LUND UNIVERSITY
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Prevalence of SDG-Washing

An Empirical Analysis on Large Listed European Companies

by

Jörgen Jürine

jo0472ju-s@student.lu.se

Abstract

The sustainable development goals (SDGs) were introduced in 2015 to steer worldwide progress towards a sustainable, inclusive and prosperous path. Since then companies have gradually taken up the goals and are today actively reporting contributions to the goals. However, with this, also a novel concept of SDG-washing has emerged – companies claiming to contribute to the SDGs but in reality not doing so meaningfully. To examine the prevalence of SDG-washing, an empirical analysis is conducted on 156 large listed European companies who belong to the STOXX 600 Europe Index. The reports and webpages of the companies are analyzed with a specially developed framework for identifying SDG-washing. The framework represents minimum requirements of reporting on the SDGs while claiming contributions to the goals. It was found that 139 firms claimed to contribute to the SDGs and of these 35% of companies were found to be SDG-washing. SDG-washing was identified through subconcepts – 27% of companies were found to be rainbow washing, 14% cherry-picking and also 14% reporting only on positive contributions and ignoring negative impacts on the SDGs. The results indicate that SDG-washing is not widely prevalent, but however still a considerable share of large listed European companies were found to be SDG-washing.

Keywords: SDG-washing, European listed companies, SDG reporting, sustainable development goals (SDGs), content analysis

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1 Introduction

1.1 Background

In 2015, the world nations under the leadership of the United Nations (UN) adopted 17 sustainable development goals (SDGs) to steer worldwide progress and development towards a sustainable path and to respond to many global challenges, such as poverty, hunger, climate change and inequality (United Nations, 2015).

Figure 1. 17 sustainable development goals

Source: Icons and wheel of sustainable development goals (United Nations, 2023)

The SDGs are comprehensive and affect the entire society and thus every actor in the society needs to contribute to the achievement of the goals. The private sector plays a very significant role in the achievement of the SDGs (Henriksson & Weidman Grunewald, 2020; Pizzi et al., 2020; Sullivan, Thomas & Rosano, 2018) and hence is highly encouraged to contribute (United Nations, 2015). Thus, companies are also encouraged to integrate the sustainable development goals into their business practices and report on them publicly. This has been happening – through the years SDG reporting has increased gradually and today substantial part of large companies report on the SDGs (KPMG, 2022; PwC, 2019). The SDGs are often presented in firms annual and sustainability reports. Reporting is important because it creates transparency and accountability and gives access to vital information for many stakeholders such as investors and consumers who take sustainability related information into account in their decisions.

However, the quality of SDG reporting varies and has given way to a relatively novel phenomenon – SDG-washing. In broad terms, SDG-washing refers to a practice where an organization claims to contribute to the achievement of the SDGs but does not do so meaningfully. It is connected with the concepts of greenwashing and bluewashing. Greenwashing denotes to a practice where an organization discloses false or misleading information regarding the organizations' environmental practices or claims (Baum, 2012). Bluewashing on the other hand originally refers to a practice where an organization associates itself with the United Nation's initiatives for reputational benefits without implementing expected meaningful changes (Berliner & Prakash, 2015).

Many studies have found that on average companies have a superficial approach to SDG reporting (Heras-Saizarbitoria, Urbieta & Boiral, 2022; Moratis & Melissen, 2019; van der Waal & Thijssens, 2020) which implies SDG-washing. For example, a study conducted by PwC (2018) found out that 72% of the companies surveyed mentioned SDGs in their public reports and at the same time 23% of the companies presented meaningful key performance indicators and targets related to the SDGs. SDG-washing is explained by companies' wish to boost their image among their stakeholders (Heras-Saizarbitoria, Urbieta & Boiral, 2022) by being associated with the SDGs (Beyne, 2020). However, to achieve the SDGs by 2030, the private sector, as an important actor in achieving the goals, needs to meaningfully contribute to the goals – only doing so symbolically is hindering the progress.

SDG-washing is little researched in the academic literature. Several studies touch briefly on the subject of SDG-washing (Heras-Saizarbitoria, Urbieta & Boiral, 2022; Silva, 2021; van der Waal & Thijssens, 2020) but the literature is very scarce on empirical analyses aiming to examine the prevalence of SDG-washing. Only one paper was found in the literature that empirically analyzed SDG-washing (Ferrón Vílchez, Ortega Carrasco & Serrano Bernardo, 2022). This points to the gap in the literature and therefore further research is needed regarding SDG-washing (Krasodomska, Zieniuk & Kostrzewska, 2022; Silva, 2021).

1.2 Aim and Scope

The aim of this thesis is to research the prevalence of SDG-washing in large listed European companies.

The concept of SDG-washing is relatively broad and incoherent in the academic literature and therefore, firstly the aim is to define the concept on the basis of relevant literature. Secondly, the literature does not offer many methodological approaches of how to identify SDG-washing and thus the second aim is to develop a framework to assess the prevalence of SDG-washing in firms. These are the prerequisites for researching the prevalence of SDG-washing in large listed European companies.

Thus, three research questions have been set to meet the research purpose:

- What is SDG-washing?
- How to identify SDG-washing?
- What is the prevalence of SDG-washing in large listed European companies?

The first research question will be addressed in Chapter 2: Theoretical Background. Chapter 3: Methodology will focus on the second research question by developing a framework for identifying SDG-washing. Third research question and the aim of this thesis will be reached in Chapter 4: Empirical Analysis.

156 large European stock companies who are part of the STOXX Europe 600 Index (600 largest European firms) will be evaluated for SDG-washing. For this content analysis based on the developed framework will be conducted on firms' webpages and reports (e.g. annual reports, sustainability reports, integrated reports) for the year 2022. The aim is also to present a first indication of SDG-washing between different sectors. Therefore the sample consists of 13 largest European companies in twelve sectors totaling to 156 firms.

The reasoning behind focusing on large listed European firms is the following. First, the role of large companies is crucial since due to their size and reach they can significantly influence the SDGs positively or negatively and hence influence sustainable development in general (van Zanten & van Tulder, 2021). Secondly, European companies have been found to be more active in SDG reporting than firms in other world regions (Elalfy, Weber & Geobey, 2021; KPMG, 2022). Additionally, European countries are ranked very high in SDG Index, which measures how well a country is doing in terms of SDGs (Sachs et al., 2022), therefore a questions arises of how well are European companies doing and whether SDG-washing is present. Thirdly, large stock companies tend to report on SDGs more than SMEs and private firms (Elalfy, Weber & Geobey, 2021; Pizzi et al., 2020; Rosati & Faria, 2019a). Hence it is expected that most of the companies in the sample report on the SDGs and the prevalence of SDG-washing can be assessed in large listed European companies.

The thesis makes three main contributions to the academic literature on SDG-washing. Firstly, the thesis provides an extensive analysis of the concept of SDG-washing and relates it to greenwashing and bluewashing. So far SDG-washing has been mentioned in several works with a few sentences but a thorough analysis has not yet been conducted. Secondly, the thesis offers a framework of how to identify SDG-washing in firms. This framework can be used in further research. Thirdly and most importantly, an empirical analysis is conducted to identify the prevalence of SDG-washing in large listed European firms. This is the first research to offer such insight which can be helpful in understanding the scope of the problem.

1.3 Outline of the Thesis

The thesis is structured as follows. Chapter 2 will focus on the theoretical background. Firstly in Chapter 2, the concept of SDG-washing will be analyzed based on the literature and elements of SDG-washing will be defined which will serve as a basis for developing the framework for identifying SDG-washing. Secondly, an overview will be given of relevant previous research regarding SDG-washing. Chapter 3 will address methodology which is the basis for empirical analysis. Firstly in Chapter 3, the sample used in the empirical analysis as well as the methodological approach are introduced and explained. Secondly, the framework for identifying SDG-washing will be developed and presented. Chapter 4 focuses on the empirical analysis. Firstly in Chapter 4, the results of the analysis will be presented – the prevalence of SDG-washing and the first indication of SDG-washing by sectors. Secondly, the results will be discussed and linked with the literature. Chapter 5 will provide concluding remarks and will outline limitations of the thesis and further research avenues.

2 Theoretical Background

2.1 Defining SDG-Washing

In this chapter the concept of SDG-washing will be defined and analyzed based on existing literature. The analysis conducted in this and the following subchapter will be the basis for the framework to identify SDG-washing in companies. Since SDG-washing is closely connected with the concepts of greenwashing and bluewashing, a brief overview of these concepts and their relation to SDG-washing will also be presented.

2.1.1 Greenwashing

Greenwashing as a term was first introduced by Jay Westerveld in 1986 who suspected that the hotel industry practice of encouraging guests to reuse towels for environment's sake was to mask the real reason of economic benefit (Pearson, 2010). Moreover, he argued that at the same time hotels did not pay attention to problems which have more substantial effect on the environment, such as waste recycling, but portrayed themselves as environmentally conscious because of encouraging towel reuse (Pearson, 2010). Since then the concept of greenwashing has been widely used and the definition has evolved with time. There is not an universally accepted definition of greenwashing (de Freitas Netto et al., 2020) but many researchers define greenwashing as a practice where an organization discloses false or misleading information regarding the organizations' environmental practices or claims (Baum, 2012). At the core of greenwashing is the deception of stakeholders through disclosure of false or misleading information (de Freitas Netto et al., 2020; Venturelli, 2021). Some researchers have broadened greenwashing concept and also include social dimension in addition to the environmental (de Freitas Netto et al., 2020). However, some researchers separate social and environmental dimensions and use the term bluewashing to refer to the social aspect (de Freitas Netto et al., 2020). In this paper the two concepts will be distinguished.

The rationale behind greenwashing is that companies wish to influence their stakeholders (e.g. investors, consumers) and be seen more positive in their eyes (Venturelli, 2021). In addition, since so called "green markets" are on the rise (Nyilasy, Gangadharbatla & Paladino, 2014) then businesses wish to appeal to these markets and thus have an incentive to disclose incorrect or misleading environmental claims (Baum, 2012). A study led by the European Commission in 2020 surveyed organizations' e-shops, webpages and advertisements for environmental claims and found that 53% of them are misleading and vague (European Commission, 2020) highlighting the problem. Greenwashing has created a trust problem between companies and their stakeholders because it is difficult to verify various environmental claims by the stakeholders (Nyilasy, Gangadharbatla & Paladino, 2014).

2.1.2 Bluewashing

Bluewashing was first associated mainly with United Nations Global Compact (UNGC) (Heras-Saizarbitoria, Urbieta & Boiral, 2022; Sailer, Wilfing & Straus, 2022) which is a voluntary initiative for businesses to integrate sustainable and socially responsible policies (Berliner & Prakash, 2015). Bluewashing occurs when a company associates itself with the UNGC but mainly for reputational benefits and does not implement expected meaningful changes (Berliner & Prakash, 2015). The name comes from the blue color of the UN (Sailer, Wilfing & Straus, 2022; van Tulder & Lucht, 2019). Although, bluewashing originated from the criticism around UNGC and is associated with UN initiatives (van Tulder & Lucht, 2019), it is also used to point towards organizations misleading stakeholders on social issues in general (de Freitas Netto et al., 2020; Sailer, Wilfing & Straus, 2022). As is the case with greenwashing, bluewashing does not have a universally accepted definition (Sailer, Wilfing & Straus, 2022). All in all, bluewashing appears when organizations disclose false or misleading social claims (i.e. business is portrayed more socially responsible than in reality) (Sailer, Wilfing & Straus, 2022) and when organizations join UN initiatives/programs to benefit from the positive image without making real contributions (e.g. being part of UNGC without implementing real changes) (van Tulder & Lucht, 2019).

