLBLs to finance initiatives targeted at their packaging (see figure 11). The Higg BRM module includes 17 questions that are pertinent to the topic, and 6 of these questions are addressed by the SLBLs through bond or loan reports and sustainability reports.

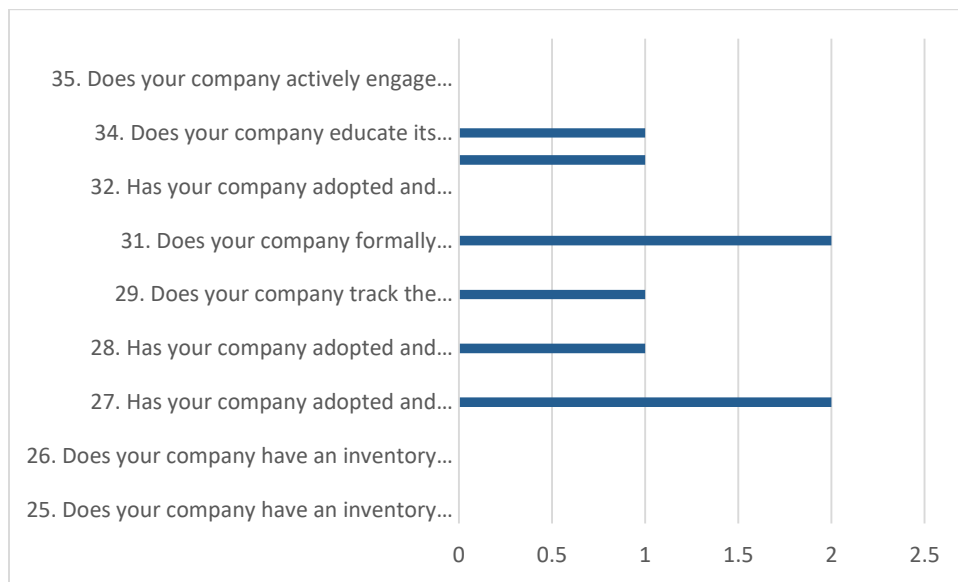


Figure 11 Packaging Related Section from Higg BRM Covered by SLBLs through Bond and Loan Reports

25. Does your company have an inventory of the primary materials used in its consumer packaging (e.g. on product packaging and labels, retail packaging, etc.)?
25.1. Which of the following primary material categories are used in your consumer packaging?
26. Does your company have an inventory of the primary materials used in its transport packaging (e.g. polybags, boxes, shipping bags, etc.)?
26.1. Which of the following primary material categories are used in your transport packaging?

<i>27. Has your company adopted and implemented any consumer packaging reduction programs (e.g. reducing product packaging, retail packaging, etc.)?</i>
<i>27.1. Select all that apply:</i>
<i>28. Has your company adopted and implemented any transport packaging reduction programs (e.g. reducing polybags, boxes...)?</i>
<i>28.1. Select all that apply:</i>
<i>29. Does your company track the percentage of consumer packaging materials that have environmental attributes or certifications?</i>
<i>30. Does your company track the percentage of transport packaging materials that have environmental attributes or certifications?</i>
<i>31. Does your company formally incorporate circular design considerations into its packaging materials development and/or selection process?</i>
<i>31.1. How?</i>
<i>32. Has your company adopted and implemented a Packaging Restricted Substance List for your company and its suppliers?</i>
<i>33. Has your company adopted and implemented a preferred and restricted packaging materials list? (e.g. virgin fibers must be from FSC-certified forests, no fibers from old growth or endangered forests, minimum percentage post-consumer recycled content for plastics, no PVC plastic, etc)?</i>
<i>34. Does your company educate its customers about the environmentally preferred packaging materials it has used or its initiatives to reduce packaging?</i>
<i>34.1. Describe 1-3 ways you have done this:</i>
<i>35. Does your company actively engage and collaborate with communities of practice, NGOs, and/or governments to share information, knowledge, and best practices that accelerate the adoption and development of environmentally sustainable packaging or the reduction of packaging?</i>
<i>35.1. Please list these efforts and provide relevant URLs that describe them in detail:</i>

Two of the SLBLs include questions 27 and 31 (see figure 11), which address whether the company has implemented consumer packaging reduction programs and whether circular design considerations are formally incorporated into the development and selection process of packaging materials (refer to Appendix A). One of the SLBLs addresses questions 28, 29, 33, and 34 (see figure 11). These questions cover the implementation status of programs associated with transport packaging, and method of measuring progress particularly concerning the percentage of consumer packaging materials that are environmentally friendly. Furthermore, whether the company established both a preferred and restricted packaging materials list and do they inform

customers about environmentally preferable packaging materials (refer to Appendix A).

