T.C
ISTANBUL TİCARET UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
DEPARTMENT OF BUSINESS ADMINISTRATION
DOCTOR OF PHILOSOPHY IN BUSINESS ADMINISTRATION

ESG GREENWASHING BEHAVIOURS REGARDING FIRM AND COUNTRY FACTORS: EXAMINATION OF EUROPEAN COMPANIES

PhD Dissertation

Duygu EROL

ISTANBUL, 2023

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ETİK BEYAN SAYFASI

Hazırlamış olduğum tez özgün bir çalışma olup YÖK ve İstanbul Ticaret Üniversitesi Lisansüstü Yönetmeliklerine uygun olarak hazırlanmıştır. Ayrıca, bu çalışmayı yaparken bilimsel etik kurallarına tamamıyla uyduğumu; yararlandığım tüm kaynakları gösterdiğimi ve hiçbir kaynaktan yaptığım ayrıntılı alıntı olmadığını beyan ederim. Bu tezin ihtiva ettiği tüm hususlar şahsi görüşüm olup İstanbul Ticaret Üniversitesi'nin resmi görüşünü yansıtmamaktadır.

Öğrenci Adı-Soyadı: DUYGU EROL

ABSTRACT

While ESG investments have increased in the last decade, stakeholders are curious about the correctness of the ESG claims of companies. Greenwashing (GW) is a conscious and selective information disclosure of firms to create a positive image in the eyes of the stakeholders. It limits the integration of ESG data into investments as the stakeholders lose their trust in that declarations. Unaudited sustainability reports, lack of standardization in disclosure rules of ESG data, and the absence of a global governance body to ensure the accuracy of reported ESG information increase the risk of GW behaviors. The motivation of this study is to help out stakeholders to determine which company factors (size, profitability, board structure, governance model) and country factors (corruption, unemployment, wealth of the society) impact the ESG greenwashing behaviors within STOXX 600. We implemented a panel regression model. The dataset covers STOXX 600 firms from 2009-2020. The results show that each ESG GW dimension is impacted by different company and country variables. An increase in CSR committee and embedding sustainable factors into the Executive remuneration are two main factors that decrease all three dimensions of GW behaviors. Company governance and financial factors have more impact on the GW compared to the country factors. According to our knowledge, this is the first research that evaluates each greenwashing dimension at the firm and country levels.

Keywords: ESG greenwashing, ESG disclosure score, ESG performance, Institutional theory, Signaling theory, Legitimacy theory

ÖZET

Surdurulebilir yatirimlar son 10 yilda hizla artarken. sirketlerin surdurulebilirlik ile ilgili yaptiklari beyanlarin dogrulugu ve guvenilirligi de paydaslar tarafindan daha cok sorgulanmaktadir. Yesilaklama (greenwashing) paydaslarin dusuncelerini ya da kararlarini sirket lehine cevirmeyi amaclayan, firmalarin bilincli ve secici sekilde yaptiklari faaliyetler ve aciklamalardir. Yesilaklama sisteme olan guveni zedelediginden, ESG verilerinin yatirimlara entegre edilmesini sinirlandirmaktadir. Surdurulebilirlik ile ilgili raporlarin denetimden gecirilmemesi, ESG verilerinin aciklanmasinda bir standardizasyon olmamasi, ESG ile ilgili bilgilerin dogrulugunu saglayacak global kurumlarin olmamasi greenwashing riskini daha da arttirmaktadir. ESG greenwashing'i etkileyebilecek firma ve ulke faktorlerini inceleyerek paydaslarin degerlendirmelerine yardimci olabilmektir. Arastirmada panel data regresyon modeli uygulanmis, STOXX 600 de faaliyet gosteren firmalarin 2009-2020 yili verileri incelenmistir. Bu analiz sonucunda cevresel, sosyal ve kurumsal yonetim boyutlarindaki yesil aklama risklerinin her birinin firma ve ulke faktorlerden farkli derecede etkilendigi gorulmustur. Kurumsal Sorumluluk ile ilgili komitelerin varligi ve yonetici ucretlendirme politikalarina surdurulebilirlik ile iliskilendirilmesinin greenwashing risklerini her boyutta (E-S-G) dusurdugu gorulmustur. Diger taraftan ulke faktorlerinden ziyade firma faktorlerinin (hem yonetim hem de finansal), greenwashing riski yaratmada daha etkili oldugu bulunmustur. Literatur taramalarimiza gore, yesilaklama (greenwashing) boyutlarini firma ve ulke faktorleri acisindan inceleyen ilk calisma olmasi sebebiyle ozgunluk tasimaktadir.

Anahtar Kelimeler: ESG Greenwashing, ESG beyani, ESG performansi, Kurumsallik teorisi, Sinyal teorisi, Mesruiyet teorisi.

ACKNOWLEDGEMENT

I am honored to complete my PHD. It is a long journey and requires lots of efforts and dedication. There were difficult times, but I have never forgotten the quote of Atuturk that ‘there is no hopeless situation but there are hopeless people’. That always keep me on the way and encourage me to do better, thanks to him for his vision. I feel very lucky that I am surrounded by lots of good people who have encouraged and helped me to complete this journey. First of all, I want to thank to Prof Murat Yalcintas for his endless supports, his leadership and advises. Then I want to also thank Prof Serkan Cankaya and Doc Dr Elif Guneren for their guidence. Many thanks also to Oguz Simsek and Huseyin Sert for teaching me how to use Bloomberg and Refinitive Databases, without their support, it would be much more difficult to overcome data related issues. I thank to Lamin Saidykhan for his honest feedbacks, peer reviews and proof reading of the thesis. He was always ready to help. I am very happy that PHD created an opportunity to meet with great colleagues, Ekin Nakay, Muhammet Dilberoglu, we have learned a lot from each other. Last but not least, of course I am thankful to my family and my close friends who never lost their beliefs on me and provide endless support.

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LIST OF ABBREVIATIONS

ADR	Absolute Disclosure Ratio
CAR	Cumulative Abnormal Returns
CDP	Carbon Disclosure Projects
CSA	Corporate Social Actions
CSP	Corporate Social Performance
CSR	Corporate Social Responsibility
DNSH	Do Not Significant Harm
FSB	Financial Stability Board
GHG	Green House Gas
GRI	Global Reporting Initiative
GSIR	Global Sustainable Investment Review
GWB	Green-washing Behaviors
IORP II.	Institutions for Occupational Retirement Provision Directive
MNCs	Multi-national corporations
NWG	Newsweek Green Rankings
PRI	Principles for Responsible Investment
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RI	Responsible Investments
RoA	Return on Asset
RoHS	Restriction of Hazardous Substances
SDG	Sustainable Development Goals
SI	Sustainable Investments
SRI	Socially Responsible Investments
UNFCCC	United Nations Framework Convention on Climate Change
UNGC	UN Global Compact
UNPRI	United Nations Principle of Responsible Investment
WDR	Weighted Disclosure Ratio

INTRODUCTION

ESG prescribes a spectrum to integrate environmental, social, and governance factors into asset allocation and risk decisions in order to create sustainable, long-term financial benefits (Boffo & Patalano, 2020). Environmental criteria show how a company acts as an agent of nature. Social criteria indicate how the company manages relationships with vendors, employees, customers, and the communities in which it functions. Governance criteria are related to a company's leadership, shareholder and minority rights, executive pay, audits, and internal controls (Chen, 2021).

Investors and shareholders have given more attention to sustainable investing in recent decades. Investors are paying more attention to ESG impacts because they believe it will be much more important economically in the long run. 63% of investment professionals declare that they use ESG ratings as a part of their investment data analysis. 73% of investment professionals believe that ESG ratings' influence on firms' cost of capital will be greater in the next five years (CFA, 2020).

Investors focused solely on environmental aspects in the early days of ESG, but today's emphasis is much more on environmental, social, and governance issues and concerns. Socially responsible investment was started back in the 1960s in the US by political concerns about the Vietnam war. It has evolved in recent years through anti- racist activist events, union acts, and ESG-friendly regulations (Stout, 2020). Google Trends shows that "environmental, social, and corporate governance" are the most searched terms in recent years. According to CFA Institute data, just in the first half of 2020, the Principles for Responsible Investment (PRI) signatories increased by 28%, to more than 3,000 entities, and the assets under management grew by 20%, to more than US $100 trillion. Customer demand has increased dramatically over the last 3 years as a motivation for investment organizations, especially in the USA. COVID 19 also prompts investors to consider the vulnerabilities and resistance of financial systems, as well as sustainability issues (CFA, 2020).

ESG greenwashing terminology is derived from greenwashing and is still new in the literature. It refers to making stakeholders believe that a company is doing much more to adopt sustainability than it actually is, generally for getting more public relations benefits.

Greenwashers are companies that seem very transparent and issue large quantities of ESG data but perform poorly in ESG matters (Yu, Luu, & Chen, 2020). Greenwashing means delivering a false message, impression, or providing misleading information or misleading reports about how a company and its products are environmentally sound or positive in an ESG context. There are some concerns that the recent significant inflows into ESG products may not be based on correct and complete information, and if outcomes disappoint, there could be a reaction (CFA, 2020). Greenwashing is a deliberate and selective information disclosure decision initiated by firms that may be beneficial to firms but costly to society. In that sense, there are similarities with fraud because, while fraudsters get the individual benefit from it, the society ultimately pays the cost of fraud. Yu, Luu, & Chen (2020) classify greenwashing into three categories: "The first type of greenwashing is manipulating disclosure to increase company valuation. The second type of greenwashing is selective disclosure to mislead investors. Lastly, the third type of greenwashing basically focuses on product-level greenwashing rather than firm-level greenwashing". As cited by Gatti, Seele, and Rademacher, (2019) in Seele and Fatti (2017) article, greenwashing terminology generally deals with environmental issues (61.6% of the selected articles), other researchers maintain that greenwashing is also related to social issues (38.0% of articles). In light of this definition, we can define ESG washing as a discrepancy between an organization's environmental, social and corporate governance claims versus actual performance. In this thesis, We use the terms "greenwashing" and "ESG washing" synonymously.

Uyar , A., Karaman, A. S., & Kilic, M. (2020) cite in their article to Clarkson (2008, 2011) and refer to socio-political theories (political economy, legitimacy, stakeholder theory) that low social and environmental performers face strong social and political stress and tension and are threatened by legitimacy. They will have a tendency to report elective disclosures to alter stakeholder perceptions about their actual performance and to deflect stakeholders' attention from the problematic areas (i.e., low social performance) to other safer areas where they feel more comfortable. Legitimacy helps businesses survive because it is dependent on their relationships with various stakeholder groups (i.e., regulatory authorities, vendors, employees, customers, or residents).

Greenwashing is an important topic to be aware of because there are high expectations from companies to perform better in ESG factors and provide more reliable ESG data to

support their financial reports. The main difficulties of ESG data disclosure are unaudited sustainability reports; a lack of standardization in disclosure rules for ESG data; and the absence of a global governing body to ensure the accuracy of reported ESG information. Greenwashing can limit investors' integration of ESG data into their investment strategy (Yu, Luu, & Chen, 2020).

According to Jong, Huluba, and Beldad (2020), customers' views and behavioural intentions toward a brand or firm are negatively impacted by greenwashing. It is critical to distinguish which factors have the greatest impact on the ESG in order to promote transparency and dependability in the reporting of non-financial information. ESG washing also prevent stakeholders to take accurate and timely investment positions.

Different variables have an influence on a company's environmental, social, and governance (ESG) performance, and sustainability risk agencies do not agree on the best way to quantify the ESG indicators (Sharma, Panday, & Dangwal, 2020; Johnson, 2020; Broadstock, Chan, Cheng, & Wang, 2020).Therefore, most companies make their own adjustments to fill the gaps between the literature and the Sustainability Risk Agent's results.

Greenwashing and exaggerated disclosures cause confusion and annoyance among stakeholders such as investors, firms, and policymakers (CFA, 2020).

It is still challenging to assess what ESG integration means for organisations due to the absence of standards, the performance uncertainties of businesses in areas of ESG and sustainability, as well as other ESG advantages (Durand, 2018).

The aim of the research is to determine whether firm-based or country-based factors impact more on the ESG greenwashing for each dimension. We will concentrate on the companies which operate in STOXX 600 for the periods between 2009 to 2020. It can be another potential research if future researchers would like to increase the scope by changing the sector, years, and regions.

Our thesis consists of five main chapters. In the first chapter, we will give the information related to ESG regarding its components, related terms, historical evolution, its challenges, and the regulatory framework. In the second chapter, we will explain the ESG

washing concept, the historical context, the main drivers of the ESG washing, ESG washing typologies, and how to measure ESG washing behaviors. In the third chapter of the thesis, you will find the theoretical background of ESG washing. In the fourth chapter, research methodology and data are explained, including our hypothesis. Finally, in the last chapter, discussion points, findings and the future recommendations will be mentioned.

1. ESG AND ITS EVOLVEMENT

1.1. Environmental Social and Corporate Governance

The United Nations Principle of Responsible Investment (UNPRI) introduced the terms environmental, social, and corporate governance by emphasising the need of including these considerations in investment choices. ESG integration in the investing sector has grown over time (Sharma, Panday, & Dangwal, 2020).

ESG investing has developed from socially responsible investment principles into a unique type of responsible investing, which has resulted in major changes to its practises and terminology. Earlier approaches used exclusionary screening and value judgments to shape investment decisions; however, ESG investing has been increased by shifts in demand from across the finance ecosystem, driven by both the search for better long-term financial value and a desire for better alignment with values (Boffo & Patalano, 2020).

ESG investing is a strategy that attempts to achieve sustainable, long-term financial returns by incorporating environmental, social, and governance issues into asset allocation and risk decision-making. The degree to which the ESG approach integrates information that might have a major financial impact in the future when determining expectations for returns and risks, as well as the degree to which it can contribute to the generation of superior long-term returns (Boffo & Patalano, 2020).

ESG may also be defined as the process of establishing, executing, and reporting on an organization's environmental, social impact, and governance structures and frameworks. This is done so that the Board of Directors and the company's leadership may leverage stakeholder interests to shape business strategy and convey ESG tendencies (Team, 2021).

1.1.1. Environmental Score

Environmental factors consist of water pollution, water usage, waste, nonrenewable resources, usage of renewable resources etc.

On which components should be taken into account when calculating the ESG factors, there is no agreement. However, when determining the E-S-G criteria, researchers and

Sustainability Reporting Agency (SRA) businesses often utilise the same metrics Sharma, Panday, & Dangwal, (2020); Johnson, (2020); Broadstock, Chan, Cheng, & Wang, (2020). Environmental factors relate to how well a business manages the environment. Examples include:

- Air and water pollution
- Climate change impact/greenhouse gas emissions
- Fracking
- Animal treatment
- Biodiversity Deforestation
- Energy efficiency
- Plastics and nuclear energy
- Methane emissions
- Water scarcity
- Sustainable land use
- Waste management
- Usage of renewable and non-renewable resources

1.1.2. Social Score

Social criteria look at how an organisation handles connections with its staff, vendors, clients, and the communities in which it works:

- Conflict zones
- Consumer privacy and data security
- Child labour
- Gender equality
- Employee relations
- Health and safety
- Working conditions
- Labour standards
- Human rights
- Modern-day slavery
- Supply chain standards
- Impact of operations on community and society

1.1.3. Governance Score

Governance covers a company's management, executive compensation, audits and internal controls, as well as shareholder rights**:**

- Anticorruption and bribery
- Board independence, board agendas, board attendance, issues, and so on
- Code of ethics
- Cybersecurity
- Risk management
- Executive pay
- Gender balance
- Shareholder rights
- Tax transparency
- Corruption

1.2. Terms related with ESG

As previously stated, there is no agreed-upon definition of ESG in the literature. By pointing out that there are other terminological definitions that are used in conjunction with ESG and/or that they are occasionally substituted for ESG investment. Therefore, it is essential to consider what they are and how they relate to the ESG.

1.2.1. Corporate Social Responsibility (CSR)

The European Union has modified its well-known definition of CSR to include a mandatory component, emphasising the significance of policy measures and regulations to prevent unfair CSR and greenwashing behaviours (Gatti, Seele, & Rademacter, 2019). The Commission of the European Communities, 2001, originally described CSR as "a concept whereby companies integrate social and environmental concerns into their business operations and in their interaction with their stakeholders on a voluntary basis."

CSR is the obligation of businesses to consider how their actions affect society, according to the European Commission (2021). As a result, the corporation should be in charge. By incorporating social, environmental, ethical, consumer, and human rights issues into their corporate strategy and operations, companies act as socially responsible. Additionally, they have a societal responsibility to uphold the law. Businesses in the EU are obliged to be aware of both their good and negative effects on the environment and society. Therefore, businesses should control, prevent, and reduce any potential negative effects they may have, especially on their global supply chain. Responsible Business Conduct (RBC) or "Corporate Social Responsibility" (CSR) are terms used to describe upholding these obligations and standards.

In order to protect businesses' reputations and their access to cash, land, and markets, CSR aims to connect corporate policies and practises with sustainable development. (Haman & Kapelus, 2004). The CSR is conceptualized by agency theory, institutional theory, the resource-based perspective of the corporation, stakeholder theory, stewardship theory, and the theory of the firm (Lindgreen & Swaen, 2009).

CSR is a multilayered notion that is frequently used synonymously with corporate citizenship or sustainability (Strand, Freeman, and Hockerts, 2015). There are studies in the literature that focuses on the symbolic (talk, self-serving) and substantive (walk, cause-serving) approaches to CSR (e.g., Donia, Ronen, Tetrault Sirsly, and Bonaccio, 2019; Schons and Steinmeier, 2016; Shabana and Ravlin, 2016). Research on CSR has been approached from various angles as cited in Blanco, Romero, & Feijoo, (2021). Corporate social responsibility (CSR) is a tool used to set businesses apart in a competitive market.

The voluntary standalone CSR reports are also known as "Environmental reports," "GRI reports," "Sustainability reports," and "Citizenship reports" when they are submitted. These reports often satisfy three requirements: they must concentrate on social and environmental issues, deviate from the company's annual report, and contain material that is not required under obligatory reporting requirements (Mahoney, Thorne, Cecil, & LaGore, 2013).

Through a report on the entity's ESG performance, the CSR reports give the stakeholders a glimpse of how the entity executes sustainable development (KPMG, 2008) as cited by

Mahoney et al. (2013). CSR reports are a relatively new figures compared to yearly reports and financial statements. Three distinct phases can be identified in the development of CSR reports: the first, which began with the emergence of "greenwash" reports over 30 years ago; the second, which began with the emergence of more quantifiable and verifiable reports about 20 years ago; and the third, which saw the emergence of guidelines and requirements (Huefner & Tschopp, 2015) as cited in Petersson & Dzafic, (2016). In order to report on their CSR efforts, organisations have expanded the communication channels, including press releases, newspapers, interim reports, and their own websites. Others have elected to include more information than it is legally necessary , such as details on how the company is carrying out its social and environmental obligations (Coughlan & Sweeney, 2008) as cited in Petersson & Dzafic, (2016). The Global Reporting Initiative (GRI), G3 standards, and Account Ability's AA1000 Series are a few examples of rules and standards for the CSR report, although they are all optional, and organisations are not required to abide by them (Petersson & Dzafic, 2016).

1.2.2. Sustainable Investments (SI)

To enhance long-term results, sustainable investment combines conventional investing with environmental, social, and governance-related (ESG) knowledge (Sustainable Investing and Investment Management, 2021).

There are three important factors in sustainable investing:

- Sustainable investment is an extension to asset management philosophy. It does not imply that fundamental concepts ought to be abandoned.
- Investors may have a better understanding of how value will be produced in the future by taking ESG into considerations.
- As businesses grow, sustainable investing takes into account a variety of stakeholders.

“Investments that integrate long-term environmental, social, and corporate governance (ESG) issues into investment processes in order to achieve both a financial and a social end” are referred to as sustainable investments (SI). Those who advocate for SI argue that the incorporation of ESG risks is a potential for investors to better properly price assets

and more effectively deploy capital over the long term (Forum for the Future, 2002; Zadek, Merme, & Samans, 2005) as cited in Juravle & Lewis, (2009). Additionally, proponents contend that by interacting with management, activist institutional investors may enhance portfolio performance, increase company governance, decrease negative externalities (such as pollution), and boost positive externalities (Juravle & Lewis, 2009).

Financial markets are held more responsible for their social and environmental challenges when they make sustainable investments. Today, more investors expect their investments to be a reflection of these bigger ideals and to offer answers to bigger problems. This generates important stages for sustainable or value-based investment. When environmental, social, and governance (ESG) considerations are addressed in the investment process, that is considered sustainable investment. Sustainable investment has become more popular in last 20 years, despite the fact that evidence points to its beginnings in the 18th century. A key marker of the expansion of sustainable investing is the UNPRI's (United Nations Principles for Responsible Investment) success, which asks for the consideration of ESG issues in ownership and investment decisions. (Talan & Sharma, 2019).

Asset owners challenge the investors to demonstrate how one company's operations are significantly more or less sustainable than those of other businesses. Metrics are mainly restricted to documenting changes to internal business practises but offer limited guidance on whether a company's actions, products, and services promote human well-being or preserve environmental integrity in the external, real-world domain, fueling resistance to the concept of "green washing" (1) despite the fact that company declarations and respective information are hardly standardised and are difficult to verify (Vörösmarty, 2018).

1.2.3. Socially Responsible Investments (SRI)/ Responsible Investments (RI)

The term "socially responsible investment" is widely used and gained popularity in the 1980s and 1990s, but it was developed by women, faith-based groups, and philosophers during the civil rights movement. Three pillars support the contemporary SRI process:

1. Values-based avoidance screening

2. Analytics with a proactive sustainability focus, sometimes known as "ESG investment" and Proactive sustainability-focused analytics—colloquially referred to as “ESG investing” and

3. Corporate engagement and impact investing (Townsend, 2020).

In the literature, there are few studies that are focus on the precise definition instead of the description of SRI. Cooper and Schlegelmilch (1993) noticed the absence of a terminological consensus. Similar definitions were separately created by Sparkes (1994) and Cowton (1994), as cited in Sparkes (2008) proposing that the distinctive characteristic of SRI resided in the employment of ethical and social factors in the selection and management of listed equities portfolios.

Investments that are socially conscious (SR) are often found after a screening procedure. Usually, it is possible to select a negative screening or positive screening. Companies in industries that are controversial, such as alcohol, gambling, cigarettes, or guns, are left out of the negative technique. A positive screening procedure, in contrast, chooses businesses based on metrics for Corporate Social Performance (CSP), which refers to the evaluation of corporate social responsibility (CSR) choices (see, for example, McWilliams and Siegel, 2001; Renneboog et al, 2008; Luo and Bhattacharya, 2009 as cited in Dorfleitner, Halbritter, & Nguyen, 2015 study. ESG ratings, which assess a company's efforts to incorporate environmental, social, and governance concerns, are provided by specialist rating agencies since a positive screening procedure necessitates a substantial study (Dorfleitner, Halbritter, & Nguyen, 2015).

Responsible investment is a term that commonly refers to activities like socially responsible investing, mission-related investing, impact investing, and environmental, social, and governance investing.

• *Socially-responsible investing (SRI),* a portfolio construction process that uses negative screening in accordance with established ethical principles in an effort to steer clear of investing in particular stocks or industries;

• *Impact investing*,
which entails funding initiatives or businesses with the specific intention of bringing ab out social or environmental change, and

• *Environmental, social and governance (ESG) investing* is taken into account in basic investment analysis that affects the performance of investments (Caplan, Griswold, & Jarvis, 2013).

These investing strategies accomplish quite different goals. The goals of SRI and impact investing are to convey institutional values or enhance the institution's mission through funding and investment operations. ESG investing, on the other hand, attempts to raise investment performance, freeing up more funds for mission support. For a long time, SRI was the most often applied strategy among the three. Negative screening, though it may be a beneficial tool for organisations looking to express their ethical, religious, or moral beliefs through their investment portfolio, has recently been criticised as being excessively limiting for many. With a larger perspective, ESG research looks at whether environmental, social, and governance concerns may have an impact on a company's performance and, consequently, the investment performance of a long-term portfolio. Determining their institution's approach to ESG investing is important for fiduciaries of long-term institutional investors to do, even if not every institution will choose to engage in SRI or impact investing (Caplan, Griswold, & Jarvis, 2013).

1.2.4. Impact Investments

Impact investing was first coined by Rockefeller Foundation in 2007. “It is created for establishing a global industry aiming for investments with a favourable social and environmental impact (Harji and Jackson 2012)” as cited in Hóchstádter & Scheck, (2014). Impact investment is similar to traditional investing in that it includes providing financial resources in exchange for a financial return (Global Impact Investing Network, or GIIN 2013a; Louche et al. 2012). Impact investing seeks to have a positive social and environmental impact in addition to financial return because this is not its only goal (GIIN 2013a; Louche et al. 2012) as cited in Hóchstádter & Scheck, (2014). So, impact investing blends traditional financial decision-making with altruistic goals. While impact investing differs from philanthropy and grant financing in that it has a stated financial return objective, it differs from regular investments in that it places an explicit emphasis on some sort of non-financial benefit Addis et al. 2013; Wong 2012 as cited in Hóchstádter & Scheck, (2014).

Impact investing is frequently used interchangeably with social investment. However, it is also used to refer to a more general idea like to SRI. Additionally, there is a viewpoint that social investment as a specific subtype of impact investing that focuses on organisations with social missions and social enterprises, or on investments that place a higher focus on nonfinancial effect than on financial factors(i.e., impact first impact investments) (Hóchstádter & Scheck, 2014).

1.2.5. Sustainable Development Goals (SDG)

"The Sustainable Development Goals (SDGs), sometimes referred to as the Global Goals, were enacted by the United Nations in 2015 as a global call to action to eradicate poverty, safeguard the environment, and guarantee that by the year 2030, peace and prosperity would be experienced by everyone. The 17 SDGs aims to develop a balanced social, economic, and environmental sustainability and that actions in one area will have an impact on results in others. Countries have agreed to give higher priority for those who are falling behind making progress". The SDGs aim to eradicate AIDS, famine, poverty, and discrimination against women and girls (The SDGS in Action , 2021).

The 17 SDGs are: "(1) No Poverty, (2) Zero Hunger, (3) Good Health and Well-being, (4) Quality Education, (5) Gender Equality, (6) Clean Water and Sanitation, (7) Affordable and Clean Energy, (8) Decent Work and Economic Growth, (9) Industry, Innovation and Infrastructure, (10) Reducing Inequality, (11) Sustainable Cities and Communities, (12) Responsible Consumption and Production, (13) Climate Action, (14) Life Below Water, (15) Life On Land, (16) Peace, Justice, and Strong Institutions, (17) Partnerships for the Goals".

The Global Reporting Initiative (GRI) is a reporting framework that many multinational corporations (MNCs) use for their ESG disclosures. Due to their complexity, GRI reports are frequently included at the start or conclusion of Corporate Social Responsibility (CSR) or Sustainability reports. The GRI framework includes standards for several topics, such as the UN's 2030 Sustainable Development Goals (SDGs). The United Nations Global Compact (UNGC) is a set of guidelines for companies to abide by as follows.

Under Human Rights are two principles:

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and

Principle 2: make sure that they are not complicit in human rights abuses.

Under Labour are four principles:

Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;

Principle 4: the elimination of all forms of forced and compulsory labour;

Principle 5: the effective abolition of child labour; and

Principle 6: the elimination of discrimination in respect of employment and occupation.

Under Environment are three principles:

Principle 7: Businesses should support a precautionary approach to environmental challenges;

Principle 8: undertake initiatives to promote greater environmental responsibility; and

Principle 9: encourage the development and diffusion of environmentally friendly technologies.

Under Anti-Corruptions is one principle:

Principle 10: "Businesses should work against corruption in all its forms, including extortion and bribery. Each of the principles is connected to the specific SDGs that they include (United Nations, 2016, p. 12). Companies from 154 countries have joined the United Nations Global Compact, which supports the Sustainable Development Goals (SDGs)" (Khaled, Ali, & Mohamed, 2021).

Khaled et al. (2021) studied the mapping of SDGs with ESG performance scores. They find that there are specific SDGs and targets that are more relevant to some sectors than others. Additionally, they discovered that successful, bigger, less indebted organisations are more likely to exhibit higher corporate sustainability performance. In our thesis, we will figure out if company factors impact the greenwashing.

1.2.6. Global Reporting Initiative (GRI)

“The GRI Standards make it possible for any organisation, regardless of size, sector, or public or private status, to comprehend and report on its effects on the economy, environment, and population in a comparable and reliable manner, increasing transparency on its contribution to sustainable development. The Standards are extremely pertinent to a wide range of stakeholders, including reporting firms and investors, governments, capital markets, and civil society” (Standards, 2021).

The Standards provide an inclusive view of an organization's material themes, their connected implications, and how they are handled. They are created as an accessible modular collection.

- The Universal Standards - have been updated to include reporting on human rights and environmental due diligence in line with intergovernmental requirements – must be adhered to by all businesses ;
- The new Industry Standards allow for more structured reporting that are particular to each sector;
- The Topic Standards – modified to work with the updated Universal Standards – after which they provide disclosures pertinent to a certain subject (Standards, 2021).

1.3. ESG Evolvement

We can categorize the evolvement of ESG into 3 phases. In Phase 1, governance was a major concern for the investing community, and the term "ESG" had not yet gained widespread acceptance. When the UN PRI was introduced in Phase 2, the investment community changed its focus to include social and environmental problems as well as governance, which were combined into a handy and useful package. Since then, the terms "ESG investment," "responsible investing," and "sustainable investing" have become synonymous, although having quite different meanings. In Phase 3, the industry is in a position to unite with a convergence of standards and best practises thanks to an acceleration of regulation and the pandemic's longer-lasting effects (Institude, 2020).

