Utrecht
University

Master Thesis U.S.E.

The Financial Impact of Greenwashing: Insights from Fashion Companies

Talia Songur - 7544375
Sustainable Finance & Investments MSc
Supervisor: Mohamad Kaakeh
2nd Supervisor: Martin Rohleder

Footnote

This thesis marks the completion of the Master of Science in Sustainable Finance and Investments at the Utrecht University School of Economics (U.S.E.). A special thanks to Mohammed Kaakeh, my master's thesis adviser and Martin Rohleder, my second supervisor, for their invaluable advice, support, and insightful feedback during the writing process. Additionally, I would also like to express my gratitude to my peers for their support and enlightening conversations, which helped greatly in the making of my thesis. Finally, I would want to express my sincere appreciation to my family and friends for their constant support and patience during this study.

Abstract

This study focuses on the effects of greenwashing on financial performance in the fashion sector, which is one of the most polluting industries in the world, in an effort to further the continuing research on the environmental impact of companies. A proxy for greenwashing is produced by calculating the difference between a company's symbolic environmental initiatives and its real performance. The study's foundation is an in-depth review of the literature on the drivers and mechanisms of "greenwashing," with a focus on the impact of stakeholder pressure and disclosure risks on corporate green behaviour. The empirical research makes use of information from the Eikon Refinitiv database that spans five years and includes financial and ESG data for 83 fashion companies. In contrast to the expectations, the data suggest that greenwashing has no apparent impact on financial performance, with companies exhibiting varying degrees of success in meeting CO_2 reduction goals and an unexpectedly significant correlation between carbon emissions and market value. The findings emphasise the importance of sincere environmental initiatives while highlighting the complexity of the financial consequences of greenwashing. The thesis concludes by offering suggestions for further study to improve the understanding and evaluation of greenwashing, with the goal of creating a more transparent and sustainable fashion sector.

Table of Contents

1. Introduction

Fashion sector being one of the main components of humanity alongside food industry and energy, employs 300 million people worldwide with $2.4 trillion-dollar industry making it a major force by impacting economic environments, sociological trends, and environmental impacts. However, despite its significance, it holds a problematic issue being counted as the third most polluting industry globally (Plasencia, 2024). Its annual carbon footprint is 10%, which is found to be equivalent to that of the European Union's. It also releases 8% of the world's wastewater and leaks 9% of the microplastic into the ocean each year (Adamkiewicz et al., 2022). This environmental impact, further deepened by fast fashion phenomenon that evolves around rapid design, production, and distribution. What industry experts implied was that by 2030, wastes from garments would rise to almost 148 million tons and emission from the production of these would be able to reach 60% (Fashion Industry, UN Pursue Climate Action for Sustainable Development, 2018, Maiti, 2024; Papamichael et al., 2023).

With the rapid evolving of the global landscape, the fashion industry actively strives to enhance their procedures to conform to ethical and ecological standards as well as balancing their strategic planning and environmental sustainability to maintain competitive advantage and stakeholder trust. Sustainability in company operations has attracted attention more than ever with growing consumer awareness and regulatory constraints that affect the whole supply chain (Alizadeh et al., 2024; De Ponte et al., 2023). Literature have also found range of factors that contributes to greenwashing activities from organisational incentives to individual cognitive biases, and external pressures from regulatory environments and non-market actors (Delmas and Burbano, 2011; Freeman, 1983). Considering these developments "greenwashing" term has developed that shows the common fraud in which businesses misrepresent their environmental efforts to project a sustainable image and profit from sustainability without truly committing to sustainable initiatives (Lyon & Montgomery, 2015; Testa et al., 2015). These acts could be shown by some couple examples in the industry such as: deceptive statements by H&M with the "Conscious" collection, claiming that they will offer "eco-friendly" products but were later on found to be false and illegal, in 2022 (Wren, 2022) and Adidas' advertisement of "Stan Smith Forever" claiming 100% iconic and 50% recycled, without the disclosure to customers how much of the shoe actually is recycled, misleading consumers with an "end plastic waste" emblem (Rauturier, 2022).

Academic literature has extensively recorded the issues and consequences greenwashing has on several stakeholders, as well as the tactics employed by the companies extending from

behavioural and motive greenwashing to manipulation of disclosure and product level deception (de Jong et al., 2019; Yu et al., 2020). Such strategies surround many stakeholders like consumers, companies, the environment, and society as a whole who could get a negative perception of the key strategy. Greenwashing damages the credibility of business CSR (Corporate Social Responsibility) claims based on deception, which might lead consumers, especially those who are not CSR experts, to misunderstand such claims. Besides the fact that these types of strategies may not be always deliberate, greenwashing can have a negative impact even on a company image after all (Alizadeh et al., 2024; de Jong et al., 2019; Gatti et al., 2019). By doing so, in the short run the cost-saving and enhanced brand image may come with privileges yet, in the long run, the financial performance and relations with stakeholders may be affected as customers increasingly value more on the authentic environmental commitment than on deceptive marketing tactics (de Jong et al., 2019; Liao, et al., 2023).

Taking the results of studies into account, the aim of this thesis is to investigate the impact that greenwashing might has on financial performance in the apparel and fashion sectors. The study is aimed at filling the knowledge gap in a more sufficient understanding of greenwashing that can lead to the development of recommendations for promoting true sustainability acts in the fashion area. This research is intended to showcase the ways between financial performances, sustainable and responsible practices, and perception of stakeholders regarding greenwashing. This will be used to guide and instruct the corporations, industry leaders, and consumers, on the needed actions that will favour the responsible and transparent nature of the fashion industry.

To measure the link between greenwashing and financial performance, the study employed both financial measures and ESG (Environmental, Social, and Governance) related measures. A fixed-effects panel data regression model is used, with a period of 5 years, such a duration is considered because it overlaps with the concerns regarding greenwashing really started to rise among the society. The study leveraged Eikon Refinitiv data of apparel and fashion-related firms as the data source and then perform a panel data analysis with a sample representative firm in the industry to build more robust foundation for greenwashing and financial performance.

Hence, this thesis begins by examining the motives and factors driving firms to engage in greenwashing practices specifically in fashion industry. Subsequently, it attempts to shift the discussion towards a more definitive understanding of the impact of greenwashing on firm' financial performance through the following research question:

What is the influence of greenwashing within the fashion industry on the financial performance
of firms?

I have developed the hypothetical framework based on previous literature that shows the effect of environmental greenwashing on the financial performance of fashion apparel companies. Primarily, I expect that the greenwashing is a result for the poor financial performance of some fashion companies by making consumers reluctant to trust a brand and diminishing the brand reputation. (de Jong et al; 2019, Walker & Wan, 2011). Next, fashion firms achieving CO_2 emissions reduction targets are expected to have higher financial performance, reflecting the positive correlation between environmental efforts and brand loyalty (Walker & Wan, 2011). Finally, the last expectation is that there exists a negative relationship between carbon emissions and firm value, with higher emissions associated with decreased market value due to reputational risks and regulatory pressures (Ghoul et al., 2016; Liao et al., 2023).

To achieve these objectives, the remainder of the paper is structured as follows: Firstly, the literature review combining with the theoretical framework provides a comprehensive overview of greenwashing in the fashion industry, highlighting its various manifestations, impacts, and drivers. The formation of the hypotheses that direct my research is covered in detail in the next section. Subsequently, the data and method section present the dataset utilised for analysis, the variables included, and the empirical approach taken to test the hypotheses. The empirical analysis's conclusions, including regression results, robustness tests, and any further analyses carried out, are then presented in the results section. The discussion section addresses the implications and limits of the findings. Finally, the conclusion section provides a summary of the main conclusions, theoretical and practical consequences, and recommendations for further research.

2. Literature & Theoretical Framework

2.1. The Fashion Industry's Impact on Society, Economy, and Environment

The many aspects of the fashion industry have a significant impact on society, the economy, and the environment. These include releases of microplastic pollution, carbon emissions, and large consumption of water. Moreover, disposing unsold clothing contributes to landfill waste and causes financial losses because of insufficient recycling and reuse (Alizadeh et al., 2024). Customers may become sceptical, lose faith in brands, and become less credible if they believe that the fashion industry engages in "greenwashing" (Apaolaza et al., 2022; Rausch & Kopplin, 2021). Additional dangers linked with greenwashing practices include the financial

consequences, may include low sales, higher rebranding, or correcting expenses and in the worst case, litigation (Rausch & Kopplin, 2021). Despite these hazards and consequences, some corporations ignore these and rather continue to take advantage from misleading environmental claims (Adamkiewicz et al., 2022).