4.1.4.2 Sustainability reports

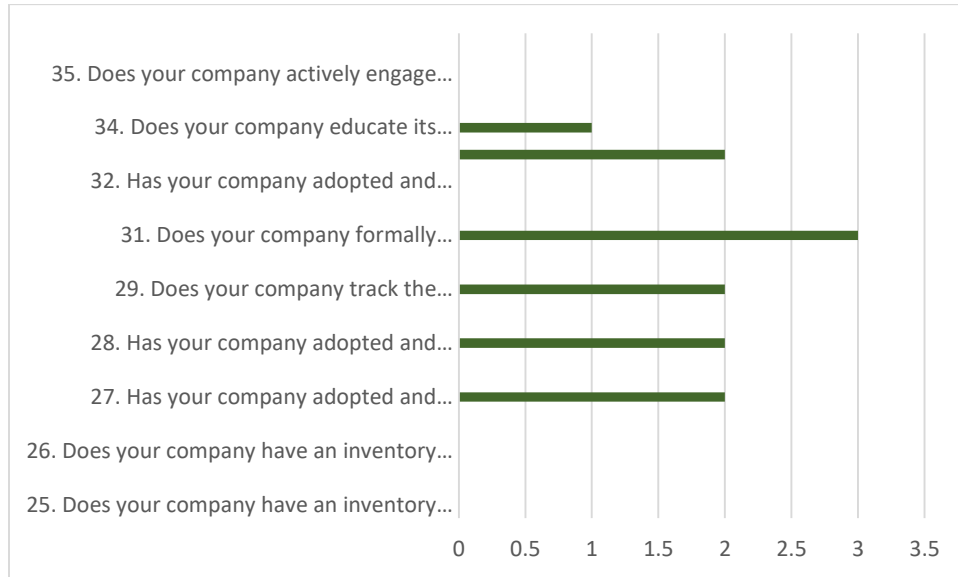


Figure 12 Packaging Related Section from Higg BRM Covered by SLBLs through Sustainability Reports

25. Does your company have an inventory of the primary materials used in its consumer packaging (e.g. on product packaging and labels, retail packaging, etc.)?
25.1. Which of the following primary material categories are used in your consumer packaging?
26. Does your company have an inventory of the primary materials used in its transport packaging (e.g. polybags, boxes, shipping bags, etc.)?
26.1. Which of the following primary material categories are used in your transport packaging?
27. Has your company adopted and implemented any consumer packaging reduction programs (e.g. reducing product packaging, retail packaging, etc.)?
27.1. Select all that apply:
28. Has your company adopted and implemented any transport packaging reduction programs (e.g. reducing polybags, boxes...)?
28.1. Select all that apply:
29. Does your company track the percentage of consumer packaging materials that have environmental attributes or certifications?
30. Does your company track the percentage of transport packaging materials that have environmental attributes or certifications?
31. Does your company formally incorporate circular design considerations into its packaging materials development and/or selection process?
31.1. How?
32. Has your company adopted and implemented a Packaging Restricted Substance List for your company and its suppliers?

<i>33. Has your company adopted and implemented a preferred and restricted packaging materials list? (e.g. virgin fibers must be from FSC-certified forests, no fibers from old growth or endangered forests, minimum percentage post-consumer recycled content for plastics, no PVC plastic, etc)?</i>
<i>34. Does your company educate its customers about the environmentally preferred packaging materials it has used or its initiatives to reduce packaging?</i>
<i>34.1. Describe 1-3 ways you have done this:</i>
<i>35. Does your company actively engage and collaborate with communities of practice, NGOs, and/or governments to share information, knowledge, and best practices that accelerate the adoption and development of environmentally sustainable packaging or the reduction of packaging?</i>
<i>35.1. Please list these efforts and provide relevant URLs that describe them in detail:</i>

The sustainability reports cover 6 out of the 17 relevant questions related to packaging which is same as bonds and loans reports. Question 31, which has the highest number of brands addressing it, is covered by all the brands, followed by questions 27, 28, and 29 that is covered by two of the brands. The lowest number of brands address question 34 (see figure 12; refer to Appendix A).