ESG integration as a sustainable approach has seen tremendous growth on a worldwide scale. Alliance, G. S. (2018) reported that ESG integration has increased to $17.5 trillion in assets over the last two years, a 69 percent increase.

In the largest markets in 2019, ESG-integrated portfolio capitalisation was reached US$30 trillion. ESG investment is important to investors for at least two reasons. First, ethical investment behaviours are actively encouraged by ESG investing. Second, ESG investing is increasing for improving managed portfolio performance, lowering portfolio risk and boosting returns (Broadstock, Chan, Cheng, & Wang, 2020).

For the internalization of ESG, the board's involvement and support are also very important. In a 2019 PwC poll of more than 700 directors of publicly traded companies, it was shown that 56% of them thought boards spent too much time on sustainability Lubin, D. A., & Esty, D. C. (2010). But still, while looking at the figures of ESG performance, we can say that there is room for improvement in the use of ESG in decision-making.

1.3.1 ESG Evolvement in the History

The history of SRI is far more older than that of "ESG". Since the 19th century, especially among faith-based groups, investment decisions have included social factors and restrictions. Due to historical occurrences like the Vietnam War and social problems like civil rights, the environment, and women's rights that are becoming more and more ingrained in the investing decisions of politically engaged people, SRI has gained momentum. "The Ethical Investment Research Services Ltd. (EIRIS) was founded in London to provide independent research for churches, charities, and NGOs so they could make knowledgeable and responsible investment decisions. A few decades later, SRI efforts specifically targeted investments in discrimination of South Africa and nations engaged in the arms trade (such as Sudan)" (Eccles, Lee, & Stroehle, 2019).

In the 1970s, environmental awareness began to increase and the first funds, which concentrate on topics outside of the conventional, "sin" screening were launched. The fight against apartheid in South Africa gave rise to the first funds that excluded businesses operating in a particular nation, igniting a debate that is still open as to whether

exclusionary investing benefits a nation by hastening the fall of unfair institutions or harms it by prompting businesses to leave, slowing economic growth and, potentially, impeding the pace of reform. There were over 60 SRI mutual funds and $640 billion in SRI assets under management by the middle of the 1990s. Climate change, corporate scandals, and humanitarian disasters have become major issues in the twenty-first century. SRI has been increasingly linked in recent years to the practise of forbidding or restricting investment in specific businesses or industries according to ethical convictions. It has been suggested that this strategy can result in worse investment performance and is thus inconsistent with an institution's fiduciary obligation to maximise return on investment since it restricts the selection of assets that are available for investment (Caplan, Griswold, & Jarvis, 2013).

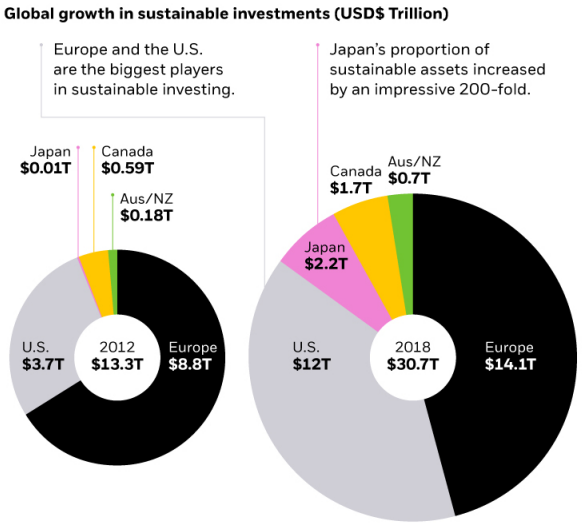
The United Nations (UN) Global Compact (2004) report Who Cares Wins: Connecting Financial Markets to a Changing World is where the term "ESG" first appeared. For this report, the former UN Secretary General invited a joint initiative of financial institutions "to develop guidelines and recommendations on how to better integrate environmental, social, and corporate governance issues in asset management, securities brokerage services, and associated research functions." Twenty financial organisations, including major banks like BNP Paribas, HSBC, and Morgan Stanley, asset owners like Allianz SE and Aviva PLC, asset managers like Henderson Global Investors, and other stakeholders, supported the final report (e.g., Innovest). Only one year later, the Freshfields Report by the UN Environmental Program Finance Initiative (UNEP-FI, 2005) provided the first concrete proof of the financial importance of ESG concerns and extensively covered the question of fiduciary obligation in the use of ESG data in investment choices. The two publications are regarded as the cornerstone of the 2006-launched, UN-backed Principles for Responsible Investment, which has gathered as signatories international financial institutions that combined represent more than US$ 89 trillion in assets (Principles for Responsible Investment, 2018). The increase in signatures is an indication that investors are becoming more aware of ESG problems and considering them when making investments (Eccles, Lee, & Stroehle, 2019).

1.3.2. ESG developments in the World

Japan, Australia/New Zealand, and Canada had the highest growth between 2016 and 2018, according to the Global Sustainable Investment Review Report 2018. Additionally, throughout the past two years, these three regions had the fastest growth. Europe, the US, and Japan were the three largest areas in terms of the value of their sustainable investment assets. According to asset value of sustainable investments, ESG integration continues to be the most popular approach in the United States, Canada, Australia, and New Zealand, while negative screening (excluding those businesses that have negative ESG activities) is still the most popular method in Europe. In Japan, the prevalent strategy is one of corporate involvement and shareholder action (Alliance, 2018).

Figure 1.1. shows the growth of sustainable investments per region.

Figure 1. 1 Global Growth in Sustainable Investments (USD $ Trillion)



Source: (Visual Capital, 2020)

- European markets still set the bar for sustainability throughout the world. The Nordic region and the eurozone receive the best ratings.
- When it comes to environmental standards, France leads the world.
- The social pillar is where Denmark excels.
- When it comes to governance, the Netherlands is at the top of the list.
- Due in large part to its large banks, Australia receives the greatest sustainability rating among non-European markets.

- Sustainability is not merely a trend in developed markets. Colombia, South Africa, Hungary, and Taiwan are a few emerging markets that outperform the world average.
- The largest Asian market for sustainability is Taiwan.
- Except for Singapore, the United States does worse than all developed markets. Scores are poor across all ESG pillars, however ESG-related controversies involving index participants are partially to blame.
- Issues with governance lower Japan's rating.
- China receives bad marks for its governance, social, and environmental performance (Lefkovitz, 2017).

1.4 Regulatory Environment related to ESG

Regulations may create costs and opportunities for businesses. Being abreast of policy changes and determining their influence on investments is a crucial duty for a prudent investment practitioner. International corporations must look at how changes within the many countries they operate in might collectively impact company-wide policy. It must go beyond local regulatory changes.

The regulatory environment around the ESG is still evolving in the world. Compared to other regions, Europe is the pioneer of regulations related to ESG and sustainable finance. Since sustainable investments have increased over the years, they certainly attract more scrutiny from the regulatory bodies. It is expected that the EU regulations will have an impact on non-EU countries and investors too, because the companies may adjust their processes to do business together (this is also linked to the institutional theory too).

The political support of sustainability is also very important to strengthen the regulatory environment. The sustainable investments were not supported in June 2020 by the politicians of the US (during the Trump period), and ESG integration on pension funds has been opposed by some industry leaders. However, the new government pushed more ESG-related requirements onto the Security Exchange market in 2021. The UK has established its own regulatory agenda prior to Brexit, and they declared their strategy as being to become the first country to comply with the Task Force on Climate Related Financial Disclosures (LLP, 2021).

Some of the important ESG-related laws that have been passed internationally over the past 20 years and impacted the development of the responsible investment sector are listed as follows:

1989 - *Montreal Protocol on Substances that Deplete the Ozone Layer (Worldwide)*
"The most effective international environmental pact in history is *the Montreal Protocol on Substances* that Deplete the Ozone Layer. It is the international environmental pact that has been approved by the most countries, second only to the Vienna Convention for the Protection of the Ozone Layer. Over 99 percent of ozone-depleting chemicals have been phased out since its inception".
1990 - The first emissions trading plan in history is the result of changes to the Clean Air Act (USA) Acid rain regulation was made possible by *the Clean Air Act* modifications, which also authorised the issuance of permits for stationary sources of pollution such chemical facilities, petrol stations, and power plants.
2000 - *Grain to Green programme* (China)
In order to control soil and water erosion on agricultural fields with a slope of more than 25 degrees, China has implemented a significant government forest restoration initiative.
2002 - *Sarbanes-Oxley Act* (USA)
"The Sarbanes-Oxley Act of 2002 was enacted by the U.S. Congress to aid in safeguarding investors from corporate financial reporting fraud. The Corporate Responsibility Act of 2002 is another name for it".
2005 - *European Union Emission Trading Scheme* (EU)
The first carbon market in the world, the EU Emission Trading Scheme covers around 40% of the EU's GHG emissions.
2006 - *RoHS (Restriction of Hazardous Substances*) - (EU)
2006 – *Registration, Evaluation, Authorisation and Restriction of Chemicals* (REACH) – (EU)
Specific hazardous compounds that are present in electrical and electronic devices are restricted under RoHS. The REACH regulation is concerned with all chemicals that might be utilised in the production of a product.
2008 - *Amendment to the Danish Financial Statements Act*
"ESG disclosure requirements for businesses and investors. Policies on corporate social responsibility, implementation techniques, and an assessment of what has been

accomplished via corporate social responsibility in the most recent financial year and what is anticipated for the future must all be included in the information".

2011 - *Australia: 'Two-strikes rule'*

At Australian-listed corporations, shareowners have had a non-binding vote on CEO remuneration since 2005. The "two-strikes rule" was a pretty effective tool given to Australian shareowners in their say-on-pay voting in 2011. According to the regulation, the whole board may need to run for reelection within three months if 25% of shareholders vote against a company's compensation report at two consecutive annual general meetings. Voting on board elections is authorised, however key management individuals and others connected to them are not allowed to participate in the initial vote on executive compensation. As a result, it is feasible for shareholders to "spill" a board through a second-strike vote only to have insiders pick a new board.

2011 - *South Africa: Reg 28 of the Pension Funds Act 2012 –*

Over 30 nations' governments and stock exchanges currently demand corporate sustainability reporting (mandatory or voluntary)

2014 - *Non-Financial Reporting in Europe*

Companies must disclose about their policies, risks, and results when it comes to environmental concerns, social and employee-related issues, respect for human rights, anti-corruption and bribery issues, and board diversity.

Large enterprises must produce an annual non-financial statement under the European Union's Disclosure Directive (also known as Directive 2014/95/EU), which was released in December 2014 Directive 2014/95/EU Directive amends the Accounting Directive 2013/34/EU.

"Currently, major public interest enterprises with more than 500 workers are subject to EU regulations on non-financial reporting. This pertains to around 11.700 significant businesses and groupings within the EU, such as:

- listed companies
- banks
- insurance companies
- other companies designated by national authorities as public-interest entities

Details will be revealed Large businesses are required by Directive 2014/95/EU to provide details about:

- environmental matters
- social matters and treatment of employees
- respect for human rights
- anti-corruption and bribery
- diversity on company boards (in terms of age, gender, educational and professional background)" (Corporate Sustainability reporting, 2021).

2014 - *Switzerland: Decree of board remuneration*

"Voting at annual shareholder meetings on the pay of the management, advisory, and board of administration members".

2015 – *Paris Agreement*

196 nations joined together to sign a coordinated agreement at the United Nations Framework Convention on Climate Change (UNFCCC) in Paris to cap greenhouse gas emissions at a level that would prevent an increase in global temperatures of more than 2^0C. Support from the financial sector and market-based strategies are important parts of the agreement.

2016 - *European Union: Revision of the Institutions for Occupational Retirement Provision Directive (IORP II)*.

According to the Directive, pension funds must take ESG into account and indicate in their investment policy statement how their risks are taken into account.

2017 - *Financial Stability Board (FSB) Task Force on Climate-related Financial Disclosures*

A global organisation called the Financial Stability Board offers suggestions to support a stable global financial system. Its voluntary recommendations are intended to assist businesses in identifying and disclosing the possible financial effects of climate-related risks and opportunities on their operations, which will aid investors, insurers, and lenders in more accurate assessment and pricing of those risks and opportunities.

2019 - *UK: Occupational Pension Schemes (Investment) Regulations*

In their Statement of Investment Principles, trustees of schemes must state their positions on financially significant issues. With a focus on climate change, this is characterised as covering environmental, social, and governance challenges.

2019 - *UKSIF – New Government regulations makes clear existing pension scheme duty to consider ESG factors*

2020 - *The EU Technical Expert Group on Sustainable Finance (TEG) EU Taxonomy*

"The EU Sustainable Finance Taxonomy is a tool to aid in the transition to a low-carbon, resource-efficient economy for investors, businesses, issuers, and project promoters. Technical screening criteria are performance benchmarks the taxonomy establishes for economic activities that:

- contribute significantly to one of the six environmental goals;
- if applicable, do not significantly damage the other five;
- meet minimum safeguards (e.g., OECD Guidelines on Multinational Enterprises and the UN Guiding Principles on Business and Human Rights)".

The EU is the first international group to set up a taxonomy for regulating financial system

On July 12, 2020, the taxonomy regulation came into effect. The taxonomy regulation defines the criteria for determining whether a certain economic activity is considerably contribute to one or more of the environmental objectives of the EU while not significantly harming any other environmental objectives. This evaluation seeks to promote long-termism in financial and economic operations and openness to stakeholders (via necessary disclosure standards) on the one hand, and to refocus capital flows toward sustainable investments on the other (EU taxonomy for sustainable activities, 2021).

"The Taxonomy Regulation establishes six environmental objectives

- Climate change mitigation
- Climate change adaptation
- The sustainable use and protection of water and marine resources
- The transition to a circular economy
- Pollution prevention and control
- The protection and restoration of biodiversity and ecosystems" (EU taxonomy for sustainable activities, 2021).

On April 21, 2021, a first delegated act on sustainable practises for objectives related to climate change adaptation and mitigation was accepted in principle. On June 4, 2021, the act was legally enacted and sent to the co-legislators for review. For the remaining goals, a second delegated act will be released in 2022 (EU taxonomy for sustainable activities, 2021).

On March 10, 2021, the **Sustainable Finance Disclosure Regulation** (SFDR) went into effect. The SFDR (Level 1 legislation) seeks to establish uniform guidelines for the transparency that financial market participants and financial advisors must follow with regard to the incorporation of sustainability risks and impacts into the decision-making process for investments or financial advice, as well as the transparency of financial products (European Regulation, 2019).

The following articles of SFDR are used for the classification of the financial products.

- Article 6 disclosures apply to products not classified as either article 8 or 9. It is applicable both to products that integrate sustainability risks as well as those that do not.
- Article 8: Financial products that support environmental or social charateristics must comply with Article 8 disclosures, provided that the firms in which.
- Article 9: Financial instruments having sustainable investments as their objectives and for which an index has been selected as a reference benchmark are subject to Article 9 disclosure requirements. The DNSH ("Do Not Significant Harm") concept must be met by such sustainable investments, and the investee company must adhere to good governance principles.

Included in a potential extra product categorization would be negative sustainability consequences at the product level. The timelines for this are different from the classification based on Articles 6, 8, and 9. In addition, the adverse sustainability impacts at product level may be connected to the requirements regarding adverse sustainability impacts at entity level. SFDR is about disclosures, and transparency. Please see below the overview of the relevant requirements, including which level 1 requirements have more detailed requirements included in the draft RTS. (Joint Committee of European Supervisory Committee 2021 03, 2021).

In September 2020, the Regulatory Technical Standards (also known as Level 2 legislation) comment period came to an end. The European Supervisory Authorities (ESAs) released their "Final Report on Draft Regulatory Technical Standards" on February 4, 2021. SFDR Level II's start date has been postponed from January 1, 2022, to July 1, 2022.The impact of this deferral is not identical for every requirement resulting from SFDR Level II. The impact on pre-contractual disclosures such as prospectuses is the most straightforward. Adding more detailed disclosures to pre-contractual information will now have an adherence date of 1 July 2022 instead of 1 January 2022 (European Securities and Market Authority, 2021).

Table 1. 1. Summary of Recent Regulatory Changes related to Sustainability

Topic	**SFDR Level I**	**Date**	**SFDR Level II(RTS)**	**Date**
Transparency of sustainability risk policies	Yes, article 3	10 March 2021	No	
Transparency of adverse sustainability impacts at entity level	Yes (article 4)	10 March 2021	Yes (articles 4 – 12)	First statement by 30 June 2023
Transparency of remuneration policies in relation to the integration of sustainability risks	Yes (article 5)	10 March 2021	No	
Transparency of the integration of sustainability risks	Yes article 6	10 March 2021	No	
Transparency of adverse sustainability impacts at financial product level	Yes (article 7)	By 30 December 2022*	No	

Transparency of the promotion of E or S characteristics in pre-contractual disclosures)	Yes (article 8)	10 March 2021	Yes (articles 13 – 19, Annex II)	1 January 2022 (expected)
Transparency of sustainable investments in precontractual disclosures	Yes (article 9)	10 March 2021	Yes (articles 20 – 30, Annex III)	1 January 2022 (expected)
Transparency of the promotion of E or S characteristics and of sustainable investments on websites	Yes (article 10)	10 March 2021	Yes (articles 31 – 57)	1 January 2022 (expected)
Transparency of the promotion of E or S characteristics and of sustainable investments in periodic reports	Yes (article 11)	10 March 2021	Yes (articles 58 – 73, annexes IV and V)	In annual report published in 2023 over 2022**
Review of disclosures	Yes (article 12)	Continuous	No	
Marketing communications	Yes (article 13)	Continuous	No	

Notes:

* The requirements of article 7 can be implemented before the date mentioned.

** As the RTS is still a draft version, there are some concerns about the timelines and periodic reports. The (market) approach is, at the moment, that if the RTS does not allow for a six-month implementation period reports should be published in 2023 concerning 2022.

Proposal for a Corporate Sustainability Reporting Directive (CSRD)

The NFRD's current reporting requirements would be changed by the Corporate Sustainability Reporting Directive (CSRD), which the Commission approved on April 21, 2021. The proposal:

- broadens the scope to include all large businesses and all businesses listed on regulated exchanges (except listed micro-enterprises)
- It calls for the audit (assurance) of reported information
- It adds new reporting criteria that are more specific and mandates reporting in accordance with statutory EU sustainability reporting standards
- It mandates that businesses "tag" their reported data digitally so that it may be input into the European single access point that is envisioned in the Capital Markets Union Action Plan and is machine readable.

The EU Action Plan on Financing Sustainable Growth which has resulted in a lot of legislation. For example:

- Sustainable finance package | European Commission (europa.eu) Sustainable finance package | European Commission (europa.eu)
- Renewed sustainable finance strategy and implementation of the action plan on financing sustainable growth | European Commission (europa.eu) Renewed sustainable finance strategy and implementation of the action plan on financing sustainable growth | European Commission (europa.eu)

There are some national developments (France, Germany, and Spain). In addition, there are some national labels, for example in Belgium, France, and the Nordics.

- France: Information to be provided by collective investment schemes incorporating non-financial approaches | AMF (amf-france.org)

Reasons for nation developments are:

1) was already in existence before EU developments,

2) preference for slightly different requirements compared to EU approach etc.

2. ESG GREENWASHING

2.1. Greenwashing and its relation with the ESG Greenwashing

There is no unique definition in the literature for "greenwashing" or "ESG washing". The scholars in general are of the opinion that "greenwashing" is a deliberate and selective choice of the management to hide or shine some of the information so that the company will be seen better in the eyes of the stakeholders (Young & Schumacher, 2021;. Olatubosun & Nyazenga, 2021; Lashitew A. Addisu, 2021; Bowen F., Aragon-Correa JA, 2014; Attig, Brockman and Trabelsi, 2020). Other scholars believe that companies might engage in "greenwashing" without having bad intentions (Goffman 1974, 1981) as cited in Olatubosun & Nyazenga, (2021). The main reasons for the greenwashing can be clustered as lack of regulatory framework, complexity of products, and stakeholder pressure.

Since the 1990s consumer interest in environmental aspects has increased. Therefore, "greenwashing" is also included in the Oxford English Dictionary as a new term. (Watson, 2017).

According to Gatti et al. (2019), the majority of academics discuss greenwashing in relation to environmental concerns (61.6 percent of the papers they chose), although other researchers also discuss it in relation to social issues (38.0 percent of articles). On the other hand, there are other "greenwashing" or "washing" terms created based on the difference between what the company says and what they perform. For example, "carbon washing", "greenwashing", "bluewashing" (deceptive acts through the reputation of the United Nations), "brownwashing" etc (Young & Schumacher, 2021). Greenwashing is a comprehensive term for misleading communications on environmental as well as broader Sustainable Development Goals ("SDG") related indicators (Cojoianu, Hoepner, Ifrim, & Lin, 2020). Greenwashing is also related to broader Sustainable Development Goals ("SDG") indicators. There can be different levels of "greenwashing" from minor misrepresentation to full falsification.

Due to the multidisciplinary nature of greenwashing, several definitions and points of view have been used by scholars (Guo, Tao, Li, & Wang, 2017; Nyilasy, Gangadharbatla, & Paladino, 2014; Roulet & Touboul, 2015; Seele & Gatti, 2017; Wilson, Robinson, &

Darke, 2010 as cited in Torelli, Balluchi, & Lazzini, (2019). Recent academic work has employed a variety of greenwashing techniques, such as "selective disclosure","active management of misleading information", "impression management" and "active management of misleading information." Solomon et al., 2013; Laufer, 2003; Lyon and Maxwell, 2011 as cited in Olatubosun & Nyazenga, (2021).

Numerous papers discuss various facets of "greenwashing," but according to Yong and Bart (2018), it may be characterised by two characteristics: Distance from veracity (an intrinsic characteristic) and a communication feature (techniques used to mislead or confuse people) (Jong, Harkink, & Barth, 2019).

According to Lyon and Montgomery (2015), instead of a narrow and exact definition of a greenwashing, there is a need to create a taxonomy of greenwash, determine how to mitigate the greenwashing risk, hypothesise the effects of greenwashing on social welfare, the effects of greenwashing and greenwashing organisations as a whole. They note that the greenwashing studies are still in their infancy and that many topics still need to be researched.

Researchers have made an effort to define greenwashing more precisely, although as was already said, definitions vary widely. According to Laufer (2003), there are three components of greenwashing: "confusion," "fronting," and "posturing." A more precise description is provided by Delmas and Burbano (2011): "Poor environmental performance and favourable communication about environmental performance". Lyon and Maxwell (2011) as cited in Lyon & Montgomery (2015) define greenwashing as "selective publication of positive information regarding a company's environmental performance, without full disclosure of negative information on these dimensions." However, this definition ignores factors like ambiguous statements, the use of visual imagery, and "image advertising" in favour of disclosing "hard," or verified, facts regarding environmental performance.

2.2. Historical background of greenwashing

Jay Westerveld, who is an environmental activist, used the term “greenwashing” for the first time at his study in 1986. In this study, he noticed that the hotels are encouraging guests to use the towels more than once by asserting themselves as environmentally

friendly, but on the other side, it was noticed that the hotel management uses this argument only to save more money (Pimonenko , Bilan , Horák , Starchenko , & Gajda , 2020).

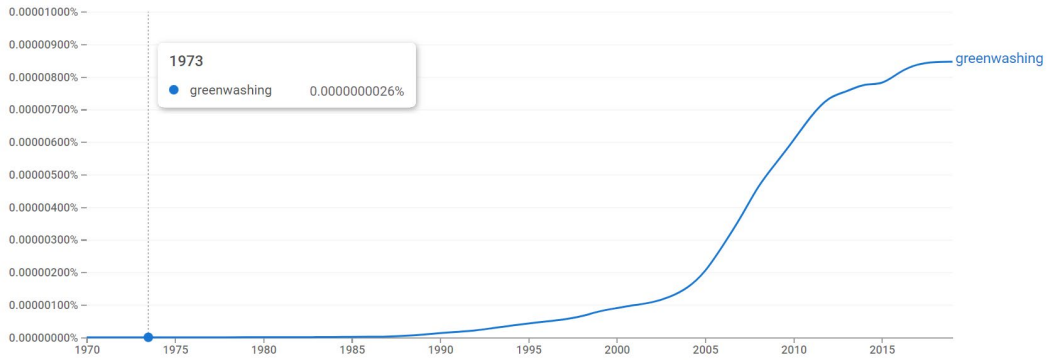
As cited by Olatubosun and Nyazenga (2019), the evolution of greenwashing is even traced back to the 1970s when the economic sector changed its focus to sustainable investments to gain a market advantage.

One of the earliest examples of greenwashing is noted by Watson (2017) for the advertisement of Westinghouse, which is a USA electrical giant and nuclear power department, in 1969. They argued in their ads that they give more electricity via their nuclear power departments in with a cheap and safe manner. They were right at that point that they provided more electricity, but they had nuclear meltdown, which shows that it is not safe and clean anymore (Watson, 2017).

Lyon and Montgomery (2015) conducted a literature review and analysis of 94 papers on greenwashing. They discovered that the bulk of publications (78.7%) tackled greenwashing in the corporate communications, marketing, and management domains. The subject of law and legislation is covered in 12.8% of articles.

Google Ngram viewer shows that the greenwashing usage in publications has been significantly increasing since the 2000s.

Figure 2. 1 Google ngram view results_1973-2019



Source: Google Books Ngram Viewer, (Access Date: 22.11.2022)

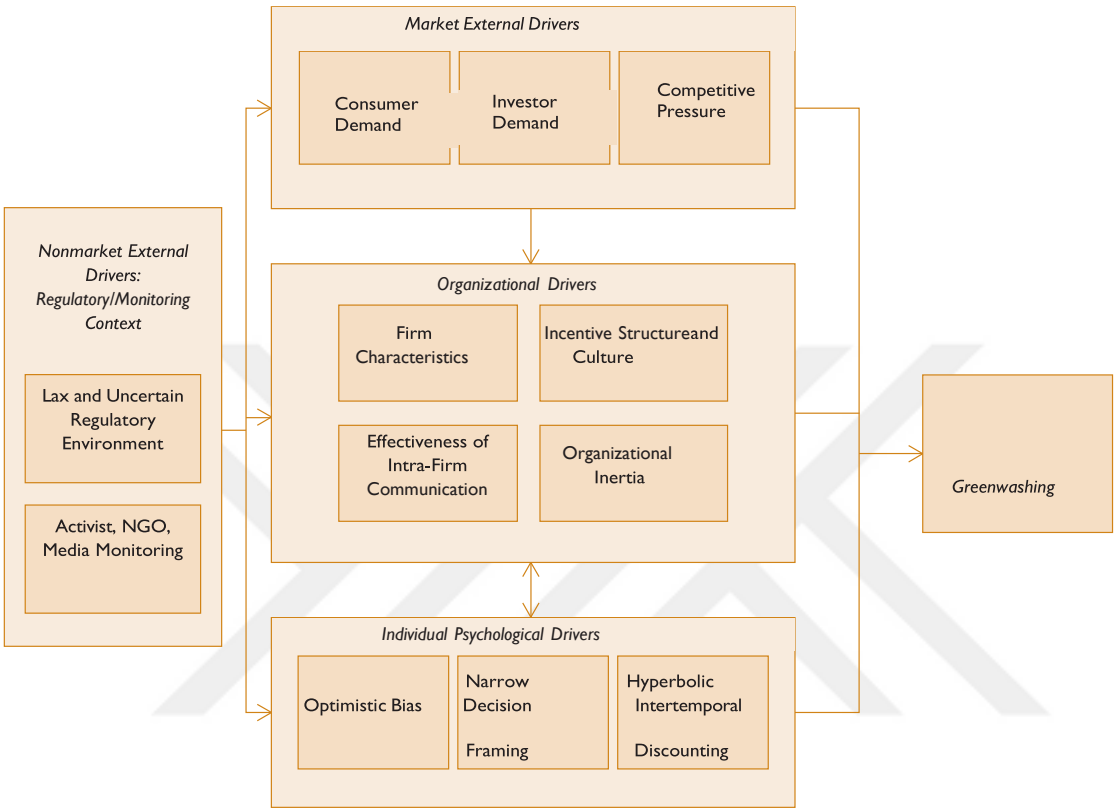
2.3. The main drivers of greenwashing

Regarding the factors that contribute to greenwashing, there is no agreement in the literature.However, as cited by Champagne (2020), the regulatory environment is one of the important determinants of greenwashing. Weak regulatory frameworks and international standards increase the likelihood of inaccurate and deceptive assertions about environmental aspects, which cause greenwashing. The gaps in the regulatory framework increase the complexity of how to measure greenwashing (Champagne, 2020).

On the other side, determinants of greenwashing are classified by Cojoianu et al. (2020) based on environmental factors, like if the company agrees that they aim to decrease climate change and makes its declarations in line with that, but in reality, the performance of climate change mitigations is well behind (Cojoianu, Hoepner, Ifrim, & Lin, 2020).

Delmas and Burbano (2011) explain the drivers of greenwashing from three angles: Market External Drivers, Organizational Drivers, and Individual Psychological Drivers. Market-level drivers are listed, such as customer demands, stakeholders requiring green products, and sustainable companies. Organizational level drivers are listed like organizational laziness and lack of interaction. The individual-level drivers can be related to the managers who focus on their short-term benefits instead of considering the long-term benefits of the shareholders. They explain their framework based on institutional theory. Please see the figure 2.2. for the drivers of GW:

Figure 2. 2. Drivers of Greenwashing



Source: (Delmas & Burbano, 2011).

A significant external institutional driver of corporate greenwashing is the regulatory component. Institutional variables alone are insufficient to determine the company's various tactics. The market external variables and essential organisational drives relevant elements to determine the Company's reaction as well. Executive's decision-making processes are influenced by individual psychological and cognitive characteristics, which in turn affect how external drives are translated into internal action plans. The legislative framework indirectly affects the other factors that contribute to greenwashing by influencing the calibre of information that stakeholders may obtain concerning corporate environmental performance and greenwashing (Delmas & Burbano, 2011).