2.2. Understanding Greenwashing

The term "greenwashing," which was originally used in 1986 by environmental activist Jay Westerveld (Pearson, 2010), refers to the practice of businesses exaggerating the benefits of their environmental activities to provide a sustainable image (De Freitas Netto et al., 2020). Businesses use it as a calculated tactic to improve their legitimacy, public image, and corporate reputation—often at the price of the welfare of society (Lee & Raschke, 2023). On the one hand, such misconduct erodes the stakeholder's ability to make fair and well-crafted decisions as well as on the other hand, it may distort a true level of ESG performance. Various types of greenwashing and greenwashing techniques are pointed on in the greenwashing literature. The following type is considered "the behavioural claim greenwashing" in which organizations overstate their environmental activities without ensuring that they are really implemented. On a similar note, "motive greenwashing" is a method of highlighting the intended goals more than the actual ones of an organization which wants to claim to act in an environmentally conscious manner. According to research, customers are more concerned about companies lying about their environmental policies than they are about how closely their actions and statements match (de Jong et al., 2019). Nevertheless, Yu et al.'s (2020) paper identified three categories: "The Manipulation of Disclosure," which occurs when business disclose large amounts of green data, or positively green data without providing the other side of the story; "The Selective Disclosure" category occurs when businesses disclose only the positive aspect of their environmental performance, and "The Product Level Greenwashing" which occurs when companies deceive consumers by overstating the environmental benefits of their product. Two important features of greenwashing were found in another study: "intrinsic" and "communicative" (Lee & Raschke, 2023). Claims that deviate from the truth are referred to as intrinsic features. Examples of these include misrepresenting the environmental advantages of certain acts or using green practices as a cover for past wrongdoing (de Jong et al., 2017). Conversely, misleading tactics like the use of fraudulent certificates or unsupported statements are examples of communicative features (Schmuck et al., 2018). In the context of greenwashing these misleading tactics and acts suggests a "Signalling Theory" which states that firms could

be engaging in certain actions or behaviours to signal specific qualities or characteristics to stakeholders, like consumers or investors. (Fu et al., 2021; Spence, 1973).

2.3.   Drivers and Influences of Greenwashing

Additionally, studies have separated the drivers of greenwashing into three primary groups: external, organisational, and individual factors (Delmas and Burbano, 2011). The legislative framework that allows for lower inspection and enforcement of green claims become a trap of external forces, which gives businesses the opportunity to mislead customers. To avoid criticism and preserve a favourable reputation, companies may also feel pressure from non-market players like regulators and non-governmental organisations (NGOs) to project a positive picture of their environmental initiatives. Greenwashing occurs often in organisations for a variety of reasons. Marketing incentives that pay employees for including environmental message in communications without checking the accuracy of the statements made could encourage dishonest behaviour. Individual-level factors that influence greenwashing behaviour include cognitive biases and tendencies in decision-making. Individuals within organisations may make decisions based on incomplete or restricted knowledge due to psychological factors including optimistic bias and narrow decision framing which then can result in the spread of false environmental claims (Delmas and Burbano, 2011). It is important to understand the "Stakeholder Theory," which states that corporations are influenced by a complex environment involving multiple stakeholders who ultimately have the power to affect or be affected by the organization's external and internal objectives. As a result, this has pushed firms to go green by engaging in greenwashing to gain legitimacy in the eyes of the stakeholders. Since these demands and expectations can affect a firm's decisions about green initiatives, disclosure practices, and reputation management, this theory emphasises the significance of comprehending stakeholder perceptions of legitimacy and their impact on organisational practices (Freeman, 1983).

2.4.   Regulatory Responses and Industry Initiatives

The global transformation regarding implementation of meaningful accountability and transparency of sustainability measures has dramatically taken place since 2022 when the European Union issued the Corporate Sustainability Reporting directive making close to 50,000 companies to disclose their ESG numbers. The European Commission published the "EU Strategy for Sustainable and Circular Textiles" in 2022 which matches the requirements of sustainability measures and boosts the sustainability of garments and other tangible goods.

This planned act is a reaction to a recent assessment of sustainability claims made by the textile, apparel, and shoe industries, which found that 39% of the claims may be false or misleading. To address such greenwashing practices, they have proposed new regulations aimed at ensuring that consumers are equipped with information pertaining to the durability and repairability of products (European Commission; 2021).

As a result of the Fashion Revolution's "Fashion Transparency Index 2023" it has been found that only 70 of the world's 250 biggest fashion companies showed the Environmental, Social and Governance (ESG) score at least 70. Meaning that 28% of firms still received scores between 0 and 10%. Interestingly, two brands achieved a score of 80% or more for the first time in 2023. Even with these developments, 88% of well-known fashion companies disguise the amount of overproduction in the business by not disclosing their yearly production volumes. Moreover, 99% of firms have not committed to cut back on the quantity of new products they create, underscoring the continued difficulties in encouraging sustainable purchasing habits. Additionally, a significant majority (95%) of major fashion brands lack transparency regarding their efforts to facilitate a just transition to a circular economy, raising concerns about addressing workers' voices and needs in the industry's sustainability initiatives. (Fashion Transparency Index, 2023)

There has been a shift in customers' behaviour towards seeking out environmentally friendly items as regulatory measures increase and their awareness of sustainability concerns grows. (Alizadeh et al., 2024; Fletcher, 2013; Raus & Kopplin, 2021). Although there still exists a gap between the demand of environmentally friendly products from the customers and their willingness to pay for them, even with the fashion industry's growing attention to sustainable and eco-friendly practices in supply chains and production lines (Choudhury et al., 2023). It was also observed that the responses of customers differed according to their level of environmental knowledge and care; individuals with higher levels of environmental awareness and concern are more likely to object to greenwashing techniques and be convinced by such claims (Schmuck et al., 2018). Companies began to use practices like green marketing in response to the public's growing voice about social and environmental issues (Alexa et al., 2022). But this tendency also increases concerns about some fast-fashion retailers. They have a history of employing green marketing strategies, frequently disguising unsustainable practises behind terms like "organic," "natural," or "recycled" to attract more customers and raise concerns about greenwashing (Adamkiewicz et al., 2022). Additionally, some businesses deceive customers by making fraudulent claims about their products, like misusing green

labels, or about their businesses, like not having supply chain traceability or third-party verification of sustainability reports (De Freitas Netto et al., 2020; Iwanow, 2007; Munir & Mohan, 2022). The growing use of recycled polyester in the fashion industry without clear proof of its integration into a circular garment system is an example of greenwashing. Comparably, some businesses employ certificates derived from their own sustainability initiatives, which might deceive customers into thinking their goods are greener than they are (Cobbing et al., 2023).

2.5. Relationship Between Financial Performance and Greenwashing

Greenwashing is also a tactic that can be used to influence consumers' perceptions of a company's CSR efforts and divert attention from unethical behaviour, but there is growing concern that it will have a damaging effect on customers' perceptions and, more broadly, the company's performance (Gatti et al., 2019). This is especially true considering today's climate, which is characterised by intense scrutiny and scepticism. As a result, there is a significant danger that this might backfire and damage an organization's legitimacy, credibility, and communicative integrity, resulting in unfavourable customer views (de Jong et al., 2017). Negative customer perceptions, diminished trust, and degraded brand reputation are the main effects of such greenwashing claims and results (de Jong et al., 2019; Hameed et al., 2021). There is uncertainty on the relationship between greenwashing and financial performance, making a clear conclusion difficult to be reached. While some research points to possible short-term gains in the form of cost savings and higher profit margins (Liao et al., 2023), others show negative impacts on corporate reputation constructs and raise concerns about the long-term sustainability and risks involved for the companies—especially when customers view it as deceptive communication (de Jong et al., 2019). Such views may cause consumers to become more sceptical of brands, lowering credibility and trust. This, in turn, may cause consumers to become less inclined to make purchases and to be less loyal to brands, all of which may have an impact on stock prices and investment choices (Lee & Raschke, 2023). Research on the impact of greenwashing on corporate financial performance (CFP) indicates that there is a positive correlation between the two; however, negative media attention and stringent local environmental legislation counter this benefit (Li et al., 2022). Lu et al. (2022) found a clear relationship between consumers' perceptions of greenwashing and their inclination to buy environmentally friendly products in the fast fashion industry. They also found that these beliefs had an indirect impact on consumer behaviour through perceptions of environmental and financial risk. The study showed that when customers make impulsive purchases,

greenwashing has a greater impact on their perceptions of financial risk. This indicates that consumers' impulsive buying habits worsen their impressions of the financial risks associated with buying eco-friendly products.