2.1.3 SDG-Washing

Although in overall, the literature is still quite sparse on SDG-washing, there could be found number of works where SDG-washing is mentioned. SDG-washing has elements from both greenwashing as well as bluewashing: deception of stakeholders and using association with the UN to boost reputation. However, the concept of SDG-washing does not only consist of these two elements but is much broader. SDG-washing emerged after the introduction of SDGs in 2015 and the definition of SDG-washing is not coherent in the literature. Meaning that different authors use the term SDG-washing differently and emphasize different aspects. To illustrate this the following table consists of some of the definitions of SDG-washing found in the literature.

Table 1. Definitions of SDG-washing in the literature

Authors	**Definition**
Kornieieva (2020, p.68)	"… "SDG-washing" practice, which means reporting on positive contributions to global goals and ignoring the significant negative impacts."
McCarton, O'Hogain and Reid (2021, p.171)	""SDG washing" refers to companies that use the SDGs as "window dressing" to present a deceptively positive picture of their environmental and social impacts."
Van Tulder et al. (2021, p.16)	"SDG washing refers to the inclination of organizations espousing to embrace the SDGs, but only superficially addressing them without aiming for the transformative change needed to help resolve the systemic problems the partnership is supposed to commit to."
Venturelli (2021, p.2)	"… SDG-washing represents a subfield of the greenwashing, and it consists in the disclosure of false information about the contribution to SDGs."

Venturelli (2021) sees SDG-washing as presenting untrue information regarding the contribution to SDGs, whereas Kornieieva (2020) takes a broader approach highlighting that SDG-washing appears when organizations do not report on relevant negative effects they have on the SDGs but do so with positive impacts. McCarton, O'Hogain and Reid (2021) highlight the practice of disclosing misleading information on the contribution to the SDGs to seem more favorable. Van Tulder et al. (2021) emphasize the aspect of organizations claiming to commit to achieving the SDGs but do so symbolically. The aforementioned authors note different aspects of SDG-washing but all definitions point that as a result of SDG-washing organizations appear more positive than in reality.

There are also two relevant subconcepts to SDG-washing which are "cherry-picking" and "rainbow washing". The first occurs when a business reports on or chooses SDGs and their targets on the basis of which are the easiest to achieve not the ones that the organization has the highest impact on (GRI & UNGC, 2018). For example, it occurs when businesses report on SDGs where they are already doing well or which can be taken forward with low efforts and at the same time neglecting the SDGs which the businesses have the most impact on (Johnsson et al., 2020). Izzo, Ciaburri and Tiscini (2020) point out that cherry-picking practice leads to a situation where a company superficially addresses the SDGs which is similar to what Van Tulder et al. (2021) emphasizes regarding SDG-washing. Rainbow washing points to the colorful figures and symbols of the SDG framework and to the situation where businesses use these illustrations enthusiastically in their materials for reputational benefits but do not take seriously contributing to the SDGs (Izzo, Ciaburri & Tiscini, 2020). This highlights the situation where businesses in the attempts to boost their reputation want to be associated with SDGs and the UN which largely have a positive connotation in the society and therefore benefit from this. This implies bluewashing.

The following table provides a further analysis of the concept of SDG-washing by presenting different elements. It is based on the review of 18 sources.

Table 2. Different SDG-washing aspects found in the literature

Element	Studies emphasizing the element
Cherry-picking – focusing on the SDGs that are the easiest to achieve not the most relevant/impactful	GRI and UNGC (2018), Heras-Saizarbitoria, Urbieta and Boiral (2022), Johnsson et al. (2020), Kornieieva (2020), Kørnøv, Lyhne and Davila (2020), Silva (2021), van Zanten and van Tulder (2021)
Rainbow washing – symbolic commitment to the SDGs to be associated with the UN and the colorful framework of the SDGs	Beyne (2020), Henriksson and Weidman Grunewald (2020), Heras-Saizarbitoria, Urbieta and Boiral (2022), Izzo, Ciaburri and Tiscini (2020), Krasodomska, Zieniuk and Kostrzewska (2022), McCarton, O'Hogain and Reid (2021), Moratis and Melissen (2019)
Superficial efforts on the SDGs without real and significant contributions	GRI and UNGC (2018), Henriksson and Weidman Grunewald, (2020), Heras-Saizarbitoria, Urbieta and Boiral (2022), Nishitani et al. (2021), Van Tulder et al. (2021)
Reporting on positive contributions to the SDGs while ignoring considerable negative impacts	GRI and UNGC (2018), Ferrón Vílchez, Ortega Carrasco and Serrano Bernardo (2022), Kiesnere and Baumgartner (2020), Kornieieva (2020)
Providing incorrect information of the contributions to the SDGs	Venturelli (2021)
Committing to adopt the entire SDG framework while focusing only on specific SDGs	Moratis and Melissen (2019)
Not contributing to all goals	Beyne (2020)

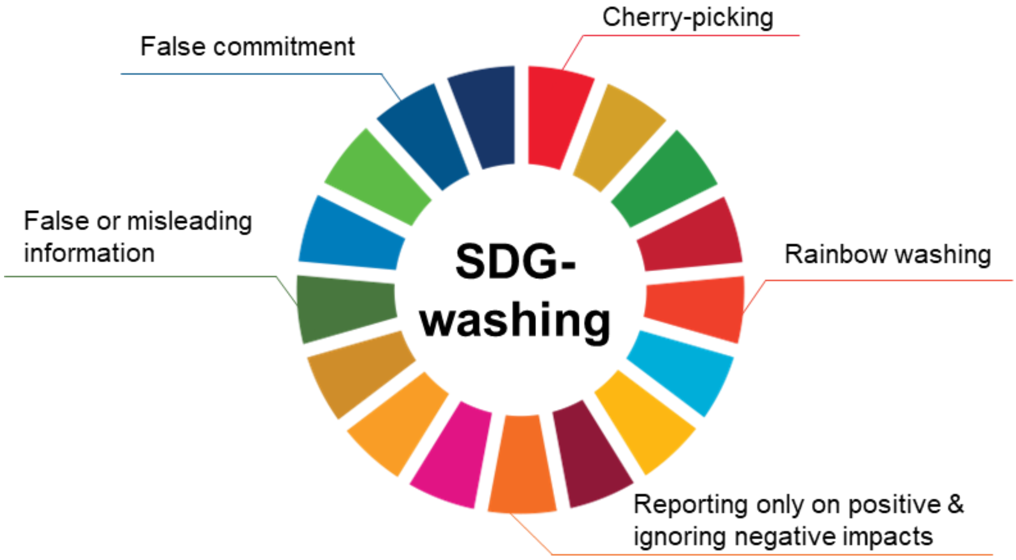
These outlined elements of SDG-washing are interconnected and are not necessarily totally separate from each other. For example, cherry-picking while not the same is similar to the element of reporting only on positive contributions to the SDGs and neglecting negative impacts – businesses select a few SDGs which for them are easy to contribute to and hence report on positive efforts but at the same time ignore other SDGs which would point out negative impacts they are creating. Kiesnere and Baumgartner (2020) provide an example where a business is developing a renewable energy project (contributing to SDG 7: affordable and clean energy) but due to this project a local community needs to relocate and hence this situation from one side has positive impact but also negative in terms of the SDGs.

The element of superficial contributions to the SDGs indicates for example a situation where a company just relabels existing activities as contributions to the SDGs but does not undertake or plan any meaningful actions/changes which aim is to contribute to the achievement of the SDGs (Nishitani et al., 2021; GRI & UNGC, 2018). This is a way for companies to just raise their reputation and does not help to significantly advance the achievement of SDGs (Moratis & Melissen, 2019). In contrast, it is necessary that businesses integrate the SDGs into their strategies (Moratis & Melissen, 2019). Rainbow washing in its core means superficial contributions to benefit from the positive image of the colorful SDG framework. Therefore, since rainbow washing and superficial contributions are very much similar they are merged together as one element of SDG-washing and will be followingly referred to as rainbow washing.

Beyne (2020) argues that a company is engaging in SDG-washing when it is not contributing to all goals and the logic behind it is that the SDGs are interconnected and should be pursued together. However, this reasoning is sound for countries but it might not be for businesses since companies might not find meaningful ways to contribute to every SDG. Therefore, it is rational to prioritize SDGs but it should be based on relevance not on which SDGs are the easiest to achieve (Agarwal, Gneiting & Mhlanga, 2017; West, 2016). Global Reporting Initiative (GRI) standards are widely used (Ferrón Vílchez, Ortega Carrasco & Serrano Bernardo, 2022; KMPG 2022; PwC, 2019) and most businesses who are reporting on the SDGs use GRI provided framework (Curtó-Pagès et al., 2021; van der Waal & Thijssens, 2020). GRI has together with United Nations Global Compact (UNGC) developed a framework and guide for businesses to integrate SDGs into reporting and there they also encourage companies to prioritize SDGs (GRI & UNGC, 2018). Therefore, it is concluded that a company is not SDG-washing when it is not reporting on all goals and hence this element is discarded.

As seen from the analysis the concept of SDG-washing is broad and has many aspects. Concludingly, the analysis points that SDG-washing transpires through five aspects – (1) cherry-picking SDGs, (2) rainbow washing, (3) reporting only on positive contributions & ignoring negative impacts, (4) disclosing false or misleading information and (5) providing false commitment (reporting only on specific SDGs but claiming to adopt the entire SDG framework). In addition to disclosing false information, providing misleading information was also added to the same aspect. Disclosing misleading information is one of the elements of greenwashing (de Freitas Netto et al., 2020; Westerman et al., 2022) and applies to SDG-washing as well to confuse stakeholders and seem more favorable. The following figure illustrates the different aspects of SDG-washing.