In their 2015 study, Lyon and Montgomery separated the causes of greenwashing into two groups: external/environmental and internal/organizational. Additionally, they assess their model by taking Delmas and Burbano (2011) into account.

Table 2. 1. Drivers of Corporate Greenwash

Drivers of greenwash	Relevant academic research
External/environmental	
• Lax regulatory environment	Delmas and Burbano (2011)
• Weak political pressure	Delmas and Montes-Sancho (2010)
• Threat of regulation	Kim and Lyon (2011)
• Weak pressure from environmental groups	Kim and Lyon (2011); Marquis and Toffel (2013)
• Weak relationships with government agencies	Delmas and Montes-Sancho (2010)
• Weak connection to industry trade groups	Delmas and Montes-Sancho (2010)
• Weak connections to global economic system	Delmas and Burbano (2011)
Internal/organizational	Internal/organizational
• Low visibility	Delmas and Montes-Sancho (2010)
• Large size	Kim and Lyon (2011)
• Being "relatively" green	Marquis and Toffel (2013)
• Growing firms	Kim and Lyon (2014)
• Firms in a service industry	Ramus and Montiel (2005)

Source: Lyon & Montgomery (2015).

2.4. Types of Greenwashing/ ESG greenwashing

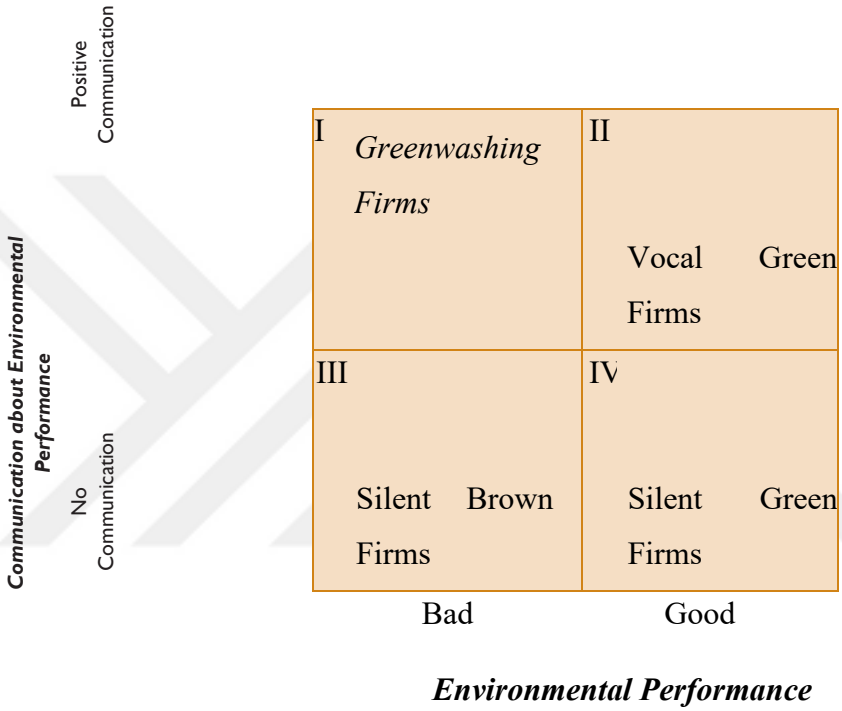
Olatubosun (2019) refers to Baron's study for the classification of greenwashing while explaining the communication of the company. They classified the greenwashing as aggressive and defensive greenwashing. Aggressive greenwashing is used when the company uses its communication strategy to boost or enhance the perception of responsible investments in the media by using selective disclosure of positive ESG

information. The uncertain regulatory framework and lack of customer education can stimulate greenwashing behavior. On the other hand, defensive greenwashing focuses on reducing the reputational damages of protests against the company, adverse media activities, or defending environmental court cases (Olatubosun & Nyazenga, 2019).

Firm level and product level are the two levels of greenwashing that Delmas and Burbano (2011) identify. Firm-level greenwashing is described as when businesses misrepresent their environmental initiatives to customers.Product-level greenwashing is defined as when companies give inaccurate information regarding the environmental impacts of their products or services. TerraChoice Company describes ”seven sins”’ while describing product-level greenwashing (please see Appendix 1). This classification can be extended to the social and governance aspects too.

Delmas and Burbano (2011) develop a typology of environmental performance and communication while elucidating the practises of the companies that engage in "greenwashing." Environmentally unsound businesses are referred to as "brown" enterprises, whereas environmentally sound businesses are referred to as "green" businesses. Communication about the environment can be classified on a spectrum from “no communication” to "positive communication”. If the company acts negatively for the environmental performance and keeps communication low or silent, this is called “silent brown”. If they perform negatively but still have positive communication, advertisement, etc, to mislead stakeholders, it is called “greenwashing firms”. If companies have good environmental performance but choose not to communicate these activities, it is called “silent green”. Finally, if the firms have positive environmental performance and communicate well about it, they are called “vocal green firms” (Delmas & Burbano, 2011).

Figure 2. 3. A Typology of Firms based on Environmental Performance and Communication



Source: (Delmas & Burbano, 2011).

Lyon & Montgomery (2015) performed a literature review on greenwashing and collected many forms of misleading environmental communications. They found that the most common greenwashing technique is selective disclosure. The other one is symbolic management of policies, procedures, or claims that they fail to execute with. Another type is also described as "certifications" which can be easily received from unqualified certifiers or whose standards might not be up to par. Cooperation with NGOs or partnerships might also be used for greenwashing even though the company does not act as green. Sometimes they also join government sponsored voluntary programs just to create good images; however, this involvement may not cause any environmental

improvements. In addition, some companies create inaccurate narratives and disclosures, then act like they have much more substantive and sustainable actions. The other most common greenwashing technique is also using misguided visual images or symbols to create a positive image about the greenness of the company (Lyon & Montgomery, 2015).

The media effect is important when framing the information so that stakeholders are ready to accept it. Olatubosun & Nyazenga (2019) refer to the studies in which greenwashing and impression management have caused higher responsible investment practices. For example, firms might register for the PRI Code and create news about the ESG involvement, etc. while they have little performance in reality.

Pizzetti, Gatti, & Seele, (2021) evaluated the supply chain management and stakeholder reactions from the greenwashing perspective. They divided the greenwashing into two categories: direct greenwashing, which happens at the corporate level, and indirect greenwashing, which happens at the supplier level. They discovered that corporations exhibit a greater amount of guilt attribution when there is a blatant greenwashing. A supplier firm is less negatively impacted by indirect greenwashing. The scholars identified that this type of greenwashing is much more dangerous to the investments (Pizzetti, Gatti, & Seele, 2021).

Greenwashing is categorised by Torelli, R., Balluchi, F., & Lazzini, A. (2019) based on environmental communication. The corporate level, strategic level, dark level, and product level are the four primary layers of greenwashing they suggest. Corporate-level greenwashing is used to provide incorrect environmental information concerning the image and reputation of the actual company. Name, purpose, vision, logo, and corporate certification are examples of static data. Greenwashing on a strategic level refers to false environmental communication in relation to future business strategies such corporate or operational plans, tactical plans for technology/processes, management reporting, and targeted exceptional operations. When a company presents a misleading environmental message to cover up unlawful actions including criminal and/or mafia involvement, money laundering, corruption, and investments with dubious motives, this is known as "dark-level greenwashing". Greenwashing at the product level refers to deceptive environmental messaging for certain elements of a product or a collection of products, such as the label, packaging, targeted advertising, and product certifications. A set of

business procedures has created a strong relationship between the four stages of greenwashing.

2.5. The measurement of ESG greenwashing

As there is no single definition of “greenwashing”, the measurement is also not standardized. However, some of the scholars measure the greenwashing via their qualitative models, and while measure it with their quantitative approaches.

2.5.1. Quantitative studies

Champagne (2020) searched for the determinants of greenwashing while analyzing the Corporate Social Responsibility (CSR) reports for crowdfunds. They give reference to previous scholars like Robert and Koeplin (2007) who calculated the greenwashing by comparing the quantity of environmental assertions in the environment dimension of the report with the quality of such assertions. They implement the same methodology. Finance Impak established an open database for measuring the CSR impact. They measured the impact of Unilever and found that it focuses its communication more on positive impact factors while hiding the negative externalities (Champagne, 2020).

Buller (2020) used the Carbon Disclosure Projects (CDP) to attempt to quantify greenwashing. Companies that do well typically alter their CDP ratings, which are then utilised by investors to guide their actions and product development. However, in the CDP system, businesses that produce goods with a high carbon footprint and contribute significantly to global emissions, like Ford Motor, are required to make robust disclosures about their emissions (Buller, 2020).

Roulet and Touboul (2015) used Corporate Social Action (CSA)s to do study on the greenwashing. CSAs are created to ensure the wellbeing of all parties involved and encompass a range of initiatives carried out by the company's CSR department. Giving attention to CSA symbolically than substantively is known as "greenwashing" (Walker and Wan 2012). Their greenwashing ratio gauges how often symbolic CSA is used in comparison to actual CSA. They calculate greenwashing using Asset 4's CSA ratings, and

they measure cultural views using VWS's public opinion survey. Unbalanced panel data of 10.232 observations for 2621 enterprises over a period of 7 years (2002-2008) for 38 different nations served as the foundation for this study. They distinguish between a company's actual CSA (such as the volume of CO2 emissions decreased in the previous year or the number of accidents and fatalities at work) and their alleged CSA (such as whether the company claims to have a policy for reducing environmental emissions or to aim to enhance employee health and safety conditions). Asset4 asserts that its ratings can distinguish between a firm's "talk" and "walk" about CSA. The researchers looked at how beliefs affect greenwashing behaviour when economic liberalism is present. They use a focus group technique to undertake an exploratory qualitative investigation of the influence of managers on this issue. On a large scale dataset, they experimentally test their predictions. They discovered that corporations are more prone to use greenwashing in nations with strong competitive values, whereas enterprises are more likely to concentrate on practical efforts in nations with high individual responsibility values. These findings imply that while weak governments are ideal in greenwashing, corporations may feel the urge to step in and address institutional gaps, this tendency is offset in environments where competitive attitudes are more prevalent _(Roulet & Touboul, 2015).

Blanco, S. R., Romero, S., & Feijoo, B. F. (2021) investigated the traits that make businesses more or less likely to engage in greenwashing. To look at the factors that contribute to greenwashing, researchers created a quantitative analysis using data from the S&P top 100 businesses' sustainability disclosures. They assess corporate transparency using content analysis. They gathered annual and sustainability reports, concentrated on the GRI framework's social and environmental categories, and then weighted the disclosure scores, determining whether or not they are supported by data and textual context. They define "greenwashing" as the discrepancy between what an organisation claims to be doing in terms of sustainability and what the organisation really performs as determined by third parties (Bloomberg ESG scores). They use Bloomberg ESG ratings as a representation of ESG activities or performance, in contrast to other academics. When writing on global green and blue washing, Blanco et al. (2021) exclusively consider environmental and social Corporate Social Reporting (CSR) issues. They discovered that businesses in environmentally conscious sectors engage in less

"greenwashing" than their counterparts in other sectors. Companies that provide assurance and provide a sustainability report engage in less greenwashing than those who do not. Intriguingly, they discovered that businesses in sectors with high exposure and close proximity to consumers greenwash more frequently than their competitors. Since the research's sample was situated in Europe, the academics advise future studies to assess the impact of industry and the applicability of reporting methods when formulating regulations and policies (Blanco, Romero, & Feijoo, 2021).

Du, X. (2015) investigated whether corporate environmental performance may explain the disparate and asymmetric market responses to environmentally friendly and unfriendly enterprises in China, as well as how the market views "greenwashing." The greenwashers is published in the South Weekend, is used to quantify this practise. If a company is on the greenwashers list, they receive a 1, but if not, they receive a 0 for not engaging in greenwashing. For market performance, they take a sample from the Chinese stock market. He stated that Cumulative Abnormal Returns (CAR) around the exposure to greenwashing are strongly adversely correlated with greenwashing. Additionally, CAR surrounding the exposure of greenwashing is considerably positively correlated with business environmental performance (Du, 2015).

Uyar et al. (2020) compared the relationships between corporate social responsibility (CSR) performance and CSR reporting to explore the signalling and greenwashing theories for the logistics sector. Using ESG indices, they assess CSR performance. According to their theory, businesses with strong CSR performance reporting let stakeholders know that their disclosures are accurate, therefore they reject the notions of greenwashing. For the years between 2012 and 2018, they extract the data from the Thomson Reuters Eikon database. The two dimensions of CSR and GRI-based reporting behaviour were taken into consideration: the first signal, CSRrepbinary/GRIrepbinary, indicated the presence of a report; the second indicator, CSRrepcount/GRIrepcount, indicated the degree (i.e., the number of reports) of the reporting. Their findings indicate that businesses with better CSR performance are more likely to publish a CSR report and produce a large volume of CSR reports (Uyar , Karaman, & Kilic, 2020). In contrast to Yu et al. (2020), their article does not compare CSR performance and disclosure to identify instances of greenwashing. However, one quantitative study used a different approach to comprehending greenwashing.

Mahoney et al. (2013) investigated the signalling and greenwashing motives for voluntary CSR disclosure. According to the theory of "signalling" businesses utilise separate CSR Reports to demonstrate their superior commitment to CSR. As a result, organisations with better environmental and social records are more likely to produce standalone CSR Reports than those that don't. The second part, known as "greenwashing" contends that businesses should employ stand-alone CSR Reports to present themselves as “good corporate citizens” even when they lack better environmental and social records. These two elements are also consistent with papers by Uyar et al. (2020). They contrasted the CSR performance ratings between companies which publish CSR reports and those that do not. Then used corporateregister.com to sample the stand-alone CSR reports, and they took data for 312 firms' CSR performance from the KLD database. They discovered that standalone CSR Reports that are voluntarily issued tend to have higher CSR performance scores, which shows that businesses are making voluntary CSR Reports available to stakeholders in order to highlight their stronger environmental and social records.

In their study, Attig et al. (2020) discuss the challenges of assessing greenwashing. In order to acquire social and environmental disclosures for a broad sample of U.S. corporations, they access data from S&P's Trucost database on symbolic and substantive environmental disclosures of U.S. firms. The difference between a company's Absolute Disclosure Ratio (ADR), which serves as a proxy for its symbolic environmental disclosure, and a company's Weighted Disclosure Ratio (WDR), which serves as a proxy for its substantive disclosure, is how they calculate greenwashing (GW).

Comparing the ESG disclosure scores and ESG performance scores, Yu et al. (2020) looked at firm-based greenwashers. They take the ESG performance scores from Asset4 and the ESG disclosure scores from Bloomberg. Between 2012 and 2016, they worked with 1925 large-cap firms with headquarters in 47 nations and territories. The greenwashing is calculated by: “A firm’s peer-relative greenwashing score = (a normalized measure representing a firm’s relative position to its peers in the distribution of the Bloomberg ESG disclosure score) - (a normalized measure representing a firm’s relative position to its peers in the distribution of our modified Asset4 ESG performance score)”. They perform the normalisation in their article since the distributions of the ESG disclosure score and ESG performance scores differ considerably. Since the

greenwashing numbers are normally distributed and we didn't want to change the nature of the data, we chose not to normalise the values. As their coefficient covariance technique, which is resistant to heteroskedasticity, they employed the White diagonal and the panel EGLS period weight models (Yu, Luu, & Chen, 2020).

Marquis, C., Toffel, M. W., & Zhou, Y. (2016) examine whether companies are less likely to use selective disclosure, concentrating on organisational and institutional characteristics that heighten scrutiny, expectations of transparency, and the mobilisation of the civil society. They use a panel data set from 4,750 public businesses with headquarters in 45 different countries and operating in a variety of industries to test their hypothesis between 2004 and 2007. An unbalanced panel of 15,108 firm-year observations from 4,787 companies by various global indices was obtained from Trucost. Their dependent variable, selective disclosure magnitude, which they define as a type of "greenwashing" in which a company disseminates accurate but selective environmental information to give the impression that its overall environmental performance is better than it actually is.

Absolute disclosure ratio less weighted disclosure ratio equals selective disclosure magnitude. Trucost created these ratios. Measured by the absolute disclosure ratio, selective disclosure magnitude aims to quantify the extent to which symbolic transparency outweighs substantive transparency (measured by weighted disclosure ratio). Regardless of their relative relevance, the absolute disclosure ratio reveals how many of the pertinent environmental indicators the firm reported, and the weighted disclosure ratio shows how much of the most crucial information was disclosed. Positive selective disclosure magnitude denotes that a corporation reported its less detrimental indicators when its absolute disclosure ratio is greater than its weighted disclosure ratio. This model allows for both fixed and random effects and accounts for the multilevel structure of their panel data. After doing their investigation, they discovered that companies that cause greater environmental harm, especially those in nations where they are more subject to inspection and international standards, are less likely to use selective disclosure (Marquis, Toffel, & Zhou, 2016).

The impact of municipal corruption on Corporate Social Responsibility (CSR) is examined by Ucar and Staer (2020). They focused their sample on US companies using

readily available company and accounting data from COMPUSTAT for the years 1991 to 2013. There are 22,887 firm-year observations for the sample period, with companies in the utilities and financial industry categories (SIC codes 4900-4999 and SIC 6000-6999) being removed. They create the CSR measurements using corporate social responsibility (CSR) information from Kinder, Lydenberg, and Domini (KLD) that was made available via WRDS. They calculate greenwashing in their research as well. They define greenwashing as a positive sample unconditional correlation of 0.2214 between CSR concerns and CSR strengths. The association between CSR strengths and CSR concerns is negative given a larger corruption degree, while the sign changes after conditioning on the corruption variable. Due to the lesser benefit and hence reduced possibility of "greenwashing" a higher prevalence of corruption is linked to a lower intensity of CSR activity.

As the signal is perceived as less reliable due to increased greenwashing, there may be a disincentive to enhance CSR activity in high corruption contexts. Their findings demonstrate that businesses in high-corruptibility regions have lower CSR rankings. Even with various anti-corruption efforts, there is still a considerable negative correlation between local corruption and CSR (Ucar & Staer, 2020).

Ghitti , M., Gianfrate, G., & Palma, L. (2020) propose a measure of greenwashing and look into its causes and effects for US businesses. Based on the Newsweek Sustainability Rankings, they evaluate the environmental performance of the 500 largest U.S. publicly traded corporations and give each one a score from 2012 to 2017. They gauge the extent of greenwashing activities using Newsweek scores as a standard. The Newsweek Green Rankings (NWG) and the Datastream ESG score are two highly regarded environmental rating systems that are used to define the dependent variable of interest, "Greenwashing" (GW) (ESG). The two systems' quality is very different; according to their interpretation, NWG is more dependable and accurate than ESG. The Newsweek Green Rankings are therefore regarded in their analysis as the high-quality ranking system, whereas the Datastream ESG score ranking is seen as the low-quality one. According to the following formula, the degree of "greenwashing" is determined by the difference between NWG and ESG scores:

“$G_{i,t}$ = ESG $score_{i,t}$,low - ESG $score_{i,t}$,high ”

When $G_{i,t}$ assumes positive values, greenwashing is said to have occurred. When a corporation earns a greater green score in the poor quality sustainability rating than in the high quality one, it suggests that it is engaging in greenwashing. For instance, the $G_{i,t}$ variable will have a value of 20 and signal greenwashing for company i, if a corporation displays a score of 40 according to the NWG vs a score of 60 in the ESG database.

An economic model of "greenwash" was created by Lyon and Maxwel (2011). In it, a company strategically provides environmental information, and an activist may audit and punish the company for only providing the positive disclosure of its environmental profile. Their research shows a nonmonotonic relationship between a firm's environmental disclosures and its anticipated environmental performance. Greenwashing is discouraged by increased activist pressure, but some businesses are compelled to disclose less about their environmental performance. Environmental management systems deter companies from "greenwashing" which may be justified by governmental regulations pushing companies to use them. According to their findings, "greenwashing" is defined as “the selective sharing of positive information about a company's environmental or social performance while hiding unfavourable information on these dimensions” (Lyon and Maxwell 2011).

Depending on the primary stakeholder group they are aimed at, Schon & Steinmeier (2015) investigate if and how a firm's symbolic ("talk") and real ("walk") CSR efforts, alone or combined, effect financial performance (i.e., high-proximity internal stakeholders such as employees versus low-proximity external stakeholders such as customers or the wider society). The analysis is based on a cross-industry dataset of Datastream from 2002 to 2011 and an international sample of 220 for employee support and 1467 observation for corporate citizenship from Thomson Reuters' Asset4ESG. Financial performance measures including revenue, sales growth, R&D spending, analyst coverage, and diversification are considered control factors. They first asked two research assistants (who were unaware of the study's objectives) to rank the Asset4ESG items in the categories of employee support and corporate citizenship according to their symbolic versus substantive value in order to properly capture the constructs of symbolic and substantive CSR actions. The classification of the symbolic and substantive data is shown in the table 2.2.

Table 2. 2. The Classification of Symbolic and Substantive Support

Symbolic employee support	**Symbolic CSR support**
- "Does the company have a policy to support the skills training or career development of its employees? - Does the company have a policy to support the skills training of its employees? - Does the company have a policy to support the career development of its employees"	- "Does the company have a policy to strive to be a good corporate citizen? - Does the company have a general, all-purpose policy regarding business ethics? - Does the company describe, claim to have, or mention processes in place to improve its good corporate citizenship? - Does the company describe, claim to have, or mention processes in place to improve general business ethics?"
Substantive employee support:	**Substantive action of CSR support**
- "Total hours of career development training per employee - The employee support cost per employee in USD".	- "The total amount of all donations divided by net sales or revenue and two items measuring - Does the company have appropriate internal communication tools (whistle blower protection, ombudsman, suggestion box, hotline, newsletter, website, etc.) to improve its good corporate citizenship?' - Does the company foster employee engagement in voluntary work?"

Source: Schon & Steinmeier (2015).

To spot greenwashing, they compared the CSR and employee support's symbolic and substantive components. According to the study, activities aimed at high-proximity stakeholders have a favourable influence on financial performance or have no impact at

all, but actions directed toward low-proximity stakeholders have the reverse effect. Additionally, the findings demonstrate that low-proximity stakeholders find it more difficult to distinguish words and actual actio (Schons & Steinmeier, 2015).

2.5.2. Qualitative studies

There are also a lot of qualitative research in the literature that look at the greenwashing issue, particularly how it is perceived.

Using communication, Torelli et al. (2019) assess the greenwashing. They describe "greenwashing" as a range of deceptive communications intended to instil excessively favourable perceptions of an organization's environmental activities among stakeholders. Stakeholders find it challenging to distinguish between businesses that truly attest to performance and those which only pretend to follow a sustainable development plan. The researchers assessed public attitudes about environmental scandals, business greenwashing, and views of corporate environmental responsibility. They test their hypothesis using a four-for-two design experiment, and the results show that differing levels of greenwashing greatly affect how stakeholders see corporate environmental responsibility and how they react to environmental problems (Torelli, Balluchi, & Lazzini, 2019).

Vries, W. Terwel, Ellemers, & Daarmen, (2013) investigated the energy industry's dilema of how to explain environmental policies to the general public. They define the "greenwashing" as the concept that companies purposefully label their operations as "green" in order to appear ecologically friendly. When an energy firm invests in environmental measures, stakeholders quickly assume greenwashing, according to their experimental study. Surprisingly, accusations of corporate greenwashing are diminished if the corporations disclose the economic drivers behind the environmental measures or acts. The impact of the disclosed purpose on perceived corporate greenwashing is moderated by suspicion of strategic organisational conduct. People who are not naturally particularly dubious of corporate communications in general tend to experience this indirect influence the most (de Vries, W. Terwel, Ellemers, & Daarmen, 2013).

The research conducted by Zhang, Li, Cao, & Huang (2018) investigates the ways in which consumers perceive greenwashing and the effects that greenwashing has, namely

whether or not it results in a competitive advantage. They used the attitude-behavior-context theory as the foundation for their study and looked at the mediating function of green Word of Mouth(WoM) and the moderating role of green concern to examine the effect mechanism of greenwashing perception on green purchase intentions. 553 surveys in the Chinese battery sector were used to gather consumer information. According to the research, green purchase intentions are adversely connected with perceptions of "greenwashing," with green WoM serving as a partial mediating factor while green worry heightens the negative correlation (Zhang, Li, Cao, & Huang, 2018).

Tetyana et al., (2020) conducted study on the effect that greenwashing has on the green brand of firms. They employed the Fishbourne, content analysis, and partial least-squares structural equation modelling (PLS-PM) methodologies. They estimate the greenwashing(GWI) using content analysis to reduce the subjective judgement. To do this, five questions were created:

1. The content on the social website was inaccurate regarding the business's green initiatives (G1);
2. On the company's website, there was no report on corporate social responsibility (G2);
3. The social media website's claims could not be backed up by actual facts (G3);
4. The company's website overstated the company's green accomplishments (G4);
5. The company's true business objectives were concealed by the content on the social page (G5).

The dataset was established by websites of the firms as well as their financial and non-financial disclosures. Ukrainian large industrial firms that operate on both the domestic and foreign markets served as the study's subject matter. The results showed that, with a load factor of 0.78, a one point rise in greenwashing results in a 0.56 point loss in the company's green brand. The content on social media that concealed the company's true economic objectives was the most important element (loading factor, 0.34) driving greenwashing. Consequently, a suggestion for businesses is to stop greenwashing by presenting in-depth social reports about their green policies and accomplishments (Pimonenko , Bilan , Horák , Starchenko , & Gajda , 2020).

Jong et al. (2018) investigated how greenwashing affects customers. They created a 4x2 randomised experimental design to ascertain if consumer behaviours for greenwashing, silent brown, vocal green, and silent green businesses are changing for hedonistic (such as perfume) or utilitarian items (such as detergent). The four environmental strategies represented various mixes of both environmental claims and environmental performance (positive vs. negative) (present vs. absent). For their analysis, they utilised 250 questionnaires. Multiple analysis of variance (MANOVA) was used to analyse the data. Product type (utilitarian and hedonic) and environmental strategy (vocal green, silent green, greenwashing, and silent brown) served as independent variables, and the dependent variables were perceived use of environmental claims, perceived integrity of the communication, perceived environmental performance, and purchase interest. Four environmental techniques were compared using the Tukey's B post hoc test to determine their differences. Four environmental techniques were compared using the Tukey's B post hoc test to determine their differences. Their findings demonstrate that greenwashing is not an effective marketing tactic for businesses since it has no influence on customers' intentions to make purchases. Greenwashing businesses are on par with silent brown businesses in the eyes of customers. Only real environmental concern appears to have the capacity to boost consumer spending. However, they also discovered that greenwashing has no real competitive advantage and only has a marginally beneficial impact on how the firm is seen to perform in terms of the environment (Jong, Harkink, & Barth, 2019).

The next year, Jong et al. (2020) investigated the effects of greenwashing on cruise industry customers. Based on a randomised 3x2 experimental investigation, they looked at the impacts of different levels of greenwashing. Based on behavioural claim greenwashing (an organisation stating the truth vs. its telling lies or half-lies) and motivation greenwashing, six experimental conditions were developed (an organisation acting on its own initiative vs. its taking credit for following legal obligations). The dependent variables were environmental performance, product and service quality, and financial performance. Lies and half-lies showed equal detrimental consequences on reputation as actual green conduct. Taking credit for upholding legal requirements has no significant impact. Unmerited claiming of credit had a detrimental impact on reputation only in the event of genuine green conduct. Overall, the results indicate that only genuine green activity will have the intended reputational benefits (Jong, Huluba, & Beldad, 2020).

A novel conception of greenwashing and its connection to the supply chain model were examined by Pizzetti et al. in 2019. The locus of disagreement, or the place along the supply chain where the difference between "responsible words" and "irresponsible walks," is where the research bases its analysis of greenwashing. They conducted three studies to examine the effects of various types of greenwashing on stakeholders' responses from both an ethical (blame attributions) and commercial (intention to invest) standpoint. The findings demonstrate that when greenwashing takes place at the corporate level (direct greenwashing), there is a higher level of blame attribution and a decrease in investment intention. If a supplier engages in improper activity that results in greenwashing (indirect greenwashing), the provider/source owner firm is not significantly impacted. If greenwashing happens as a result of a supplier failing to meet the company's sustainability requirements, this also harms investments (Pizzetti, Gatti, & Seele, 2021).

Olatosun & Nyazenga (2019) investigate greenwashing and perception management embedded in RI practise from the perspective of asset owners in Zimbabwe, a poor nation. To gather the information, semi-interviews are conducted. The study demonstrates the widespread symbolic use of impression management and "greenwashing". RI is utilised as a risk management tool as well as a marketing sign. Additionally, they discover that there are major differences between how foreign and domestic businesses operating in the local economy participate in ESG concerns and that the real ties between asset owners and the environmental repercussions in investee companies are negligible (Olatubosun & Nyazenga, 2019).

Akturan (2018) examined the connections between greenwashing, brand credibility, links with green products, and purchase intent. Her research used structural equation modelling and was based on a survey of 500 clients. She used a five-point Likert scale grading from strong disagreement to strong agreement to measure variables on multi-item scales. Greenwashing was adopted from Chen and Chang (2013), while green brand equity, brand credibility, brand associations, and buy intention were all taken from Chen and Chang (2012), Erdem and Swait (2004), Chang and Chen (2014). Her findings demonstrate that customer purchase intentions are favourably impacted by green brand equity and are positively influenced by green brand associations and brand

trustworthiness. Additionally, greenwashing has a negative impact on brand connections with sustainability and legitimacy, which in turn has an indirect impact on green brand equity and purchase intent.