While symbolic actions, like green marketing campaigns that convey an environmental message without necessarily enacting significant operational changes, are found to be negatively correlated with financial outcomes, substantive actions—that is, genuine efforts towards environmental responsibility—were found to neither significantly harm nor benefit financial performance (Walker & Wan, 2012). Furthermore, green highlighting—a well-balanced mix of symbolic and substantive actions to communicate the company's efforts and commitments—was linked to improved financial performance through the acquisition of customer trust and reputation, whereas greenwashing—which undermines a company's credibility with stakeholders—had the opposite effect on a company's financial performance (Walker & Wan, 2011). Moreover, there is further evidence indicating that greenwashing could have a detrimental effect on environmental performance. According to Zhang et al. (2022), there is a negative link between environmental performance and greenwashing, which suggests that businesses that engage in these activities might not have a strong environmental commitment. This shows how crucial it is for businesses to be transparent and make sincere environmental efforts to prevent deceiving the stakeholders.

Companies use greenwashing techniques to comply with government regulations, meet social expectations, and acquire or retain legitimacy in the eyes of stakeholders due to the increasing regulatory pressures and growing societal demands for environmental responsibility (Liao et al., 2023; Lyon & Montgomery, 2015; Pearson, 2010; Roulet & Touboul, 2014). Even while greenwashing strategies are common, research indicates that businesses might not benefit in the long run from them. According to de Jong et al. (2017), customers value sincere environmental commitment above inadequate marketing tactics, hence greenwashing has no effect on their purchasing intentions. This short-term strategy can eventually have detrimental effects on the company's success, harming not just the financial performance but also the consumers and the environment. Companies must emphasise the importance of regulations in CSR and ESG factors to protect firm valuation and risk management to mitigate the negative effects of greenwashing on financial performance and stakeholder perceptions (Gatti et al., 2019; Huang et al., 2017; Marquis et al., 2016; Yu et al., 2018). Increased openness, sincerity, and sincere environmental efforts can be used to take these measures (Hameed et al., 2021; Nyilasy et al., 2013; Yu et al., 2020). Research also shows that adopting more environmentally

friendly practices may lower a company's cost of equity capital and minimise its exposure to risk, highlighting the significance of real sustainability initiatives (Ghoul et al., 2016).

To sum up, this examination of the literature delves into the connection between the fashion industry's greenwashing techniques and their impact on its financial performance. It combines findings from several studies to show range of deceptive practices used in greenwashing, potential long- and short-term benefits as well as drawbacks of greenwashing in relation to financial success. The review's goal is to improve knowledge of the dynamics of greenwashing in the fashion industry and provide guidance for putting real sustainability initiatives. Aims to make a significant contribution to the understanding of the dynamics of greenwashing within the fashion industry and its implications for financial performance and stakeholder perceptions by demonstrating these complexities and outlining potential directions for real sustainability initiatives.

3.   Hypothesis Development

Based on the explained body of research, three main hypotheses are planned to be developed to investigate how greenwashing techniques can have an effect on fashion firms' financial performance.

Building upon the existing research on greenwashing and its financial implications for fashion industry firms, first hypothesis states that greenwashing techniques increase the likelihood of poorer long-term financial outcomes for such companies. H1 would be confirmed with a statistically significant negative coefficient, suggesting that longer-term financial performance is negatively correlated with greater greenwashing. Combining information from significant research like; de Jong et al. (2019), Gatti et al. (2019), Lee & Raschke (2023), Rausch & Kopplin (2021), Walker & Wan (2011), the literature shows that greenwashing practices are thought to undermine consumer confidence, leading a damage on the brand reputation and legitimacy. With increasing scepticism towards these tactics, there is a pivotal shift in consumer values towards authentic environmental responsibility over mere performative messaging. Ultimately having a negative financial impact on businesses by triggering a decline in sales, escalating costs associated with rebranding efforts aimed at reputation repair, and even inviting legal repercussions.

H1: Greenwashing leads to lower financial performance suggesting a negative relationship.

With the previous literature stating that genuine sustainability efforts can lead to improved brand reputation and consumer trust (Walker & Wan, 2011), this hypothesis proposes that

companies achieving their CO2 emissions reduction targets are expected to demonstrate improved financial performance. Specifically, businesses that meet their goals for reducing CO2 emissions demonstrates a further dedication to environmental responsibility, which may enhance brand loyalty and consumer satisfaction (Alizadeh et al., 2024). Additionally, effective environmental initiatives, such as reducing energy consumption and waste production, may contribute to cost savings and operational efficiency. According to Ghoul et al. (2016), firms that place a high priority on sustainability may be able to draw in investors who share their concerns, which might result in a better market valuation. To measure this hypothesis, a statistical significance of the relationship is looked at with a regression analysis between financial performance and the successful achievement of emission reduction targets which is represented by a dummy variable, after controlling for other relevant factors.

H2: Companies that achieve their CO2 emissions reduction targets, will have higher financial performance.

The literature indicates that there is a negative link between firm value and carbon emissions, meaning that firms with larger carbon emissions would see a decline in market value. The results of earlier studies that show environmental performance, particularly carbon emissions, may have a major influence on business value provide support to this hypothesis (Liao et al., 2023; Ghoul et al., 2016). Investors are starting to care more on ESG factors and buyers are more willing to pay for sustainable products. With increased emphasis on environmental sustainability by customers and regulatory agencies, businesses with greater carbon emissions suffer more reputational risks and regulatory fines. This might result in a decline in investor confidence and market valuation (Hameed et al., 2021; Yu et al., 2020). Furthermore, increased carbon emissions may be perceived as less sustainable and subject to reputational risk, which could negatively impact financial performance and market value. They may also result in higher expenses for environmental compliance and mitigation measures (Marquis et al., 2016). Therefore, it is hypothesized that there is a negative correlation between carbon emissions and business value with firms with greater carbon emissions is going to see a fall in their market value relative to those with lower emissions. This hypothesis is measured by looking if there is a significant relationship between a firm's carbon emissions and its market value, controlling for other factors.

H3: There is a negative relationship between carbon emissions and firm value, indicating that firms with higher carbon emissions experience a decrease in their market value.

4. Data & Method

4.1.   Data

4.1.1. Data Collection & Description

The proposed research utilised a mixed-method approach, with the primary objective being to build a strong foundation in understanding the intricacies of greenwashing and its effects on financial results in the fashion sector. This includes starting with an in-depth desktop research method of the body of research on greenwashing techniques, financial performance metrics, environmental scores, and other information specific to the fashion industry.

During the secondary data collection phase, the research focused on gathering information from the Eikon Refinitiv dataset. The objective was to collect data on various financial performance metrics, environmental scores, carbon emissions data, and firm-specific details. The sample also drawn from publicly traded fashion industry companies worldwide to give a broader point of view on the subject on hand. To limit the selection of the firms under consideration for the research into the Fashion & Apparel industry, a criteria is used to generate the sample using the Refinitiv Screening tool with a fixed time series request. I then filtered by Market, Sector and TRBC Industry classification. From "Personal Goods" sector, I have selected the "Apparel & Accessories Retailers", "Footwear", and "Textiles & Leather Goods". From the "General Retailers" sector, I have selected "Apparel & Accessories Retailers", "Apparel & Accessories", and "Textiles & Leather Goods". This search ultimately yielded 926 companies that fits the criteria above (520 from "Personal Goods" and 406 from the "General Retailers" sector). After manually removing the companies' data that lacked information or give error term for the sample period, the sample lessened to 83 companies from 20 different country markets (Table 1 & 2).