Figure 2. Elements of SDG-washing

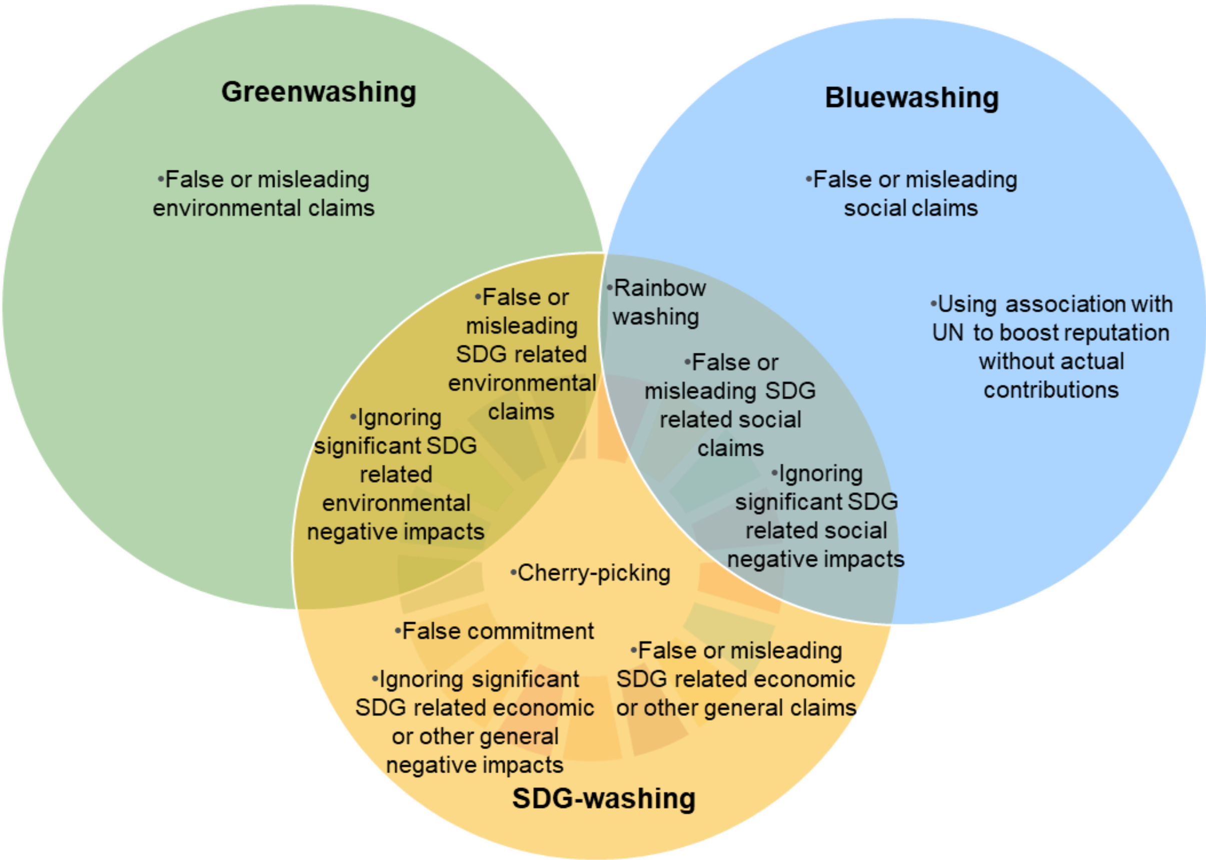


Source: Created by the author, used SDG color wheel (United Nations, 2023)

2.1.4 SDG-Washing Relation to Greenwashing and Bluewashing

The concept of SDG-washing derives from both greenwashing and bluewashing. Many researchers see SDG-washing as part of greenwashing (Johnsson et al., 2020; Kørnøv, Lyhne & Davila, 2020; Venturelli, 2021) which acts as an umbrella term. Other authors (e.g. Ferrón Vílchez, Ortega Carrasco & Serrano Bernardo, 2022) make the distinction between these two concepts. In this thesis SDG-washing, greenwashing and bluewashing will be distinguished to highlight each features. In the following figure the relation of SDG-washing to greenwashing and bluewashing is visualized. It should be noted that there can be overlaps between greenwashing and bluewashing but this was not the scope of this paper and is left unaddressed.

Figure 3. SDG-washing relation to greenwashing and bluewashing



Source: Created by the author, used SDG color wheel (United Nations, 2023)

SDGs are often categorized by environmental, social and economic dimensions. In this context, greenwashing covers environmental SDGs and bluewashing social SDGs. The two aspects: false claims and reporting only on positive & ignoring negative impacts is divided into three subcategories based on the dimensions. By this logic the overlapping areas are introduced followingly.

SDG-washing overlaps with greenwashing when companies are making false or misleading SDG related environmental claims while specifically mentioning SDG(s) – e.g. business pledging to reduce GHG emissions to contribute to SDG 13 (climate action) but reports misleading information. The overlap is also in places where a company is reporting SDG related environmental positive developments while specifically mentioning SDG(s) but ignores negative environmental impacts to the SDGs.

SDG-washing overlaps with bluewashing when a company is rainbow washing – when companies use UN backed SDGs to increase positive image without making real contributions. Also, another overlapping area is when companies are making false or misleading SDG related social claims while specifically mentioning SDG(s) – e.g. business pledging to promote gender equality in the company to contribute to SDG 5 (gender equality) but takes no action in reality. The overlap is also in places where a company is reporting SDG related social positive developments while specifically mentioning SDG(s) but ignores negative social impacts to the SDGs.

These five instances are the main overlapping areas. Cherry-picking and false commitment are solely SDG centered and these have no apparent overlaps with greenwashing nor bluewashing.

2.2 Previous Research on SDG-Washing

The literature is very scarce on empirical works focusing specifically on SDG-washing in companies. There are several studies that research how companies report on the SDGs and a few studies of these also discuss briefly SDG-washing.

The following table categorizes academic articles as well as other relevant works, which explore SDG reporting and/or SDG-washing, to three groups. The first group of works' focus is at least partly on uncovering how businesses engage with the SDGs and how they report on them. These works do not explicitly discuss SDG-washing. Studies in the second category have their focus also on researching how businesses engage with the SDGs and report on them but they also discuss one or many SDG-washing aspects. The third group consists of works which main focus is to research SDG-washing in companies.

Table 3. Selection of studies focusing on SDG reporting and/or SDG-washing

Category	**Articles and other sources**
1. SDG reporting Empirical analysis on how companies engage with the SDGs and how they report on them	Curtó-Pagès et al. (2021), Hummel and Szekely (2022), KPMG (2022), PwC (2019), van Zanten and van Tulder (2018)
2. SDG reporting & discussing SDG-washing Empirical analysis on how companies engage with the SDGs which also discuss one or many SDG-washing aspects	Heras-Saizarbitoria, Urbieta and Boiral (2022), Izzo, Ciaburri and Tiscini (2020), Mhlanga, Gneiting and Agarwal (2018), Silva (2021), van der Waal and Thijssens (2020)
3. SDG-washing Empirical analysis on SDG-washing in companies	Ferrón Vílchez, Ortega Carrasco and Serrano Bernardo (2022)

There are more studies that focus on SDG reporting but the most relevant were selected and will be introduced. In contrast, there are only a few studies in the literature that research SDG reporting which also discuss SDG-washing or studies that focus solely on SDG-washing. This points to the gap in the literature and therefore further research is encouraged regarding SDG-washing (Krasodomska, Zieniuk & Kostrzewska, 2022; Silva, 2021).

Followingly, the first group studies' results and methods will be elaborated to give context about SDG reporting in companies – to be able to identify SDG-washing it is first important to understand how companies are engaging with the SDGs and how do they report on them. Then a closer look will be taken on the works in the second group to explore how researchers have connected SDG reporting practices with SDG-washing. Lastly, only one study was found which specific focus is SDG-washing and it will be further elaborated and analyzed.

2.2.1 Empirical Analyses Focusing on SDG Reporting

The following table outlines what sample and methods have the selected studies used to research SDG reporting.

Table 4. Samples and methods used in the studies researching SDG reporting

Study	Sample	Method
Van Zanten and van Tulder (2018)	81 European and North American multinational enterprises (MNEs) listed in the 2015 FT Global 500	Digital survey in 2016-2017
Hummel and Szekely (2022)	600 companies listed in the STOXX Europe 600 Index	Content analysis on firms annual reports for the years 2015-2018
Curtó-Pagès et al. (2021)	58 companies listed on the Madrid Stock Exchange	Content analysis on firms non-financial reports for the years 2016-2019
PwC (2019)	1 141 companies which are the largest and most influential in 31 countries and territories	Content analysis on firms financial and non-financial reports of 2019
KPMG (2022)	N100 sample – 5 800 companies consisting of largest 100 companies in 58 countries, territories and jurisdictions G250 sample – largest 250 companies globally	Content analysis on firms financial as well as non-financial reports and websites which are published in the period of July 2021 - June 2022

Most of the research regarding SDG reporting is performed by content analysis on firms' reports. A survey format has not been used very often but it is a primary source of information directly from the companies and hence offers a unique insight. Therefore, the numerously cited and acknowledged article of van Zanten and van Tulder (2018) is also discussed among other works.

Van Zanten and van Tulder (2018) conducted a survey to analyze multinational enterprises (MNEs) engagement with the SDGs and their targets and for this approached the companies' executives who have a role in managing sustainability challenges. As a note, each of the 17 SDGs have a number of specific targets. For example, SDG 7 (affordable and clean energy) has five targets of which the first one's aim is to secure universal access to energy services for everyone by 2030 and the second target's aim is to grow considerably the share of renewable energy in the global energy production (United Nations, 2015). Van Zanten and van Tulder (2018) found that MNEs tend to focus more on SDG targets which are internally actionable –

meaning targets which can be pursued without cooperating with other organizations. SDG 12 (responsible consumption and production) target to cut down on waste generation (United Nations, 2015) is an example of internally actionable target. Whereas SDG 6 (clean water and sanitation) target to ensure safe and affordable drinking water for everyone (United Nations, 2015) is an example of externally actionable target since meaningful contribution to the target needs cooperation between many actors. Van Zanten and van Tulder (2018) also point out that businesses tend to engage with SDG targets which aim to avoid harm in contrast to doing good. The rationale behind this is that the SDG targets which avoid harm are ethically near-minimum of what is expected of businesses whereas the targets which aim to do good do not have that sort of pressure with them (van Zanten & van Tulder, 2018). SDG 16 (peace, justice and strong institutions) target to cut down on bribery and corruption (United Nations, 2015) is an example of avoiding harm and SDG 7 (affordable and clean energy) target to increase energy efficiency (United Nations, 2015) is an example of doing good. These findings shed light on which SDGs and targets companies are more inclined to engage with and what is the rationale behind the selection besides the practice that companies choose SDGs which they can have a more direct effect on. It is encouraged that companies integrate all of the SDGs into their strategies but however, these findings illustrate why for companies it is difficult to integrate every SDG and their targets into their business.

Curtó-Pagès et al. (2021) and Hummel and Szekely (2022) both conducted a longitudinal analysis of selected companies over a four year period. Hummel and Szekely (2022) sample is broader and encompasses 600 firms in STOXX Europe 600 Index while Curtó-Pagès et al. (2021) took a more narrow focus and analyzed 58 listed Spanish companies. Hummel and Szekely (2022) used annual reports in the research and Curtó-Pagès et al. (2021) used annual reports as well as non-financial reports (such as sustainability reports, CSR reports). Hummel and Szekely (2022) developed a framework to measure SDG reporting quality which has eleven binary indicators, including whether the report discloses qualitative and quantitative targets regarding the SDGs and whether the report provides information regarding future actions to pursue the SDGs – existence of these elements shows higher quality reporting. It is found that during the four year period (2015-2018) SDG reporting quality has increased in firms but in overall still remains low (Hummel & Szekely, 2022). It is intuitive that with time the reporting quality might steadily increase because firms are better and better acquainted with the goals and find new and more concrete ways to report on SDGs. However, low SDG reporting quality might indicate superficial efforts in integrating SDGs in reality and therefore might be a relevant indicator for identifying SDG-washing.