Zhang et al. (2018) integrate the mediating effect of green word-of-mouth (WOM) and the moderating impact of green concern by utilising attitude-behavior-context theory to focus on consumers' views of greenwashing and its related implications, such as their green purchase intentions. 553 battery buyers in China are surveyed by questionnaire. They follow Laufer, (2003) and Chen and Chang (2012) in developing five measures to gauge consumer views of "greenwashing": “(1) The product misleads consumers about its environmental features through words; (2) The product misleads consumers about its environmental features through visuals or graphics; (3) The product is associated with a green claim that is ambiguous or appears to be unprovable; (4) The product overstates or exaggerates what its green functionality actually is; and (5) the product omits or conceals crucial details, making the green claim sound better than it is”. Their findings demonstrate that consumer views of greenwashing not only have a negative direct influence on intentions to buy green products, but also have a negative indirect impact via greenWOM. Furthermore, the negative correlation between perceptions of greenwashing and intentions to make green purchases is strengthened by green concern. To assure customers and boost sales, this research advises businesses to promote genuine environmental activities rather than greenwashing(Zhang, Li, Cao, & Huang, 2018).

3. THEORETICAL BACKGROUND

A socio-political perspective known as "greenwashing" contends that businesses should utilise ESG reports to boost stakeholders' views of the suitability of their firm's pro-social and pro-environmental efforts (Mahoney et al. 2013; Lyon and Maxwell, 2011). According to the legitimacy theory, stakeholder theory, and political economics of accounting theory, which are all part of the socio-political perspective, disclosure is a result of political and social forces. Gray et al. (1995) as cited in Mahoney et al. (2013) see political economy theory, which maintains that political, social, and institutional factors cannot be examined in isolation from the field of economics, as including both legitimacy and stakeholder theories (Mahoney, Thorne, Cecil, & LaGore, 2013).

It becomes clear from a survey of the literature that various theories of reporting behaviour are complimentary rather than antagonistic to one another. Several theoretical frameworks, including institutional theory, legitimacy theory, agency theory, and stakeholder theory, have been used by several academics to study CSR or ESG disclosure transparency such as (Freeman, 1984; Elijido-Ten et al., 2010; Snyder et al., 2003; Jensen and Meckling, 1976; Chan et al., 2013; Adams et al. 1998; Amran & Siti-Nabiha 2009; Bayoud et al. 2012; Deegan 2009 as cited in Tamimi and Sebatianelli, (2017).

According to the legitimacy theory, businesses may achieve and maintain legitimacy, fulfil their social obligations, and win the support of society by releasing pertinent financial information and taking part in non-financial CSR/ESG sustainability initiatives. Therefore, adherence to social norms and environmental criteria is encouraged and desired by society and stakeholders, but non-compliance with these standards can impair an organization's credibility and capacity to preserve its financial health. Companies provide information about their social and environmental practises to meet societal expectations according to Rezaee, 2016 as cited in Ming, (2019).

Delmas and Burbano (2016) use institutional theory to describe how the rise of greenwashing has been fueled by complicated market forces, regulatory pressure, organisational cultures, and managerial effects. Given the existence of various interest groups, such as activists working to protect the environment, the government expecting

compliance with its laws, non-governmental organisations requesting support for their initiatives, and customers demanding eco-friendly products, more attention would be required to prevent greenwashing, and the cases would be much more diverse (Olatubosun & Nyazenga, 2019).

“Greenwashing is the selective presentation of positive information without full disclosure of negative facts to generate an unrealistically optimistic company image” (Lyon & Maxwell, 2011). Given that it is challenging for stakeholders to evaluate enterprises' environmental or social performance directly, greenwashing is a major empirical phenomena in the context of organisations' interactions with the natural environment. As a result, consumers increasingly rely on businesses to communicate their commitment to the environment through ESG reports, advertising, corporate websites, and other means. There is legitimate concern regarding the discrepancy between what businesses say and do on environmental issues as a result of increased ESG transparency but no discernible meaningful changes in environmental or social consequences. Increased ESG disclosure has also given academics research topics and actual data to examine the behaviour of greenwashing, its causes, and its effects (e.g., Delmas & Burbano, 2011; Du, 2014; Walker & Wan, 2012; Yu, Luu, & Chen, 2020; Bowen & Correa, 2014.

Torelli et al. (2019) refer the previous studies that there are two primary reasons why businesses engage in greenwashing: “first, to gain legitimacy (Cormier & Magnan, 2015), in line with institutional (Oliver, 1991) and legitimacy theory; second, to signal to stakeholders their values in relation to environmental issues (Connelly, Certo, Ireland, & Reutzel, 2011), in line with signalling theory” (Torelli, Balluchi, & Lazzini, 2019).

Thus, the institutional context, stakeholder pressure, the need for the company to be accepted by society, and even the unique circumstances and traits of employees exercising formal or informal authority and leadership of the company may all have an impact on a firm's decision to report on social, environmental, and economic impacts of its activity (Blanco, Romero, & Feijoo, 2021).

The details of each theory are explained below in detail, but you can also see the main features of the three complementary theory as below:

Table 3. 1 Basic features of theories

	Stakeholder theory		
Legitimacy Theory	Ethical perspective	Managerial perspeuive	Institutional theory
1. Enriched by political economy theory	1. Enriched by political economy theory	1. Enriched by political economy theory	1. Enriched by political economy theory
2. A system-oriented theory	2. A system-oriented theory	2. A system-oriented theory	2. A system-oriented theory
3. Social contract	3. Accountability to all stakeholders, regardless of their power	3. Accountability_to all economically most powerful stakeholders	3. Emphasis survival value of conformity
4. Organizational legitimacy	4. Individual stakeholder view (high resolution view)	4. Selected individual stakeholder view(high resolution view)	4. All organizations are socially constructed and tend to conform to social norms and
5. Survivability_when the legitimacy gap exists, legitimating strategies are	5. An organisation tries to balance stakeholders with competing interests	5. An organization tries to manage critical stakeholders' competing interests and pressure.	5. Isomorphism - the process of homogenization – through coercive, mimetic and
6. Holistic Stakeholder View (low resolution view)	6. Responsibility driven than power or pressure driven	6. Stakeholders' power or pressure than responsbility driven	6. May occur decoupling;- the external expectation gap in organizational practice
7. Implicity expects stakeholders pressure and tries to respond through	7. Implicity expects organizational legitimacy, survavibablility, and stability among all stakeholders by	7. Implicity expects organizational legitimacy, survavibablility, and stability among powerful	7. Implicity expects organizational legitimacy, survavibablility, and stability
References:	References:		References
(Lindblom 1994; Deegan *et of.* 2000; Deegan 2002; Tilling 2004; Deephouse& Carter 2005; de Villiers &van Staden 2006; Blanco&Rodrigues 2008; Archelr et al.2009; Deegan 2009; Deegan&Samkin 2009; Gray et al. 2010)	(Freeman 1984; Ullmann 19S.S; Robert 1992; Freeman 1994; Clarkson l995; Donaldson & Preston 1995; 2005; Belal&Owen 2007; Branco & Rodrigues 2007; Islam & Deegan 2008; O'Riordan&Fairbass 2008; Carroll & Buchholtz 2009; Deegan 2009; Weiss 2009; Gray et al. 2010; Russo & Perrini 2010; Bayoud et.al. 2012)		(DiMaggio & Powell 1983; Carpenter & Feroz 2001; Rahaman et al. 2004; Scott 2004; Deephouse &Carter 2005; Moll et al. 2006; Campbell 2007; Amran&Siti-Nabiha 2009; Berrone&Gomez- Mejia 2009; Gray et al. 2009; Archel et al. 2011)

Source: (Fernando & Lawrence, 2014)

3.1. Legitimacy Theory

"Legitimacy is the common assumption or view that an entity's activities are desirable and appropriate, according to a socially built system of norms, values, beliefs, and definitions" Burlea, A. S., & Popa, I. (2013). The theory was developed by Dowling and Pfeffer in 1975. According to legitimacy theory, the organisation is a component of a larger social system that influences and is impacted by other social groupings. The legitimacy theory's key claim is that organisations may exist or thrive provided they get support from society. If the organisation is seen as living up to the expectations of the society with whom they interact, this support will grow. The social contract is created,

according to Deegan et al. (2000)'s explanation in their book, when society is satisfied that an organisation is acting in a morally righteous or respectable way. If not, the social compact will be violated, and the organisation will no longer be legitimate. The social contract may be tacit or explicit in some instances. Implicit phrases pertain to social norms, whereas explicit terms refer to legal obligations (Deegan et al., 2019).

According to Suchman (1995), who is quoted by Luke and Eversole (2013), there are three different sorts of legitimacy: moral or normative legitimacy, pragmatic legitimacy, and cognitive legitimacy. When an organization's operations align with societal standards and perceptions of what is proper and important, this cognitive approach is relevant. Moral legitimacy is tied to generally recognised norms, standards, and ideals, whereas pragmatic legitimacy refers to stakeholder interests and advantages.Three methods can be used to address legitimacy (Suchman, 1995): "informing (communicating using authorised or acceptable symbols and vocabularies), conforming (isomorphism through coercive, mimetic, or normative pressures), and manipulating (encouraging valued activities outside established or recognised norms)". Greenwashing happens as a result of altering norms and values and pragmatic validity (de Freitas Netto, 2020).

According to legitimacy theory, an organisation should prioritise the rights and expectations of the general public over those of its stakeholders. If public expectations are not satisfied, businesses may be subject to fines or boycotts. The non-financial, non-environmental, and non-social information that firms provide as part of their plan is one activity that is helped to comprehend or foresee by this idea. As a result, it serves as a theoretical foundation for reporting on ESG (de Silva Lokuwaduge, C. S., & de Silva, K., 2020). This makes it possible for businesses to recognise their goals and to survive in a chaotic environment Burlea, A. S., & Popa, I. (2013). Legitimacy theory emphasises the importance of a company's legitimacy to its existence.

On the other hand, norms and the society expectations are changing continuously therefore it is not easy to manage the company and to align objectives all the time in line societal expectation. This phenomenon is described by Deegan as the legitimacy gap, a lack of correspondence between how society feels an organisation should behave and how it is seen to have behaved. The gaps may be the consequence of shifting social expectations or a lack of synchronised organisational response to change. Such

legitimization gaps or threats might take the form of a financial scandal, fraud, events, or severe accident, all of which have a negative impact on the company's reputation. The organisations must adapt in order to acquire, retain, and recover credibility Cowan, S., & Deegan, C. (2011). If a corporation executes a legitimization plan, it may overcome legitimacy gaps. Lindblom (1994) proposed four legitimization strategies: “educate relevant stakeholders about its actual performance; change the perceptions of the relevant stakeholders about the underlying issue without changing the company's behaviour; distract or manipulate the attention away from the issue of concern and attempt to divert the attention to a favourable issue; and/or attempt to change external expectations about the company's performance” (Fernando & Lawrence, 2014).

According to Laufer (2003), proponents of the legitimacy thesis affirm that “social and environmental disclosures are often made for strategic reasons unrelated to perceived responsibilities or obligations (Deegan et al., 2002; O’Donovan, 1999; Brown and Deegan, 1998; Deegan and Gordon, 1996). These strategies changes from designed to gain or to extend legitimacy, to maintain its level of current legitimacy, or to repair or to defend its lost or threatened legitimacy” (O’Donovan, 2002, p. 349) as cited in Laufer, (2003).

Balluchi, F., Lazzini, A., & Torelli, R. (2020) cites to Chen & Chang (2013), Du (2015), Testa, Boiral, & Irald (2018), and Vries, Terwel, Ellemers, & Daamen (2015) as academics who have attempted to explain why and how businesses engage in "greenwashing." According to Walker and Wan (2012), corporations engage in greenwashing for two primary reasons: to achieve legitimacy (legitimacy theory; Suchman, 1995) and to express their beliefs towards green problems to stakeholders (signalling theory) through symbolic activities or "green speak".

Hrasky (2012) investigated if various legitimation techniques are supported by various fictitious (graphs, pictures) instruments. He emphasised that any firm may adopt a symbolic strategy to acquire pragmatic legitimacy and act appropriately by making rhetorical disclosures that are inconsistent with operational practise and reality. The purpose of these disclosures is to give the appearance of good corporate citizenship in the absence of actions that support this assertion. However, moral legitimacy can only be pursued by those whose activities and achievements coincide with the sustainability

features, and the company's disclosure supports this claim. The more sustainability-driven a company is, the more likely it is to adopt a behavioural strategy to seek moral legitimacy, as the plan must be based on the operational realities of sustainable conduct. Sustainability-driven businesses take activities to promote environmentally and socially responsible behaviours, and they are able to report on the results of these initiatives. In pursuit of pragmatic legitimacy, it is argued that less sustainability-driven corporations would embrace a more symbolic approach to disclosure. In such a circumstance, the purpose of the disclosure is to create an appearance of accountability without disclosing specific acts or results (Hrasky, 2012).

In his essay, Hrasky (2012) also discusses the "self-dilemma" promoter's (Ashforth & Gibbs, 1990; Morsing & Schultz, 2006; Pomering & Johnson, 2009). Self-promotion paradox is explained by the fact that excessive disclosure is difficult to verify (Arvidsson, 2010), hence diminishing the disclosure's credibility. This raises the likelihood that stakeholders would view it as mere window dressing, resulting in a poor stakeholders perceptions about its validity. Because corporations seeking moral legitimacy have more objective, instrumental data to disclose, it is anticipated that they will utilise fewer images than their pragmatic competitors. The former are required to employ imagery to grab the reader's attention, but subsequently rely on more objective disclosures to impact stakeholder evaluations of legitimacy (Hrasky, 2012).
He discovered that less sustainable organisations prefer to utilise legitimacy metaphorically via symbols, whereas sustainability-driven organisations emphasise actual consequences and achievements. Therefore, it appears that some sustainability reporters use visuals as a "green-washing" device in their engagement with stakeholders (Hrasky, 2012).

According to Baldini et al. (2016), the legitimacy theory emphasises the significance of public approval in maintaining the longevity of a business (Singh et al. 1986). Organizations use ESG disclosure as a strategy to be perceived as socially conscious and to engage in acceptable stakeholder expectations (Beelitz and Merkl-Davies 2012; Dowling and Pfeffer 1975; Palazzo and Scherer 2006).

Consequently, previous researchers utilised this legitimacy theory to explain how firm-level variables impact ESG disclosure levels Adams et al. 1998; Branco and Rodrigues 2008b; Claasen and Roloff 2012; Milne and Patten 2002 as cited by Baldini, Maso,

Liberatore, Mazzi, & Terzani, (2018). Numerous ESG-related studies have utilized legitimacy theory since ESG reporting promotes the legitimacy of enterprises. Several writers (Buallay, 2019b; Forcadell & Aracil, 2017), as stated by Bătaea et al. (2020) observed that ESG engagement of the banks boosted the organisations' legitimacy by demonstrating that profitability and the requirements and expectations of stakeholders can be managed concurrently (Bătaea, Dragomir, & Feleagă, 2020). In addition, several studies (Gray, Kouhy, and Lavers, 1995; Martinez-Ferrero et al., 2014) have observed that ESG-oriented organisations not only prioritise the requirements and benefits of stakeholders, but also socially built norms, values, and beliefs (Adiasih & Lianawati, 2019). Consequently, an organisation might modify the facts to establish legitimacy.

Legitimacy is advantageous for businesses because it generates a favourable reputation, stronger trade ties, more qualified employment candidates, easier access to resources, and enhanced financial performance (DiMaggio & Powell, 1983; Oliver, 1991; Aldrich & Fiol, 1994; Deephouse, 1999; Babiak & Trendafilova, 2011; Prakash, 2002; Walker & Wan, 2012) as cited in Torelli, Balluchi, & Lazzini, (2019). Therefore, businesses voluntarily report on sustainability in order to obtain these advantages and bring together varied stakeholders in order to establish legitimacy. However, it also causes gaps in comparability, comprehensiveness, and dependability, which reduces the usefulness of voluntarily supplied data for informing choices Hahn et al. (2015). The organisations have adequate incentives to promote themselves as sustainable businesses, but the absence of internal and external accountability procedures makes it difficult to establish sufficient legitimacy (Lashitew, 2021).

The fundamental drawback of the Legitimacy hypothesis, according to Fernando & Lawrence (2014), is that it cannot explain "why companies might choose not to disclose at all or to necessarily tell us why disclosure might be so selective" (Gray et al. 2010) as cited in Fernando &Lawrence (2014). Other academics, however, identify the primary cause of greenwashing as fostering good corporate citizenship and improving legitimacy in the eyes of society. Firms publish separate CSR Reports to portray themselves as exemplary corporate citizens when they are not (Greer and Bruno, 1996) as cited in Mahoney et al. (2013). Greenwashing is the selective disclosure of beneficial social and environmental efforts that results in deceptive and biassed reporting (Mahoney, Thorne, Cecil, & LaGore, 2013)

3.2. Stakeholder Theory

Ansoff invented the term stakeholder theory in 1965. After the mid-1980s, the term's usage increased. The primary sources are Freeman (1984; Freeman1994; 2005) and a few other academics (for example, Clarkson 1994; Donaldson & Preston 1995; Clarkson 1995; Harrison & Freeman 1999; Branco & Rodrigues 2007; Carroll & Buchholtz 2009). Freeman (1984), as referenced by Fernando and Lawrance (2014), defines a stakeholder as "any group or individual who can affect or is affected by the achievement of the firm's objectives". Using Freeman's definition as a starting point, different scholars have identified "stakeholders as shareholders, employees, and customers (Preston & Sapienza, 1990); single issue, and multiple issue stakeholders (Wood, 1994); supportive, marginal, non-supportive, and mixed blessing stakeholders (Savage et al., 1991); voluntary and involuntary stakeholders (Clarkson, 1994); and primary and secondary stakeholders (Clarkson, 1995)" as cited in Fernando & Lawrence, (2014). The primary purpose of this difference is to demonstrate that the subgroup of stakeholders may have diverse and competing expectations.

According to stakeholder theory, firms must prioritise serving a broader range of interests than merely shareholder wealth. They should not only consider the financial success of the company, but also its social performance. They should attempt to comprehend, respect, and address the requirements of all stakeholders with an interest in the organization's activities and outcomes. According to stakeholder theory, including stakeholders in business decisions is both an ethical duty and a strategic asset that contributes to the competitive advantages of a firm (Miles, 2012).

It is essential that the interests of all stakeholders, not just the favourable ones, be taken into account. The corporations employ methods such as CSR Reporting, ESG reporting, and other non-financial reports to build favourable stakeholder perceptions (Sila & Cek, 2017).

Stakeholder theory suggests that organizations encourage efforts to protect the environment, promote increasing social welfare and relations, and mostly seek to

maximise the value of governance aspects. Therefore, good management companies focus on increasing stakeholder value and engage more in ESG activities. Peng and Isa (2020) state that ESG activities create synergy in the firms' market performance, such that highly satisfied employees will be more engaged in their jobs, satisfied clients will be more loyal, satisfied vendors will provide better quality and discounted services. Therefore, the organization will have an opportunity to enhance financial and market performance with sustainable features. (Peng & Isa, 2020). Therefore, we hypothesize that the companies that have a good governance score will have less greenwashing compared to others because the stakeholders are supposed to work as they promised.

Schons & Steinmeier (2015) investigated if and how a company's symbolic ("talk") and substantive ("walk") Corporate Social Responsibility (CSR) actions have an impact on financial performance based on the primary stakeholder group. They are directed at (i.e., high-proximity internal stakeholders such as employees versus low-proximity external stakeholders such as customers or the wider society). "Stakeholder proximity, which is characterised by closeness of stakeholders to the company and a high level of involvement in a firm's operations, allows enhanced visibility and control over the actions of the organization". When focused at high-proximity stakeholders, substantive/symbolic CSR efforts have a positive impact/no impact on financial performance, but the opposite is true when directed at low-proximity stakeholders. It is also noticed that low-proximity stakeholders have a more difficult time distinguishing discourse from action. This research revealed that green-washing is rewarded if it is directed at low-proximity stakeholders, but only high-proximity stakeholders reward real CSR initiatives (Schons & Steinmeier, 2015).

Olatubosun & Nyazenga (2019) investigate how the demand of stakeholders on Responsible Investment (RI) affects greenwashing. Since there are multiple interest groups involved, including politicians, activists, non-governmental organisation, and consumers, it is likely that more focus will be placed on greenwashing and that the focus will continue to shift as stakeholders become more sophisticated. They discovered that the perceived positive effects of stakeholders' desire for environmentally friendly products and services led to an increase in pressure to present RI views to stakeholders, resulting in an increase in greenwashing and impression management, even when the

reality differs from the content of such external communication (Olatubosun & Nyazenga, 2019).

According to Mahoney's papers cited by Uyar et al. (2020), socio-political theories (political economy, legitimacy, stakeholder theory) hypothesise that companies with poor ESG performance will be more likely to voluntarily disclose their CSR initiatives due to increased public pressure (Patten, 2002). In such instances, voluntary disclosures try to modify a person's reputation. Both signalling theory and socio-political (political economy, legitimacy, stakeholder theory) theories assume that corporations will be penalised by stakeholders if they conduct recklessly and that transparency incurs expenses (Mahoney et al., 2013). However, two theoretical frameworks approach correct reporting differently (Mahoney et al. 2013). Socio-political theories suggest that voluntary company disclosures are susceptible to interpretation and greenwashing tendencies, whereas signalling theory implies that firms prefer to report their social and environmental consequences properly (Hahn and Lülfs, 2014) as cited in Uyar , Karaman, & Kilic, (2020).

In addition, a survey of the literature indicates three theoretical levels of analysis to better comprehend CSR research. According to Blanco et al. (2021), the macro-level is dominated by the institutional theory (Simnett, Vanstraelen and Chua, 2009; Kolk and Perego, 2010), which states that organisations behave similarly to their counterparts in their environment. Consequently, firms exhibit isomorphic behaviours due to institutional environment variables (like country and industry). The institutional environment at the macro level influences the sustainability strategy, conduct, and communication of businesses. Stakeholder theory mostly reflects the second level, or meso-level. The relationship between a company and its stakeholders is anticipated to be bidirectional: the stakeholders will impact the company, and vice versa. Consequently, the stakeholder ecosystem, or meso-level, will influence the strategy, behaviour, and communication of businesses about sustainability. Companies identify their major stakeholders and construct their legitimacy and strategy by considering the expectations of society in general and their key stakeholders in particular. Consequently, reputational risk evaluations at the meso-level must take into consideration the pressure exerted by stakeholders and their capacity to evaluate the company's behaviour. Therefore, it is

essential to comprehend greenwashing. Last but not least, the micro-level, at the person level, considers that individuals have an impact on CSR. There are few research on the effect of individual approach on CSR, although Blanco et al. (2021) cited the agency theory to describe the function of the top management team in defining the CSR policy of a firm (Barnea and Rubin, 2010; Faleye and Trahan, 2011). Thus, individuals inside the organisation, or the micro-level, influence the firm's sustainability strategy, behaviour, and communication (Blanco, Romero, & Feijoo, 2021). Our thesis will likewise emphasise these three levels.

From a socio-political standpoint, “greenwashing proposes that companies utilise standalone CSR reports to influence and enhance stakeholders' perceptions of the appropriateness of their firm's pro social and environmental efforts Guidry and Patten, (2010) as cited in Lyon and Maxwell, (2011). The socio-political viewpoint is comprised of legitimacy theory, stakeholder theory, and political economy of accounting theory, all of which argue that environmental disclosure is a result of political and social forces (Clarkson et al., 2008; Gray et al., 1995). Gray et al. (1995) regard both legitimacy and stakeholder theories to be part of political economy theory, which asserts that the field of economics cannot be examined in isolation from political, social, and institutional factors”. This theory is also compatible with Holder-Webb et al. (2009) as cited in Lyon and Maxwell, (2011), who posit that CSR disclosures are conducted to establish or maintain credibility with the social context. When the firm's value system aligns with that of its stakeholders, legitimacy occurs.

Therefore, we hypothesise that companies with a high number of disclosures have a greater tendency to engage in "greenwashing" in order to deal with stakeholder pressures and increase legitimization.

3.3. New Institutional Theory

Institutions are a significant component of the environment, according to institutional theory. Institutions have been characterised as "regulatory, normative, and cognitive structures and activities that provide social behaviour stability and significance" (Scott,

1995, p. 33). Laws, rules, conventions, social and professional standards, culture, and ethics are examples of institutions (Miles, 2012).

Institutionalization refers to the process through which an institution attains a stable and long-lasting condition or property.

Institutional theory: the study of how organisations might enhance their potential to expand and survive in a competitive environment by gaining legitimacy in the eyes of their stakeholders. Powell and DiMaggio (1991) reject the rational-actor models of Classical economics in their definition of the 'new institutionalism', a developing position in organisation theory and sociology. The processes of institutions are determined by regulatory, normative, and cultural cognitive aspects. It also takes behavioural and material resources into consideration, as rules and norms are implemented or altered by human conduct.

There are 3 Pillars of Institutional Theory:

- Regulatory Pillar: Institutions utilise their ability to create norms, monitor others' compliance with them, and adjust sanctions-rewards or punishments to enforce compliance. They may function via diffuse informal methods (shaming) or be highly structured and allocated to specialist players.
- Normative Pillar (values and norms): Institutions define their values in order to achieve a specific result. They can also compare their standards using the same or comparable norms or criteria. Goals and objectives are specified by normative systems.
- Cultural- cognitive pillar: It also defines how the external cultural forms are interpreted within the individual. It determines how meanings are established.

According to Miles (2012) citing DiMaggio and Powell (1983), institutional theory explains why organisations in a given field tend to appear and behave similarly. The central tenet of institutional theory is that organisations tend to adopt the vision, purpose, organisational structures, and procedures of other organisations (Miles, 2012). Institutional theorists think that there are externally powerful institutions that exert a major effect on the decision-making of individual enterprises. In order to thrive,

companies must align themselves with the prevailing belief systems and social conventions in their surroundings (Burns, 2017).

Early in the life cycle of an organisation, organisational structures vary greatly. Over time, organisational processes, structures, and practises display a remarkable degree of similarity. There are two aspects to institutional theory: *isomorphism* and *decoupling*. The three sorts of isomorphic pressure that institutions exert on organisations are coercive, normative, and mimetic. *Coercive isomorphism* refers to pressure exerted by entities on which an organisation depends for resources. Following professional norms and practises created via education and training techniques, professional networks, and employee mobility is referred to as *normative isomorphism*. *Mimetic isomorphism* refers to the imitation or replication of other successful organisations when a company lacks direction (Miles, 2012).

Decoupling is the separation between an organization's external image and its actual structures, procedures, or practises. Therefore, the organisation may not conform to external expectations, and decoupling may be purposeful or unintended. Deegan, (2009), in relating decoupling to CSR reporting practice, states "this decoupling can be linked to some of the insights from legitimacy theory, whereby social and environmental disclosures can be used to construct an organizational image that might be very different from the actual organizational social and environmental performance. Thus, the organizational image constructed through corporate reports might be one of social and environmental responsibility when the actual managerial imperative is maximization of profitability or shareholder value" (Fernando & Lawrence, 2014). Thus, greenwashing is a decoupling approach that seeks to increase legitimacy and signaling conformance without actually adhering (Delmas and Burbano 2011). This typically manifests as a preference for symbolic activities, such as policy claims and standards of behaviour Christmann and Taylor, (2006), social accreditations, or green labels Weaver et al. (1999) Walker and Wan, (2012) as cited in (Roulet & Touboul, 2015).

Lyon & Montgomery (2013) explain that "decoupling as a strategic action (Boxenbaum & Jonsson, 2008) enables organisations to proactively frame communications to their stakeholders in a comprehensive process of sense-making (Fiss & Zajac, 2006) or

impression management (Elsbach and Sutton 1992)". Within the CSR arena, Aguinis and Glavas (2012) observe corporations engaging in "symbolic rather than genuine actions" and decoupling in order to satisfy "minimal requirements" and "appease stakeholders". Decoupling is commonly referred to as "greenwash" in the environmental field (Bansal and Clelland 2004; Ramus and Montiel 2005). Internal and external pressures, however, are unlikely to allow inconsistencies between corporate commitments and actions to persist indefinitely (Fiss and Zajac 2006), and they may eventually lead to "recoupling" as actors seek to adapt actual practises to publicly stated policies (Tilcsik 2010; Bromley and Powell 2012; Espeland 1998; Sandholtz 2012), even if such policies were initially adopted purely symbolically. This research demonstrates that organisations' ability to successfully greenwash may deteriorate with time as a result of stakeholder pressures.

Although the literature on recoupling depicts some of the ways in which decoupling can be disputed over time, it has not explicitly addressed the topic of greenwashing. More crucially, the decoupling literature offers little concrete insight into how increasing transparency and information availability may limit decoupling behaviours, such as corporate greenwashing. As a result, we supplement this work with ideas from information economics in order to improve institutional knowledge of greenwashing (Lyon & Montgomery, 2013).

Larger social structures, such as public and private regulation, as well as the presence of non-governmental and other independent organisations that monitor business activity, have an impact on companies (DiMaggio and Powell 1983; Campbell et al. 1991; Campbell 2007). Numerous studies utilised the new institutional theory to explain the effect of country-level features on ESG disclosure behaviour of corporations (Oliver 1991; Jackson and Apostolakou 2010; Muthuri and Gilbert 2011) as cited in (Baldini, Maso, Liberatore, Mazzi, & Terzani, 2018).

Baldini et al. (2018) investigated whether social structures (i.e., institutional theory) and social legitimization (i.e., legitimacy theory) had an impact on ESG disclosure practises and each pillar. Employing institutional theory, they observed that country-level characteristics associated with the social context in which a company works have a substantial effect on ESG disclosure levels (also studied by Ioannou and Serafeim 2012).

Using legitimacy theory, they discovered that firm-level indicators expressing social needs and company visibility significantly influence ESG disclosure and each pillar (Baldini, Maso, Liberatore, Mazzi, & Terzani, 2018). We hypothesise that the country-level characteristics influence the greenwashing conduct of corporations by taken into consideration the institutional theory and firm level factors will associate with the greenwashing by taken into consideration legitimacy theory.