Table 1. *Sector Makeup of Fashion Industry Companies*

Sector	TRBC Industry Name	Number of Companies
General Retailers		
	Apparel & Accessories Retailers	35
	Apparel & Accessories	9
	Textiles & Leather Goods	3
Total		47
Personal Goods		
	Apparel & Accessories Retailers	13
	Textiles & Leather Goods	2
	Footwear	21
Total		36
Total		**83**

Table 2. *Country Makeup of Fashion Industry Companies*

Country	Number of Companies
Australia	1
Brazil	7
Canada	2
Denmark	1
Finland	2
France	2
Germany	7
Hong Kong	3
India	3
Japan	4
Netherlands	1
New Zealand	1
Poland	2
Spain	1
Sweden	2
Switzerland	1
Taiwan	2
Turkey	1
United Kingdom	9
United States	31
Total	**83**

The study is to be span over a 5-year period between 2019-2023 with a yearly data frequency. This time frame has been chosen because it matches with a significant rise in the issues concerning greenwashing specifically in the fashion sector, which makes this time frame ideal for researching how greenwashing methods have changed in response to growing environmental criticism in this industry (Alizadeh et al., 2024; Lu et al., 2022). Through fixed-effects panel data analysis, the study aims to explore the link and provide an understanding of the dynamics between financial success and greenwashing practices, while taking into consideration the impact of other relevant factors. This enables me to do a cross-sectional analysis to compare the financial success and greenwashing practices of different fashion firms throughout the world, offering insights into prospective trends for the sector. Furthermore, by utilising panel data analysis, the fixed-effects model allows to investigate how greenwashing and financial success within specific organisations vary over time. This can provide an understanding of how a company's changing greenwashing practices may impact its financial outcomes. For the analysis of the data in this thesis, STATA was employed as the statistical software for measurement and computation.

4.1.2. Variables

Greenwashing practices as an independent variable is operationalized based on two measures as the proxy variables, the first one is "Emissions Reduction Target" measuring how much company has targeted to cutting back on carbon emissions. The second one is the "CO2 Emissions Total YoY" showing the change of a company's CO2 emissions year on year where, a negative value implies emissions increased, possibly signalling inadequate reduction efforts. Conversely, positive value shows emissions decreased, reaching reduction targets. The difference between those two variables, serving as proxies for the "Greenwashing" variable, indicates a possible increase in the degree of greenwashing. A positive difference suggests that actual emissions increased more than the target, possibly indicating target overachievement, while; a negative difference suggests that actual emissions decreased less than the target, potentially indicating greenwashing practices. This difference allows us to evaluate the real environmental performance as well as any differences between the goals and the actual outcomes, giving us a better understanding of any greenwashing practices.

Alternatively, this difference establishes a useful way for measuring the difference between the actions—the reduction targets the company has established—and the real substantive actions—the reduction they actually documented (Walker & Wan, 2012). Additionally, a study by Delmas & Burbano (2011) defines greenwashing as the convergence of poor environmental performance and favourable communication about that performance, aligning with the idea of assessing differences between stated goals and actual actions to identify greenwashing. A large gap can be an indication of greenwashing, while companies that regularly meet or outperform the goals might be making sincere attempts. Inspired from studies such as Mihaela (2023) and Mukhambetov et al. (2020), I chose to measure financial performance as the dependent variable using "EBITDA - Earnings Before Interest, Taxes, Depreciation, and Amortisation", as it considered to offer a complete picture of a company's operational profitability. It represents the earning of the company before interest expense, income taxes and depreciation.

For robust analysis and to account for confounding effects, the model additionally incorporates a set of control variables drawn from research like Del Mar Miras-Rodríguez et al. (2014) & Peng et al. (2023). Among these factors are the following: "ISO14000" certification status, demonstrating an active approach on climate change and potentially impacting the firm's performance, is inserted as a dummy variable, with a value of 1 denoting that certifications are present and a value of 0 denoting that they are not. The "Environmental Pillar Score" reflects

the weighted average relative rating of a company based on the reported environmental information and the resulting environmental category scores. "Total Assets", representing the sum of total current assets, long term receivables, investment in unconsolidated subsidiaries, other investments, net property plant and equipment and other assets, acting as a proxy for firm size and financial resources; "Return on Equity % (ROE)", calculated from the Average of Last Year's and Current Year's Common Equity * 100, capturing the company's profitability relative to shareholder equity; "Market Value" expressed in millions, calculated by Number of Shares * Security Price, representing the firm's market capitalization and investor sentiment; and lastly "Audit Board Committee" is selected to indicate whether the company have an audit board committee or not. It also be counted as a dummy variable, where a value of 1 indicates the presence of oversight and a value of 0 indicates the absence of it.

Table 3. *Variable Descriptions*

Variable Name	Description	Measurement
Dependent Variable		
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortisation	Financial metric representing a company's operational profitability before accounting for financing decisions, taxes, and non-cash expenses.
Independent Variables (Greenwashing Proxies)		
Greenwashing	Proxy calculated as the difference between CO_2 Emissions Total YoY and Emissions Reduction Target (%)	Calculated as CO_2 Emissions Total YoY minus Emissions Reduction Target (%).
CO2 Emissions Total YoY	Year-over-year change in a company's total carbon emissions.	Measured as the percentage difference in total CO_2 emissions between two consecutive years.
Emissions Reduction Target (%)	Percentage reduction in carbon emissions a company has pledged to achieve over a specific timeframe.	Measured as a percentage.
Control Variables		
Environmental Pillar Score	Score assigned by a sustainability rating agency reflecting a company's overall environmental performance beyond just CO_2 emissions.	Calculating a weighted sum of category scores related to various environmental factors
ISO14000 Certification (dummy)	Indicates whether a company has achieved ISO 14000 certification, an international standard for environmental management systems.	Binary variable (1 = certified, 0 = not certified).
Total Assets	Total value of a company's assets.	Financial metric representing the company's size and resource base.
Return on Equity (ROE)	Ratio of a company's net income to its shareholders' equity, measuring profitability relative to shareholder investment.	Calculated as Net Income divided by Shareholders' Equity.
Market Value	Total market capitalization of a company's outstanding stock.	Financial metric reflecting investor sentiment and the company's overall value.
Audit Committee Composition (dummy)	Indicates whether a company has an audit committee or not	Binary variable (1 = qualified, 0 = not qualified).

17

Table 4. *Explanation of Variables*

FP	Financial Performance (Measured by EBITDA)
MV	Market Value
G	Greenwashing Proxy (Measured by CO2 Emissions minus Emissions Reduction Target)
CO2RG	CO2 Reduction Goal Met
C	Control Variables
α	Alpha
ε	Error Term

4.2. Empirical Model

To test H1 and examine the link between financial performance and greenwashing, I employed Equation (1), where financial performance FP_{it} of a company i at time t is regressed on the degree of greenwashing G_{it}, along with every control variable C_{it}.

$$(1) \quad FP_{it} = \beta 0 + \beta 1 G_{it} + \beta 2 C_{it} + \alpha_i + \varepsilon_{it}$$

In H2, to investigate the impact of companies meeting their CO2 emissions reduction targets on financial performance while controlling for various other factors, Equation (2) models the financial performance FP_{it} of company i at time t as a function of whether CO2 Reduction Goal is met $CO2RG_{it}$, while controlling for other variables in C_{it}.

I initially computed the difference between a company's actual CO2 emissions and its established emissions reduction target in order to assess whether it has fulfilled its emissions reduction target. In the event that this difference was higher than or equal to zero ($\geq$0), it signified that the company had met its targets for reducing emissions. This computational approach is consistent with the method I applied to create the greenwashing proxy. However, I modified the variable's name to "CO2 Reduction Goal" in order to make Hypothesis 2 (H2) easier to understand. I then turned the differences computed into a dummy variable where value of "1" denotes the achievement of the emissions reduction objective, whereas a value of "0" denotes its failure. In essence, this method produces a binary indication, where "0" denotes "no" (target not reached) and "1" indicates "yes" (goal met).

$$(2) \quad FP_{it} = \beta 0 + \beta 1 CO2RG_{it} + \beta 2 C_{it} + \alpha_i + \varepsilon_{it}$$

Lastly, to test H3, looking at the market value and carbon emissions, Equation (3) is employed where the market value MV_{it} of company i at time t is regressed on carbon emissions CE_{it}, also controlling for other related factors C_{it}.

$$(3) \; MV_{it} = \beta 0 + \; \beta 1 CE_{it} + \; \beta 2 C_{it} + \alpha_i + \; \varepsilon_{it}$$

The study aims to contribute on several significant findings by evaluating the regression results. First, it looks if there is a negative relationship between a company's financial success as measured by EBITDA and greenwashing methods, as demonstrated by the difference between emission reduction targets and actual emissions. It also seeks to determine how control variables, like environmental pillar scores, affect the association between financial performance and greenwashing. This then assist in identifying the impact of greenwashing techniques. Lastly, the anticipated results provide knowledge about how real environmental initiatives and greenwashing strategies, in addition to other relevant elements, could affect a firm's financial success in the fashion sector.