Overall, in the packaging section both sustainability reports and bonds/loans reports had the same coverage numbers which is 35%. In terms of frequency of addressing the questions sustainability reports are higher compared to bonds and loans reports.

4.1.5 Others

In addition to packaging, the two SLBLs also cover other areas such as zero waste and waste reduction, reuse, and recycling. Both questions 15.4 and 15.4.1 are relevant to these areas and are addressed by the in bond, sustainability and loan reports (see figure 13).

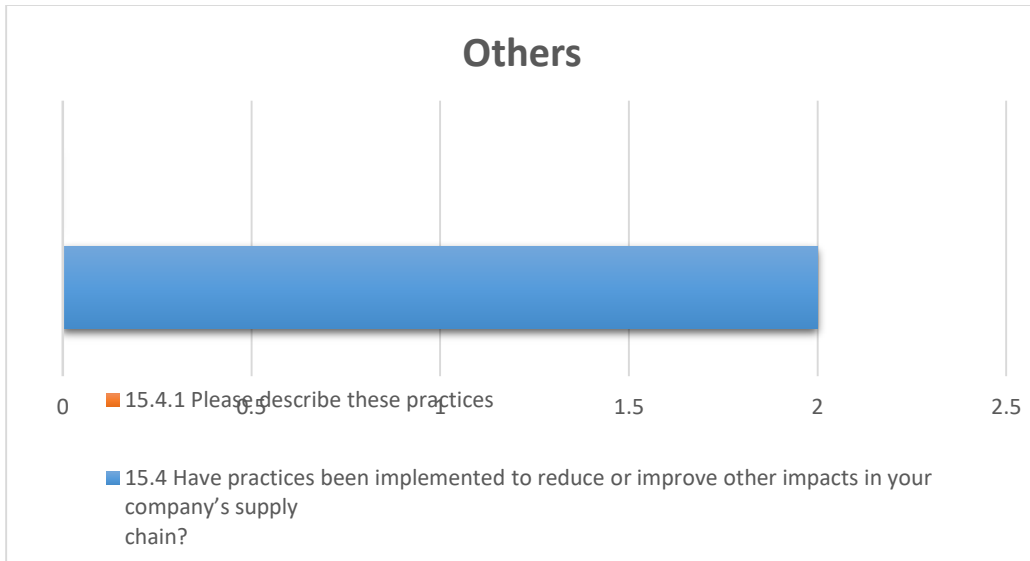


Figure 13 Others Related Section from Higg BRM Covered by SLBLs through Bond and Loan & Sustainability Reports

Question 15.4 inquires about the implementation of practices to reduce or improve other impacts in the company's supply chain, while question 15.4.1 asks for a description of these practices (refer to Appendix A). To summarize the Other section covers 100% of the questions of Higg BRM module respectively.

Chapter 5: Discussion

Out of a total of eleven brands, seven have employed SLBLs to fund their initiatives aimed at achieving their desired objectives concerning materials. All of these brands and retailers have issued SLBLs with the intention of reducing their Greenhouse Gas (GHG) emissions. Additionally, three of the brands have incorporated SLBLs into initiatives specifically focused on packaging, while two brands have utilized SLBLs to tackle concerns related to water, wastewater, and other pertinent areas.

In comparing information from sustainability reports, bond reports, and loan reports, we have investigated whether the reports addressed the Higg BRM questions. In the product section, sustainability reports addressed 33% of the related questions, while bond or loan reports covered 26%. In terms of information disclosure, question 4 & 5 of the environment section were most frequently addressed by bond, sustainability and loan reports. These questions evaluate whether a company utilizes a certain percentage of materials that possess environmentally preferred attributes or certifications as well as track the percentage utilized. In terms of frequency, sustainable material topics are addressed in sustainability reports by 7 of the brands, while 6 of the brands address these issues in their bond or loan reports.