Weber (2014), as mentioned by Sharma et al. (2020), describes the significance of ESG reporting based on three rationales: “institutional theory, accountability, and stakeholder management”. ESG reporting is based on institutional theory; businesses respond to institutional pressures pertaining to ESG practises. Accountability describes how firms are accountable to their stakeholders; consequently, they report on environmental, social, and governance (ESG) issues. Weber (2014) describes, according to the third idea of stakeholder management, the importance of ESG reporting, financial performance, and returns to stakeholders. Both firms and investors must contemplate the future in order to survive and thrive in the marketplace (Sharma, Panday, & Dangwal, 2020).

In accordance with the new institutionalism perspective, a company may alter its CSR-related behaviours in accordance with the criteria of major ESG ratings due to its assumed, "best" or "most appropriate" status. Conformity may also come from the coercive requirements of powerful groups that have the ability to penalise noncompliance through their control of vital resources. Investors are one such stakeholder group in the current setting (Amel- Zadeh and Serafeim 2018) as cited in (Clementino & Perkins, 2019). Another possibility is that companies may attempt to replicate the ESG policies, practises, and scores of peers that they perceive to be important or successful—a sort of mimetic isomorphism that could be created by benchmarking initiatives (Clementino & Perkins, 2019).

Schons and Steinmeier (2015) base their model on neo-institutional theory in order to derive their understanding of symbolic and substantial CSR acts (Meyer & Rowan, 1977; Pfeffer, 1981; DiMaggio & Powell, 1983; Ashforth & Gibbs, 1990). Substantive CSR initiatives mean genuine changes at an operational level, often involve observable and

quantifiable activity that demands the utilisation of a company's resources (Weaver et al. 1999; Zott & Huy, 2007). According to neo-institutional theory, symbolic gestures enable corporations to at least appear to meet stakeholders' wishes or expectations without incurring substantial expenses or modifying business operations (Meyer & Rowan, 1977; DiMaggio & Powell, 1983). In certain instances, even rhetorical conformity can enhance the legitimacy of a company (Oliver, 1991). However, previous research indicates that symbolic activities are not always rewarded positively (Westphal & Zajac, 1998; Walker & Wan, 2012) as cited in (Schons & Steinmeier, 2015). The distinction between symbolic and practical CSR initiatives is seen as greenwashing.

Based on institutional theory and game theory, He et al. (2020) investigates how alternative environmental regulatory techniques influence contractor Green-washing Behaviors (GWB) in building projects. They note that environmental rules (coercive pressure) are the most significant component in managing GWB and are employed as an institutional strategy. The primary cause of GWB is hazy government laws. It can be avoided through government penalties (coercive pressure), media pressures, negative list publications, "eco-labeling," green certifications by third parties (normative pressure), and green subsidies (coercive pressure). However, their research reveals that these techniques can only prevent GWB if the government has appropriate regulatory authority. The effectiveness of government fines and green subsidies may be diminished. This study provides a theoretical foundation for harmonising the preventative strategies of contractor GWBs (He, et al., 2020). In our thesis, we will examine the impact of the rule of law on the institutional pressures of organisations and on the GW behaviour of those organisations.

Current studies on greenwashing have focused mostly on firms' verbal rhetoric and message, according to novel researchers Lyon & Montgomery (2015). The function of visual imagery and rhetoric in influencing green communications and message has received little consideration. New research in communications, marketing, and even institutional theory investigates the persuasive role of visual rhetoric and semiotics (e.g., Scott & Batra, 2003; Birdsell & Groarke, 2007; Lefsrud, Graves, & Phillips, 2014), suggesting that visual imagery may be more attention-grabbing, elicit richer inferences, be more pleasurable, and ultimately be more persuasive than verbal statements (e.g., McQuarrie & Mick, 2003) as cited in Lyon & Montgomery, (2015).

Delmas and Burbano (2011) based their model on institutional theory, which highlights the significance of regulatory, normative, and cognitive variables in enterprises' decisions to adopt particular organisational practises (Delmas & Burbano, 2011).

Marquis et al. (2016) look for organisational and institutional features that predict whether corporate environmental disclosure suggests higher responsibility or greater symbolic action in the form of greenwashing. Companies are less likely to engage in selective disclosure, focusing instead on organisational and structural characteristics that heighten scrutiny and expectations of transparency and promote civil society mobilization. In the period 2004–2007, they evaluate their assumptions using a novel panel data set consisting of 4,750 public enterprises spanning numerous industries and headquartered in 45 countries. Results indicate that enterprises that are more environmentally destructive, particularly in nations where they are more subject to inspection and worldwide standards, are less likely to engage in selective disclosure (Marquis, Toffel, & Zhou, 2016).

3.4. Signaling Theory

Signaling theory is mainly inspired by biology while examining communication between individuals, species, and across species. The intuitive aspect of Michael Spence's signalling theory led to its adaptation to numerous other fields, including Human Resource Management, business, and financial markets. In accordance with signalling theory, one party (agent) sends the message and the other party (receiver) receives it (the principle). A knowledge gap may exist between the agent and the principal. This theory is important for examining how parties with different information interpret signals (Torelli, Balluchi, & Lazzini, 2019).

According to the signalling theory, as mentioned by Uyar et al. (2020) to Mahoney et al. (2013), corporations with higher social and environmental ratings will be more willing to engage in voluntary CSR reporting in order to avoid the adverse selection problem. On the other hand, socio-political theories (political economy, legitimacy, stakeholder theory) postulate that corporations with poor social and environmental performance will be more willing to voluntarily disclose their CSR initiatives due to increased public pressure. Both signalling theory and socio-political (political economy, legitimacy,

stakeholder theory) theories predict that irresponsible corporations would be penalised by their stakeholders. Moreover, both theories argue that transparency is expensive. However, two theoretical viewpoints on truthfulness in reporting differ in their approach. According to Uyar et al. (2020) and Hahn and Lulfs (2014), signalling theory implies that corporations tend to report their social and environmental consequences accurately, but socio-political theories assume that voluntary corporate disclosures are susceptible to interpretation and greenwashing (Uyar , Karaman, & Kilic, 2020).

Mahoney et al. (2013) cites several authors (Clarkson et al., 2008; Al-Tuwaijri et al., 2004; Brammer and Pavelin, 2004; Berthelot et al., 2003) that signalling theory is built on voluntary disclosure theory, which posits that organisations use standalone CSR Reports as a signal of their high commitment to CSR. Disclosure of their actual superiority in terms of CSR actions on a voluntarily basis. Voluntary disclosure theory says that "good" corporations will utilise standalone CSR Reports to demonstrate that they are "good" corporate citizens (cf., Dye, 1985; Lizzeri, 1999). Even though disclosure is expensive, "good" firms will gain from informing stakeholders of their "good" performance, whereas "bad" enterprises may be punished by stakeholders (e.g., Verrecchia, 1983). Consequently, companies will engage in voluntary disclosure when the benefits of providing standalone optional information, such as CSR Reports, offset the related expenses (Li et al., 1997). As applied to CSR performance, Prado-Lorenzo and Garcia-Sánchez (2010) contend that organisations with superior CSR performance will seek a competitive advantage by proactively disclosing pertinent CSR information. Therefore, organisations with poor CSR performance will avoid disseminating CSR-related information that could harm their reputations. Greenwashing suggests that companies use standalone CSR Reports to pose as "good" corporate citizens when they are not, through biassed reporting that tends to be overly positive about their pro-social and environmental actions, while ignoring or avoiding the reporting of negative social and environmental actions (Lindblom, 1994; Adams et al., 1995; Adams, 2004) as cited in Mahoney, Thorne, Cecil, & LaGore, (2013).

There are two reasons why companies participate in greenwashing. According to institutional theory, the primary motive is to achieve legitimacy (Oliver 1991). Second, signalling theory (Connelly et al. 2011) suggests that appearing to comply to green norms

through symbolic gestures or green language can effectively indicate to external stakeholders a company's values about green concerns (Ramus and Montiel 2005). In terms of implementation, managers may prefer symbolic activities over substantive measures on environmental issues because communicating green principles is easier and allows for greater internal flexibility than adopting these values through actions (Suchman 1995). Russo and Harrison (2005) discovered, for instance, that ISO 14001 certification was curiously connected with higher levels of harmful air emissions. They hypothesised that this may be due to the fact that certification gives the image of being green without enforcing the company to take any substantial activities. Similarly, there is evidence of green-washing in the establishment of corporate governance systems (Westphal and Zajac 1994; Zajac and Westphal 1995) and in the formulation of corporate ethics codes (Weaver et al. 1999) as cited in Walker & Wan, (2011).

However, for corporations in areas like as consumer goods (e.g., Body Shop) or retail (e.g., Starbucks), symbolic acts or green highlighting can be significant indicators of the firms' environmental principles. Such signals can serve as a significant symbolic brand attribute to attract consumers who share similar beliefs, while also distinguishing the company from competitors which do not display such values (Walker & Wan, 2011).

Torelli et al. (2019) investigates the impact of several types of deceptive messaging about environmental issues on stakeholders' views of corporate environmental responsibility and greenwashing. When firms engage in solely symbolic gestures to convey their values to stakeholders and refer to the environment and green concerns in a deceptive manner, they are engaging in "green talk" without a "green walk". These businesses exploit the inherent knowledge imbalance between the signaler and the receiver. Signaling theory is valuable for analysing how parties with access to diverse information interpret signals (Connelly et al. 2011) and for examining the distorting effect of greenwashing (Seele & Gatti, 2017). Diverse types of communication (e.g., different methods behind the labels, sustainability reports, institutional communications, and strategic behaviours) resulting from varied methodologies and strategic decisions yield different levels of greenwashing (Torelli, Balluchi, & Lazzini, 2019).

Signaling and voluntary disclosure theories provide an economic justification for why sustainability reporting is a technique for establishing legitimacy. According to Stiglitz (2000), “there are important asymmetries of information, and the extent of information asymmetries is affected by actions of firms and individuals”. Standards and guidelines diminish the performance reporting gap (Adams, 2004). According to signalling theory (Spence, 1973), better-informed agents (managers) utilise signals to lessen information asymmetry with less-informed agents (stakeholders) and legitimate their action. Given this theory and the principles described by Connelly et al. (2011), managers in sustainability-focused firms signal the unobservable (quality of their commitment to sustainability) by reporting observable facts to lessen information asymmetry. Various signals are utilised. The observable information is typically communicated via a sustainability report, such as a stand-alone or integrated report; following a reporting standard (such as GRI criteria); or upgrading the quality of the information provided (e.g. external assurance statement). All of them are regarded CSR communication management and information asymmetry reduction techniques. Therefore, it is anticipated that businesses employing these techniques to promote their CSR performance will be less likely to engage in greenwashing.

In accordance with the signalling and voluntary disclosure theories, managers (the better-informed party) use voluntary reports to communicate with stakeholders (less-informed party). Reporting methods also serve as legitimacy mechanisms, establishing a channel of contact between companies and their stakeholders (Blanco, Romero, & Feijoo, 2021).

The fact that sustainability disclosure is influenced by strategic concerns, such as stakeholder demand and signalling, further diminishes the credibility of sustainability reports. In the context of voluntary, unaudited disclosure, there is a substantial risk that corporations may disclose favourable information rather than accurate, impartial data. To modify public impressions and protect their validity, businesses could, for instance, provide a subset of their sustainability performance data. Thus, unverified claims of SDG adoption could enable certain firms to appear as sustainable without having a substantial influence on their stakeholders' lives (Lashitew, 2021).

3.5. Agency Theory

The principal-agent theory is concerned with the problem of directors running a firm while shareholders own it. A situation was observed in which directors may not act in the best interests of shareholders (or other stakeholders). The agency theory tackles this issue and investigates potential solutions.

In the corporate governance discussion, agency theory can help to understand the actions of the various interest groups. Historically, the same individuals owned and operated businesses. Due to economic and scale expansion, a greater number of investors were required to supply financing for company expansion. This resulted in the formation of limited liability and stock markets for buying and selling shares.

Agency theory refers to the knowledge asymmetry between major shareholders and minority shareholders, as well as between principals and directors or firm managers. Two models explain the asymmetry of information: It can be either hidden activities (the shareholder only sees the final results) or hidden information (the shareholders might not know the vital info needed to perform those actions). This information asymmetry may result in two major agency problems: adverse selection (an agent may overstate a favourable condition in their favour) and moral hazard (the agent might not deliver the promised outcomes in order to get max compensation with min effort).

In their article, Raimo et al. (2021) mention agency theory and the asymmetry of information between lenders and agencies. They recommend that organisations offer more precise information (Mazumdar & Singupta, 2005) in order to decrease costly knowledge asymmetries between managers and lenders, lower agency costs, and prevent adverse selection (Dye, 1985; Verrecchia, 1983). In fact, more disclosure could result in a cheaper cost of debt for these enterprises by reducing knowledge asymmetries and agency costs (Aman & Nguyen, 2013; Armstrong et al., 2010; Bryl & Fijałkowska, 2020; Diamond & Verrecchia, 1991; Healy & Palepu, 2001; La Rosa et al., 2018). In addition, they believe that the beneficial effect of disclosure in reducing information asymmetries can be extended to ESG disclosure and that ESG disclosure can serve as a mechanism for communicating information that is not included in the financial disclosure (Raimo, Caragnano, Zito, Vitolla, & Mariani, 2021).

Strong corporate governance enables the resolution of agency theory issues and boosts the firm's worth. In many circumstances, agency conflicts may emerge and can be mitigated by fostering trust in relationships with stakeholders (Bătaea, Dragomir, & Feleagă, 2020).

Peng and Isa (2020), citing the research of Jensen and Meckling's (1976) agency theory, argue that ESG engagement can be perceived as an agency problem between managers and shareholders because ESG expenditure is not in the best interests of shareholders because it is perceived as a direct outflow of funds that will reduce profits. Brown et al. (2006), Barnea and Rubin (2010), Schuler and Cording (2006), Allouche and Laroche (2005), Kao, Yeh, Wang and Fung (2018), and Borghesi, Houston and Naranjo (2014) as cited in Peng & Isa, (2020) are among the previous researchers to identify evidence consistent with agency theory.

There are three distinct ways in which agency concerns may arise in respect to ESG operations. The first is when managers use company resources for personal advantage. Managers may engage in ESG initiatives for their own advantage (Brown et al., 2006) or overinvest to get private rewards by enhancing their reputation as good citizens at the expense of shareholders (Barnea & Rubin, 2010). In this opinion, ESG participation is a net waste of business resources and, as a result, decreases firm performance. Second, ESG activities may force corporations to forego more lucrative projects (Schuler & Cording, 2006). Allouche and Laroche (2005) believe that corporate social successes have financial costs that are extracted from the firm's capital and other resources, which will position the company at a disadvantage compared to less socially active competitors.

The management opportunism argument proposes that managers exploit business resources to engage in ESG activities to escape unfavourable attention and to compensate for or justify poor financial performance. This is commonly referred to as greenwashing. ESG actions are conducted with the intention of gaining positive publicity in an effort to conceal poor performance. Consistent with the stakeholder theory, the study's findings indicate that ESG aggregate and its individual aspects are positively associated to

company performance. They find no indication that ESG is related to agency issues (Peng & Isa, 2020).

In their article, Sharma et al. (2020) note that the literature indicates a mixed relationship between profitability and disclosure score. They also allude to the agency hypothesis which suggests that agents may enhance their disclosure scores to increase their income (Sharma, Panday, & Dangwal, 2020).

Blanco et al. (2021) assessed greenwashing on three distinct levels: macro, meso, and micro. The agency theory is used to explain the function of the top management team in defining the CSR policy of the organisation (Barnea and Rubin, 2010; Faleye and Trahan, 2011). Thus, individuals within the organisation, or the micro-level, influence the firm's sustainability strategy, behaviour, and communication. The micro-level study, along with agency theory and its influence on individual entrepreneurial actions, provides a theoretical foundation for understanding greenwashing. Less information asymmetries are correlated with less greenwashing, according to their article. Therefore, reporting techniques that eliminate information asymmetries reduce greenwashing as well. Sustainability reports, GRI principles, and external assurance assist the executive team in managing stakeholder expectations and satisfying demands for greater openness (Blanco, Romero, & Feijoo, 2021).

4. RESEARCH DATA AND METHODOLOGY

4.1. Data and Tools

The research question is find out if company and country factors impact the ESG washing behaviors. The scope of the thesis is to evaluate companies that operate in the STOXX 600 and the research period covers 2009-2020.

“The STOXX Europe 600 Index includes companies with big, mid, and small market capitalizations from 17 European nations: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, and the United Kingdom” (Quantigox, 2022).

Nirino, Santoro, Miglietta, and Quaglia, in their 2021 study, investigated the association between ESG corporate scandals and financial performance. They conducted a quantitative analysis by extracting data from Thomson Reuters Datastream and using the STOXX Europe 600 index. Tax heaven countries such as Luxembourg, Cyprus, Malta, Isle of Man, Bermuda, and Forea Ireland were removed since they could have a negative effect on the national considerations and the study consist of 580 firms (out of 600 STOXX Europe Indexed Company).

The companies' ESG performance, financials, and governance information were gathered from the Thomson Reuters Refinitiv database. Scores for ESG disclosure were taken from Bloomberg databases. In addition, we utilised databases from Euromonitor, the World Bank, and transparency.org to extract national characteristics such as the corruption index and the rule of law/transparency of law. Each variable's source and specifics are presented in Appendix 2 of the thesis.

“Refinitiv provides ESG data on more than 9,000 listed companies, including numerous major, global, and regional indices such as MSCI World, MSCI Europe, STOXX Europe 600, NASDAQ 100, Russell 1000, S&P 500, FTSE100, ASX 300, and MSCI Emerging Markets. In addition, Refinitiv provides takeover defence profiles for more than 11,000 public firms with more than 12,000 "Poison Pill Events." Reuter's ESG professionals manually collect and audit the data from publicly available sources like company websites, annual reports, and corporate social responsibility (CSR) reports”.

Several authors, including Weber et al.2008, 2008; Rees, 2011; Ioannou and Serafeim, 2012; Wimmer, 2012; Tangjitprom, 2013; Cheng et al., 2014; Marsat and Williams, 2014;

Martinez, 2015; Nitsche and Schroeder, 2015; Martinez and Schneider, 2016, Mervelskemper, L. and Streit, D. (2016) utilise the Thomson Reuters Refinitiv database as a source of ESG performance scores as referenced Mervelskemper, L., & Streit, D. 2017. ESG score and its environmental (E), social (S), and corporate governance (G) pillars (or subscores) are derived from publicly-reported data and are used to evaluate a company's ESG performance. The overall ESG scores, as well as the subscores, are percentile rank scores that range from 0 (lowest score) to 100 (highest score) (maximum score).

According to Thomson Reuters Refinitiv ESG, “the scores are based on relative performance of ESG factors with the company’s sector (for E and S) and country of incorporation (for G)" (Refinitiv, 2020a). The total ESG score is determined by data metrics in ten distinct categories, which flow into the E, S, and G subscores” (Thomson Reuters, 2017). Thus, the E subscore contributed 34% to the total ESG score, whereas the S subscore contributed 35.5% and the G subscore contributed 30.5%. The initial equally-weighted ASSET4 ESG score had a "economic" subscore, which is no longer included in the current ESG score. Since 2018, Thomson Reuters ESG data are part of Thomson Reuters Refinitiv and are referred to as "Refinitiv ESG" (Berg, Fabisik, & Sautner, 2021).

Several researchers utilise the Bloomberg ESG disclosure ratings in their research, including Bernardi & Stark, 2018; Ioannou & Serafeim, 2017; Raimo et al. 2021; and Lueg & Lueg, 2020. The ESG Data collection from Bloomberg provides ESG indicators and ESG disclosure scores for over 11,800 firms in 100+ countries with over 410,000 active shares. In addition to reported data and derived ratios, the package offers sector- and country-specific data points.

Bloomberg delivers ESG data structured into more than 2,000 areas across a variety of crucial sustainability themes (Global ESG Data_ content and data, 2021). The ESG Disclosure Score is derived from the ESG information disclosed by companies in corporate documents (sustainability reports and annual reports), press releases, direct communication, third-party research, and news articles (Tamimi & Sebastianelli, 2017). “Environmental information refers to water, emissions, energy, waste, and operational policies regarding environmental impact; social information refers to employees, human rights, products, and community impact; and governance information refers to the board structure and function, executive compensation, and the company's political activities”

(Ioannou & Serafeim, 2017). The ESG Disclosure Score is derived from 100 out of 219 raw data points collected by Bloomberg and is weighted to emphasise the most frequently revealed fields. It is adjusted to fall between 0 and 100. A score of 0 indicates that no ESG information is disclosed, while a score of 100 indicates that all ESG information is disclosed. Bloomberg adjusts for sector-specific disclosures by standardising the final score based solely on a subset of fields pertinent to the industry type (Raimo, Caragnano, Zito, Vitolla, & Mariani, 2021).

Database access was ensured by Istanbul Ticaret University. The data were extracted and converted to panel data format in November 2021. The research started in 2009 because historical data from previous periods was not always available or reliable for the companies. The data between 2007 and 2009 were very fluctuating due to the global financial crisis, therefore it was not taken in the research.

The difference between ESG disclosure and ESG performance score has been used to calculate the greenwashing score. In order to measure the GW scores, it is required to have both ESG disclosure and ESG performance scores. If a company has more than 2 years of missing data, it was not included in the analysis. If there are only 2 missing years data, the data are imputed with either the mean or the nearest prior or the next year data, depending on the place of the missing value. After this elimination, the number of firms decreased from 580 to 390, of which 69 are financial firms. A dataset is created by combining the GW scores with firms' governance and financial scores. If there are more than 2 years of missing data for company or country scores in one of the variables, these companies were excluded from the analysis as well. As a result, this analysis was performed with a balanced panel data with 326 companies (58 financial institutions).

Table 4. 1 Sectoral Basis Representation of Sample, per Country.

Sectors	UK	FR	DEU	CHE	SWE	ESP	NLD	FIN	BEL	ITA	DNK	NOR	IRL	AUT	PRT	POL	Grand Total
Communication Services	5	4	1	1	2	1	1	1	1	1		1					19
Consumer Discretionary	10	11	7	1	2	1					1						33
Consumer Staples	11	5	2	2			2	1	2		1	1	1		1		29
Energy	1	1				1	2	1		1		1		1	1	1	11
Financials	14	6	5	7	3	5	2	2	3	3	2	3	1	2			58
Health Care	5	3	2	5	1	1	2	1	1								21
Industrials	17	14	7	5	8	3	3	3	1	3	3	1	4	1			73
Information Technology	3	3	2	1	2	1	1	1									14
Materials	9	2	5	4	2		2	2	2		2	2	1	1			34
Real Estate	5	2		1	2				1								11
Utilities	6	4	2			6		1		2				1	1		23
Grand Total	**86**	**55**	**33**	**27**	**22**	**19**	**15**	**13**	**11**	**10**	**9**	**9**	**7**	**6**	**3**	**1**	**326**

Source: This table was created by the author. Appendix 3 of the thesis explains the symbols of the countries.

4.2. Variables and Hypothesis development

There are 5 main cluster of the variables in this research:

1. Dependent variables: ESG Greenwashing (ESG GW), Environmental Greenwashing (EGW), Social Greenwashing (SGW), and Governance Greenwashing (GGW). Dependent variables are calculated by deducting the ESG/E/S/G Disclosure score (Bloomberg database) from ESG/E/S/G Performance Score (Refinitive)
2. Independent variables:
   a. Firm level governance variables: CSR sustainability committee, improvement tools and business ethics, policy executive compensation ESG performance, board size, independent board members, board gender diversity percent.
   b. Firm level financial variables (control variables): ROA , log Total Assets, leverage
   c. Country variables: corruption perception index, rule of law (alternative variable: transparency of laws), unemployment rate, Tax social contribution.
   d. Country variables (control variables): GPD per capital (constant)

For more information about the details of the variables, please see Appendix 2.

We used the Yu et al. (2020) study as a baseline however we did not make normalization in the ESG variables to avoid data manipulation by excluding the extreme values. The ESG data were distributed normally. If the company has a better ESG disclosure score than its ESG performance score, the company's greenwashing score is measured as positive or vice versa (Yu, Luu, & Chen, 2020).

4.2.1. Firm Level determinants

Internal factors like Corporate Sustainability Reporting (CSR) committee, improvement tools (whistle blower policies, hotlines etc) and business ethics, policy executive compensation ESG performance, board size, independent board members, board gender diversity percent are the firm level variables. In addition the firm based financial variables are used as a control variable like, firm size, Return on Asset (ROA), leverage.

Corporate Social Responsibility(CSR) committee refers to a governance body that is responsible for the sustainability strategy and practices of the company. The commission does not only help to good governance but is also responsible for integrating sustainability and the business priorities that the company tries to achieve. Uyar et al. (2020) use the CSR committee as one of the control variables in their article while they are investigating whether CSR reporting is used as a signal or greenwashing tool. They found that CSR committees are significant for sustaining CSR disclosure and explain that it increases stakeholders' attention. Therefore CSR committees have a key role in establishing concrete steps for CSR commitments. Therefore we hypothesize that the CSR committee and the GW scores have negative relationship because the scrutiny of the stakeholders supports the transparency and accuracy of what the company declares and what they actually perform (as referenced in stakeholder theory).

H1: The presence of CSR committee reduces the ESG washing dimensions

Improvement Tools (whistle blower, ombudsman, suggestion box, hotline, newsletter, website, etc.) and anti bribery policies increase corporate citizenship Schons and Steinmeier (2015) and reduce agency theory problems regarding information asymmetry. We hypothesize that higher scores on improvement tools will help to reduce the GW score by taking into account stakeholder theory and agency theory.

H2 Higher scores on improvement tools reduce the risk of ESG washing dimensions

Agency theory suggests having a good governance structure, shared direction and proper remuneration policies to prevent agency theory problems. If the individual targets and the remuneration framework do not support transparent processes, then high stakeholder pressure migh cause greenwashing. Several researchers like Labini et al. (2018), Haque and Ntim (2020), and Maas (2016), focus on the relationship between remuneration scheme and sustainability reporting or performance. According to the research of Haque and Ntim (2020), CEO remuneration has a beneficial influence on process-oriented carbon performance but no effect on actual carbon performance. Their article is consistent with the emerging institutional idea that corporations employ incentive-based mechanisms to symbolically increase their process-oriented carbon performance without enhancing their real carbon performance. Consequently, we propose that if a company's executive remuneration system includes ESG elements, it should have a negative

influence on greenwashing since the principal (shareholders) and agent (top management) have matched objectives.

H3: The inclusion of sustainability factors in executive compensation reduces the ESG greenwashing dimensions.

Board size indicates the number of board members a corporation has, whereas board diversity indicates the percentage of board members that are diverse. Existing research demonstrates the correlation between ESG performance and board size. For example, Maretno and Yan (2020), mentioned in Harjoto and Wang (2020) study, examine the relationship between the centrality of the board of directors' network and ESG performance. Their research indicates that strong board network centrality confers greater social (reputational) capital and informational advantages to the firm, allowing it to more effectively, promptly, and accurately manage stakeholder pressures (stakeholder management), which in turn leads to improved ESG performance. Board size, board independence, proportion of women on the board, ROA, leverage, CEO age, number of years in the post, institutional ownership, and education are the factors of their study. They discover a positive correlation between board size (BSIZE) and the proportion of independent boards (BINDEP) and board network measurements. Board gender diversity and industry characteristic, as defined by industry concentration, are positively associated with board networks. Therefore, board networks are determined endogenously by the diversity and concentration of board members and the industry. Their analysis also indicates that there is a decreasing return on board networks on subsequent ESG performance, demonstrating that a constant growth in board networks does not necessarily lead to a rise in subsequent ESG performance. Increased board networks provide possible drawbacks recognised in the literature, such as groupthink and less effective monitoring, lack of creativity, and greater conflict of interests. Higher ESG performance may not necessarily result in ESG washing, but stakeholder pressure that creates such an environment for ESG washing is cause for worry. The relationship between board size and gender diversity and ESG GW will be investigated, taking into account the dwindling usefulness of board networks and the growth of conflicts of interest (Harjoto & Wang, 2020).

Ghitti et al. (2020) presented a metric for greenwashing and investigated the antecedents and outcomes for U.S. businesses. In relation to greenwashing, they find that both board size and proportion of independent members are extremely statistically and economically significant. Interestingly, while board size is inversely correlated with greenwashing, the proportion of independent directors is positively connected with it. They explain the findings as board members contribute greater environmental performance knowledge, hence reducing greenwashing malpractice. Their conclusion is consistent with the resource dependency theory, demonstrating that environmental performance is higher in companies with larger boards (De Villiers, Naiker, and van Staden, 2011) as stated by Ghitti, Gianrate, and Palma (2020). According to their hypothesis, board size and the number of independent shareholders have a negative association with greenwashing because board size and the number of independent board members boost board members' scrutiny (the stakeholder theory). They find that corporations with larger boards engage in less greenwashing. Contrary to the literature, board independence is positively associated with greenwashing behaviour, while the proportion of women on the board had no obvious influence. Finally, they demonstrate how greenwashing diminishes business value.

H4. A greater board size reduces firms' ESG greenwashing dimensions.

H5. A greater number of independent board members reduces firms' ESG greenwashing dimensions.

H6. The presence of more female board members reduces the ESG greenwashing dimensions.

Return on Asset (ROA) is derived by dividing Net Income by Total Assets. According to Jong et al. (2020), companies with a higher ROA engage in greenwashing more aggressively. Such firms are likely to be more profit-driven, caring more about profit but not willing to receive the punishment due to their low CSR image, so they take advantage of their concealed suppliers' inferior environmental commitment to save costs. More profit-driven companies face more competitive pressure, care more about brand image and reputation, and are owned more by institutional investors which would lead the firms

to conduct more supply chain greenwashing. Yu et al. (2020) use ROA while evaluating firm level factors that might impact the greenwashing behavior.