4.3.   Data Analysis

A comprehensive review of the descriptive statistics for each variable is given in Table 5 below, along with details about the mean, minimum, maximum, and standard deviation. For additional research and interpretation in addition to these data, correlation matrix is included in the following table to identify the possible multicollinearity problems and understanding the interactions between the variables.

Table 5. *Descriptive Statistics for Pooled Data*

Variable	Obs	Mean	Std. Dev.	Min	Max
EBITDA	410	5,133,905	12,900,000	-21,700,000	87,500,000
Greenwashing	410	-0.45	0.74	-1.64	7.22
CO2 Emissions	410	0.11	0.70	-0.93	7.27
Emissions Reduction Target	410	0.56	0.32	0.02	1.00
Environmental Pillar Score	410	58.72	25.78	0.00	96.43
ISO14000 (dummy)	410	0.22	0.41	0.00	1.00
Total Assets (log)	410	15.50	2.10	10.20	20.95
ROE	410	22.85	71.19	-583.07	493.39
Market Value (log)	410	4.12	1.16	0.96	7.87
Audit Committee (dummy)	410	0.94	0.24	0.00	1.00
CO2 Reduction Goal (dummy)	410	0.15	0.36	0.00	1.00

All values are rounded to two decimal places for consistency and clarity.

Table 6. *Correlation Matrix*

Variables	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
[1] Environmental Pillar Score	1										
[2] CO2 Emissions	0.09	1									
[3] Emissions Reduction Target	-0.07	0.10	1								
[4] CO2 Reduction Goal	0.01	0.66	-0.11	1							
[5] EBITDA	0.11	-0.01	0.16	-0.09	1						
[6] Greenwashing	0.12	0.90	-0.34	0.67	-0.08	1					
[7] ISO14000	0.09	0.11	0.23	-0.01	0.10	0.00	1				
[8] Total Assets	0.20	0.07	0.17	-0.06	0.66	-0.01	0.18	1			
[9] Rreturn on Equity	-0.08	-0.02	-0.11	0.00	-0.03	0.03	-0.05	-0.06	1		
[10] Audit Committee	0.25	0.05	0.06	0.05	-0.24	0.02	0.14	-0.34	0.06	1	
[11] Market Value	0.38	0.13	0.16	-0.01	0.47	0.05	0.11	0.51	0.08	-0.13	1

All values are rounded to 2 decimal places for consistency and clarity.

A merged dataset was created by adding different variables from the Eikon Refinitiv dataset, following the steps specified in the methodology. Notably, several variables have been converted to natural logarithmic (ln) form such as "Total Assets" and "Market Value", which were once composed of positive integers. In table 6, direction of the linear correlations between pairs of variables is shown by the correlation coefficients, which range from -1 to 1.

Interestingly, CO2 Emissions are highly correlated with Greenwashing (0.90) and moderately with the Emissions Reduction Target (0.66). Greenwashing also exhibits a significant negative correlation with the Emissions Reduction Target (-0.34), indicating conflicting goals between emissions reduction and potential greenwashing practices. EBITDA shows moderate correlations with Market Value (0.47) and Total Assets (0.66), implying larger firms with higher earnings tend to have higher market valuations and total assets. The Environmental Pillar Score demonstrates a moderate positive correlation with Market Value (0.38), indicating that firms with higher environmental scores tend to have higher market valuations. In spite of these findings, the majority of the other relationships are modest to moderate, suggesting that multicollinearity may not be a major problem in general.

5. Results and Interpretation

The table below display the full fixed effects regression findings, along with the Hausman test results for the fashion firms panel data sample.

Table 7. *Fixed Effects Regression Model & Hausman Test Results*

Dependent Variable	(1) EBITDA	(2) EBITDA	(3) Market Value
Greenwashing	165,845.50	47,324.58	-0.20
	{159,760.3}	{ 223,601.9 }	{0.01}
	[0.30]	[0.83]	[0.05**]
Environmental Pillar Score	95,995.92	95,896.18	0.00
	{56,727.78}	{56,881.34}	{0.00}
	[0.09*]	[0.1*]	[0.08*]
CO2 Emissions			0.23
			{0.11}
			[0.03**]
Emissions Reduction Target			
CO2 Reduction Goal (dummy)		439774.6	
		{486326.3}	
		[0.369]	
Total Assets (log)	1,129,566	1,093,678	0.15
	{888,461.2}	{889,122.1 }	{0.06}
	[0.21]	[0.22]	[0.01***]
ROE	8,286.26	8,297.74	0.00
	{4,515.78}	{4,521.19 }	{0.00}
	[0.07*]	[0.07*]	[0.00**]
Market Value (log)	1,047,647	1,027,167	
	{731,972.3}	{7,733,415.2}	
	[0.16]	[0.17]	
EBITDA			0.00
			{0.00}
			[0.08*]
ISO14000 (dummy)	-630,394.90	-674,258.80	-0.06
	{394,480.7}	{393,153.5}	{0.12}
	[0.11]	[0.09]	[0.61]
Audit Committee (dummy)	0 (omitted)	0 (omitted)	0 (omitted)
_cons	-22,300,000	-21,800,000	1.71
	{13,500,000}	{13,600,000}	{0.87}
	[0.1*]	[0.11*]	[0.05**]
No. Obervations	410	410	410
R-squared	0.27	0.26	0.24
f-test	2.37	2.74	4.46
Prob> F	0.04**	0.01***	0.00**
Hausman Test			
Chi2 Value	16.85	37.12	26.3
P-value	0.01***	0.00**	0.00**

*Standard errors are in {} p-values are in []. All values are rounded to 2 decimal places for consistency and clarity. The significance levels are denoted as follows *** p≤ 0.01, ** p≤ 0.05, * p≤ 0.1*

Before delving into the regression results, a Hausman test was conducted to compare fixed and random effects models for each hypothesis. The significant test statistic led to the rejection of the null hypothesis, indicating that the difference in coefficients is systematic. Thus, the fixed effects model was preferred due to providing more consistent estimates compared to the random effects model. Robust actions were taken during the regression analysis to address potential issues. Heteroskedasticity was checked using robust standard errors to ensure the reliability of the results. Additionally, the F-test was utilized to test the overall significance of the models. It is also noteworthy to add that the variable audit committee was omitted from all three hypotheses due to collinearity from the regression results.

The fixed-effects regression analysis was then conducted to test each of the hypotheses. For H1 which examines the relationship between greenwashing, the primary independent variable, and EBITDA, the dependent variable, and controlling for other factors specified above, suggest that greenwashing although having a positive coefficient, does not significantly affect financial performance "EBITDA", and no direct relationship between those two, as indicated by the p value of 0.30. Among the control variables, EPS and ROE showed a significant positive relationship with EBITDA, with a p-value of 0.09 and 0.07 respectively, suggesting that higher environmental pillar score and returns is somewhat associated with higher EBITDA, indicating that companies with better environmental performance might experience improved financial outcomes. Other control variables on the other hand, did not show significant effects on EBITDA. Further on, the f-test for the significance of the fixed effects model with a p-value of 0.04 indicates that the model as a whole is significant at the 5% level. Based on these results, I reject Hypothesis 1, which posited that greenwashing leads to lower financial performance. The evidence does not support a significant relationship between greenwashing and EBITDA, implying that greenwashing practices do not have a measurable impact on this financial performance metric in the sample.

The analysis for H2, which investigates whether companies that reach their CO2 emissions reduction targets exhibit superior financial performance, presents mixed results. The independent variable indicating whether the CO2 Reduction Goal is met shows a positive coefficient but is not statistically significant. This suggests that there is not enough evidence to conclude that financial performance is affected by whether a company reaches its emissions goals. However, the control variables Environmental Pillar Score and ROE show significance at the 0.1 level, indicating that they have a measurable positive impact on a company's financial performance. Specifically, companies with higher ROE tend to have better financial outcomes,

and a stronger environmental score may lead to better financial results. Interestingly, the ISO14000 variable is associated with a negative relationship with EBITDA at the 0.1 level, suggesting potential costs or challenges related to implementing ISO14000 standards. Therefore, these results led me to conclude that the hypothesis 2 is rejected. The F-test for the overall model is statistically significant at 0.01 level, so it can be concluded that the model as a whole provides significant insights into the financial performance of the firm.