Both Curtó-Pagès et al. (2021) and Hummel and Szekely (2022) found that with every observed year more firms mentioned SDGs in their reports, implying a gradual increasing popularity of SDGs among large companies. Curtó-Pagès et al. (2021) also looked at whether companies' CEOs mention SDGs in their letters to the stakeholders, signifying importance of the SDGs to the higher management. They found that through the years more and more firms mention SDGs in the letters, however it is not a dominant trend – in 2019 43% of the researched companies did so (Curtó-Pagès et al., 2021).

KPMG (2022) study is the most recent and largest on SDG reporting and the study found that SDG reporting is relatively prevalent – 71% (N100 sample) of companies were found to report on the SDGs. SDG reporting has gradually increased through the years – in 2017 39% (N100 sample) of companies reported on the SDGs (KPMG, 2022). This confirms the trend brought out by Curtó-Pagès et al. (2021) and Hummel and Szekely (2022). Although, the increase in the last two years has been very small – in 2020 69% of firms (N100 sample) reported on the SDGs (KPMG, 2022). KPMG (2022) study also uncovered that 86% of the firms who report on the SDGs disclosed only positive information regarding their impact on the SDGs while 14% of the companies offered balanced reporting and included negative information as well. This finding might imply to SDG-washing (reporting only on positive & ignoring negative impacts) since it is questionable that large companies have only positive impacts on the SDGs.

PwC (2019) study points out that firms on average are not meaningfully contributing to the SDGs, substantiating the claim with the results that show low integration of SDGs into business strategy, low efforts in identifying relevant SDG targets, setting objectives and measuring progress of contributing to the SDGs. The study found that 34% of all firms in the sample mention SDGs in their business strategy sections of the report and 21% mentioned SDGs in CEO statements (PwC, 2019). Moreover, only 14% of firms brought out concrete SDG targets and of these 39% set qualitative and 28% quantitative objectives to contribute to the SDGs (PwC, 2019). 1% of all companies in the sample set quantitative objectives and also reported on the progress (PwC, 2019). These results highlight the low quality of SDG reporting and hence superficial efforts in pursuing SDGs – most companies are mentioning SDGs in their reports but few are showing how exactly they contribute.

The four studies (Curtó-Pagès et al., 2021; Hummel & Szekely, 2022; KPMG, 2022; PwC, 2019) find similar results when assessing which SDGs are the most and least often addressed by firms – SDG 8 (decent work and economic growth), SDG 13 (climate action) and SDG 12 (responsible consumption and production) are the most engaged with and SDG 1 (no poverty), SDG 14 (life below water) and SDG 2 (zero hunger) the least. These results follow the logic of van Zanten and van Tulder (2018) that firms engage more with SDGs and their targets which are internally actionable. The most engaged SDGs are arguably easier for companies to pursue than the least engaged SDGs. Firms create jobs and are central to economic growth and hence SDG 8 is one of the easiest to interact with. SDG 13 and SDG 12 can be pursued by enhancing and remodeling processes in the firms (e.g. upgrading to less carbon intensive technologies and reducing waste) and hence are more internally actionable. Also, it is not surprising that SDG 13 is one of the most engaged with since climate challenge is one of the most emphasized in the world today comparing to other challenges. In contrast, the least engaged SDGs are more externally actionable meaning that firms might find it difficult to pursue these goals alone. Achieving no poverty and zero hunger are such large problems that firms might find difficult to directly influence these through their everyday processes and these goals are most likely pursued through partnerships with other actors. Similar might be with SDG 14, where companies which are not directly involved in marine sector might find it difficult to contribute to this goal directly. As PwC (2019) found firms engage more with goals that have more straightforward impact on their business.

However, why do companies voluntarily report on the SDGs? SDG reporting can be explained by firms' intention to maintain legitimacy in the eyes of stakeholders in the society (Elalfy, Weber & Geobey, 2021; Heras-Saizarbitoria, Urbieta & Boiral, 2022; Hummel & Szekely, 2022; Silva, 2021) and also to appear favorable to financial stakeholders for financial benefit (Hummel & Szekely, 2022). The stakeholders can be categorized into two: financial (e.g.

socially responsible investors, financial analysts) and non-financial (e.g. clients, media, employees, environmental NGOs) (Hummel & Szekely, 2022). Therefore, SDG reporting is a way for companies to advance or at least maintain their image in the society and to appear favorable to financial stakeholders who take into account firms sustainability practices in their evaluations and decisions.

Several works have focused on uncovering what are the characteristics of companies who report on the SDGs. It has been found that large companies are more inclined to report on the SDGs than small firms (Elalfy, Weber & Geobey, 2021; Rosati & Faria, 2019a) and also it is the same with public listed firms (Elalfy, Weber & Geobey, 2021; Pizzi et al., 2020). Industry might have a role as well – companies who belong to industries (e.g. energy, manufacturing) which have higher sustainability impacts tend to report more on SDGs than companies in industries (e.g. real estate) which have lower sustainability impacts (Elalfy, Weber & Geobey, 2021). However this is debatable and needs further research since another study by Krasodomska, Zieniuk and Kostrzewska (2022) did not find substantial evidence that industry is a relevant factor. From a regional viewpoint companies in Europe and South America report on SDGs more than companies in other world regions (Elalfy, Weber & Geobey, 2021; KPMG, 2022). Rosati and Faria (2019b) examined the institutional factors behind SDG reporting and found for example that organizations in countries which are more impacted by climate change tend to report more on the SDGs. Lastly, Rosati and Faria (2019a) found that firms who report on SDGs tend to have a lower average age of board members and have a higher share of female members in the board.

2.2.2 Empirical Analyses Focusing on SDG Reporting & Discussing SDG-Washing

The following table brings out what samples and methods have the studies used which focus on SDG reporting but also discuss one or many SDG-washing elements.

Table 5. Samples and methods used in the studies researching SDG reporting and discussing SDG-washing elements

Study	Sample	Method
Mhlanga, Gneiting and Agarwal (2018)	76 large global companies in different industries	Content analysis on publicly available information
Izzo, Ciaburri and Tiscini (2020)	40 largest listed Italian companies	Content analysis on firms' financial and non-financial reports of 2018
Van der Waal and Thijssens (2020)	2000 largest public companies globally by the Forbes Global 2000 list	Content analysis on firms' sustainability reports of 2017
Silva (2021)	100 firms in the FTSE 100 Index (100 largest companies on the London Stock Exchange)	Content analysis on firms sustainability, CSR and integrated reports of 2018
Heras-Saizarbitoria, Urbieta and Boiral (2022)	1370 sustainability reports from organizations around the world (including SMEs and large companies)	Content analysis on organizations' sustainability reports for the years 2018-2020

Although all of the studies touch on one or many SDG-washing elements, most of them do not go in depth regarding SDG-washing (with the exception of Heras-Saizarbitoria, Urbieta & Boiral, 2022). This again implies the scarce literature on the subject.

As a short analysis of the five studies the following indicators are in some cases used to explore SDG reporting practices and quality and for discussing SDG-washing:

- Explanation of why SDGs are pursued
- Explanation of why specific SDGs are prioritized
- Explanation of how SDGs are pursued
- Whether specific objectives have been set to contribute to the SDGs
- Whether the objectives are qualitative/quantitative and past/future oriented

Mhlanga, Gneiting and Agarwal (2018) found that companies rarely explain how they have selected the SDGs they report on and hence it is difficult to ascertain if firms prioritized SDGs based on the impact they have on them or on the basis of which are the easiest. This echoes what Heras-Saizarbitoria, Urbieta and Boiral (2022) found – almost in all cases firms gave no or very superficial justification why certain SDGs were chosen. The absence of explanation implies cherry-picking (Heras-Saizarbitoria, Urbieta & Boiral, 2022). Silva (2021) argues that cherry-picking SDGs might satisfy the pressure from the stakeholders and hence companies might not have any incentives to make substantial efforts.

All of the analyzed works found that companies are superficially engaging with the SDGs. Heras-Saizarbitoria, Urbieta and Boiral (2022) highlight that the absence of specific SDG related objectives and the absence of explanation of how SDGs are pursued indicates that a firm has superficial approach to the SDGs. Mhlanga, Gneiting and Agarwal (2018) found when analyzing firms' reports that some companies used colorful SDG design illustrations and in word supported the SDGs but failed to substantiate how their business contributes to the achievement of the goals. Hence implying rainbow washing. This is backed up by the findings of Izzo, Ciaburri and Tiscini (2020) – the analyzed listed Italian companies provided scarce information regarding how they pursued the SDGs. Similar results was found by van der Waal and Thijssens (2020) – in most cases companies are symbolic in their commitment to SDGs and do not substantiate their involvement with how specifically SDGs are pursued and how progress is measured. Heras-Saizarbitoria, Urbieta and Boiral (2022) note that in some cases SDG icons were added to the reports to certain places to suggest a connection to the SDGs but no justification was given (Heras-Saizarbitoria, Urbieta & Boiral, 2022) which implies rainbow washing. As a conclusion Heras-Saizarbitoria, Urbieta and Boiral (2022) state that most analyzed organizations make symbolic efforts to the SDGs and most likely cherry-picking and rainbow washing practices are prevalent.

Many researchers have found that some companies merely tend to use SDGs to group existing activities (Mhlanga, Gneiting & Agarwal, 2018; Silva, 2021; van der Waal & Thijssens, 2020) and hence paint these activities over with the SDG design illustrations to imply on a connection but in reality do not seek ways to advance the SDGs, hinting at rainbow washing. As GRI and UNGC practical guide (GRI & UNGC, 2018) state, that although it is important to bring out existing activities that contribute to the SDGs but just relabeling these activities is not enough and does not correspond with the idea of integrating SDGs into the business.

2.2.3 Empirical Analyses Focusing on SDG-Washing

As already mentioned only one paper was found which empirically analyzed SDG-washing (Ferrón Vílchez, Ortega Carrasco & Serrano Bernardo, 2022). The following table presents the sample and method used in the article.