Regarding GHG emission reduction, bond or loan reports covered 53% of the questions, while sustainability reports covered 47%. Both types of reports provided similar coverage in terms of questions related to the supply chain, stores, and distribution centers. However, sustainability reports disclosed 20% more questions in the office section compared to bond and loan reports. Conversely, the coverage of questions related to transportation is significantly lower in

sustainability reports (1%) compared to bond and loan reports (45%). Regarding the frequency of addressing these topics, 70-80% of the brands addressed GHG reduction goals through their stores, and office sections in sustainability reports, which was 20-30% higher compared to bond and loan reports. Approximately 30% to 45% of the brands mentioned efforts to reduce GHG in their supply chains, as indicated in the bond, supply chain, and loan reports. However, a lower percentage of brands addressed the topic of transportation in both types of reports, indicating that this area received less attention in the analyzed reports.

Similarly, in terms of water and wastewater, sustainability reports had slightly over 30% coverage, whereas bond or loan reports covered nearly 20% of the questions. However, none of the six questions specifically focus on water-related issues in the supply chain. In terms of frequency, approximately 20% of the brands address this topic through SLBLs, encompassing bond reports, sustainability reports, and loan reports. Finally, in terms of packaging and other sections, both reports had the same coverage numbers, 35% and 100% respectively with a frequency of 20%. The other sections consisted of zero waste and waste reduction, reuse, and recycling.

The findings indicate that the brands' sustainability goals related to environmental concerns, particularly sustainable materials and greenhouse gas (GHG) emissions, are prioritized in issued SLBLs. In contrast, social and human rights issues are not adequately addressed by the SLBLs. The finding of inclination towards achieving GHG emission reduction through SLBLs by all the brands supports the peer emulsion theory (Ozili, 2022). This suggests that there is greater potential of incorporating social and human rights considerations into SLBLs in the fashion industry. This finding supports the report of Nguyen (2022) that mentions the effectiveness of sustainable

finance in the fashion industry and risk of greenwashing of SLBLs in the fashion industry. This supports the existing literature that suggests inadequate progress has been made in incorporating social performance in ESG investing. Moreover, historically sustainable investing landscape in Europe neglected the "S" (social) component in ESG (Baid & Jayaraman, 2022). In contrast, a study based on South Korea concludes that institutional investors give higher priority to environmental and governance factors over social factors. This means that factors such as protecting shareholders' rights, reducing pollution and waste, managing greenhouse gas emissions, and identifying potential risks and opportunities have a stronger impact on the investment decisions of institutional investors (S. R. Park & Jang, 2021). This finding contradicts the notion found in grey literature that investors tend to prioritize thorough and detailed ESG risk assessments at the individual company level to supplement impact evaluations. Literature shows that an investor will not solely rely on a company meeting their environmental impact criteria but will assess whether the company aligns with the other two pillars of ESG risk assessment (Mascotto, 2020).

Most of the bond and loan reports pertaining to sustainable material prioritize environmentally friendly materials such as recycled polyester, recycled nylon, regenerated nylon, sustainable cotton, and footwear made with Parley Ocean Plastic¹. Even though sustainability reports highlighted the progress in terms of the percentage of these materials used, only 40% bond and loan reports tracked the progress. Therefore, it is important to track the progress toward achieving the SPT through yearly third-party reports. However, a more comprehensive approach to understanding sustainability in the fashion industry would require integrating questions 1 and 3 of Higg BRM in Environment: Product subsection of Brand section (Appendix A) which address