There are numerous research evaluating the relationship between ROA and ESG performance or ESG disclosure. The relationship between ESG performance and financial performance (ROA) is strengthened by the CEO's influence (Velte, 2017). Belkaoui and Karpik, 1989; Cowen et al. 1987; Gray et al. 2001; Gamerschlag et al. 2015; as cited in Ghitti, Gianfrate, and Palma (2020) suggest a positive correlation between firm profits and the disclosure of complete and trustworthy environmental information (2020). However, contradictory information exists about profitability and greenwashing (Nawaiseh, 2015). Other researchers have argued that more profitable businesses are more susceptible to greenwashing since they are better able to defend their reputation (Ghitti , Gianfrate, & Palma, 2020). Mahoney et al. (2013) conducted research on greenwashing and used Total Asset as a proxy for business size and ROA as a proxy for the firm's financial performance. These variables are provided as a variable of control. Their research indicates that smaller enterprises may not exhibit as many socially responsible activities as larger firms due to the greater pressure exerted by stakeholders on larger organisations.

Regarding profitability, the literature contains contradictory findings. Based on the signalling theory, we hypothesize that prosperous organisations would invest more in ESG performance, therefore they will aim to communicate their greatest performance and have a favourable association.

H7. The more profitable companies creates more greenwashing for each dimension.

Firm size (SIZE) is measured by the natural logarithm of total assets. Large size frequently results in economies of scale or scope, which can be difficult to replicate (Velte, 2017).

Numerous researchers have investigated and analysed the company's size. Regarding financial aspects, the firm size (FirmSize) is the most significant, both economically and statistically, indicating that the larger the organisation, the less likely it is to engage in greenwashing. According to the available evidence, size is one of the most significant criteria that explain greenwashing. Typically, larger sizes indicate greater public presence

and/or more renowned businesses or items. This results in increased pressure of authorities and society to provide transparency and accurate information sharing. Misdeeds have serious repercussions for legitimacy, making the benefits of the approach considerably less attractice- especially for large, publicly-observed corporations (Ghitti , Gianfrate, & Palma, 2020).

It is commonly believed that the scale of a company prevents greenwashing. Large publicly listed corporations, as well as large private enterprises with well-known brands, are more likely to experience pressure from all their stakeholders (particularly customers, who view the problem as more vital in this environment) and from NGOs, activists, and the media to become greener. This is because they are more apparent and prone to stronger disclosure requirements, especially if they are publicly traded. Since bigger organisations are more susceptible to detection and incur more reputational harm and loss of legitimacy, they will not only provide more information on their environmental activities, but also have less incentives to engage in greenwashing (Delmas and Burbano, 2011; Marquis et al., 2016). Therefore, size has a detrimental effect on greenwashing, as it promotes environmental reporting transparency (Belkaoui and Karpik, 1989; Cowen et al. 1987, as quoted in Delmas & Burbano (2011)).

By taking into account previous studies, the new institutional theory, and the stakeholder theory, we hypothesise that there is a negative relationship between business size and GW behaviour.

H8. Larger companies exhibit less ESG washing for all dimensions

Leverage refers to the use of borrowed capital or debt as a source of finance when investing to increase a company's assets and earn returns on capital. If a company's leverage is high, its stakeholders will be interested in learning about its economic and ecological impact. There is a clear incentive for creditors to investigate debtors thoroughly. Higher levels of indebtedness may increase the possibility of greenwashing, because more financially strapped businesses may have less resources to support environmental reporting and research on the environmental impact (Brammer and Pavelin, 2006; Nawaiseh, 2015).

Zhang (2022), explores the factors that cause corporations to engage in ESG greenwashing. By studying multinational large-cap corporations across 47 nations and territories, he constructs a peer-relative greenwashing score to quantify the extent to which companies engage in ESG greenwashing. Initially, he examines and evaluates greenwashing by assessing ESG disclosures and developing peer-relative performance ratings that take into account the amount of transparency and the actual ESG performance. Second, he demonstrates that organisations' decisions to engage in greenwashing are influenced by financial limitations, indicating that the financial environment influences greenwashing behaviour. Thirdly, he describes how intermediation might reduce financial restrictions and greenwashing conduct. Moreover, highly indebted organisations may be subject to increasing financial pressure and may, as a result, engage in more greenwashing. According to several measures of financial restriction indicators, his conclusions are solid (Zhang D. , 2022).

The coefficients for leverage and profitability are likewise statistically significant, with negative and positive values, respectively. More indebtedness results in increased oversight by creditors and regulators, which reduces the likelihood of corporations making false or inaccurate environmental claims. In addition, as leverage rises, firms are more concerned about protecting themselves from the potential financial consequences of greenwashing (Ghitti , Gianfrate, & Palma, 2020). We suggest the following hypothesis as a result.

H9. The leverage increases the monitoring of the stakeholders/creditors therefore reduces the ESG washing for all dimensions.

4.2.2. Country level determinants

At the country level, external factors such as the corruption perception index (CPI), rule of law (transparency of laws), tax social contribution, and unemployment rate are considered. GDP is used as a control variable.

The Corruption Perceptions Index (CPI) indicates that the global degree of corruption is. According to their perceived levels of public sector corruption, the CPI ranks 180 nations

and territories worldwide. Several writers have already utilised the CPI to investigate the relationships between the GW, ESG performance, and ESG disclosure.

The findings of Yu et al. (2020) indicate that firms in nations with less corruption are less likely to participate in greenwashing. Specifically, a 1 percent rise in the absence of corruption factor (meaning a country will become less corrupt) results in a 0.60 percent decrease in greenwashing. In a nation with less corruption, citizens are better able to analyse greenwashing practises and speak out against them. Therefore, they posit that a system with less corruption can give more opportunity for key stakeholder parties to reduce the level of greenwashing.

Consideration is given to bribery as one of the high ESG risks for enterprises dealing with major contracts in sectors and nations prone to bribery, such as construction, extractive industries, and other public procurement contracts. Typically, risks are smaller for small and medium-sized businesses (SMEs). Environmental and social risks associated with microfinance are often modest, although business integrity and/or corporate governance issues may be present. Risks to business integrity are more evident in industries with large public sector contracts. Some nations and places are more susceptible to corruption than others. Fund managers who invest in countries ranked as corrupt by Transparency International's Corruption Perceptions Index (www.transparency.org), particularly in sectors where corruption is widespread, should classify their investments as high risk from the standpoint of business integrity and pay particular attention to managing business integrity risks during the investment period by instituting appropriate policies and procedures (Rosenctranz&Co, 2010).

Baldini et al. (2018) indicate in their study that businesses are more likely to participate in unethical actions if they are located in a nation with a high corruption score, and consequently are hesitant to disclose this information.

Legitimization theory and new institutional theory also support the hypothesis below because companies in less corrupt countries will act properly and show less GW behavior, they will try to ascertain legitimacy. Institutions will also force them to act properly and supports the appropriate corporate behaviors, therefore they will show fewer GW behaviors.

H10. Firms engage in less ESG greenwashing in countries where corruption is low

Rule of law variable indicates the amount to which residents have faith in and follow by the laws of society, as well as the quality of contract enforcement, property rights, the police, and the courts, and the possibility of crime and violence. Transparency of law variable is used as a robostness test.

Bhagat and Hubbard (2021) discuss the relationship between the rule of law and the goal of modern collaboration. Rule of law is closely tied to many SDG objectives. In particular, the rule of law is essential to enhancing equal opportunity and decreasing result disparities, particularly via the elimination of discriminatory laws, policies, and practises and the promotion of suitable legislation (Goal 10). In addition it is essential to ensuring that everyone has access to adequate, safe, and affordable housing and basic services (Goal 11), which intersects with (Goal 1) that all men and women, especially the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, and natural resources.

They discovered that rule of law improves economic success and reduces income disparity worldwide. The authors refer to the finance literature about the importance of rule of law in allowing companies to be the primary driver of economic growth in a country. Specifically, rule of law is required to boost investors' trust in investing in physical capital, human capital, and innovation, the three growth drivers. In addition, the rule of law enhances the effectiveness of the court in enforcing legal transactions. Legal contracts involving shareholders, debtholders, and other stakeholders are the source of shareholder reliance on restricted responsibility and debtholder rights. The rule of law enables companies to raise stock and debt financing, resulting in economic growth. Given this background on the importance of the rule of law in the issue of equity capital to supply businesses with financial resources, they assess the present discussion on the purpose of the contemporary corporation among legislators, corporate executives, institutional investors, and social activists. The conclusion of their analysis is that modern corporations should maximise long-term shareholder wealth while abiding by the law (Bhagat & Hubbard, 2021). It is evident from these reasons that the rule of law promotes the transparency of organisations and the environment.

Roulet and Touboul (2015) investigate the determinants of greenwashing, and their research indicates that in countries where beliefs in the virtues of competition are

prominent, firms are more likely to engage in greenwashing, whereas in countries where beliefs in the virtues of individual responsibility are prominent, firms are more likely to focus on concrete actions. In circumstances where weak governments are viewed as ideal, corporations may feel compelled to fill institutional gaps, but in contexts where competitive mindsets prevail, this tendency is counterbalanced.

High transparency in the actions of governments, financial institutions, and financial markets is required in order to attract more foreign capital flows, which in turn accelerate ESG integration. To attract more foreign equity capital and international credit, nations must provide all possible investors with circumstances that are transparent, reliable, and dependable. To increase investor confidence, authorities must guarantee that the execution of policies and enforcement of laws are transparent and effective. If the level of transparency is poor, investors' and financiers' exposure to risks will rise, and it would be extremely difficult for nations to improve their ESG performance (Ng, Lye, Chan, Lim, & Lim, 2020). Taking stakeholders and legitimacy theory into account, we suggest the following the following hypothesis.

H11. Firms engage in more ESG greenwashing in countries with weak rule of law or low regulatory transparency

Baldini et al. (2018) cites previous scholars and asserts that a high unemployment rate generates rivalry between businesses to acquire a greater number of talented workers. According to Freeman et al. (2007), organisations are motivated to expand their ESG disclosure in order to recruit a more competent workforce, while a more skilled workforce is interested in ESG disclosure since it is viewed as a sign of better career possibilities.

There are not many studies evaluating how unemployement can be associated have an association with greenwashing. ESG disclosure may not be in sync with ESG performance. On the other hand, association of GW and type of unemployment (white collar and blue collar unemployment) can also be investigated by the future researchers. Existence of unions can also be another research topic because the voice of employees can be heard more and companies cannot force employees to stay silent in case there is an ESG GW.

H12. In countries with a high unemployment rate, firms engage in greater ESG greenwashing.

Several experts utilise the Gross Domestic Product (GDP) per capita as one of the economic performance measures.

Yu et al. (2020) examined the impact of company and country variables on greenwashing. The per capita GDP is used as a control variable. Their findings indicate that the GDP per capita has an equivocal effect on the greenwashing conduct of enterprises in ESG aspects. Their findings also confirm the conclusion of Chapple and Moon (2005), quoted by Ioannou and Serafeim (2012), that economic development cannot entirely explain cross-country differences in corporate social performance. Therefore, they conducted a robustness test by substituting the Log (GDP per capita) for the Human Development Index (HDI). Based on the HDI, they discovered that a greater national standard of living can diminish enterprises' greenwashing practises (Yu, Luu, & Chen, 2020).

Quirós et al. (2019) analysed the impact of socially responsible operations on the production of shareholder value in 166 banks from 31 countries between 2010 and 2015. Their research examines banks during a time when these institutions boosted their social responsibility activities in an effort to strengthen their credibility and the confidence of their stakeholders. During their study, they employ Log GDP, the log of the nation where the bank's headquarters are located, which are thus quoted on their respective stock exchanges. They discovered a strong and negative association between a bank's size and leverage and the production of shareholder value as well as a country's wealth as measured by Gross Domestic Product (GDP) (Quirós, Quirós, & Hernández, 2019).

Krueger et al. (2021) examine the ESG disclosure and the country impact. Their study show that countries with a higher GDP growth rate, a bank-based market structure, better protection for property rights, and more labor freedom are less likely to pass regulation that mandates ESG disclosure.

Aras and Yildirim (2020) investigate whether there is a correlation between ESG performance and per capita GDP. Their findings indicate a significant positive correlation between environmental-social performance and GDP per capita.

In contrast, Crespi and Migliavacca (2020) investigated Corporate Social Performance (CSP) and ESG ratings drivers. The relative difference in GDP growth is used as an indicator of economic advancement. Their findings indicate that the GDP growth rate appears to play no important influence in determining the CSP of financial enterprises.

Using their data on the three individual pillars comprising the total ESG score, they determine that the environmental and social pillars, which do not exhibit an upward trend, are the primary drivers of the baseline model findings. The governance pillar shows a very strong positive trend that appears to be driving the overall improvement in ESG ratings over time, but it responds in a completely different, nearly inverse way to firm and country factors than the environmental and social pillars. Positive governance performance is connected with small financial enterprises with little Tier 1 common stock in the least developed countries. This conclusion may be attributable to the fact that analogous studies conducted in the past primarily focused on banks and that the nations in their sample range from less to more developed, but also include emerging countries (Crespi & Migliavacca, 2020).

There are conflicting findings in the literature about the relationship between GDP and greenwashing practises. As previous researchers have discovered, corporations with headquarters in nations with a higher GDP have superior ESG performance and ESG disclosure due to the higher living standards, improved laws, and increased stakeholder monitoring. Following the stakeholder theory and new institutional theory, we hypothesize a negative relationship between GW behavior and per capita GDP.

H13. Firms engage in less ESG greenwashing for all dimensions in countries with high GDP per capita.

Tax Social Contribution variable indicates social security contributions, which are payments given to the government in exchange for a (possibly dependent) future social benefit. There has been no previous study which has taken this variable into account directly, we noted that Ireland and Latvia are lower than the OECD average, and the highest scores are with France, Slovenia, Avustria and the Netherlands (OECD, 2022). Based on the neo-institutional theory, it is hyptothesized that the companies whose head offices are in the countries that ask for more contributions need to act more socially responsible.

H14. Firms engage in less ESG greenwashing dimensions in countries with high tax social contributions.

4.3. Research Method

We implemented a panel data regression model. The dependent and independent variables are annual data. The analysis is based on 326 companies and twelve years (2009-2020), for a grand total of 3912 observations.

Over the past two decades, the study of panel data where both the cross-section (N) and time-series (T) dimensions are moderate to large has been a very active area of theoretical econometrics. The theoretical literature on panel time-series econometrics began with a first generation of methods (unit-root tests, cointegration tests, and empirical estimators) that assumed panel members were cross-sectionally independent (e.g., Im, Pesaran, and Shin (2003); Levin, Lin, and Chu (2002); Maddala and Wu (1999); and Pedroni (1999, 2004).

The field then advanced to a second generation of approaches that explicitly addressed the issue of correlation among panel members (e.g., Bai and Ng (2004); Bai, Kao, and Ng (2009); and Pesaran (2006, 2007)). The three empirical estimators presented in this command reduce the micro panel estimators' assumption of parameter homogeneity among panel members (Eberhardt, 2012). These three empirical estimators are the Pesaran and Smith mean group estimator (1995, Journal of Econometrics 68: 79–113), the Pesaran common correlated effects mean group estimator (2006, Econometrica 74: 967– 1012), and the augmented mean group estimator introduced by Eberhardt and Teal (2010) as cited in Eberhardt, (2012).

Verbeek and Nijman (1992) consider a random effects (RE) model under the assumptions of normality and serial independence of the idiosyncratic errors in both the selection and regression equations, as well as the normal distribution of the time-constant unobserved effects in the selection and regression equations.

4.3.1 Panel Data Regression Model

In this thesis, we implement the similar model as Yu et al.'s article (2020). The dependent variable is greenwashing score, which quantifies the magnitude of a firm's ESG greenwashing. Employing the panel dataset, we will examine the common features of firms' greenwashing behavior across STOXX 600 companies. Deviations of performance

and the disclosure are interpreted as a greenwashing behavior of the firms (Yu, Luu, & Chen, 2020).

Formula1. Panel regression model:

$$Y= \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \beta_6 X_{6it} + u_{it}$$

Formula 2. Greenwashing model

$$\text{Greenwashing score}_{jkt} = b_0 + b_1 * (\text{firm level governance variables})_{jt} + b_2 * (\text{country variables})_{jt} + b_3 * (\text{firm level financial variables})_{jt} + b_4 * (\text{log GPD per capital}) + \varepsilon_{jk}$$

1. Y refer to the dependent variable of Formula 2: ESG Greenwashing (ESG GW), Environmental Greenwashing (EGW), Social Greenwashing (SGW), Governance Greenwashing (GGW). Dependent variables are calculated by deducting ESG/E/S/G Disclosure score (Bloomberg database)- ESG/E/S/G Performance Score (Refinitive)
2. A constant/ intercept of Formula 2 refer to the value of a response or dependent variable in a regression equation when all of its related predictors or independent variables are equal to zero (i.e., are at baseline levels).
3. $\beta_1 X_{1it}$ of Formula 1 refer to the first independent variables of Formula 2. CSR sustainability committee, improvement tools and business ethics, policy executive compensation ESG performance, board size, independent board members, and board gender diversity percentage are firm-level governance variables.
4. $\beta_2 X_{2it}$ of Formula 1 refer to the second independent variables of Formula 2, Country variables: corruption perception index, rule of law (alternative variable: transparency of laws), unemployment rate, Tax social contribution.
5. $\beta_3 X_{3it}$ of Formula 1 refer to the third independent variables of Formula 2, Firm level financial variables (control variables): ROA , log Total Assets, leverage.
6. $\beta_4 X_{4it}$ of Formula 1 refer to the fourth independent variables of Formula 2, Country variables (control variables): log GPD per capital (constant).
7. ε_{jk}: error term

4.4 Descriptive Statistics

Table 4. 2. Table 4. 3, Table 4.4. and Table 4.5. show number of observations, mean, standard deviation, min and max values of the variables.

Table 4. 2. Descriptive Statistics to Explain Research Variables for EGW

Variable	Obs	Mean	Std. Dev.	Min	Max
EGWcorrected	3,912	-4.52E-07	16.51207	-56.49754	60.6666
CSRSustain	3,912	0.8890593	0.314099	0	1
PolicyExecS	3,912	0.4849182	0.499836	0	1
BoardSize	3,912	12.09024	3.866645	1	26
IndBoardMembrs	3,912	61.3845	21.85123	3.333333	100
ROA_R	3,912	4.598787	5.096687	-22.91317	42.4356
LogTA	3,912	10.39914	0.787283	8.135454	12.6138
logunem	3,912	1.923107	0.429317	1.131402	3.26155
Taxsoccontw	3,912	34.18295	3.675403	23.7	45.8
PolicyBribery	3,912	0.8808793	0.323972	0	1
Improvementscr	3,912	0.7318507	0.443052	0	1
InternalAudt	3,912	0.9690695	0.173152	0	1
BoardGender	3,912	26.06732	12.09068	4.166667	75
corruption	3,912	76.96345	9.751997	39	94
logtans	3,912	-0.0804565	0.083479	-0.634878	0
loggdppcons	3,912	10.77939	0.886139	9.726165	13.326
leverage	3,912	0.2401662	0.142467	0	0.88

Table 4. 3. Descriptive Statistics to Explain Research Variables SGW

Variable	Obs	Mean	Std. Dev.	Min	Max
SGWcorrected	3,912	1.36E-07	16.2545	-49.96051	79.348
CSRSustain	3,912	0.8890593	0.314099	0	1
PolicyExecS	3,912	0.4849182	0.499836	0	1
BoardSize	3,912	12.09024	3.866645	1	26
IndBoardMembrs	3,912	61.3845	21.85123	3.333333	100
ROA_R	3,912	4.598787	5.096687	-22.91317	42.4356
LogTA	3,912	10.39914	0.787283	8.135454	12.6138
logunem	3,912	1.923107	0.429317	1.131402	3.26155
Taxsoccontw	3,912	34.18295	3.675403	23.7	45.8

PolicyBribery	3,912	0.8808793	0.323972	0	1
Improvementscr	3,912	0.7318507	0.443052	0	1
InternalAudt	3,912	0.9690695	0.173152	0	1
BoardGender	3,912	26.06732	12.09068	4.166667	75
corruption	3,912	76.96345	9.751997	39	94
logtans	3,912	-0.0804565	0.083479	-0.634878	0
loggdppcons	3,912	10.77939	0.886139	9.726165	13.326
leverage	3,912	0.2401662	0.142467	0	0.88

Table 4. 4. Descriptive Statistics to Explain Research Variables for GGW

Variable	Obs	Mean	Std. Dev.	Min	Max
GGW	3,912	-2.11E-08	19.69932	-52.1225	66.8619
CSRSustain	3,912	0.8890593	0.314099	0	1
PolicyExecS	3,912	0.4849182	0.499836	0	1
BoardSize	3,912	12.09024	3.866645	1	26
IndBoardMembrs	3,912	61.3845	21.85123	3.333333	100
ROA_R	3,912	4.598787	5.096687	-22.9132	42.4356
LogTA	3,912	10.39914	0.787283	8.135454	12.6138
logunem	3,912	1.923107	0.429317	1.131402	3.26155
Taxsoccontw	3,912	34.18295	3.675403	23.7	45.8
PolicyBribery	3,912	0.8808793	0.323972	0	1
Improvementscr	3,912	0.7318507	0.443052	0	1
InternalAudt	3,912	0.9690695	0.173152	0	1
BoardGender	3,912	26.06732	12.09068	4.166667	75
corruption	3,912	76.96345	9.751997	39	94
logtans	3,912	-0.0804565	0.083479	-0.63488	0
loggdppcons	3,912	10.77939	0.886139	9.726165	13.326
leverage	3,912	0.2401662	0.142467	0	0.88

Table 4. 5. Descriptive Statistics to Explain Research Variables for ESG GW

Variable	Obs	Mean	Std. Dev.	Min	Max
ESGGW	3,912	6.35E-08	11.64506	-41.25824	71.88194
CSRSustain	3,912	0.8890593	0.3140988	0	1
PolicyExecS	3,912	0.4849182	0.4998364	0	1
BoardSize	3,912	12.09024	3.866645	1	26
IndBoardMembrs	3,912	61.3845	21.85123	3.333333	100
ROA_R	3,912	4.598787	5.096687	-22.91317	42.43555
LogTA	3,912	10.39914	0.787283	8.135454	12.61376
logunem	3,912	1.923107	0.4293174	1.131402	3.261552
Taxsoccontw	3,912	34.18295	3.675403	23.7	45.8
PolicyBribery	3,912	0.8808793	0.3239718	0	1
Improvementscr	3,912	0.7318507	0.4430524	0	1
InternalAudt	3,912	0.9690695	0.1731515	0	1
BoardGender	3,912	26.06732	12.09068	4.166667	75
corruption	3,912	76.96345	9.751997	39	94
logtans	3,912	-0.0804565	0.0834787	-0.6348783	0
loggdppcons	3,912	10.77939	0.8861392	9.726165	13.32599
leverage	3,912	0.2401662	0.1424674	0	0.88

4.5 Analysis and Findings

In this study, the data of 326 companies in the STOXX 600 index from 11 industries and 16 countries are evaluated for the period 2009-2020.

The multicollinearity of the rule of law and the transparency of law were high therefore the transparency of the law was used. The Variance Inlation Factors (VIF) is lower than 10, the VIF values are 1-2, therefore there is no multicollinearity between the variables.

Pooled Ordinary Least Square (OLS) against Fixed Effect (FE) / Random Effect (RE): There are essentially five assumptions that must be met for simple linear regression models. Two can help us decide between Pooled OLS and FE/RE.

- These assumptions are (1) Linearity, (2) Exogeneity, (3a) Homoskedasticity and (3b) Non-autocorrelation, (4) Independent Variables (IV) are not Stochastic and (5) No Multicolinearity.
- If assumption (2) or (3) (or both) are violated, then FE or RE might be more preferable.
- Choosing between FE and RE: It depends whether the individual and unobserved heterogeneity is a constant or random effect. The Hausman-Test can also be used to determine whether FE or RE.
- Hausman-Test: Simply put, the Hausman-Test is an endogeneity test. The null hypothesis of the Hausman-Test is that the correlation between IV(s) and alpha is zero. In this situation, RE is favoured to FE. If the null hypothesis is false, the FE-model must be used (Brugger, 2022).

We performed an industry adjustment to the dependent variables by subtracting average GW score of the sector from the Company belongs to.

4.5.1. Hausman tests results

For EGW:

Test: Ho: difference in coefficients not systematic

chi2(16) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 24.40

Prob>chi2 = 0.0811

The findings of Hausman tests indicate that the best acceptable estimator for EGW is random effect regression. Then we apply Breusch and Pagan Lagrangian multiplier test for random effects.

Test: Var(u) = 0

chibar2(01) = 6754.77 Prob > chibar2 = 0.0000

The results of the LM test reveal that random effect regression is preferable to Pooled OLS.

For SGW:

Test: Ho: difference in coefficients not systematic

chi2(16) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 35.66

Prob>chi2 = 0.0032

By performing the Hausman tests, the best estimator for SGW is proven to be fixed effect regression.

For GGW:

Test: Ho: difference in coefficients not systematic

chi2(16) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 82.95

Prob>chi2 = 0.0000

By applying the Hausman tests, the best estimator is determined as fixed effect regression for GGW.

For ESG GW:

Test: Ho: difference in coefficients not systematic

chi2(16) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 43.95

Prob>chi2 = 0.0002

By performing the Hausman tests, the best estimator is determined as fixed effect regression for ESG GW.

4.5.2. Cross sectional dependency results

The findings of the Pesaran test suggest that the model has cross-sectional dependence. This indicates that at a significance level of 1%, the null hypothesis of weak cross-sectional reliance may be rejected, and the residuals are likely to impede substantial cross-sectional dependence.

For EGW

xtcsd, pesaran abs

Pesaran's test of cross sectional independence = 3.523, Pr = 0.0004

Average absolute value of the off-diagonal elements = 0.383

For SGW:

Pesaran's test of cross sectional independence = 3.523, Pr = 0.0004

Average absolute value of the off-diagonal elements = 0.383

For GGW

Pesaran's test of cross sectional independence = 4.396, Pr = 0.0000

Average absolute value of the off-diagonal elements = 0.316

ESG GW

Pesaran's test of cross sectional independence = 7.888, Pr = 0.0000

Average absolute value of the off-diagonal elements = 0.341

4.5.3. Auto correlation results

Thirdly, we evaluated the autocorrelation. Covariance between error terms should be zero, according to the regression model's fundamental assumption. This indicates that the error term should be random and devoid of any pattern. Cov (μt , μs)=0. This phenomenon is referred to as autocorrelation if there is covariance between the residuals that is not zero. We utilised Wooldridge autocorrelation tests to examine the autocorrelation. The results imply the null hypothesis that there is no autocorrelation on the model can be rejected.

For EGW:

Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation

F(1, 325) = 184.997 Prob > F = 0.0000

For SGW:

Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation

F(1, 325) = 244.368 Prob > F = 0.0000

For GGW:

Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation

F(1, 325) = 282.668 Prob > F = 0.0000

For ESG GW:

Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation

F(1, 325) = 201.587 Prob > F = 0.0000

Based on the outcome of the Wooldridge autocorrelation test, we may reject the null hypothesis that the model lacks autocorrelation.

4.5.4 Heteroscedasticity results

As a fourth step, we examined the model's heteroscedasticity. Variables must be homoscedastic according to the criterion of the traditional linear regression model. This implies that the spread should be constant and consistent. Variance of residuals must be constant; otherwise, homoskedasticity, a prerequisite for the existence of regression, would be broken and the data would be heteroskedastic (Rafique, 2012). We implement the formula as follows in STATA. xtreg DV IV1, IV2, to test heteroscedasticity.

For EGW:

Modified Wald test for groupwise heteroskedasticity

H0: sigma(i)^2 = sigma^2 for all i

chi2 (326) = 47418.95 Prob>chi2 = 0.0000

For SGW:

H0: sigma(i)^2 = sigma^2 for all i

chi2 (326) = 15129.42 Prob>chi2 = 0.0000

For GGW:

H0: sigma(i)^2 = sigma^2 for all i

chi2 (326) = 10006.70 Prob>chi2 = 0.0000

For ESG GW:

H0: sigma(i)^2 = sigma^2 for all i

chi2 (326) = 13543.42 Prob>chi2 = 0.0000

4.5.5 Driscoll and Kraay results

As the panel data have cross sectional dependency, auto-correlation and the heteroscedasticity, the Driscoll and Kraay correction of standard errors is used for industry adjusted dependent variables.

Commonly, "robust" standard errors are used to assure proper statistical inference when some of the underlying regression model's assumptions are violated.

The coefficient estimates using typical panel estimators—e.g., fixed effects (FE) estimator, random effects (RE) estimator, and pooled ordinary least-squares (OLS) estimation—remain consistent if the unobservable common factors are uncorrelated with the explanatory variables (but inefficient). However, the standard error estimates of frequently used covariance matrix estimation techniques, such as OLS, White, and Rogers, or clustered standard errors, are biassed, and statistical inference based on such standard errors is therefore erroneous. Fortunately, Driscoll and Kraay (1998) provide a nonparametric covariance matrix estimator that generates heteroskedasticity- and autocorrelation-consistent standard errors that are robust to common kinds of spatial and temporal dependency. Table 4.6. demonstrates why the following STATA command was utilised (Hoechle, 2007).