Table 6. Sample and method used in the one study found to empirically research SDG-washing

Study	**Sample**	**Method**
Ferrón Vílchez, Ortega Carrasco and Serrano Bernardo (2022)	97 MNEs listed on the FTSE Index	Regression analysis

This study focuses on identifying whether SDG-washing exists in firms (Ferrón Vílchez, Ortega Carrasco & Serrano Bernardo, 2022). By using regression analysis it takes methodologically substantially different approach than other studies which most of the times use content analysis on firms' reports. Ferrón Vílchez, Ortega Carrasco and Serrano Bernardo (2022, p.1001) use the following definition of SDG-washing: "SDGwashing refers to positively pursuing a contribution to some SDGs while ignoring the negative impact of others". For evaluating SDG-washing they compare the environmental performance of MNEs who focus more on environmental SDGs with MNEs who focus more on social SDGs (Ferrón Vílchez, Ortega Carrasco & Serrano Bernardo, 2022). For clarification the 17 SDGs can be categorized through different dimensions, for example environmental, social and economic. Often times it is expanded to so called 5Ps – people, planet, prosperity, peace, partnership (United Nations Sustainable Development Group, 2022). If the two groups – MNEs focusing more on environmental SDGs and MNEs focusing more on social SDGs – have different levels of environmental performance then this signifies SDG-washing (Ferrón Vílchez, Ortega Carrasco & Serrano Bernardo, 2022). The logic being that if the environmental performance level differs then this means that some companies are ignoring negative impacts to some SDGs and are thus SDG-washing (Ferrón Vílchez, Ortega Carrasco & Serrano Bernardo, 2022). For elaboration, if a firm is focusing more on social SDGs, it should pay attention to environmental impacts as well (Ferrón Vílchez, Ortega Carrasco & Serrano Bernardo, 2022).

Ferrón Vílchez, Ortega Carrasco and Serrano Bernardo (2022) use proxies for measuring environmental performance of a firm and how much a firm is focusing on social SDGs and on environmental SDGs. There are two proxies for environmental performance which act as independent variables: (1) carbon intensity of a firm (GHG emissions divided by revenue) and (2) CDP climate score (Carbon Disclosure Project measures firms environmental performance through different dimensions) (Ferrón Vílchez, Ortega Carrasco & Serrano Bernardo, 2022). Proxy used for measuring focusing on social SDGs is SDG 8 (decent work and economic growth) and SDG 6 (clean water and sanitation) is used to measure focusing on environmental SDGs (Ferrón Vílchez, Ortega Carrasco & Serrano Bernardo, 2022). These are dependent variables and for both SDGs an external database (EIKON) is used to measure firms commitment to either SDG (Ferrón Vílchez, Ortega Carrasco & Serrano Bernardo, 2022). Ferrón Vílchez, Ortega Carrasco and Serrano Bernardo (2022) claim that results show that SDG-washing exists.

However, firstly it is debatable whether the logic behind identifying SDG-washing is sound. In the case when the environmental performance of firms who focus more on social SDGs is lower than those who focus on environmental SDGs, this does not have to mean that firms focusing more on social SDGs are certainly ignoring negative impacts. There might be other reasons why the environmental performance differs – e.g. firms have made positive progress in the last years in terms of environmental performance but environmental performance is still lower than the average. This wouldn't mean that a company is SDG-washing but would actually signify that a company is advancing and however, it is not on the same level as other companies it is still making positive progress.

Secondly, from the methodological side the proxies used to measure how much a firm focuses on environmental and social SDGs might not provide sufficient quality information for assessing it. Ferrón Vílchez, Ortega Carrasco and Serrano Bernardo (2022) bring out as well that one of the limitations is using only two SDGs – SDG 6 and SDG 8 – to measure firms focusing on environmental and social SDGs. Additionally, the correctness of using SDG 6 as a proxy for a focus on environmental SDGs is questionable. SDG 6 targets address environmental concerns (e.g. reducing pollution from wastewater) as well as social (securing safe drinking water for everyone and) (United Nations, 2015). Although, SDG 6 is often categorized as generally environmental (e.g. in Boar, Bastida & Marimon, 2020) it is doubtful that SDG 6 is purely environmental. Hence it is debatable when firms contribute to SDG 6 then they are focusing on environmental SDGs in general. There is a similar problem with SDG 8 – its' targets address social challenges (e.g. safe working environments and eliminating forced labor) as well as economic (e.g. raising productivity and economic growth) (United Nations, 2015).

Moreover, often SDG 8 is categorized as belonging to the economic pillar not social pillar (e.g. in Boar, Bastida & Marimon, 2020). All in all, the logic behind identifying SDG-washing and the methodology used in Ferrón Vílchez, Ortega Carrasco and Serrano Bernardo (2022) study are not convincing and hence the validity of the final results are arguable.

3 Methodology

3.1 Sample and the Methodological Approach

The sample consists of 156 large listed European companies who are part of the STOXX Europe 600 Index as of April 2023. The index is comprised of 600 largest European stock companies (Qontigo, 2023). Large listed European companies were chosen due to the following reasons. European companies have been found to be more active in SDG reporting than firms in other world regions (Elalfy, Weber & Geobey, 2021; KPMG, 2022). Additionally, large stock companies tend to report on SDGs more than SMEs and private firms (Elalfy, Weber & Geobey, 2021; Pizzi et al., 2020; Rosati & Faria, 2019a) and moreover large companies have more resources available to conduct sound SDG reporting. Hence it is expected that most of the companies in the sample report on the SDGs and the prevalence of SDG-washing can be assessed. Moreover, especially large companies have a vital role to play in the achievement of SDGs because of their wide reach in numerous industries and significant impact on the world.

This thesis also aims to look at how different sectors are doing in terms of SDG-washing and whether there is a difference among the sectors. Therefore, the sample comprises of 13 largest European firms in twelve sectors hence totaling to 156 companies. The firms in STOXX Europe 600 Index are divided into 20 sectors, however the division of sectors was rearranged and many sectors which are similar were merged. The exact information which sectors were merged can be found from Appendix A. The twelve sectors are:

- Energy & Utilities
- Basic Resources
- Industry & Construction
- Automotive
- Healthcare
- Finance & Insurance
- Technology
- Food, Beverage & Tobacco
- Retail & Consumer Products/Services
- Telecom & Media
- Real Estate
- Travel & Leisure

13 companies per sector were chosen because firstly, a larger number would have been unfeasible in the scope of this thesis and secondly, results on 13 firms can be sufficient to provide the first indication of inter sector comparison. However, 13 firms per sector is still quite a low number and therefore substantial inter sector conclusions cannot be made. Nonetheless,

the total sample of 156 firms is in sufficient size to assess SDG-washing prevalence in European large listed companies.

The 156 companies are headquartered in different European countries. Over half of the companies are headquartered in three countries – the United Kingdom, France and Germany as presented in the following table.

Table 7. Companies in the sample by country

Country	**No.**	**Share**
UK	34	22%
France	31	20%
Germany	22	14%
Switzerland	16	10%
Netherlands	11	7%
Sweden	10	6%
Spain	7	4%
Italy	6	4%
Other (Denmark, Ireland, Finland, Belgium, Norway, Austria, Luxembourg)	19	12%
	156	**100%**

SDG-washing prevalence is assessed by performing content analysis on firms' reports for the year 2022 (i.e. annual reports, sustainability reports, integrated reports, strategic reports) and on their websites. Different nature reports are included in the analysis since a quick glance at firms reports revealed that some companies mentioned SDGs in their annual or other reports but surprisingly not in sustainability reports. Moreover, it differs from firm to firm which reports are disclosed. Additionally, some companies disclose little information on SDGs in their reports but more in depth SDG related information on their websites. Therefore, for acquiring a holistic picture of companies, different reports and also websites are included in the analysis.

The reports were downloaded from the firms' websites. For two companies year 2022 reports were unavailable and therefore year 2021 reports were used. For other two firms year 2021/22 reports were included since their financial year ends in March. For one company year 2022 English reports were unavailable and therefore year 2021 reports were included.

First, each company's reports were analyzed to see whether SDGs were mentioned and whether the firm claimed to contribute to the SDGs. For this reports were searched through using the keywords "SDG" and "sustainable development goal". The companies who did not claim to contribute to the SDGs were dropped from the sample. The reports and websites of firms who claimed to contribute to SDGs were then further analyzed for identifying SDG-washing – for this a framework was developed which is introduced in the following subchapter.

3.2 Framework for Identifying SDG-Washing

The framework is developed based on the works of several authors introduced in the theoretical section of this thesis (including Heras-Saizarbitoria, Urbieta & Boiral, 2022; Hummel & Szekely, 2022; Izzo, Ciaburri & Tiscini, 2020; Mhlanga, Gneiting & Agarwal, 2018; Silva, 2021; van der Waal & Thijssens, 2020). In addition, Global Reporting Initiative's and United Nations Global Compact practical guide (GRI & UNGC, 2018) was used which offers guidelines and best practices for firms to integrate SDGs into their business and reports. Most businesses who are reporting on the SDGs use GRI provided framework (Curtó-Pagès et al., 2021; van der Waal & Thijssens, 2020) and therefore, the practical guide is a relevant source.

As defined in the theoretical section of this thesis SDG-washing has five elements:

- **Rainbow washing** – companies state a contribution to the SDGs and use SDGs in their materials and communication but do not engage with the SDGs in a meaningful way. Publicly usable SDG design materials are colorful and hence the name "rainbow washing".
- **Cherry-picking** – firms select SDGs to report on based on which are the easiest to achieve, not which the firms have the most impact on.
- **Reporting only on positive & ignoring negative impacts** – firms report only on positive contributions to the SDGs and neglect considerable negative impacts.
- **Disclosing false or misleading information** – companies report incorrect or misleading information regarding their contributions to the SDGs.
- **False commitment** – firms claim to adopt the entire framework of SDGs but fail to report on all of the SDGs.

For each SDG-washing element indicators were developed which are used to identify SDG-washing. For the element "disclosing false or misleading information" feasible indicators were not discovered and hence this aspect was removed from the framework. However, it could be researched by comparing information in firms reports with information in the media or third party databases which are not controlled by the firm. In the scope of this thesis this is unfeasible and moreover taking also into consideration the sample size. Thus this element was discarded.

For other elements relevant indicators were determined – altogether eight indicators. The indicators are binary (true/false) and many indicators can be not applicable (n/a). The framework with the indicators and their possible outcomes are presented in the following table.

Table 8. Framework for identifying SDG-washing: indicators and their possible outcomes.

SDG-washing element	Indicator	Outcome
Prerequisite of the framework: a firm claims to contribute to the SDGs		
A. Rainbow washing	A.1 No SDGs are selected or prioritized	True/false
	A.2 No objectives have been set to prioritized SDGs	True/false or n/a
	A.3 No elaboration on how objectives will be achieved (i.e. no activities, projects, initiatives brought out)	True/false or n/a
B. Cherry-picking	B.4 SDG prioritization process is not explained	True/false or n/a
	B.5 SDGs are not prioritized based on impact/importance	True/false or n/a
	BC.6 Sector's core SDG(s) are not prioritized	True/false or n/a
C. Reporting only on positive & ignoring negative impacts	BC.6 Sector's core SDG(s) are not prioritized	True/false or n/a
	C.7 No improvement areas or negative impacts/practices pointed out in terms of prioritized SDGs	True/false or n/a
D. False commitment	D.8 Commit to contributing to all SDGs but all SDGs do not have objectives	True/false or n/a

First, a prerequisite of the framework is that a company has to signify that it contributes to the SDGs, hence if a company does not claim this, SDG-washing cannot be assessed. SDG-washing is identified when at least one indicator's outcome is "true". Indicator's outcome can be not applicable (n/a) when one of previous indicator's outcome is "true" or "n/a". For example, if a firm does not select any SDGs (A.1) then it also cannot explain on how SDGs were prioritized (B.4).