material inventory and environment impact assessment of material through Life Cycle Analysis. In these cases, brands can use Higg Materials Sustainability Index namely Higg MSI to evaluate the LCA, though there are controversies associated with this tool. The Higg Index in product labels derived from Higg MSI, has faced criticism for favoring synthetic fabrics, lacking transparency in data access, being influenced by its ties to the fashion industry, and being potentially misleading for marketing purposes. Additionally, the index only analyzes the environmental impact of materials until the production of fabric is completed, omitting important sources of emissions throughout a garment's full life cycle (Britten, 2022). Based on the claim, the Norwegian Consumer Authority (NCA) and Netherlands Authority for Consumers and Markets (ACM) collaborated on an 11-page report that highlights ways in which the SAC can enhance the reliability and accuracy of its Higg MSI tool, in order to prevent deceptive marketing and accusations of greenwashing. The report suggested that the SAC should substantiate the claims of the Higg MSI, seek independent third-party reviews of data and methodologies, and put environmental impact claims in context. The SAC is reviewing the guidance while undergoing a third-party review of the Higg MSI. This follows the NCA's ruling that the use of Higg MSI data in consumer marketing could mislead customers, prompting the SAC to suspend the labels (DEELEY, 2022). Additionally, some materials, such as Better Cotton, consider labor and human rights issues and involve external stakeholders in addressing these issues. Therefore, there is a significant potential of addressing labor and human rights issues as along with environmental aspects. Moreover, recycled polyester is popular among environmentally conscious brands, but the majority of it comes from recycled PET bottles rather than recycled clothing. This poses a challenge because using PET bottles breaks the closed loop recycling system and recycled

polyester is difficult to recycle again, because it releases micro plastic in the same as virgin synthetic material (CHAN, 2022; WEBB, 2022). According to the Fashion Transparency Index 2022, approximately three-quarters of brands do not reveal their methods for reducing the effects of microfibers, despite the fact that textiles are the primary contributor to micro plastic pollution in the ocean (Fashion Revolution, 2022). The quality of recycled cotton fiber is a concern due to the current common method of mechanical recycling. When the recycled fibers are spun back into yarns, they become shorter and the quality degrades over time. Moreover, toxic dyes and chemicals used in processing make it hard to recycle. The lack of available infrastructure is a hindrance to the expansion of recycling in the fashion industry. However, new technologies are emerging as potential solutions to tackle the challenges of fashion recycling. For instance, Renewcell, a Swedish company, produces a material by utilizing textile waste, while the Green Machine developed by the Hong Kong Research Institute of Textiles and Apparel, with support from H&M, is capable of recycling blended textiles (CHAN, 2022). One of the top five investment trends, as stated in a 2020 report from American Century Investments, is that an increasing number of investors will insist on a transition towards a circular economy, which will prioritize the use of alternative raw materials and composites (Mascotto, 2020).

When it comes to energy, most fashion brands prioritize reducing GHG emissions in their stores and offices, which primarily fall under scope 1 and 2 emissions. Approximately 30-45% of brands have linked their bond and loan reports to initiatives aimed at reducing scope 3 emissions in their supply chain. However, it remains unclear from these reports or sustainability reports which areas of the supply chain these initiatives are targeting. Only two brands have reported on emission reduction in transportation, which suggests that there is room for improvement in this

area. On the other hand, 75% of bond and loan reports and 40% of sustainability reports address emissions from distribution centers. Of all the sections analyzed, the energy category was found to have the highest level of coverage in bond and loan reports compared to sustainability reports, with a greater number of brands addressing questions from the Higg BRM module. This finding is aligned with literature which finds that investors are prioritizing the transition to a lower carbon economy and are willing to pay a premium for sustainability, as evidenced by nearly 90% of callable SLBs linked to the Science-Based Targets initiative being aimed at reducing GHG emissions. Climate change is a major concern for investors which motivates issuing sustainable debt to adopt ambitious targets for reducing emissions (Amundi, 2021; Kölbel et al., 2020; Mascotto, 2020; Y. Park et al., 2021). These findings also support the Fashion Transparency Index 2022 report which revealed that stakeholder pressure, such as investor and government regulations, has led to an increase in disclosure of GHG emissions. This report found that around 65% of major brands and retailers now report their carbon footprint for their own operations, with 34% disclosing emissions at the processing level and 22% at the raw material level (Fashion Revolution, 2022). However, previous studies depicted that the relationship between emissions reduction targets and actual emissions has not been extensively studied (Ioannou et al., 2016). However, prior research indicated that setting ambitious long-term targets is positively associated with carbon performance (Dahlmann et al., 2019; Ioannou et al., 2016). Dreier (2022) claims that investors apprehension regarding the risk of greenwashing implies that the adoption of science-based targets will likely become a norm. This claim supports the positive signaling theory (Ozili, 2022). A study on United States firms revealed that companies with stronger environmental performance are more inclined to opt for debt issuance rather than equity when

seeking external financing. The author also finds that this shift towards debt financing offers tax advantages to responsible firms, despite conflicting with the target capital structure of maintaining low leverage ratios. This study also reveals that taking on new debt does not hinder firms from reaching their desired leverage levels if the debt is temporary and short-term (Benlemlih, 2020). Gallego-Álvarez et al. (2014) suggests that during periods of economic turmoil, there is a stronger correlation between environmental and financial performance. The authors suggest that companies should maintain their investments in sustainable initiatives to improve their relationships with stakeholders, resulting in increased economic profits.