Finally, for H3, which examines the relationship between carbon emissions and firm value, reveal important insights. The coefficient for CO_2 emissions is positive and statistically significant ($p = 0.03$), which is contrary to the hypothesis. This suggests that for every unit increase in CO_2 emissions, there is also an increase in the market value. The coefficient for Greenwashing and Environmental Pillar Score is negative and statistically significant (0.05 and 0.08 respectively), suggesting that higher Greenwashing and EPS associated with lower market values. Additionally, several other control variables except ISO14000 Certification show significant associations with market value. So, the results contradict that higher CO_2 emissions are significantly associated with higher firm value, leading me to reject the H3 which suggests otherwise, a negative relationship between carbon emissions and firm value. Finally, the p-value of 0.00 for the whole model indicates a highly significant relationship between the independent variables and the dependent variable, demonstrating strong evidence that the model is a good fit for the data.

5.1. Robustness Checks

To ensure the validity and significance of the results, more robustness tests were carried out in regard to any limitations in the analyses and assumptions used. The purpose of these tests was to identify and resolve any underlying empirical problems so that the analysis' conclusions could be accepted more. First multicollinearity is tested with the VIF test for each hypothesis model. It resulted in an average VIF value of 1.29, 1.47 & 2.58 respectively for each hypothesis model indicating that multicollinearity is not an issue in this model (Appendix A, B & C). Secondly, in order to take heteroskedasticity into consideration, a Breusch-Pagan test is performed (Appendix D). The test produced a significant result, suggesting that the model does not have constant variance. In order to ensure the validity of the statistical findings, I have also included robust standard errors in the regression models afterwards to account for heteroskedasticity and also to result in more dependable standard errors and confidence intervals for the coefficients.

6. Discussion

The study tries to assess and shed light on the link between greenwashing and the financial success of fashion industry firms. Given the growing scrutiny and demand from consumers and authorities for more true environmental responsibility, the findings are intended to be relevant with current trends as well as the future outlook (Liao et al., 2023; Lyon & Montgomery, 2015; Pearson, 2010; Roulet & Touboul, 2014).

The first analysis's conclusion was that there was no meaningful correlation between greenwashing and financial performance measured by EBITDA, implying that there is no apparent connection between greenwashing techniques and the operational profitability of the sampled fashion companies. Although several studies (de Jong et al., 2019; Gatti et al., 2019); Lee & Raschke, 2023; Rausch & Kopplin, 2021; Walker & Wan, 2011) suggest that there may be reputational harm and a decline in customer trust, these impacts were not shown in the study's financial measures. A possibility of such outcomes could be the possibility that the short-term financial gains from cost reductions and marketing strategies exceed the long-term expenses associated with reputation management. The possibility that investors and customers lack the knowledge or awareness to hold companies accountable for greenwashing is another factor to consider. This emphasises the need for more openness and communication of true sustainability initiatives (de Jong et al., 2019; Liao et al., 2023). Additionally supporting the claims that true commitment to the environment does not necessarily significantly affect financial performance, which suggests that greenwashing may not genuinely have an obvious and direct effect on the companies' financials (Walker & Wan, 2012).

According to the second hypothesis, businesses that meet their CO_2 emission reduction objectives would have better financial results (Alizadeh et al., 2024). The findings, however, indicated that fulfilling those goals had no significant impact on EBTDA. It would suggest that, despite their importance, environmental initiatives may not always result in improved financial success during the short term under consideration. While emissions targets alone might not be a deciding factor, there is a substantial positive link between environmental pillar scores and ROE with EBITDA, suggesting that companies with greater overall environmental performance and profitability might have better financial outcomes. These results highlight the complex relationship between financial success and sustainability practices, indicating that wider-ranging and more comprehensive environmental initiatives may be required to see significant financial impact.

The findings demonstrated a positive and substantial link between carbon emissions and market value, contradicting the third and final hypothesis (Liao et al., 2023; Ghoul et al., 2016). The conventional understanding that environmental performance is negatively correlated with firm value due to reputational risks and regulatory pressures is challenged by this unexpected result, which suggests that higher carbon emissions are associated with higher market values (Hameed et al., 2021; Yu et al., 2020). As companies with higher emissions tend to have better stock returns, one interpretation could be is that investors may view these companies as more established or rich in resources, which might result in higher values (Bolton & Kacperczyk, 2021). Nonetheless, the notion that misleading environmental policies can damage a company's market impression is supported by the negative correlation shown between market value and greenwashing (Alizadeh et al., 2024; de Jong et al., 2019; Gatti et al., 2019). These contradictory findings point to a possible discrepancy between environmental factors and real investing behaviours by highlighting the complex diverse character of investor views towards environmental performance.

6.1.   Limitations

Drawing inspiration from studies such as Walker and Wan (2011), a proxy for greenwashing was formed by examining the disparity between a firm's symbolic and substantive actions. Throughout the analysis, the study encountered some limitations in its results and assumptions. One notable limitation is the method used to measure greenwashing. It was assessed by calculating the difference between the total CO_2 equivalent emissions (in percentage) and the percentage of emissions reduction target set by the company aiming to capture the stated goals and the actual performances. First of all, it assumes that all businesses disclose their emissions and targets properly and consistently, which may not always the case. Another is that it ignores other potential contributing factors to greenwashing that are not always related to CO_2 emissions, such as selective disclosure of environmental information or product-level greenwashing, which happens when businesses mislead the public about the "sustainability" of their goods by, for example through green labelling (De Freitas Netto et al., 2020; Iwanow, 2007; Munir & Mohan, 2022; Yu et al., 2020).

Another acknowledgment is the scarcity of publicly available environmental and financial data from fashion firms. There could be several reasons contributing to this scarcity within the industry one of them being the fact that many fashion companies are privately owned, further limiting the availability of data for analysis (Fashion Transparency Index, 2023). This lack of data affects the ability to accurately assess the prevalence of greenwashing practices and their

impacts on financial performance within the fashion industry. As a result, the depth of analysis is constrained, potentially leading to incomplete conclusions regarding the relationship between greenwashing and financial outcomes.

Lastly, in the robustness checks part of the paper, some empirical issues have been addressed. Despite the absence of multicollinearity issues in the hypothesis models, identified through VIF tests, there are other potential sources of bias and error. The significant result from the Breusch-Pagan test indicates the presence of heteroskedasticity in the model, which could affect the reliability of the statistical findings. Although robust standard errors were employed to address heteroskedasticity and enhance the robustness of the regression models, this approach may not fully mitigate the issue. Also, there was also the omission of the audit committee variable from the regression models, which this exclusion may overlook potential influences on financial performance, leading to incomplete analyses. Additionally, not all factors that could influence a firm's financial performance are included due to limitations in the available data. Therefore, the statistical findings should be interpreted with caution.

6.2.   Practical Implications

Policymakers, researchers, business executives, and non-governmental organisations (NGOs) that want to implement greenwashing methods and policies in an attempt to increase public awareness of the possible causes and consequences of these acts could consider the implications of this study's findings. The results emphasise how crucial it is for businesses in the fashion industry to be transparent and to take real environmental action. While there does not seem to be much of an influence on greenwashing's short-term financial success, there may still be a risk to the practice's long-term reputation and brand confidence. Therefore, in order for businesses to build long-lasting trust and avoid any unfavourable responses, they must prioritise real environmental efforts and communicate them to stakeholders in an effective manner. The paper also emphasises to policymakers the necessity of more stringent rules and enforcement measures to stop greenwashing.

6.3.   Suggestions for Future Research

All things considered, this study has attempted to explain why companies engage in greenwashing in the first place and has used panel data from the Refinitiv Eikon database to perform research in order to discover proof for this claim. This study may be considered a useful addition to the body of knowledge on greenwashing and company performance as it provides a summary of the main relevant greenwashing-related subjects. Furthermore, this

research may provide additional insights into a quantitative approach to the problem of greenwashing. However, to make conclusions about how greenwashing affects business performance of fashion industry firms, the results from each model do not reach a significant level of significance. In light of this, future studies may explore more thoroughly how to develop empirical models and other metrics for evaluating greenwashing that might be essential to the literature.