The framework was developed keeping in mind what are the minimum requirements for firms when they report on the SDGs and claim to contribute to the SDGs. Hence a soft approach was taken – meaning that the proposed framework is a very low bar. Thus in the case a company does not surpass the bar it is SDG-washing. The GRI and UNGC practical guide (GRI & UNGC, 2018) offers a much stricter approach by recommending firms to additionally go to target level and prioritize relevant SDG targets, set qualitative as well as quantitative objectives, set indicators for measuring the progress and report on the progress regularly. As already stated, most firms who are reporting on SDGs claim to use the GRI framework (Curtó-Pagès et al., 2021; van der Waal & Thijssens, 2020) and hence should be familiar with these recommendations.

Further explanation and justification of the indicators is provided followingly.

A.1 No SDGs are selected or prioritized – Rainbow washing

This appears when a firm claims to contribute to the SDGs but fails to select specific or all SDGs to be further elaborated. Both Mhlanga, Gneiting and Agarwal (2018) as well as GRI and

UNGC practical guide (GRI & UNGC, 2018) state that prioritization is the first step of integrating SDGs into the business.

A.2 No objectives have been set to prioritized SDGs – Rainbow washing

This is marked true when a company does not report at least one qualitative or quantitative objective to every prioritized SDG. Hence when a company has one qualitative or quantitative objective per prioritized SDG the outcome is false. In this context quantitative objectives show more meaningful SDG reporting than qualitative since they are more specific and useful for measuring progress. However, since soft approach was taken to prevent falsely identifying SDG-washing then if a company has just qualitative objective(s) it is enough to pass this criterion. If this indicator is true then a company is very superficial in their elaboration how they contribute to the SDGs. Several works have used the existence of qualitative and quantitative objectives to assess SDG reporting quality (Hummel & Szekely, 2022; PwC, 2019; Silva, 2021; Tsalis et al., 2020) and the lack of them indicates superficial efforts. Moreover, the GRI and UNGC practical guide (GRI & UNGC, 2018) encourages companies to use qualitative as well as quantitative objectives. GRI and UNGC have also compiled a supporting 559 page document for businesses which outlines multitude of indicators and ways to disclose SDG-related information (GRI & UNGC, 2022). Therefore, in theory every company should be able to find relevant ways to disclose information regarding SDGs and set relevant qualitative as well as quantitative objectives. Indicator cannot be assessed and is marked not applicable when a company does not select or prioritize SDGs (A.1).

A.3 No elaboration on how objectives will be achieved (i.e. no activities, projects, initiatives brought out) – Rainbow Washing

This indicator will be marked true when a company does not elaborate how set objectives will be achieved. If at least a few words are provided it is marked false – a company can point out activities, projects, initiatives which contribute to the set objective or give a very general description. If the achievement of objectives is not elaborated at all then this indicates a very superficial approach to SDGs and hints at SDG-washing (Heras-Saizarbitoria, Urbieta & Boiral, 2022). Henriksson and Weidman Grunewald (2020) stress that firms must provide concrete proof to back up the claims they make regarding SDGs to prevent SDG-washing. In this framework again an even softer approach is taken. Indicator cannot be assessed and is marked not applicable when a company does not select or prioritize SDGs (A.1) and when a company has not set objectives (A.2).

B.4 SDG prioritization process is not explained – Cherry-picking

In the case a firm has prioritized SDGs but has failed to elaborate with at least a few words on the process, it is marked true. Lack of explanation on the process of prioritization suggests cherry-picking (Heras-Saizarbitoria, Urbieta & Boiral, 2022). GRI and UNGC practical guide (GRI & UNGC, 2018) recommends firms to explain how SDGs are prioritized. Indicator cannot be assessed and is marked not applicable when a company does not select or prioritize SDGs (A.1).

B.5 SDGs are not prioritized based on impact/importance – Cherry-picking

In the case there is an explanation of how SDGs are prioritized but it appears that SDGs are not selected based on impact or importance, it is marked true. The SDGs should be prioritized based on impact/importance to avoid cherry-picking (Agarwal, Gneiting & Mhlanga, 2017; GRI & UNGC, 2018; Silva, 2021). Indicator cannot be assessed and is marked not applicable when a company does not select or prioritize SDGs (A.1) or when a company has not explained the SDG prioritization process (B.4).

BC.6 Sector's core SDG(s) are not prioritized – Cherry-picking and Reporting only on positive & ignoring negative impacts

This is marked true when SDG(s) which are obviously strongly linked to the sector a firm is operating in is not prioritized. To determine SDGs which have a substantial connections with certain sectors a relevant study will be used which has mapped linkages between sectors and SDGs (Business & Sustainable Development Commission, 2016). For example, oil & gas sector is strongly linked with SDG 7 (affordable and clean energy) and the same is for healthcare sector and SDG 3 (good health and well-being) (Business & Sustainable Development Commission, 2016). Additionally, another example can be when a tobacco company fails to prioritize SDG 3. This indicator is relevant to both cherry-picking and to reporting only on positive & ignoring negative impacts elements and hence used for both. An assumption is made that when a company fails to prioritize sector's core SDG(s) then it most likely does so to avoid presenting negative impacts. Indicator cannot be assessed and is not applicable when a company does not select or prioritize SDGs (A.1).

C.7 No improvement areas or negative impacts/practices pointed out in terms of prioritized SDGs – Reporting only on positive & ignoring negative impacts

In the case a company does not report a single improvement area or negative impact/practice in relation to the SDGs, it is marked true. An assumption is made that every company, especially large companies have areas which need improvements in terms of SDGs. When companies report on the SDGs but fail to bring out at least one improvement area or negative impact/practice then it can be considered that a company is ignoring/not showing negative impacts. KPMG (2022) in their study on SDG reporting emphasize the importance of balanced reporting (presenting positive as well as negative information). Indicator cannot be assessed and is not applicable when a company does not select or prioritize SDGs (A.1).

D.8 Commit to contributing to all SDGs but all SDGs do not have objectives – False commitment

Indicator is marked true when a company claims to commit to all SDGs but fails to provide at least one qualitative objective to every SDG. If no objectives are provided then this hints that a company is not taking seriously contributing to every SDG. Companies have to offer concrete evidence to back up the claims they make regarding SDGs to prevent SDG-washing (Henriksson & Weidman Grunewald, 2020). Indicator cannot be assessed and is not applicable when a company does not commit to contributing to all SDGs.

4 Empirical Analysis

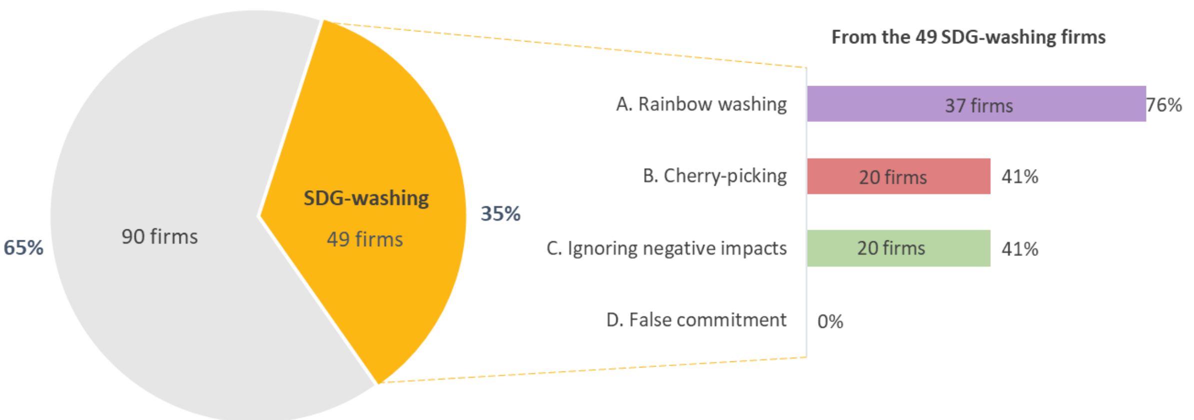
4.1 Results

4.1.1 SDG-Washing in Large Listed European Companies

Of the 156 companies in the sample 89% were found to mention SDGs in their reports and claimed to contribute to the SDGs. 11% (17 firms) did not state a contribution to the SDGs. This shows a slightly higher uptake of SDGs than what previous works have found – KPMG (2022) found that 75% of European companies in the sample report on the SDGs and PwC (2019) found that 72% of the sample report on SDGs. The other studies' samples are larger and therefore also include smaller companies which might explain the difference. In other case, the gradual uptake of SDGs is continuing.

The remaining 139 firms were further analyzed for SDG-washing. The following figure presents the main results of the analysis. A full table of the results can be found in Appendix B. It was found that approximately two thirds of the firms were not found to engage in SDG-washing. However, SDG-washing could be identified in 35% of the companies who claimed to contribute to the SDGs. Of these companies 76% firms were rainbow washing, 41% cherry-picking and another 41% reporting only on positive contributions & ignoring negative impacts in the context of the SDGs. No companies were found to be providing a false commitment. Additionally, of the 139 analyzed companies who claimed to contribute to the SDGs, 27% of firms were found to be rainbow washing, 14% cherry-picking and also 14% reporting only on positive & ignoring negative impacts.

Figure 4. Results of SDG-washing in 139 companies who state a contribution to the SDGs



The results were also compared with Refinitiv ESG (environment, social, governance) scores for the analyzed companies. ESG topics are highly linked with the SDGs. Refinitiv ESG score (range 0-100) measures firms' ESG performance and the transparency of reporting and hence the lower the ESG score of a firm the lower the ESG performance and transparency of reporting (Refinitiv, 2023). The aim was to test whether SDG-washing firms have on average a lower ESG score than non SDG-washing firms. The rationale behind this is that companies who do not perform very well on the ESG topics are also not contributing meaningfully to the SDGs – implying SDG-washing. Refinitiv ESG scores were chosen because they are publicly available and provide information to most of the analyzed companies. The ESG scores were acquired in April 2023 and for three companies the scores could not be found and they were discarded from this analysis.