Despite being a major concern in the fashion industry, none of the questions related to the water category have been addressed in any of the SLBLs. As for wastewater, the focus is mainly on mitigating wastewater issues and complying with the effluent water treatment plant regulations prescribed by the brand. However, this is viewed as a basic level of compliance rather than an ambitious goal. This finding supports the grey literature that companies in the apparel and textile sector have poor levels of transparency and disclosure regarding water security. More than half (54%) of these companies, including brands, manufacturers, and retailers, did not disclose important details related to water when asked to do so by investors or purchasers for the Carbon Disclosure Project (CDP) report in 2019. The CDP (2019) report reveals that among the 100 largest apparel and textile companies, only 21% reported data related to water security. Moreover, water pollution risks are widespread throughout the entire apparel and textile value chain, yet most companies that report through CDP are unaware of these risks. Among companies that water related information, only 21% reported water pollution risks that could have a significant financial or strategic impact on their business, mainly during the manufacturing stages. However,

none of the companies identified raw material production and pollution at product use and disposal phases as a significant risk. In the same report, only 23% of responding companies disclosed goals or targets related to water pollution throughout their value chain, and a mere 6% tracked and reported progress towards these goals. The report claims that although the potential advantages of addressing water pollution may not be fully recognized, there are opportunities for businesses to capitalize on. Some companies are already taking action, as evidenced by 29% of those disclosing who reported business opportunities linked to decreasing water pollution (CDP, 2020). According to Fashion Transparency Index 2022, although 32% of brands disclose their water footprint concerning their own operations, the numbers drastically drop when it comes to manufacturing level (15%) and even lower at the fiber and raw material level (4%) (Fashion Revolution, 2022).

The result of this study reveals that fashion brands prioritize reducing consumer and transportation packaging, implementing preferred and restricted packaging list, and adopting circular packaging. However, to obtain a more comprehensive understanding of packaging sustainability, it is necessary to take into account the inventory of primary materials used in both customer and transportation packaging. This finding opposed the literature revealed that 57% of the brands have shown notable progress in adopting sustainable packaging practices. Additionally, 34% have initiated a transition from conventional to environmentally friendly packaging, whereas the remaining brands have pledged to reassess (1%) or enhance (8%) their packaging approaches in the upcoming period (Jestratijevic, 2022). Moreover, according to Fashion Transparency Index 2022, 45% of brands and retailers have publicly announced their

objectives to decrease the utilization of packaging made from new plastic materials which is greater the disclosure on GHG(Fashion Revolution, 2022).

The "Others" section of Higg BRM module that are being addressed by the SLBLs mainly addresses waste reduction strategies in their distribution centers, as well as waste prevention, reduction, and recycling initiatives across their facilities, supply chain, and communities. However, the specific actions taken are not elaborated upon in the reports. It may be beneficial to include measures aimed at reducing post-consumer waste, which has been a topic of recent discussions in the fashion industry. According to Fashion Transparency Index 2022, one-third of 33% of major brands and retailers disclosed that they have takeback programs. However, there is still a lack of transparency regarding the fate of the collected clothes, as only 26% of brands disclose this information (Fashion Revolution, 2022).