Increasing the sample size and lengthening the analysis period may also help to increase the results' generalizability and robustness. A more thorough understanding of the financial effects of greenwashing may also be obtained by using other financial measures. Furthermore, although the study's primary focus is on the fashion industry, expanding the research to other sectors could be helpful in confirming the findings' generalizability.

To better understand how varying levels of consumer knowledge about sustainability influence their purchasing decisions and perceptions of greenwashing, more qualitative research could examine the motivations behind greenwashing practices, specific strategies firms employ to balance environmental claims with financial performance, and the role of consumer awareness in mitigating the effects of greenwashing.

7. Conclusion

In order to add to the growing body of knowledge on the role of businesses and their influence on the environment, particularly in the fashion industry, the goal of this thesis is to examine the relationship between greenwashing and financial success. It attempted to answer the question of whether deceptive environmental claims actually affected company profits. It specifically examined the following question What is the influence of greenwashing within the fashion industry on the financial performance of firms? Three theories served as the basis for this study: (1) Greenwashing would have a negative effect on businesses' financial performance; (2) There will be a positive financial impact on businesses that accomplish their CO2 reduction goals; and (3) Higher carbon emissions would correlate with a reduction in a company's market value.

The study provided insights into the subject at hand using data from the Eikon Refinitiv database spanning five years and a robust fixed-effects panel data regression model. The results, which contradicted conventional belief, showed no apparent association between greenwashing activities and financial performance, indicating that the immediate financial effects of greenwashing may not be as severe as previously thought. Furthermore, meeting CO2

emissions reduction objectives did not considerably improve financial results, suggesting that sincere environmental initiatives may not immediately pay off. The investigation revealed a surprising positive association between business value and carbon emissions, which contradicts the conventional belief that increased emissions inevitably have a negative impact on market valuation.

These results demonstrate how complicated and often conflicting sustainability is in the fashion sector. Fashion has a huge environmental effect, being one of the most polluting industries in the world. Its activities contribute considerably to waste consumption, water usage, and carbon emissions. The study shows that greenwashing—often employed as a fast and superficial solution for a favourable public image instead of genuine and honest changes—does not significantly impair financial performance in the short term, despite the sector's attempts to embrace more sustainable practices. Nonetheless, it is important to acknowledge the potential for lasting damage to consumer confidence and company image.

The results highlight how important it is that fashion brands give transparency and true sustainability policies their highest priority. Fashion firms are coming under more and more scrutiny for their environmental claims as a result of rising consumer awareness and governmental pressure. This thesis argues in favour of stricter industry standards and regulatory frameworks to guarantee that environmental promises are supported by concrete, quantifiable activities.

The report also emphasises how crucial it is to incorporate sustainability into the main business model as opposed to using it only as a promotional tool. Sincere dedication to environmental sustainability may generate loyal customers and long-term financial success. The findings urge more investigation into the wider effects of greenwashing and the improvement of greenwashing metrics in order to gain a better understanding of the ways in which corporate profitability and genuine sustainability may coexist in the fashion sector. This strategy not only fits in with moral corporate conduct, but it also puts the sector in a strong position to handle upcoming difficulties in a fast-changing global economy.

8. References

Adamkiewicz, J., Kochanska, E., Adamkiewicz, I., & Łukasik, R. M. (2022). Greenwashing and sustainable fashion industry. Current Opinion in Green and Sustainable Chemistry, 100710. https://doi.org/10.1016/j.cogsc.2022.100710

Alexa, L., Apetrei, A., & Pîslaru, M. (2022b). Fast Fashion – An Industry at the Intersection of Green Marketing with Greenwashing. In *Sciendo eBooks* (pp. 263–268). https://doi.org/10.2478/9788366675735-042

Alizadeh, L., Liscio, M. C., & Sospiro, P. (2024). The phenomenon of greenwashing in the fashion industry: A conceptual framework. Sustainable Chemistry and Pharmacy, 37, 101416. https://doi.org/10.1016/j.scp.2023.101416

Apaolaza, V., Policarpo, M. C., Hartmann, P., Paredes, M. R., & D'Souza, C. (2022). Sustainable clothing: Why conspicuous consumption and greenwashing matter. Business Strategy and the Environment. https://doi.org/10.1002/bse.3335

Bolton, P., & Kacperczyk, M. (2021). Do investors care about carbon risk? Journal of Financial Economics, 142(2), 517–549. https://doi.org/10.1016/j.jfineco.2021.05.008

Choudhury, R. R., Islam, A. F., & Sujauddin, M. (2023). More than Just a Business Ploy? Greenwashing as a Barrier to Circular Economy and Sustainable Development: A Case Study-Based Critical Review. Circular Economy and Sustainability. https://doi.org/10.1007/s43615-023-00288-9

Cobbing, M., Wohlgemuth, V., Vicaire, Y., & Greenpeace in Germany e.V. (2023). GREENWASH DANGER ZONE. In Greenpeace. https://www.greenpeace.de/publikationen/Greenpeace_Report_Greenwash_Danger_Zone.pdf

De Freitas Netto, S. V., Sobral, M. F. F., Ribeiro, A. R. B., & Da Luz Soares, G. R. (2020b). Concepts and forms of greenwashing: a systematic review. Environmental Sciences Europe, 32(1). https://doi.org/10.1186/s12302-020-0300-3

de Jong, M. D. T., Harkink, K. M., & Barth, S. (2017). Making Green Stuff? Effects of Corporate Greenwashing on Consumers. Journal of Business and Technical Communication, 32(1), 77–112. https://doi.org/10.1177/1050651917729863

de Jong, M. D. T., Huluba, G., & Beldad, A. D. (2019). Different Shades of Greenwashing: Consumers' Reactions to Environmental Lies, Half-Lies, and Organizations Taking Credit for Following Legal Obligations. Journal of Business and Technical Communication, 34(1), 38–76. https://doi.org/10.1177/1050651919874105

De Ponte, C., Liscio, M. C., & Sospiro, P. (2023). State of the art on the Nexus between sustainability, fashion industry and sustainable business model. Sustainable Chemistry and Pharmacy, 32, 100968. https://doi.org/10.1016/j.scp.2023.100968

Del Mar Miras-Rodríguez, M., Carrasco-Gallego, A., & Escobar-Pérez, B. (2014). Has the CSR engagement of electrical companies had an effect on their performance? A closer look at the environment. Business Strategy and the Environment, 24(8), 819–835. https://doi.org/10.1002/bse.1848

Delmas, M. A., & Burbano, V. C. (2011). The drivers of greenwashing. California Management Review, 54(1), 64–87. https://doi.org/10.1525/cmr.2011.54.1.64

European Commission, Joint Research Centre, Donatello, S., Danneck, J., Löw, C., et al. (2021). Circular economy perspectives in the EU textile sector – Final report. Publications Office. https://data.europa.eu/doi/10.2760/858144

Fashion Industry, UN Pursue Climate Action for Sustainable Development (2018). UNFCCC. https://unfccc.int/news/fashion-industry-un-pursue-climate-action-for-sustainable-development

FASHION TRANSPARENCY INDEX 2023; Fashion Revolution. (2023). https://www.fashionrevolution.org/about/transparency/

Fletcher, K. (2013). Sustainable fashion and textiles. In Routledge eBooks. https://doi.org/10.4324/9781315857930

Freeman, R. E. (1983). Strategic management: A stakeholder approach. Advances in Strategic Management, 1(1), 31-60.