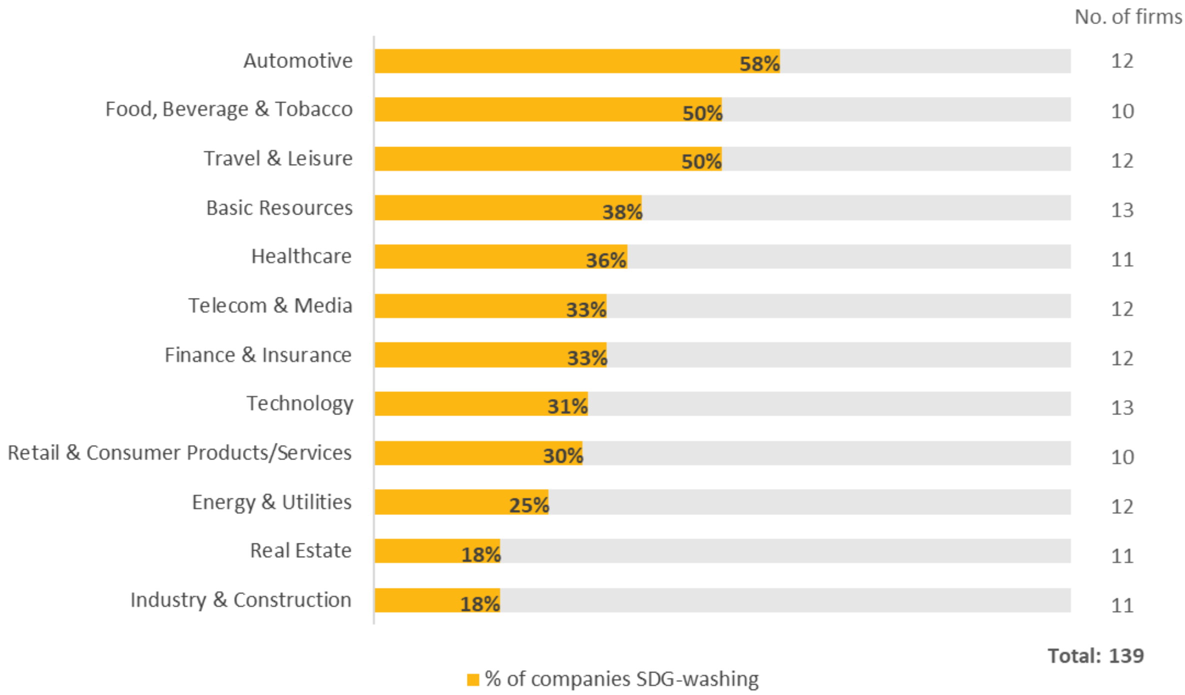
It was found that the mean ESG score for SDG-washing companies was 75.7 and for non SDG-washing companies 80.4. The mean values were found by summing up ESG scores of SDG-washing companies and non SDG-washing companies and dividing both sums by the respective number of companies in the group (47 SDG-washing companies, 89 non SDG-washing companies and three companies were discarded since ESG scores were not available). The results indicate a slight difference between the two groups. However, it cannot be assumed that the difference is statistically significant[1].

4.1.2 SDG-Washing by Sectors and Countries

The following figure presents SDG-washing by sectors. In every sector there were companies who engaged in SDG-washing. Approximately half of the analyzed companies in Automotive, Travel & Leisure and Food, Beverage & Tobacco sectors were found to be SDG-washing. Whereas SDG-washing was least found in Industry & Construction and Real Estate sectors. The results provide a first indication of SDG-washing in different sectors, however far-reaching conclusions cannot be made due to the low sample size of every sector.

[1] To determine if the difference in the mean values is statistically significant an appropriate test was performed using Stata. First, Shapiro-Wilk test was performed on the continuous variable (ESG score) to test for normal distribution. The results indicated that the null hypothesis can be rejected and hence it cannot be assumed that there is normal distribution. Thus, t-test could not be used and Mann-Whitney U test was used instead. Full results of both Shapiro-Wilk and Mann-Whitney U tests are provided in Appendix C. The Mann-Whitney U test indicated that the difference is not statistically significant on the level of 0.05. Thus it cannot be concluded that there is a significant difference in ESG scores between SDG-washing firms and non SDG-washing firms.

Figure 5. Proportion of SDG-washing firms in different sectors



In every sector there were good examples of reporting on the SDGs and bad examples – this emphasizes that regardless the sector every company can increase the quality of reporting since other companies (in many cases competitors) in the sector have found a way to do it. For example, firms in the Finance & Insurance sector might find it more difficult to directly contribute to the SDGs than companies in the Healthcare sector which are more directly linked to SDG 3 (good health and well-being). One Swiss bank stated a clear commitment to contribute to the SDGs and stressed the goals importance several times in their reports but failed to elaborate any further of how they will contribute to the goals – e.g. no prioritization of SDGs and no qualitative or quantitative objectives. On the other hand one Spanish bank prioritized 13 SDGs and dedicated a whole section of the report to report progress on all of the selected SDGs through quantitative indicators. The firm was also able to find relevant quantitative indicators for SDG 16 (peace, justice and strong institutions) and SDG 17 (partnerships for the goals) – companies usually struggle to find quantitative indicators for these SDGs among others since they are not so directly linked to businesses as some other SDGs. This highlights clearly how differently firms tackle the SDGs and how every company should be able to increase their SDG reporting quality and also find quantitative indicators to measure progress regardless the specific SDG.

Another example from the Automotive sector. One German firm stated a contribution to five SDGs and claimed that SDG icons are used at the start of particular sections in the report which they are connected with. No other explanation regarding the SDGs was given. However, the promised SDG icons could not be found at the start of the sections and even if they had been, then without a more direct elaboration of how the firm contributes to the SDGs it would be deemed SDG-washing and more particularly rainbow washing. This kind of practice of using SDG icons in the reports without explaining of how the contribution is made to the SDGs was found in several instances. This problem is also highlighted by other researchers (Heras-

Saizarbitoria, Urbieta & Boiral, 2022; van der Waal & Thijssens, 2020). On the other side, a French company producing automobile parts brought out SDGs the firm contributes to and presented quantitative objectives related to the SDGs and reported on the progress. These examples illustrate the varying level of effort in SDG reporting.

The following table groups SDG-washing firms by country. The results indicate that the analyzed firms in Switzerland, UK and Germany were more often found to be SDG-washing than companies in Spain and France. Taking into consideration the sample size from each country, it is noticeable that French headquartered companies were found considerably less engaging in SDG-washing than British and German headquartered companies. However, again the sample size is too small to make substantial conclusions when comparing countries.

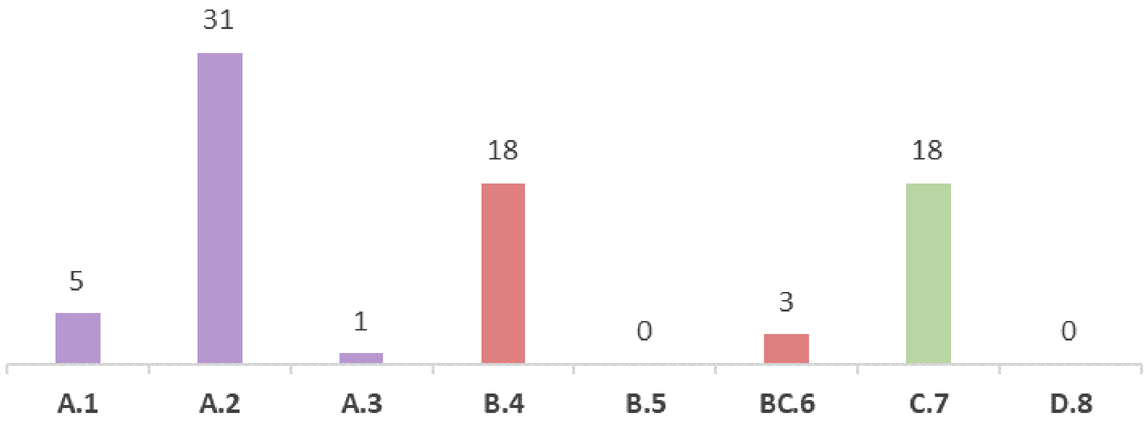
Table 9. Number of SDG-washing firms by country

Country	**No. of firms SDG-washing**	**Total no. of firms**	**Share**
UK	14	29	48%
France	7	28	25%
Germany	9	19	47%
Switzerland	7	14	50%
Netherlands	3	9	33%
Sweden	3	9	33%
Spain	1	7	14%
Italy	2	6	33%
Other (Denmark, Ireland, Finland, Belgium, Norway, Austria, Luxembourg)	3	18	17%
	49	**139**	

4.1.3 SDG-Washing by Framework Indicators

The following figure and table present the results by indicators – the number of firms which did not meet the indicator criterion. The three indicators that most often identified SDG-washing were: (A.2) company did not show any objectives in relation to every selected SDG, (B.4) SDG selection process was left completely unexplained and (C.7) not a single improvement area or negative impact/practice was disclosed in relation to the selected SDGs.

Figure 6. SDG-washing firms by indicators



The following table presents detailed information of the results by indicators, also including the number of companies that met the indicator criterion (false) and the number of companies who could not be assessed by a specific indicator (n/a).

Table 10. Results by indicators

<table>
<tr><th></th><th>Indicator</th><th>True</th><th>False</th><th>N/a</th></tr>
<tr><td rowspan="3">A. Rainbow washing</td><td>A.1 No SDGs are selected or prioritized</td><td>5</td><td>134</td><td>0</td></tr>
<tr><td>A.2 No objectives have been set to prioritized SDGs</td><td>31</td><td>103</td><td>5</td></tr>
<tr><td>A.3 No elaboration on how objectives will be achieved</td><td>1</td><td>103</td><td>35</td></tr>
<tr><td rowspan="3">B. Cherry-picking</td><td>B.4 SDG prioritization process is not explained</td><td>18</td><td>116</td><td>5</td></tr>
<tr><td>B.5 SDGs are not prioritized based on impact/importance</td><td>0</td><td>114</td><td>25</td></tr>
<tr><td>BC.6 Sector’s core SDG(s) are not prioritized</td><td rowspan="2">3</td><td rowspan="2">131</td><td rowspan="2">5</td></tr>
<tr><td rowspan="2">C. Reporting only on positive & ignoring negative impacts</td><td>BC.6 Sector’s core SDG(s) are not prioritized</td></tr>
<tr><td>C.7 No improvement areas or negative impacts/practices pointed out in terms of prioritized SDGs</td><td>18</td><td>118</td><td>3</td></tr>
<tr><td>D. False commitment</td><td>D.8 Commit to contributing to all SDGs but all SDGs do not have objectives</td><td>0</td><td>6</td><td>133</td></tr>
</table>

A.1 No SDGs are selected or prioritized – Rainbow washing

Five firms were found to not select/prioritize specific or all SDGs but just stated their contribution to the SDGs but did not elaborate any further. However, many organizations who provide guidelines for reporting on SDGs, including GRI and UNGC (GRI & UNGC, 2018) stress that prioritization of SDGs is the first step in SDG reporting. Since these companies did not select any SDGs they also did not set any objectives or disclose more information regarding the SDGs. For example, an Irish company from the Travel & Leisure sector mentioned once sustainable development goals in their reports in the context of claiming to support the SDGs but no other mentions and no further elaboration on the contribution.