Table 4. 6. Selection of Stata Commands that Produce Robust Standard Error Estimates for Linear Panel Model

Command	Option	SE estimates are robust to disturbances being	Notes
`reg, xtreg`	`robust`	heteroscedastic	
`reg, xtreg`	`cluster()`	heteroscedastic and autocorrelated	
`xtregar`		autocorrelated with AR(1)[1]	
`newey`		heteroscedastic and autocorrelated of type MA(q)[2]	
`xtgls`	`panels(), corr()`	heteroscedastic, contemporaneously cross-sectionally correlated, and autocorrelated of type AR(1)	$N < T$ required for feasibility; tends to produce optimistic SE estimates
`xtpcse`	`correlation()`	heteroscedastic, contemporaneously cross-sectionally correlated, and autocorrelated of type AR(1)	large-scale panel regressions with `xtpcse` take a lot of time
`xtscc`		heteroscedastic, autocorrelated with MA(q), and cross-sectionally dependent	

[1] AR(1) refers to first-order autoregression
[2] MA(q) denotes autocorrelation of the moving average type with lag length q.

Source: (Hoechle, 2007).

As shown in Table 4.7, we analysed the data without taking the 2009 financial crisis into account.

Table 4. 7. Assumption of taking out 2009 data from the analysis

Independent variables	Coef. EGW	P>t EGW	sig EGW	Coef. SGW	P>t SGW	sig SGW	Coef. GGW	P>t GGW	sig GGW	Coef. ESGGW	P>|t |ESGGW	sig ESG GW
CSRSust.Committee	-3.955	0	***	-3.791	0.016	***	-2.278	0.099	*	-2.2518	0.011	***
PolicyExec Compen	-2.543	0	***	-3.476	0.002	***	-1.879	0.013	***	-3.0118	0.001	***
BoardSize	-0.009	0.953		-0.221	0.021	**	0.544	0.051	**	0.07974	0.178	
IndBoardMembers	-0.007	0.413		0.002	0.873		-0.125	0.013	***	-0.045	0.003	***
ROA_R	0.005	0.95		-0.066	0.252		0.162	0.032	**	0.03431	0.535	
LogTA	-4.334	0.033	**	-1.114	0.475		-4.17	0.059	**	-1.9965	0.001	***
logunem	-3.785	0.009	***	1.944	0.075	*	2.668	0.211		1.26398	0.301	
Taxsoccont	0.101	0.673		-0.086	0.457		1.287	0	***	0.43944	0.006	***
PolicyBribery	-0.179	0.842		-8.22	0	***	0.626	0.412		-2.8073	0.001	***
ImprovementTools	-0.053	0.929		-6.577	0	***	-3.276	0.006	***	-3.8226	0	***
InternalAuditDep	5.474	0.059	**	-4.384	0.105	*	-1.396	0.785		0.56242	0.821	
BoardGenderDiv	0.065	0.209		-0.042	0.039	**	-0.055	0.082	*	-0.0021	0.945	
corruptionpercept	-0.02	0.594		-0.177	0.026	**	0.091	0.32		-0.0274	0.465	
logtans	-6.582	0.118		2.592	0.06	*	-0.875	0.919		-1.1281	0.729	
loggdppcons	-0.188	0.884		0.436	0.363		-0.184	0.867		-0.4611	0.466	
leverage	-4.911	0.01	***	-1.831	0.516		-3.941	0.252		-5.4744	0.019	***
_cons	51.754	0.049	**	45.929	0.013	***	-1.828	0.883		21.6515	0.002	***

*** 1% significance level, ** 5 % significance level and * 10 % significance level

By excluding data of 2009, it is noted that the results are not changed significantly, except the followings:

- Independent board members are statistically insignificant for the EGW, despite being significant when using 2009 data. For the ESG GW dimension, ROA becomes statistically insignificant.
- Log TA is negative and statistically significant for the ESGGW dimension.
- Log unemployment is negative and statistically significant for EGW, and it is positive and statistically significant for SGW.
- Board gender diversity is positive and statistically significant with GGW. With SGW, regulatory transparency is negative and statistically significant.

4.5.6. Assumption of 1 year lag, from 2010 to 2020

As shown in Table 4.8, one year lag of variables are taken.

Formula 3: Lag of greenwashing model

Greenwashing $score_{jkt-1} = b0 + b1 * (\text{firm level governance factors})_{jt-1} + b2 * (\text{country factors})_{jt-1} + b3*(\text{industry-adjusted operating firm performance indicator})_{jt-1} + b4 * \log(\text{firm asset size})_{jt-1} + b7*(\text{GDP growth rate})_{jt-1} + \varepsilon jk$

Table 4. 8. One Year Lag of Both Dependent and Independent Variables (summary of Discoll Kray).

	Coef.d EGW	P>|t| EGW	Sig EGW	Coef. SGW	P>|t| SGW	sig SGW	Coef. GGW	P>|t| GGW	sig GGW	Coef. ESG GW	P>|t| ESG GW	sig ESG GW
dcsr	-4.24732	0	***	-3.765462	0.041	**	-4.66396	0.103	*	-4.432683	0.022	**
dpol	-2.853732	0.074	*	-10.82557	0	***	-2.88047	0.187		-6.183193	0	***
dboad	-0.172384	0.076	*	-0.209369	0.195		0.27037	0.24		-0.0564048	0.644	
dinb	-0.011199	0.295		-0.015246	0.251		-0.17558	0	***	-0.0657496	0	***
droa	-0.030507	0.587		0.0032194	0.949		0.07937	0.137		0.0262425	0.128	
dta	-0.967746	0.592		4.937578	0.06	*	-3.26588	0.099	*	1.749862	0.08	*
dunem	-2.232553	0.044	**	1.033103	0.536		-0.32797	0.927		0.0556023	0.973	
dtax	0.3903367	0.079	*	0.3504098	0.304		2.046779	0.005	***	0.9397016	0.002	***
dbribe	0.0606467	0.881		0.0297118	0.881		0.234566	0.61		0.2576305	0.367	
dimpr	-1.072497	0.244		-10.0289	0	***	-2.52752	0.243		-5.318486	0.014	***
dinter	1.050399	0.431		0.6091952	0.768		-5.59827	0.131		-0.2765469	0.821	
dbgdv	0.0186145	0.541		0.0259424	0.236		-0.18061	0.001	***	-0.0312291	0.247	
dcor	-0.040527	0.595		-0.077748	0.354		-0.02667	0.772		-0.0728157	0.183	
dlogtans	1.252339	0.673		4.755119	0.036	**	4.347008	0.063	*	2.139148	0.2	
dgdp	-6.15381	0.294		-4.008858	0.539		-3.85604	0.47		-4.730139	0.269	
dlev	-6.375915	0.046	**	-0.710096	0.746		-1.32614	0.806		-3.382405	0.04	**
cons	0.2938909	0.292		-0.071308	0.872		0.30251	0.495		0.1087517	0.721	

*** 1% significance level, ** 5 % significance level and * 10 % significance level

With a one-year lag, the existence of a CSR committee and the addition of remuneration factors have a negative significant relationship with all dependent variables (only GGW is statistically insignificant).The results are generally statistically significant. We did

notice, however, that independent board members have negative and statistically significant relationships with the GGW and ESG GW. Tax social contributions have positive and statistically significant relationship with the GGW and ESG GW. The improvement tool still shows negative and statistically significant SGW and ESG GW dimensions. Leverage variable is negative and statistically significant EGW and ESG GW dimensions.

Tables 4.9 and 4.10 show the distinction between financial and non-financial firms.

Table 4. 9. Data analysis from 2009 to 2020, non financial firms

	Coef. EGW	P>|t| EGW	sig EGW	Coef. SGW	P>|t| SGW	sig SGW	Coef. GGW	P>|t| GGW	sig GGW	Coef. ESGGW	P>|t| ESGGW	sig ESGGW
CSRSustainabilityCommittee	-3.439583	0.001	***	-3.583703	0.016	**	-2.401476	0.074	*	-1.90291	0.038	**
PolicyExecutiveCompen.	-3.395806	0	***	-3.125886	0.001	***	-3.490587	0	***	-3.6018	0	***
BoardSize	-0.001603	0.991		-0.348134	0.004	***	0.7543551	0.002	***	0.10779	0.148	
IndBoardMembers	-0.004562	0.78		-0.010077	0.328		-0.162109	0	***	-0.05994	0	***
ROA_R	-0.022464	0.813		-0.044481	0.435		0.2324087	0.004	***	0.048816	0.257	
LogTA	-5.440222	0.022	**	-3.069088	0.034	**	-7.320637	0	**	-2.63588	0.003	***
logunem	-3.82255	0.004	***	1.229685	0.415		-0.942257	0.651		-0.19846	0.879	
Taxsoccontnew	0.2565128	0.348		0.0089326	0.976		2.450457	0	***	0.953273	0	***
PolicyBriberyandCorruption	-1.006503	0.24		-8.579507	0	***	-0.119682	0.846		-3.27368	0.001	***
ImprovementToolsBus.Ethic	0.4698675	0.332		-5.71098	0	***	-3.592229	0.014	***	-3.52048	0	***
InternalAuditDept.Rep.	8.457616	0.006	***	0.8258357	0.709		-2.790825	0.454		2.656746	0.186	
BoardGenderDivr	0.1066661	0.031	**	-0.008111	0.683		-0.06064	0.132		0.024127	0.394	
corruptionpercept	0.0371812	0.349		-0.262798	0	***	0.053806	0.489		-0.02217	0.714	
logtans	-6.503904	0.053	**	-0.252675	0.92	*	-3.26598	0.593		-2.49637	0.382	
loggdppcons	-0.69674	0.635		-7.004498	0.057	**	3.372944	0.543		-4.97776	0.054	**
leverage	-7.695502	0.004	***	-8.469473	0.001	***	-6.942259	0.008	***	-10.8361	0	***
_cons	55.97165	0.069	**	147.914	0.011		-34.14507	0.616		60.97769	0.082	

*** 1% significance level, ** 5 % significance level and * 10 % significance level

Several researchers (Raimo et al. 2021; Yu et al. 2020; Haque, F., & Ntim, C. G. 2020) leave it out financial sector companies from their analysis since they are are already exposed to sustainaibility related requirements in specific to financial sector and their financial systems are much different than other industries. According to our analysis, GW can be reduced by CSR committee, executive remuneration scheme, firm size and the leverage for nonfinancial firms. In addition we examined how the greenwashing dimensions are associated with each independent variables. The differences with the main analysis are as follows:

- Independent board members are not significantly associated with the EGW, whereas it is statistically significant including all sectors.
- ROA and ESG GW are not statistically significant for non financial firms.
- For nonfinancial firms, log unemployment is negatively and statistically significant with the EGW.

- Internal audit independence is not statictically significant and associated with the SGW for non financial firms.
- Board gender diversity is not statictically significant and not associated with the SGW for non financial firms.
- Both SGW and EGW have a negative and statistically significant transparency of law variable.
- GDP has a statistically significant negative impact on SGW and ESG GW.
- Leverage is negative and statistically significant for all GW dimensions.

Table 4. 10. Data analysis from 2009 to 2020, only with financial sector

	Coef. EGW	P>|t| EGW	sig EGW	Coef. SGW	P>|t| SGW	sig SGW	Coef. GGW	P>|t| GGW	sig GGW	Coef. ESGGW	P>|t| ESGGW	sig ESGGW
CSRSust.Committee	-4.88483	0.006	***	-0.298371	0.79		-1.728393	0.415		-1.892931	0.035	**
PolicyExecutiveCompensat	2.779341	0.042	**	-1.266771	0.161		2.195931	0.008	***	1.215073	0.005	***
BoardSize	-0.279323	0.516		-0.322102	0.129		0.4226603	0.103	*	0.0727058	0.57	
IndBoardMembers	-0.086501	0.01	***	0.0160066	0.548		-0.111448	0.005	***	-0.070884	0.006	***
ROA_R	0.081194	0.363		-0.011038	0.92		0.0266666	0.856		0.0865417	0.178	
LogTA	4.213988	0.221		0.5742062	0.817		12.10457	0.002	***	-0.791835	0.427	
logunem	-2.949298	0.329		-0.596406	0.722		-0.437578	0.702		0.1939659	0.86	
Taxsoccontnew	0.2833466	0.52		0.2606098	0.362		2.634085	0	***	0.6271971	0.001	***
PolicyBribery	3.421311	0.015	***	-6.492088	0.006	***	-1.543624	0.567		-2.304986	0.166	
ImprovementToolsBusiness	-1.674719	0.08	**	-7.233528	0.019	***	0.5163935	0.786		-3.307633	0.025	**
InternalAuditDepartmentR	-9.057336	0.013	***	-21.03273	0	***	5.427463	0.305		-8.460567	0.003	***
BoardGenderDiversityPerc	-0.021792	0.644		-0.088194	0.131		-0.027255	0.616		-0.003569	0.924	
corruptionpercept	-0.346383	0.072	*	-0.234618	0.253		-0.1784	0.316		-0.113801	0.161	
logtans	-7.419496	0.435		-1.468375	0.819		19.8873	0.004	***	0.8809609	0.899	
loggdppcons	13.43005	0.257		2.2584	0.314		-13.85004	0.26		1.649881	0.26	
leverage	0.3484073	0.945		26.61612	0	***	-19.41282	0.027	***	5.008063	0.091	*
_cons	-149.0597	0.267		12.97376	0.754		-49.34114	0.756		-6.40658	0.833	

*** 1% significance level, ** 5 % significance level and * 10 % significance level

About 17% of the firms (58 out of 326 firms) are in the financial sector. As they are well advanced in the implementation of sustainability related regulations, their relationship with the GW is evaluated separately.

If we summarize the table 4.10, ESG GW is reduced by CSR committee existence, increase of independent board members, existence of independent audit function. However executive remuneration scheme is positively and statistically significant with the ESG GW. If the sustainability targets of the executives are not determined clearly or determined very vague that cannot be measured, executive remuneration scheme might even increase the risk of ESG GW. As cited by Labini et al. (2018) focus on the remuneration policies in banks and suggest to EU regulators to bring more clarity and more guidance regarding non-financial performance criteria and on their selection and implementation processes for banks. EU regulatory body will require to explain the

remuneration scheme of the financial institution for 2023 according to RTS. Therefore this variable should be reconsidered for the future researches carefully.

The analysis shows statistically not significant results in general compared to non-financial sectors.

- The presence of a CSR committee in financial firms is not statistically significant for SGW and GGW. However, it is statistically and negatively significant for EGW and ESG GW. As cited by Sensharma, S., Sinha, M., & Sharma, D. (2022) to the previous scholars financial companies have disadvantages while integrated ESG information in their investment models because of the intangible nature of the CSR and ESG reports. As the reports are not yet audited, not based on clear regulatory regulatory requirements or guidences; there is a risk of creating a deceptive image on the eyes of the customers at the company level.
- Including sustainable factors in the executive scheme is not statistically significant for SGW whereas it is positively and statistically significant for the EGW, GGW and ESG GW dimensions. The results show that there is a significant difference between financial and nonfinancial firms regarding the incentives impact on greenwashing.
- Mixed results exist for the board size and association of the GW. Board size and GGW have been found to be positively and significantly associated to GGW for financial firms.
- ROA is not statistically significant for any of the GW dimensions and firm size is statistically positively and statistically significant only for the GGW. However the coefficient is very high, therefore the result might not be reliable.
- Tax social contribution is positively and statistically significant at the 10% level for the GGW.
- The policy bribery score is positive and statistically correlated with the EGW, but negative and statistically significant for the SGW.
- The improvement tool has a negative and statistically significant relationship with the EGW, SGW and ESG GW.
- Dependence on internal audit departments has a negative and statistically significant relationship with EGW, SGW, and ESG GW. Because of regulatory requirements, financial firms in Europe in general must have independent audit functions.
- EGW has a negative and statistically significant corruption perception index.

- Transparency of laws is statistically and positively significant in the GGW area. As the financial firms have more strict rules about their governance processes, this part might impact on them more.
- For any of the GW dimensions for financial firms, board diversity and GDP are not statistically significant.
- For SGW and ESG GW, leverage is both positively and statistically significant. It is negative and statistically significant with the GGW.

As illustrated in Tables 4.11 and 4.12, analysis were conducted to see whether firm or country variables are related with the GW dimensions.

Table 4. 11. Data analysis from 2009 to 2020, for the firm factors

	Coef. EGW	P>|t| EGW	sig EGW	Coef. SGW	P>|t| SGW	sig SGW	Coef. GGW	P>|t| GGW	sig GGW	Coef. ESGGW	P>|t| ESGGW	sig ESGGW
CSRSustainabilityCommittee	-3.8138	0	***	-3.423343	0.011	***	-1.851888	0.092	*	-2.18278	0.016	***
PolicyBriberyandCorruption	-0.24994	0.811		-8.691159	0	***	-0.791385	0.223		-3.485952	0	***
BoardSize	-0.08228	0.627		-0.410106	0.001	***	0.7406217	0.001	***	0.0790442	0.176	
IndBoardMembers	-3.8E-05	0.997		-0.005026	0.683		-0.124006	0	***	-0.053848	0	***
ROA_R	0.022098	0.731		-0.031319	0.611		0.2543762	0.011	***	0.0753078	0.107	*
LogTA	-4.45215	0.039	**	-3.105956	0.082	*	-6.094948	0	***	-2.174162	0.001	***
ImprovementToolsBus.Eth	-0.29466	0.681		-6.656547	0	***	-2.857147	0.006	***	-3.849023	0	***
InternalAuditDept.	5.388872	0.057	**	-4.587888	0.072	*	1.078589	0.771		0.5515012	0.811	
BoardGenderDiv.%	0.108069	0.027	**	-0.072669	0.002	***	-0.044506	0.427		-0.010517	0.771	
leverage	-4.66881	0.004	***	-3.718071	0.143		-9.636134	0	***	-6.695889	0.006	***
_cons	44.10249	0.03	***	60.51435	0.01	***	67.73386	0		33.78892	0	

*** 1% significance level, ** 5 % significance level and * 10 % significance level

According to the analysis results, the CSR committee is negative and statistically significant across the all GW dimensions. EGW is impacted by the CSR committee, firm size, independent audit independence, gender diversity on the board, and the leverage. SGW is negatively and statistically related to the CSR committee, the presence of a policy bribery score, board size, firm size, and having whistleblower policies. GGW is statistically significant for firm related variables except for three independent variables. GGW is negative and statistically significant for the existence of a CSR committee, the number of independent board members, firm size, and the existence of ethical tools and leverage whereas GGW is positive and statistically related to profitability. ESG GW is negative and statistically significant for the existence of a CSR committee, policy bribery scores, number of independent board members, firm size, and existence of ethical tools and leverage whereas ESGGW is positive and statistically related to profitability.

Table 4. 12. Data analysis from 2009 to 2020, for the country factors

	Coef. EGW	P>|t| EGW	sig EGW	Coef. SGW	P>|t| SGW	sig SGW	Coef. GGW	P>|t| GGW	sig GGW	Coef. ESGGW	P>|t| ESGGW	sig ESGGW
logunem	-5.091218	0	***	1.432359	0.211		0.874348	0.441		0.2676997	0.794	
Taxsocco	0.550385	0.027	**	-0.188308	0.658		2.028958	0	***	0.7392291	0.001	***
corruption	-0.0307256	0.628		-0.354087	0	***	0.0465419	0.376		-0.08746	0.022	**
logtans	-2.565337	0.524		12.51496	0.045	**	14.2008	0.045	**	7.371008	0.15	
loggdppcc	-2.086513	0.666		-25.42197	0	***	-18.36881	0	***	-17.62266	0	***
_cons	15.62687	0.789		305.9744	0		124.5279	0.023		171.502	0	

*** 1% significance level, ** 5 % significance level and * 10 % significance level

None of the country variables have an association with all GW dimensions; they have separate impacts. The social tax contribution is positive and statistically significant for EGW, GGW, and ESG GW. Our hypothesis is rejected. The corruption perception score is negative and statistically significant for SGW and ESG GW. Transparency of law is positive and statistically correlated with SGW and GGW, but the coefficients are very high, therefore the results might not be reliable. GDP is negative and statistically related to the SGW, GGW, and ESG GW.

GW scores of countries can also be evaluated at the future research.

4.5.7.Data analysis from 2009 to 2020, with the elimination of most significant to least significant

Table 4. 13. Driscoll Kraay Standard errors for EGW

Regression with Driscoll-Kraay standard errors		Number of obs=	3912
Method: Random-effects regression		Number of groups=	326
Group variable (i): id		F(16, 11)=	1212.96
maximum lag: 2		Prob > F=	0
		within R-squared=	0.0331

Drisc/Kraay

EGWcorrected	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]	Sig
CSRSustainabil	-3.785265	0.764054	-4.95	0	-5.466935	-2.103594	***
PolicyExecutiv	-2.682615	0.362618	-7.4	0	-3.480732	-1.884499	***
BoardSize	-0.062203	0.11743	-0.53	0.607	-0.320665	0.1962598	
IndBoardMembers	-0.034377	0.012701	-2.71	0.02	-0.062331	-0.006424	***

ROA_R	-0.016266	0.05121	-0.32	0.757	-0.128979	0.096447	
LogTA	-3.0875	1.031132	-2.99	0.012	-5.357008	-0.817993	***
Logunem	-4.962753	0.698529	-7.1	0	-6.500204	-3.425301	***
Taxsoccontnew	0.5816547	0.193805	3	0.012	0.1550926	1.008217	***
PolicyBribery	-0.689793	1.129691	-0.61	0.554	-3.176226	1.79664	
ImprovementToo	-0.017879	0.438718	-0.04	0.968	-0.983492	0.9477338	
InternalAuditDp	5.033563	2.067288	2.43	0.033	0.4834928	9.583634	**
BoardGenderDiv	0.0700531	0.028619	2.45	0.032	0.0070642	0.133042	**
Corruptionperc	-0.023363	0.060126	-0.39	0.705	-0.155699	0.1089727	
Logtans	-6.248773	3.210158	-1.95	0.078	-13.31428	0.8167384	*
Loggdppcons	3.361562	5.797364	0.58	0.574	-9.39835	16.12147	
Leverage	-7.111599	1.579819	-4.5	0.001	-10.58876	-3.634441	***
_cons	-9.943704	62.64335	-0.16	0.877	-147.8208	127.9334	

*** 1% significance level, ** 5 % significance level and * 10 % significance level

The statistically insignificant variables are deducted starting from the highest insignificant to the low insignificant and the model was re-executed again. The results are shown as follows:

Table 4. 14. Driscoll Kraay Standard errors for EGW (extracted from the highest insignificant to low insignificant)

Regression with Driscoll-Kraay standard errors				Number of obs=		3912	
Method: Pooled OLS				Number of groups=		326	
Group variable (i): id				F(12, 11)=		11881.52	
maximum lag: 2				Prob > F=		0.00000	
				within R-squared=		0.0876	
				Root MSE		15.7967	
		Drisc/Kraay					
EGW	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]	Sig
CSRSustainabil	-3.672207	0.979623	-3.75	0.003	-5.828343	-1.51607	***
PolicyExecutiv	-1.510316	0.207459	-7.28	0	-1.966929	-1.053702	***
IndBoardMembers	0.0392727	0.005246	7.49	0	0.0277273	0.0508182	***

ROA_R	0.1118729	0.088274	1.27	0.231	-0.082416	0.3061622	
LogTA	-4.832422	0.328996	-14.69	0	-5.556537	-4.108308	***
Logunem	-0.751988	0.74429	-1.01	0.334	-2.390158	0.8861821	
PolicyBriberyscr	0.2863066	0.43109	0.66	0.52	-0.662516	1.235129	
InternalAuditdp	6.285445	1.361551	4.62	0.001	3.28869	9.282199	***
Corruptionperc	0.0233823	0.013069	1.79	0.101	-0.005382	0.0521468	*
Logtans	-10.09801	3.014834	-3.35	0.006	-16.73362	-3.462405	***
Loggdppcons	-0.274664	0.32379	-0.85	0.414	-0.987321	0.4379931	
Leverage	-3.677358	0.918273	-4	0.002	-5.698464	-1.656252	***
_cons	47.65978	3.829814	12.44	0	39.23041	56.08914	

*** 1% significance level, ** 5 % significance level and * 10 % significance level

Even with the most insignificant ones excluded from the analysis, the results have not changed dramatically because there is no multicollinearity among independent variables. However, we found that unemployment, tax social contribution, and board gender diversity are statistically insignificant, whereas "transparency of laws" is statistically significant in the second analysis.

Table 4. 15. Driscoll Kraay Standard errors for SGW

Regression with Driscoll-Kraay standard errors		Number of obs =	3912
Method: Fixed-effects regression		Number of groups =	326
Group variable (i): id		F(16, 11) =	1.41E+09
maximum lag: 2		Prob > F =	0
		within R-squared =	0.1401

		Drisc/Kraay					
SGWcorrected	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]	Sig
CSRSustainabil	-3.305348	1.037103	-3.19	0.009	-5.587996	-1.0227	***
PolicyExecutiv	-3.027139	0.621581	-4.87	0	-4.395229	-1.659049	***
BoardSize	-0.410935	0.098512	-4.17	0.002	-0.627758	-0.194112	***
IndBoardMembers	0.0028207	0.009288	0.3	0.767	-0.017622	0.0232631	

ROA_R	-0.033344	0.063928	-0.52	0.612	-0.174048	0.1073605	
LogTA	-1.473968	1.157638	-1.27	0.229	-4.021912	1.073977	
Logunem	1.210085	1.188472	1.02	0.33	-1.405725	3.825895	
Taxsoccont	0.0212595	0.294875	0.07	0.944	-0.627757	0.6702756	
PolicyBribery	-8.541848	0.800725	-10.67	0	-10.30423	-6.779464	***
ImprovementToo	-5.899841	0.839323	-7.03	0	-7.747177	-4.052504	***
InternalAuditD	-4.611878	2.35527	-1.96	0.076	-9.795793	0.5720372	*
BoardGenderDiv	-0.035069	0.015062	-2.33	0.04	-0.06822	-0.001918	***
Corruptionperc	-0.323229	0.029849	-10.83	0	-0.388927	-0.257532	***
Logtans	0.8309454	2.856067	0.29	0.777	-5.455215	7.117105	
Loggdppcons	-4.236917	3.437093	-1.23	0.243	-11.80191	3.328074	
Leverage	-3.656452	2.151147	-1.7	0.117	-8.391094	1.07819	
_cons	110.348	46.57579	2.37	0.037	7.835365	212.8606	**

*** 1% significance level, ** 5 % significance level and * 10 % significance level

We eliminate the statistically insignificant variables starting from the most insignificant to the low insignificant. Then we re-executed the model again and found the following results:

Table 4. 16. Driscoll Kraay Standard errors for SGW_extracted highest insignificant to low insignificant

Regression with Driscoll-Kraay standard errors					Number of obs =	3912
Method: Fixed-effects regression					Number of groups =	326
Group variable (i): id					F(12, 11) =	1.33E+03
maximum lag: 2					Prob > F =	0
					within R-squared =	0.1399
		Drisc/Kraay				
SGWcorrected	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]

CSRSustainabil	-3.31927	1.051841	-3.16	0.009	-5.634356	-1.00418	***
PolicyExecutiv	-3.016921	0.65523	-4.6	0.001	-4.459072	-1.57477	***
BoardSize	-0.4151	0.103797	-4	0.002	-0.643556	-0.18664	***
LogTA	-1.4298	1.316187	-1.09	0.301	-4.326708	1.467108	
Logunem	1.288256	1.02352	1.26	0.234	-0.964496	3.541009	
PolicyBriberya	-8.584412	0.758479	-11.32	0	-10.25381	-6.91501	***
ImprovementToo	-5.906677	0.871265	-6.78	0	-7.824319	-3.98904	***
InternalAuditD	-4.594296	2.300841	-2	0.071	-9.658412	0.469821	*
BoardGenderDiv	-0.035343	0.015473	-2.28	0.043	-0.0694	-0.00129	
Corruptionperc	-0.322835	0.025069	-12.88	0	-0.378012	-0.26766	***
Loggdppcons	-4.185928	3.070634	-1.36	0.2	-10.94435	2.572491	
Leverage	-3.613311	2.247499	-1.61	0.136	-8.560022	1.3334	
_cons	109.918	43.83213	2.51	0.029	13.44418	206.3919	**

*** 1% significance level, ** 5 % significance level and * 10 % significance level

It is noted that board gender diversity which was a statistically significant independent variables turned out to be the statistically insignificant at the second analysis.