Fu, L., Boehe, D. M., & Orlitzky, M. (2021). Broad or narrow Stakeholder Management? A Signaling Theory perspective. Business & Society, 61(7), 1838–1880. https://doi.org/10.1177/00076503211053018

Gatti, L., Seele, P., & Rademacher, L. (2019). Grey zone in – greenwash out. A review of greenwashing research and implications for the voluntary-mandatory transition of CSR. International Journal of Corporate Social Responsibility, 4(1). https://doi.org/10.1186/s40991-019-0044-9

Ghoul, S. E., Guedhami, O., Kim, H., & Park, K. (2016). Corporate environmental Responsibility and the cost of Capital: international evidence. Journal of Business Ethics, 149(2), 335–361. https://doi.org/10.1007/s10551-015-3005-6

Hameed, I., Hyder, Z., Imran, M., & Shafiq, K. (2021). Greenwash and green purchase behavior: an environmentally sustainable perspective. Environment, Development and Sustainability. https://doi.org/10.1007/s10668-020-01202-1

Huang, H., Kerstein, J., & Wang, C. (2017). The impact of climate risk on firm performance and financing choices: An international comparison. Journal of International Business Studies, 49(5), 633–656. https://doi.org/10.1057/s41267-017-0125-5

Iwanow, H. (2007). Greenwashing in the fashion sector: the consumer's perception of ethical issues in the global supply chain. Oslo: Oslo University College. Dostupno na: https://www.researchgate.net/publication/314952438_Greenwashing_in_the_fashion_sector_the_consumer's_perception_of_ethical_issues_in_the_global_supply_chain

Lee, M. T., & Raschke, R. L. (2023). Stakeholder legitimacy in firm greening and financial performance: What about greenwashing temptations? Journal of Business Research, 155, 113393. https://doi.org/10.1016/j.jbusres.2022.113393

Li, W., Li, W., Seppänen, V., & Koivumäki, T. (2022). Effects of greenwashing on financial performance: Moderation through local environmental regulation and media coverage. Business Strategy and the Environment, 32(1), 820–841. https://doi.org/10.1002/bse.3177

Liao, F., Sun, Y., & Xu, S. (2023). Financial report comment letters and greenwashing in environmental, social and governance disclosures: Evidence from China. Energy Economics, 107122. https://doi.org/10.1016/j.eneco.2023.107122

Lu, X., Sheng, T., Zhou, X., Shen, C., & Fang, B. (2022). How Does Young Consumers' Greenwashing Perception Impact Their Green Purchase Intention in the Fast Fashion Industry? An Analysis from the Perspective of Perceived Risk Theory. Sustainability, 14(20), 13473. https://doi.org/10.3390/su142013473

Lyon, T. P., & Montgomery, A. W. (2015). The means and end of greenwash. Organization & Environment, 28(2), 223–249. https://doi.org/10.1177/1086026615575332

Maiti, R. (2024, March 4). Fast fashion and its environmental impact in 2024 | Earth.Org. Earth.Org. https://earth.org/fast-fashions-detrimental-effect-on-the-environment/

Marquis, C., Toffel, M. W., & Zhou, Y. (2016). Scrutiny, Norms, and Selective Disclosure: A Global Study of Greenwashing. Organization Science, 27(2), 483–504. https://doi.org/10.1287/orsc.2015.1039

Mihaela, G. (2023). The role of the Economic Indicator - EBITDA in measuring the financial performance of the company. ideas.repec.org. https://ideas.repec.org/a/cbu/jrnlec/y2023v6iip163-168.html

Mukhambetov, T., Yerdavletova, F., Kurbanova, K., Mukhametzhanova, Z., & Sadvakassova, K. (2020). Analysis of financial indicators used to assess the sustainability of companies. E3S Web of Conferences, 208, 03049. https://doi.org/10.1051/e3sconf/202020803049

Munir, S., & Mohan, V. (2022). Consumer perceptions of greenwashing: lessons learned from the fashion sector in the UAE. Asian Journal of Business Ethics. https://doi.org/10.1007/s13520-021-00140-z

Nyilasy, G., Gangadharbatla, H., & Paladino, Á. (2013). Perceived greenwashing: The interactive effects of green advertising and corporate environmental performance on consumer reactions. Journal of Business Ethics, 125(4), 693–707. https://doi.org/10.1007/s10551-013-1944-3

Papamichael, I., Chatziparaskeva, G., Voukkali, I., Navarro-Pedreño, J., Jeguirim, M., & Zorpas, A. A. (2023). The perception of circular economy in the framework of fashion industry. Waste Management & Research, 41(2), 251–263. https://doi.org/10.1177/0734242x221126435

Pearson, J. (2010). Turning point. Are we doing the right thing? Leadership and prioritisation for public benefit. The Journal of Corporate Citizenship, 2010(37), 37–40. https://doi.org/10.9774/gleaf.4700.2010.sp.00006

Peng, X., Li, J., Tang, Q., Lan, Y., & Cui, X. (2023). Do environmental scores become multinational corporations' strategic "greenwashing" tool for window-dressing carbon reduction? A cross-cultural analysis. Business Strategy and the Environment, 33(3), 2084–2115. https://doi.org/10.1002/bse.3586

Plasencia, J. (2024). The world's most polluting industries. ClimateTrade. https://climatetrade.com/the-worlds-most-polluting-industries/

Rausch, T. M., & Kopplin, C. S. (2021). Bridge the gap: Consumers' purchase intention and behavior regarding sustainable clothing. Journal of Cleaner Production, 278, 123882. https://doi.org/10.1016/j.jclepro.2020.123882

Rauturier. (2022). Greenwashing examples: 8 Notorious fast fashion claims and campaigns - Good on you. Good on You. https://goodonyou.eco/greenwashing-examples/

Roulet, T. J., & Touboul, S. (2014). The Intentions with Which the Road is Paved: Attitudes to Liberalism as Determinants of Greenwashing. Journal of Business Ethics, 128(2), 305–320. https://doi.org/10.1007/s10551-014-2097-8

Schmuck, D., Matthes, J., & Naderer, B. (2018). Misleading Consumers with Green Advertising? An Affect–Reason–Involvement Account of Greenwashing Effects in Environmental Advertising. Journal of Advertising, 47(2), 127–145. https://doi.org/10.1080/00913367.2018.1452652

Spence, M. (1973). Job market signaling. The Quarterly Journal of Economics, 87(3), 355. https://doi.org/10.2307/1882010

Testa, F., Boiral, O., & Iraldo, F. (2015). Internalization of environmental practices and institutional complexity: Can stakeholders pressures encourage greenwashing? Journal of Business Ethics, 147(2), 287–307. https://doi.org/10.1007/s10551-015-2960-2

Walker, K., & Wan, F. (2011). The Harm of Symbolic Actions and Greenwashing: Corporate actions and communications on environmental performance and their financial implications. Journal of Business Ethics, 109(2), 227–242. https://doi.org/10.1007/s10551-011-1122-4

Wren, B. (2022). Sustainable supply chain management in the fast fashion Industry: A comparative study of current efforts and best practices to address the climate crisis. Cleaner Logistics and Supply Chain, 4, 100032. https://doi.org/10.1016/j.clscn.2022.100032

Yu, E. P., Van Luu, B., & Chen, C. H. (2020). Greenwashing in environmental, social and governance disclosures. Research in International Business and Finance, 52, 101192. https://doi.org/10.1016/j.ribaf.2020.101192

Zhang, K., Pan, Z., Janardhanan, M., & Patel, I. (2022). Relationship analysis between greenwashing and environmental performance. Environment, Development and Sustainability. https://doi.org/10.1007/s10668-022-02381-9

9. Appendix

Appendix A. *VIF for Hypothesis 1*

Variable	VIF	1/VIF
Total Assets	1.61	0.62
Market Value	1.56	0.64
Environmental Pillar Score	1.36	0.73
Audit Committee	1.35	0.74
ISO14000	1.09	0.92
Return on Equity	1.05	0.96
Greenwashing	1.02	0.98
Mean VIF	**1.29**	

Appendix B. *VIF for Hypothesis 2*

Variable	VIF	1/VIF
Greenwashing	1.88	0.53
CO2 Reduction Goal	1.86	0.54
Total Assets	1.61	0.62
Market Value	1.56	0.64
Environmental Pllar Score	1.38	0.73
Audit Committee	1.35	0.74
ISO14000	1.09	0.92
Return on Equity	1.05	0.95
Mean VIF	**1.47**	

Appendix C. *VIF for Hypothesis 3*

Variable	VIF	1/VIF
Greenwashing	5.96	0.16771
CO2 Emissions	5.96	0.16776
Total Assets	2.16	0.46292
EBITDA	1.81	0.55232
Audit Committee	1.37	0.73107
Envrionmental Pillar Score	1.23	0.81314
ISO14000	1.13	0.88562
Return on Equity	1.03	0.97184
Mean VIF	**2.58**	

Appendix D. *Breusch-Pagan Test for Heteroskedasticity*

chi2(1) = 434.28	
Prob > chi2 = 0.0000	