The result reveals that the social issues of the industry are not at all a focus of the issued SLBLs. Prior studies show that interest of investors and emerging regulations are the main drivers to address social issues in the SLBLs (Amir & Serafeim, 2018; Baid & Jayaraman, 2022). According to literature, the ESG focus has historically been narrow, with a primary emphasis on environmental outcomes, the investor will focus of all three components of ESG (Baid & Jayaraman, 2022; Mascotto, 2020). Due to the Russia-Ukraine war, COVID-19 pandemic, and global Black Lives Matter protests that brought attention to inequality, the industry has acknowledged that investors are now compelled to consider the social component (the "S" in ESG) in their investments. Moreover, Nike faced criticism due to child labor practices by their outsourcing partners, and the Rana Plaza incident in Bangladesh highlighted inadequate safety protocols at factories specific to fashion industry (Baid & Jayaraman, 2022). According to Baid & Jayaraman

(2022), Europe is taking a significant step towards integrating sustainability into the regulatory approach for financial markets through its action plan and forthcoming regulations for sustainable finance. The authors believe that this move has the potential to transform the sustainable investing landscape in Europe and address the previously neglected "S" (social) component in ESG, emphasizing the importance of organizations fulfilling both social and environmental agendas. Moreover, under the Sustainable Finance Disclosure Regulation (SFDR), pension funds, insurers, and asset managers are required to disclose their approach to integrating ESG risks into their investment decisions (Baid & Jayaraman, 2022). Despite social issues such as human rights, labor rights, and diversity being prevalent on social media, there is still a challenge in quantitatively measuring the social performance and impact in ESG investing. The wide range of different social issues in each country and inconsistency in ESG data make it harder to measure the social aspect of ESG compared to environmental and governance aspects (Baid & Jayaraman, 2022).

Chapter 6: Conclusion

The aims of this research were to assess the SLBLs issued by fashion brands in terms of addressing the environmental and social issues of the industry, using the Higg BRM module as a framework for evaluation. The result finds out that, SLBLs issued by fashion brands addresses related to environmental concerns, particularly sustainable materials and greenhouse gas (GHG) emissions, are prioritized in issued SLBLs, while social and human rights issues are not adequately addressed by the SLBLs. When it comes to energy, most fashion brands prioritize reducing greenhouse gas (GHG) emissions in their stores and offices, which primarily fall under scope 1 and 2 emissions. Despite being a major concern in the fashion industry, none of the questions related to the water category have been addressed in any of the SLBLs. As for wastewater, the focus is mainly on mitigating wastewater issues and complying with the effluent water treatment plant regulations prescribed by the brand. Fashion brands prioritize reducing consumer and transportation packaging, implementing preferred and restricted packaging, and adopting circular packaging. The "Others" section of Higg BRM module that are being addressed by the SLBLs mainly addresses waste reduction strategies in their distribution centers, as well as waste prevention, reduction, and recycling initiatives across their facilities, supply chain, and communities.

This suggests that the greater potential of incorporating other crucial environmental issues such as water and wastewater, post-consumer waste as well as social and human rights considerations into SLBLs in the fashion industry. The focus on addressing environmental and social issues through SLBLs is largely motivated by investor interest and, in some cases, regulatory requirements. However, despite predictions that investors would be interested in social issues,

SLBLs tend to focus more on environmental issues. One possible reason for this is that social issues are more difficult to measure compared to environmental issues. The reason of water issues is not given enough attention in the apparel and textile sector may be due to the industry's low level of transparency and disclosure regarding water security. Additionally, water pollution risks are prevalent throughout the entire value chain of the industry, yet most companies that report through CDP are not aware of these risks. Moreover, in contrast to the Paris Agreement, there is no global commitment to address water-related issues on a similar scale.

The study's findings will help the decision-makers who develop SLBLs in the fashion industry to develop SLBLs that emphasize broader material sustainability concerns. Furthermore, this research can aid institutional and private investors in gaining a clear understanding of the current emphasis placed on SLBLs within the fashion industry and be a catalyst to help bridge the gap between sustainability concerns addressed by SLBLs. This research will enhance the existing literature on sustainability finance within the fashion industry by presenting a comprehensive overview of Sustainable Linked Bonds and Loans (SLBLs) in this sector. Future researchers can leverage this study as a foundation for conducting in-depth investigations into investor behavior within the realm of SLBLs.

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Appendix A

[Higg BRM 2021 \(Version 1.2\) guideline](#)



Higg Brand & Retail Module (Higg BRM)

Module : 2021
Version : 1.2
Release Date : March, 1st 2022

¹ Parley Ocean Plastic™ is made from upcycled plastic waste collected from beaches and coastal communities, Adidas able to replace virgin plastic in our products(Adidas, n.d.)