GGW:

Table 4. 17. Driscoll Kraay Standard errors for GGW

Regression with Driscoll-Kraay standard errors		Number of obs =	3912
Method: Fixed-effects regression		Number of groups =	326
Group variable (i): id		F(16, 11) =	1475.48
maximum lag: 2		Prob > F =	0
		within R-squared =	0.0772

		Drisc/Kraay					
GGWcorrected	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]	sig
CSRSustainabil	-1.977236	1.088562	-1.82	0.097	-4.373144	0.4186713	*
PolicyExecutiv	-2.330782	0.564101	-4.13	0.002	-3.57236	-1.089203	***
BoardSize	0.7165063	0.154538	4.64	0.001	0.3763697	1.056643	***
IndBoardMembers	-0.149035	0.02501	-5.96	0	-0.2040815	-0.093988	***

ROA_R	0.2043758	0.079237	2.58	0.026	0.0299763	0.3787752	**
LogTA	-3.479869	0.801888	-4.34	0.001	-5.244813	-1.714925	***
Logunem	-1.587457	1.695129	-0.94	0.369	-5.31841	2.143497	
Taxsoccont	2.488395	0.19143	13	0	2.067059	2.909731	***
PolicyBribery	-0.24349	0.686671	-0.35	0.73	-1.754844	1.267863	
ImprovementToo	-3.089425	1.021119	-3.03	0.012	-5.336893	-0.841958	**
InternalAuditD	0.4382726	3.462017	0.13	0.902	-7.181576	8.058121	
BoardGenderDiv	-0.061216	0.035954	-1.7	0.117	-0.1403496	0.0179186	
Corruptionperc	0.0504423	0.066908	0.75	0.467	-0.0968207	0.1977053	
Logtans	0.8194079	5.493396	0.15	0.884	-11.27147	12.91029	
Loggdppcons	-1.22174	4.706095	-0.26	0.8	-11.57979	9.136306	
Leverage	-8.643474	1.117553	-7.73	0	-11.10319	-6.183756	***
_cons	-28.31059	61.50122	-0.46	0.654	-163.6739	107.0527	

*** 1% significance level, ** 5 % significance level and * 10 % significance level

We eliminate the statistically insignificant variables starting from the most insignificant to the least insignificant. Then we re-executed the model again and found the following results:

Table 4. 18. Driscoll Kraay Standard errors for GGW_extracted of highest insignificant to low insignificant

Regression with Driscoll-Kraay standard errors		Number of obs =	3912
Method: Fixed-effects regression		Number of groups =	326
Group variable (i): id		F(12, 11) =	4519.13
maximum lag: 2		Prob > F =	0
		within R-squared =	0.0772

Drisc/Kraay

GGW	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]	Sig
CSRSustainabil	-1.997425	1.074797	-1.86	0.09	-4.363037	.3681859	*
PolicyExecutiv	-2.360969	0.470132	-5.02	0		-4.721937	***
BoardSize	0.717822	0.151687	4.73	0.001	.3839614	1.051683	***

IndBoardMembers	-0.149544	0.025955	-5.76	0		-0.2990884	***
ROA_R	0.2024473	0.077594	2.61	0.024	.0316652	.3732293	**
LogTA	-3.66173	0.831907	-4.4	0.001		-7.32346	***
Logunem	-1.408228	1.217044	-1.16	0.272	-4.086925	1.270469	
Taxsoccont	2.480453	0.194459	12.76	0	2.052452	2.908455	***
ImprovementToo	-3.164253	0.891963	-3.55	0.005		-6.328506	***
BoardGenderDiv	-0.064104	0.043069	-1.49	0.165	-.1588975	.0306888	
Corruptionperc	0.053146	0.066772	0.8	0.443	-.093818	.20011	
Leverage	-8.746353	1.482534	-5.9	0		-17.492707	***
_cons	-39.51438	16.75045	-2.36	0.038		-79.028773	

*** 1% significance level, ** 5 % significance level and * 10 % significance level

According to the analysis results, the significance level gets stronger for the improvement tool variable, the other variables significance levels did not change.

For ESG GW:

Table 4. 19. Driscoll Kraay Standard errors for ESGGW

Regression with Driscoll-Kraay standard errors		Number of obs =	3912
Method: Fixed-effects regression		Number of groups =	326
Group variable (i): id		F(12, 11) =	2333.82
maximum lag: 2		Prob > F =	0
		within R-squared =	0.103

Drisc/Kraay

ESGGW	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]	
CSRSustainabil	-1.922553	0.661109	-2.91	0.014	-3.377644	-0.467463	***
PolicyExecutiv	-2.847242	0.491269	-5.8	0	-3.928519	-1.765966	***
BoardSize	0.0906114	0.070682	1.28	0.226	-0.064958	0.2461812	
IndBoardMembers	-0.060561	0.008974	-6.75	0	-0.080312	-0.040809	***
ROA_R	0.0585457	0.0346	1.69	0.119	-0.017608	0.1346991	
LogTA	-1.215592	0.522872	-2.32	0.04	-2.366425	-0.064759	**

Logunem	-0.442514	1.160962	-0.38	0.71	-2.997774	2.112746	
Taxsoccontnew	0.9716132	0.138589	7.01	0	0.666581	1.276645	***
PolicyBriberya	-3.275838	0.701786	-4.67	0.001	-4.820458	-1.731218	***
ImprovementToo	-3.561698	0.515167	-6.91	0	-4.695572	-2.427824	***
InternalAuditD	0.7146307	1.828373	0.39	0.703	-3.309591	4.738852	
BoardGenderDiv	0.0080846	0.020598	0.39	0.702	-0.037251	0.0534202	
Corruptionperc	-0.073207	0.046372	-1.58	0.143	-0.175271	0.0288578	
Logtans	-1.342112	3.193436	-0.42	0.682	-8.370818	5.686594	
Loggdppcons	-5.03245	2.788391	-1.8	0.099	-11.16966	1.104758	*
Leverage	-9.080681	0.767776	-11.83	0	-10.77054	-7.390817	***
_cons	52.26503	36.83216	1.42	0.184	-28.80201	133.3321	

*** 1% significance level, ** 5 % significance level and * 10 % significance level

The statistically insignificant variables are deducted starting from the highest insignificant to the low insignificant and the model was re-executed again. The results are shown as follows:

Table 4. 20. Driscoll Kraay Standard errors for ESGGW_extracted highest insignificant to low insignificant

Regression with Driscoll-Kraay standard errors		Number of obs =	3912
Method: Fixed-effects regression		Number of groups =	326
Group variable (i): id		F(12, 11) =	4401.35
maximum lag: 2		Prob > F =	0
		within R-squared =	0.1025

Drisc/Kraay

ESGGW	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]	Sig
CSRSustainabil	-1.905361	0.675059	-2.82	0.017	-3.391156	-0.41957	***
PolicyExecutiv	-2.764481	0.475794	-5.81	0	-3.811696	-1.71727	***
BoardSize	0.0820452	0.076129	1.08	0.304	-0.085513	0.249603	
IndBoardMembers	-0.057036	0.008848	-6.45	0	-0.076511	-0.03756	***
ROA_R	0.0572653	0.032186	1.78	0.103	-0.013576	0.128106	*

LogTA	-0.862527	0.867832	-0.99	0.342	-2.772612	1.047558	
Taxsoccontnew	0.942288	0.168717	5.59	0	0.5709444	1.313632	***
PolicyBribery	-3.231047	0.69947	-4.62	0.001	-4.770569	-1.69152	***
ImprovementToo	-3.523584	0.464222	-7.59	0	-4.54533	-2.50184	***
Corruptionperc	-0.075614	0.042681	-1.77	0.104	-0.169555	0.018327	*
Loggdppcons	-3.662094	2.946274	-1.24	0.24	-10.1468	2.822611	
Leverage	-8.836519	0.777138	-11.37	0	-10.54699	-7.12605	***
_cons	34.88148	38.09298	0.92	0.379	-48.9606	118.7235	

*** 1% significance level, ** 5 % significance level and * 10 % significance level

After re-executing the model again, it is noted that log TA and log GDP are statistically insignificant. The corruption perception index becomes statistically significant.

4.5.8. Hypothesis results

Based on the Driscol Kray results (table 9 to table 15), we combined dependent variables and independent variables in the below table to summarize associations of dependent and independent variables. The hypothesis are explained based on the Table 4.21.

Table 4. 21. Summary of Driscoll Kray results for all dependent variables

	EGW	SGW	GGW	ESG GW
CSRSustainability	-3.672***	-3.319***	-1.997*	-1.905**
PolicyExecutive Score	-1.517***	-3.016***	-2.360***	-2.764***
BoardSize	0.0748	-0.415***	0.717***	0.082
IndBoardMembers	0.039***	0.003	-0.149***	-0.057***
ROA	0.112	-0.033	0.202**	0.057*
Log TA	-4.832***	-1.429	-3.661***	-0.862
Logunem	-0.751	1.288	-1.5874	-0.442
PolicyBribery score	0.286	-8.584***	-0.25	-3.231***
Taxsoccontnew	0.021	0.021	2.480***	0.942***
ImprovementTools	-0.236	-5.906***	-3.164***	-3.523***
InternalAudit indepn	6.285***	-4.594*	0.4382726	0.714

Corruptionperct	0.023*	-0.322***	0.050	-0.075
BoardGenderDiv	0.011	-0.035**	-0.061	0.008
Logtans	-10.098***	0.83	0.819	-1.342
Loggdppcons	-0.274	-4.185	-1.22174	-3.662
Leverage	-3.677***	-3.613	-8.6434***	-8.836***
_cons	47.65***	109.91**	-28.310**	34.881

*** 1% significance level, ** 5 % significance level and * 10 % significance level

H1: The presence of CSR committee reduces the ESG washing dimensions

The hypothesis is accepted as there is a negative and statistically significant relations for all dimensions of greenwashing (EGW, SGW, SGW and ESG GW). The roboustness tests were implemented via exclusion of 2009 data, one year lag analysis, non financial firm analysis and evaluation of firms variables. The results support the studies of Uyar et al (2020) that CSR committee increases stakeholders attention and therefore reduces the GW in each dimensions and align with the stakeholder as well as legitimacy theory.

H2. Higher scores on improvement tools reduce the risk of ESG washing dimensions

Improvement tools have a negative and statistically significant relationship with the SGW, GGW and ESG GW behaviors. It supports our hypothesis. However it has no statistically significant relationship with the EGW behavior. Existence of whistle blower procedures and hotlines increase the transparency of the organization. It helps to determine how well the social and governance aspects of the companies work too. The organization can get signals and raise red flags if ESG disclosures or ESG performance are not inline with what was promised or communicated. Improvement tools are one of the tools to deal with agency theory problems. It supports stakeholder theory too, as employee feedback is used as an input to understand how things are executed in the organization. Then the stakeholders use the inputs to prevent and detect the GW behaviors. We also analyzed exclusion of 2009 data, non financial firm analysis and evauation of firms variables. The results are the same direction. One year lag analysis show the negative and statistic relation with the SGW and ESG GW, it is also aligned with these results.

EGW behavior, on the other hand, has no statistically significant relationships. Companies may need more stringent controls to prevent EGW behaviours as environmental rules and regulations become more stringent.

H3: The inclusion of sustainability factors in executive compensation reduces the ESG greenwashing dimensions.

The existence of sustainability factors in executive remuneration scheme reduces the greenwashing scores in all dimensions (EG, GW, SGW and ESG GW). The results are inline with the literature (Haque & Ntim, 2020) and agency theory. Sustainability embedded remuneration schemes increase the ownership of the agents, reduce information asymmetry and create a good internal control mechanism to reduce greenwashing risks in all dimensions. We performed robustness tests on the results by excluding 2009 data, from the non financial firm analysis. The results are the same directions. One-year lag analysis demonstrates a negative and statistical relationship with the EGW, SGW, and ESG GW; it is also consistent with these findings.

H4. A greater board size reduces firms' ESG greenwashing behavior

Board size is negatively and statistically significant with SGW, whereas it is positively and statistically significant for GGW. Negative association of SGW with board size support Ghitti et al. (2020) study. Increasing the size of board improves stakeholders oversight. It assists organisations in increasing the network centrality of the board, increasing diversity, and know-how, so that the board can react faster and better to detect and prevent SGW. Stakeholders theory explain this approach as well. On the other hand, there are also studies showing that a larger board can cause group thinking, less monitoring, a lack of innovation and greater conflict of interest (Harjoto & Wang, 2020). Therefore, board size and the GGW can also be positively related, especially in the areas of governance; hence, it is not easy to measure the correctness of governance factors. Non-financial firm analysis, with the exception of 2009 data, supports the same findings. Lag analysis of the board size is not statistically significant for any of the GW dimensions.

H5. A greater number of independent board members reduces firms' ESG greenwashing dimensions.

There are also contradictory outcomes in the literature. Table 4.21 demonstrates that an increase in the proportion of independent directors decreases GGW and ESGGW behaviours, and that these relationships are statistically significant. It is expected that the independent board members will bring more transparency, increase credibility, and act free from bias and conflict of interest. Previous literature supports the idea that having independent board members increases the quality of the ESG disclosures Yu et al. (2020). They can bring new or more developed skills to follow up on the actions to prevent or detect the greenwashing. Increasing the number of independent board members solves problems of agency theory and supports stakeholder theory. Because the existence of independent stakeholders will increase the scrutiny of the board, ESG disclosures, and ESG performance too.

EGW and the independent board directors have statistically significant positive relationships. This result supports Ghitti et al. (2020)'s study because they found that an increase in independent directors does not ensure better monitoring of greenwashing because their impact can be limited. The share of independent directors is positively related. Ghitti et al. (2020) also cite Dyck (2010), who found that firms that employ independent directors have little impact on their firms' E&S performance, especially if E&S social norms are weak. SGW did not show a statistically significant relationship. Via the exclusion of 2009 data, and non-financial firm analysis, the results support that GGW and ESGGW are negative and statistically significant. Lag analysis of the board size is not statistically significant for any of the GW dimensions.

H6. The presence of more female board members reduces the ESG greenwashing dimensions.

There are various findings in the research about the relationships between gender diversity and ESG disclosures or ESG performance. Diversity of board members increases objectivity and heterogeneity, allowing firms to react faster or better than their competitors in a rapidly changing business environment. However, Ghitti et al. (2020)

were unable to identify statistically significant relationships between board gender diversity and GW behaviours, despite the negative coefficient. Observations indicate that board gender diversity is statistically significant, with only the SGW exhibiting negative correlations. According to Velte's (2017) study, the inclusion of women on boards has a positive influence on stakeholder trust, which might lead to enhanced Corporate Sustainability reporting and financial success. This also supports the stakeholder's theory. There are no statistically significant correlations between board diversity and other GW characteristics (like EGW, GGW or ESG GW). When we take out the crisis year and lag of the dependent and independent variables, we still see that board gender diversity has a negative and statistically significant effect on GGW. For nonfinancial firms, the board of directors has a positive and statistically significant EGW.

H7. The more profitable companies creates more greenwashing for each dimension.

According to the analysis, GGW and the ESGGW have a positive and statistically significant relationship with the Return on Assets (ROA). The hypothesis is accepted. The findings support Jong et al.'s (2020) conclusion that companies with higher ROA are more aggressive in greenwashing because they are more profit-driven and value profit over sustainability. Furthermore, more profitable companies exhibit higher GW behaviour because they have more tools to manipulate data or can file lawsuits to fight back. Yu, Luu, & Chen (2020); Delmas and Burbano (2011); Ghitti, Gianfrate, & Palma (2020). Profitable firms might pretend to have good governance structures with some certifications, reports. news, etc. This could explain GGW's positive relationships with profitability. ROA correlates positively and statistically with GW for financial firms, excluding the 2019 crisis year. The analysis results support the stakeholders' and new institutional theories because stakeholder pressure on the highly profitable firms might cause the GW behaviors.

H8. Larger companies exhibit less ESG washing for all dimensions

Larger firms and GW behaviours are negatively related across all GW dimensions. It is statistically significant only for the EGW and GGW. The one-year lag and the exclusion of 2019 as a crisis year demonstrate the negative relationship between firm size, GGW, and ESGGW. Larger firms face more pressure from their stakeholders because they are

more visible. EGW is negatively related to the larger firms because the NGOs and activists also focus on these firms more. This negative relationship regarding EGW was also noted by other scholars (Belkaoui and Karpik, 1989; Cowen et al., 1987), as cited by Delmas & Burbano (2011).

Because larger companies are generally subject to global standards and regulatory rules, size can have a greater impact on GGW. Nonfinancial risk reporting, for example, is required in Europe for companies employing more than 500 people in the financial industry. These firms must also adhere to non-financial reporting requirements and corporate governance norms. Our findings are consistent with the new institutional theory, legitimacy theory, and signalling theory.

H9. The leverage increases the monitoring of the stakeholders/creditors therefore reduces the ESG washing for all dimensions.

The analysis shows that leverage has a negative relationship with all ESG GW dimensions but is statistically significant for EGW, GGW, and the ESGGW. Leverage and the SGW do not have a statistically significant relationship. Brammer and Pavelin (2006), and Nawaiseh (2015) also refer to how high leverage increases the monitoring of the company by its stakeholders. Stakeholders do not want to know only the financial performance of the company; they are also interested in non-financial risks that the company might face. Therefore, debtors can create a control mechanism to prevent ESG GW, EGW, and GGW. This is in line with the stakeholders theory. With the leverage, SGW is not found to be statistically significant. We observe that leverage remains negative and statistically significant for EGW and ESGGW in case of the year 2009 exclusion and lag of one-year. For all aspects of the GW, leverage is negative and statistically significant for non-financial enterprises.

H10. Firms engage in less ESG greenwashing in countries where corruption is low

The corruption perception score has statistically significant relationships with the EGW and the SGW; however the directions of the relationships are contradictory to each other. SGW and the corruption perception index have a negative relationship. This hypothesis is also aligned with the legitimacy theory and the new institutional theory (Baldini, Maso,

Liberatore, Mazzi, & Terzani, 2018). Companies that are in less corrupt countries will act properly and show less GW behavior, they will try to ascertain legitimacy. Institutions will also force them to act properly and support the appropriate corporate behaviors; therefore, they will show fewer GW behaviors. However, the corruption perception score, as well as the GGW and ESGGW, are not statistically significant, and the EGW relationship appears to be inconsistent with previous literature results.When we extract the crisis year 2009, the corruption score and SGW are negative and statistically significant. Furthermore, the corruption score has statistically significant negative relationships with SGW non-financial firms. For financial firms, the corruption perception score is negative and statistically significant for the EGW.

H11. Firms engage in more ESG greenwashing in countries with weak rule of law or low regulatory transparency

Transparency of law has a negatively and statistically significant relations with EGW. This is inline with our hypothesis. Environmental regulations are much more clear and it is easier to compared to soft controls if firms need to follow. However SGW, GGW and ESG GW does not statistically significant relation with transparency of regulations. With the exclusion of 2009 crisis year and a one-year lag, transparency of law has a positive and statistically significant relationship with SGW. Transparency of law is negative and statistically significant for nonfinancial firms in both EGW and SGW. When we take only the country variables into consideration it is seen that transparency of law is positively and statistically significant only with SGW and GGW, but the coefficient is very high, therefore it can be interpreted that the results are not very reliable.

H12. In countries with a high unemployment rate, firms engage in greater ESG greenwashing.

None of the GW dimensions have statistically significant relationship with unemployment rate. Our hypothesis is rejected and not supported by the result. The robustness tests utilise 2009 scores with a one-year lag, and the unemployment rate is statistically and negatively significant with the EGW for non-financial enterprises.

H13. Firms engage in less ESG greenwashing for all dimensions in countries with high GDP per capita.

According to our analysis results, GDP per capita and the GW dimensions are negatively related, but none of them is statistically significant. HDI was also used for the robustness tests; however, it was still not significant either. Therefore, the hypothesis is rejected and not supported by the result. GDP and SGW are negative and statistically significant only for nonfinancial firms.

H14. Firms engage in less ESG greenwashing dimensions in countries with high tax social contribution.

The social tax contribution is positively and significantly related to the SGW and ESGGW. This is not in line with our expectation or the hypothesis. When we exclude the 2019 data or the variable lag, it is noted that tax contribution is statistically and positively related to GGW and ESGGW. Financial and nonfinancial firms show the same direction of the relationship for GGW and ESGGW.

In addition to the above company and country variables, we also checked how anti-bribery policies and independent auditors impact the ESG GW for each dimension. The association between the company's policy and bribery score and the SGW and ESGGW is statistically significant and negative. For the EGW and GGW dimensions, there is no statistical significance. The association between a firm's anti-corruption stance and its worth is stronger for politically connected enterprises (Devi, Ko, & Subramaniam, 2019). According to stakeholder theory, organisations with greater value exhibit more responsible ESG disclosures and ESG performance. SGW and ESG GW have a statistically significant and negative relationship with the policy bribery score whether we exclude 2009 data or we take non-financial enterprises.

In contrast, the results on the independence of internal audit and greenwashing relations are discordant. EGW has a statistically significant and positive relationship with internal audit independence, whereas SGW has a statistically significant and negative relationship with effective internal audit function. Since the correlation coefficients are high in this variable, the results are not so reliable. In addition, GGW and ESG GW are statistically insignificant. An effective independent internal audit function increases organisational

transparency, aids in the resolution of agency theory issues, and should be supported in order to reduce the risk of greenwashing. Our hypothesis is not accepted and is not supported by the results. Extraction of 2009 data gives the same results as the above analysis. It gives negative and statistically significant results for EGW, SGW, and ESG GW.

CONCLUSIONS

Since ESG integrations and responsible investments have increased significantly over the last 10 years, it is important for all stakeholders to know what kind of factors can impact Greenwashing risks. There are still many challenges for ESG investments, and the risk of "greenwashing" cannot be reduced due to a lack of standardization, uncertainty, and measurements. Different ESG data providers come up with different results due to their methodological differences. Products and regulations are quite different, therefore it is not easy to ascertain the standards, like in financial reporting. However, there is an urgent need to lay the groundwork to prevent greenwashing. As with ESG calculation methods, there is no agreement on how to measure ESG greenwashing, and limited studies exist in the literature for ESG greenwashing. It is also one of the limitations of this study that we base our measurement on the Yu et al. (2020) study. Quantitative and qualitative studies have tried different methodologies while calculating the greenwashing. On the other hand, we need to point out that all quantitative studies use the different ESG data providers' results, and therefore the results might also be impacted by the ESG data providers' nuances. ESG Data providers use different variables while calculating the ESG figures. Berg et al. (2021) noted that Refinitive rewrite in ESG ratings which are systematic and impacting the historical data, therefore affecting the tests related to ESG. Alternative data providers like Sustainalitcs, MSCI, S&P Trucost can be used for future researches. We examined STOXX 600 companies' ESG greenwashing behaviors for each dimension of ESG GW (ESG GW, EGW, SGW, and GGW). According to our knowledge, this is the first study to examine the relationship between firm and country variables and each ESG GW dimension. We evaluated each of the ESG GW dependent variables individually. In addition, we worked on the STOXX 600 including the financial sector. It might be another limitation of this research that the head offices of STOXX 600 companies are located mainly in the Europe region; therefore, we advise for future researchers to work on different indices and regions to check if the country factors are still not significant. They can also broaden this research by incorporating qualitative studies such as content analysis or interviews. Our research shows that company factors do not always impact different GW dimensions at the same level and in the same directions.

EGW can be prevented by existence of CSR committee, sustainability related remuneration scheme, increase in firm size, and leverage. CSR existence and sustainability related remuneration scheme decrease the information aysymetry between agents and the principles. Firm size and leverage increase the visibility of the companies and scrutiny of stakeholders. Interestingly, there is a positive relationship betwen the EGW and the increase in independent board members, as well as the independent audit function. It can be interpreted that if the independent functions are not highlighted by environmental experts, they can even increase EGW behaviors. Transparency of laws can help to decrease EGW because transparency of the regulatory requirements increases the scrutiny of the stakeholders as they can interpret the requirements better.

SGW can be avoided by focusing on governance items like existence of CSR and sustainability related remuneration policies, ethical policies like whistle blowers and anti bribery policies and increase in board size and board gender diversity as well as independent internal audit. These items increase the scrutiny of the stakeholders, objectivity and signals that the organization act legitimate on the social concerns. The only country factor that reduces the SGW is the corruption perception index. Since it is difficult to measure the social aspects of the company, good governance helps to reduce the greenwashing for social aspects.

GGW can be decreased with existence of CSR committee, sustainability related remuneration scheme, an increase in independent board members and having the whistle blower policies. These governance factors help to solve the agency problems, support board members to reduce information asysmetry between stakeholders and the company. Firm size and high leverage firms are impacted from high visibility therefore they have less GGW. On the other side, board size and profitability are positively related to the increase in GGW. Complexities of the organizations need to be considered more for the effectiveness of the boards. Profitable companies need to be scrunitized more as cited by Yu et al. (2020); Delmas and Burbano (2011); Ghitti et al. (2020) the companies have more resources and tools (such as certifications and consultancy reports) to manipulate the data and create a better image on the governance domain. The only country factor that positively correlates the GGW is the social tax contribution index.

ESGGW can be decreased by existence of the CSR committee and sustainability remuneration schemes, ethical policies (like whistle blower or anti bribery policies),

independent board members which increase the monitoring of the stakeholders and reduce the information gap between agents and principle. Big size and high financial leverage help to reduce ESG greenwashing because companies do not want to increase the reputational risk, stakeholders'pressure and increase the cost of debt. On the other side, profitable companies focus on financial profitability more, therefore stakeholders increase their scrutiny more to reduce the ESGGW. The social tax contribution index is the only country factor that is positively related to the ESGGW too.

According to our research, an increase in the CSR committee and having sustainable requirements in the remuneration scheme impact all ESG GW dimensions. In addition non financial firms can reduce the GW for all dimensions with the existence of CSR committee, sustainability compensation scheme, firm size and high debt of the companies.

There are opportunities for the future researchers to focus on the relationship between organizational life cycle or product life cycle and the greenwashing. Organizational ecology theory impacts the stakeholders pressure, institutions as well as information aysmetries. In addition, future researchers can investigate if firms tend to make the greenwashing or the brownwashing during crises period or corona period. Greenwashing of financial firms and financial literacy of the investors can also be a potential research for the future. In addition country based ESG GW evaluation with an unbalanced panel database can be considered as a potential future research topic.

Appendix 1. Seven Sins of Greenwashing

Netto et al. (2020) cited to Delmas and Burbano (2011) to explain that the TerraChoice Group's seven sins are all product-level greenwashing. They are as follows:

1. **"The sin of the hidden trade-off**: a claim suggesting that a product is 'green' based on a narrow set of attributes without attention to other important environmental issues. Paper, for example, is not necessarily environmentally preferable just because it comes from a sustainably harvested forest.
2. **The sin of no proof:** an environmental claim that cannot be substantiated by easily accessible supporting information or by a reliable third-party certification. Common examples are facial tissues or toilet tissue products that claim various percentages of post-consumer recycled content without providing evidence.
3. **The sin of vagueness:** a claim that is poorly defined or too broad, a claim lacking in specifics that its real meaning is inclined to be misunderstood by the consumer. "Non-toxic" is an example because everything is toxic in certain dosages; "Green", "Environmentally friendly", "Eco-friendly", and "Eco-conscious" are also vague because without elaboration they are meaningless.
4. **The sin of worshipping false labels**: a product that, through a false suggestion or certification-like image, mislead consumers into thinking that it has been through a legitimate green certification process. An example is green jargon such as "eco-safe" and "eco-preferred"
5. **The sin of irrelevance:** an environmental claim that may be truthful but is unimportant or unhelpful for consumers seeking environmentally preferable products. 'CFC-free' is a common example, since it is a frequent claim despite the fact that CFCs are banned by law.
6. **The sin of lesser of two evils:** a claim that may be true within the product category, but that risks distracting the consumer from the greater environmental impacts of the category as a whole. Organic cigarettes could be an example of this sin, as might the fuel-efficient sport-utility vehicle.
7. **The sin of fibbing: environmental claims that are simply false.** The most common examples were products falsely claiming to be Energy Star certified or registered".

Appendix 2. Data Library

VARIABLES		
A. Dependent variables	**Explanation**	**Database/ source**
1.ESGGW	ESG disclosure- ESG performance score	Bloomberg-Refinitive
2.EGW	Environmental Greenwashing score= Environmental disclosure- Environmental performance score	Bloomberg-Refinitive
3.SGW	Social Greenwashing score= Social Disclosure score- Social Performance score	Bloomberg-Refinitive
4.GGW	Governance Greenwashing Score= Governance Disclosure score- Governance performance score	Bloomberg-Refinitive
B. Independent variables		
B1. Country Variables		
Corruption perception index	Corruption Perceptions Index (CPI) reveals that corruption levels are at a worldwide standstill. Changes 0 (highly corrupt) to 100 (very clean).	Transparency.org
Unemployment rate:	Unemployment, total (% of total labor force) (modeled ILO estimate) Unemployment refers to the share of the labor force that is without work but available for and seeking employment.. annual data, 2009-2020.	World Bank 28-10- 2021
Rule of law	"Rule of law index captures perceptions of the extent to which citizens have confidence in and abide by the rules of society, and in particular the quality of	Euromonitor

	contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. The index ranges approximately between -2.5 and 2.5 with higher values corresponding to better governance, however there might be some rare exceptions when the index exceeds this range". Annual data btw 2009-2020.	
GDP per capital (constant)	"GDP per capita is gross domestic product divided by midyear population. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources". Data are in constant local currency.	World Bank
Tax social contribution	"Social security contributions are compulsory payments paid to general government that confer entitlement to receive a (contingent) future social benefit"	
Company factors:		
1.CSR Sustainability Committee	Corporate Sustainability committee (True false)	Reuters refinitive database
2.Policy Business Ethics Score:	"Does the company describe in the code of conduct that it strives to maintain the highest level of general business ethics? - information on respecting general business	Reuters refinitive database

	ethics or integrity - information from the code of conduct section". (True-False)	
3.Improvement Tools Business Ethics Score	"Does the company have appropriate communication tools (whistle blower, ombudsman, suggestion box, hotline, newsletter, website, etc.) to improve general business ethics?" It is changing 0 to 100.	Reuters refinitive database
4.% of independent directors	Percentage of independent BOD members within the BOD.	Reuters refinitive database
5.Internal audit department reporting	if audit department reports to Board = True, not = False.	Reuters refinitive database
6.Policy Executive Compensation ESG Performance	Measured with True or false.	Reuters refinitive database
7.log (board size)	Board size	Reuters refinitive database
8.independent board member	Independent boar member (%)	Reuters refinitive database
9.Board member diversity	Percentage of board members diversity	Reuters refinitive database
Control variable		
1.ROA of Firm	Average Return on Assets (Net Income/ Total Assets (ratio)	Reuters refinitive database
2.Log TA	Total Assets (log)	Reuters refinitive database
3.Industry	Main industry	Reuters refinitive database

4. Leverage	Total debt at the end of the fiscal period to total equity at the same period	Reuters refinitive database
5.TRBC industry name	Sub- industry	Reuters refinitive database

Appendix 3. Countries

Label of the Country	**Name of the Country**
1.UK	United Kingdom
2.FR	France
3.DEU	Germany
4.CHE	Switzerland
5.SWE	Sweden
6.ESP	Spain
7.NLD	Netherland
8.FIN	Finland
9.BEL	Belgium
10. ITA	Italy
11. DNK	Denmark
12. NOR	Norway
13. IRL	Ireland
14. AUT	Austria
15. PRT	Portugal
16. POL	Poland

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