A.2 No objectives have been set to prioritized SDGs – Rainbow washing

Most SDG-washing companies were identified with this indicator – 31 firms did not set objectives to all of the prioritized SDGs. This shows the lack of meaningful commitment – companies in words contribute to the SDGs but have not set objectives to contribute to their achievement. There were also several cases where firms were just mapping existing activities/initiatives with relevant SDGs –for example merely saying they contribute to SDG X because they financed an initiative which is connected to SDG X but they fail to look into the future and set objectives which help to achieve the SDGs. Therefore, in many cases firms were just looking into the past and trying to match projects/activities/initiatives with relevant SDGs. However, it should be the other way around – companies are in some part directed by the SDGs and set objectives and find ways to contribute. This problem is also highlighted by other researchers and in the practical guide of GRI and UNGC (GRI & UNGC, 2018; Nishitani et al., 2021; Silva, 2021; van der Waal & Thijssens, 2020). For illustration, a Swedish technology company brought out six different projects in its' sustainability report and added SDG icons to these projects without explaining how the projects are linked with the SDGs nor did the company set objectives regarding the SDGs, therefore indicating rainbow washing. This suggested that the firm was just using SDG icons to justify its' contribution and also benefit from the positive image SDGs carry but does not engage with the SDGs meaningfully.

However, most analyzed companies did set at least qualitative objectives. In some cases they were very vague and general but since a soft approach was taken in identifying SDG-washing these vague objectives passed the criterion since at least there was an indication of where the company wishes to move towards. 32% (out of 139) also set quantitative objectives or used quantitative indicators to measure their contribution. These firms were seen to take SDGs more seriously. It can also be argued that companies who do not set quantitative objectives/indicators might be SDG-washing since the level of involvement in contribution to the SDGs is quite low without measurable indicators. Many researchers bring out that the use of quantitative indicators regarding SDGs is low and this shows superficial efforts regarding the SDGs (Silva, 2021; van der Waal & Thijssens, 2020), suggesting SDG-washing.

One German healthcare company provided an adequate example of how to present contribution to the SDGs. The firm has an interactive tool in their website in which prioritized SDGs and objectives are presented and the firm goes deeper into the SDG targets level and elaborates in many cases with quantitative indicators how the contribution is made to specific SDG targets. Not many companies engage with SDGs on the target level but those who do, show in many cases more meaningful contribution. Also, this example highlights why, when analyzing SDG-washing and reporting, it is important to include information on companies' websites into the analysis, otherwise valuable information might be lost.

Another good example is from an Italian technology company which clearly presented quantitative time-bound objectives on prioritized SDGs and also reported on the progress – hence how far they are from the objective. Again many companies were not found to be reporting on the progress of achieving the objectives, however it shows transparency and indicates meaningful contribution.

A.3 No elaboration on how objectives will be achieved (i.e. no activities, projects, initiatives brought out) – Rainbow Washing

Only one company was found to not meet this criterion. There were also considerable amount (35) of companies who could not be assessed since they did not disclose any objectives. However, most companies with at least a few words elaborated on how the objectives will be achieved. Since a soft approach was taken then such cases were also passed, where companies very vaguely described how the objective will be achieved. In the case of stricter evaluation it would be needed to define more specifically how much explanation is enough. In the case of stricter evaluation, a higher number of companies could be found to not pass the bar.

B.4 SDG prioritization process is not explained – Cherry-picking

18 firms were found to not explain at all why the particular SDGs were prioritized, signaling cherry-picking. In the best cases companies conducted a specific assessment of how their operations affect the SDGs and based on the assessment prioritized the most significant goals. In some cases firms also used external experts to conduct the assessment. In the worst cases firms just presented SDGs and did not elaborate at all on what the selection is based on. In some cases companies just claimed that the SDGs are prioritized "based on impact" or "based on materiality" but did not elaborate any further. Since a soft approach was taken these cases were passed, however it is very thin elaboration. It is difficult to see behind the words and whether a company conducted a some kind of materiality assessment to prioritize SDGs but just did not describe the process or the company just chose the SDGs which seemed the most beneficial to be presented in the reports, indicating cherry-picking. Since it is difficult to determine this, a soft approach is justified but on the other hand it can be considered that when a company conducts a meaningful materiality assessment on the SDGs then it would most likely want to also present it in the report and hence this would be an argument for a stricter evaluation.

B.5 SDGs are not prioritized based on impact/importance – Cherry-picking

Every company who elaborated on the SDG prioritization process stated in some way or the other that it is based on impact or materiality. No firms were found to state that the SDGs are chosen because they are the easiest to achieve for the company or provide the best business opportunities. These results are expected since a firm would be seen insincere or greedy if it would not say to have picked the SDGs based on impact or materiality. Therefore, it can be considered that this criterion is not the most useful and in further research should be modified or discarded.

BC.6 Sector's core SDG(s) are not prioritized – Cherry-picking and Reporting only on positive & ignoring negative impacts

Mostly companies always prioritized SDGs which they have an obvious impact on. For example, all of the analyzed companies in Healthcare sector were found to prioritize SDG 3 (good health and well-being). In addition, all of the energy firms prioritized SDG 7 (affordable and clean energy). In three cases it was found that a firm did not prioritize a SDG which the firm has an obvious impact on through its' operations. A British mining company in the sample did not prioritize SDG 15 (life on land). However, mining activities have substantial impact on the goal and in addition all of the other mining companies were found to prioritize SDG 15.

One British consumer goods company failed to prioritize SDG 12 (responsible consumption and production) but the firm has a significant impact on the goal – e.g. through recyclability of the packaging. Again, other similar companies prioritized SDG 12. In the third case, a British real estate company did not prioritize SDG 11 (sustainable cities and communities) but has significant impacts on the development of real estate and hence on the sustainability of cities. Again, other real estate firms prioritized SDG 11.

C.7 No improvement areas or negative impacts/practices pointed out in terms of prioritized SDGs – Reporting only on positive & ignoring negative impacts

Although, most companies disclose information on negative impacts they are having on the SDGs or improvement areas then 18 firms were found to show only positive contributions in connection with the SDGs. Again, in this thesis a soft approach was taken – a firm did not have to give much details regarding their negative impacts and improvement areas. For example, in the case a company acknowledged its' greenhouse gas emissions and pledged to reduce them, claimed to reduce waste generation or claimed to reduce work-related accidents all in connection with the SDGs then these cases were all considered enough to pass the criterion. Therefore, the 18 firms who did not match the indicator failed to present a single improvement area which is a very low minimum requirement and signals that the firm is ignoring negative impacts in connection to the SDGs and is therefore SDG-washing.

Among the 18 companies who only provided positive contributions, there were examples where firms only presented different projects of how the firm positively contributes to the SDGs but failed to assess companies core activities which might also impact negatively the SDGs. One Swiss healthcare company described how they participated in a special program to assess how their business has impact on the SDGs and found among other things that they have moderate negative impact on several SDGs – including SDG 13 (climate action), SDG 14 (life below water), SDG 15 (life on land). The firm admitted that the negative impact comes largely because they have a global manufacturing network and supply chain. Since most companies in the sample are large and are operating globally then this leads to question whether large companies with a global supply chain who are not prioritizing these three SDGs are ignoring significant negative impacts? As will be presented in the next subchapter, SDG 14 is one of the least addressed SDGs by companies.

A good example regarding this criterion – a Finnish bank was found to be surprisingly honest, admitting their negative impact among others to SDG 14 (life below water) and SDG 15 (life on land) through exposure to the shipping industry and agricultural sector. Such direct honesty regarding the negative impacts is quite rare in the reports.

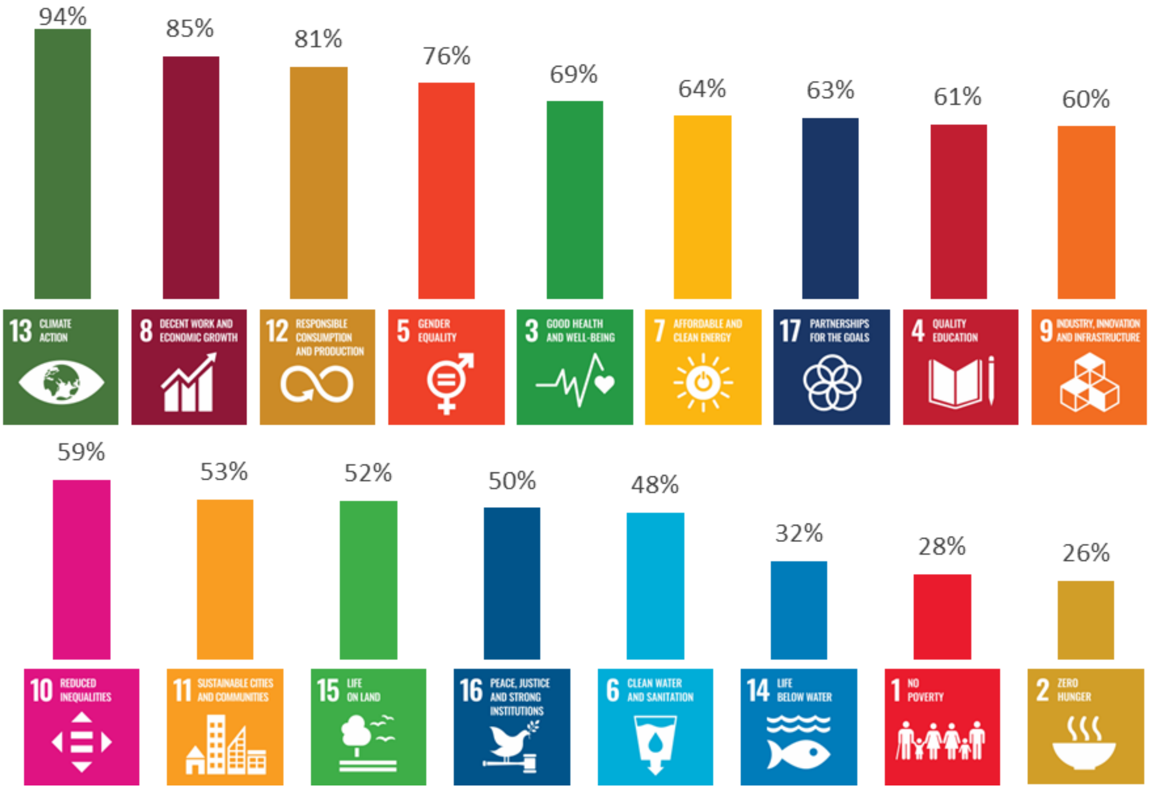
D.8 Commit to contributing to all SDGs but all SDGs do not have objectives – False commitment

No companies were found to explicitly claim a contribution to all SDGs and then fail to set objectives regarding every SDG. This criterion should be reviewed in further research since the SDG-washing element seems to be more as a special case of rainbow washing, where a firm claims a contribution to the SDGs but does not engage with them in a meaningful way.

4.1.4 Prioritization of SDGs

The 139 companies who stated a contribution to the SDGs were also analyzed for which SDGs they prioritized. The following figure presents the results.

Figure 7. The most and least prioritized SDGs



Source: Created by the author, used SDG icons (United Nations, 2023)

The most prioritized SDGs were found to be SDG 13 (climate action), SDG 8 (decent work and economic growth), SDG 12 (responsible consumption and production) and the least prioritized SDGs are SDG 2 (zero hunger), SDG 1 (no poverty), SDG 14 (life below water). 13 of 17 goals are addressed by more than half of the analyzed companies, signifying the high uptake of SDGs in general. The three least prioritized SDGs are considerably less addressed than other SDGs.

4.2 Discussion

Many authors in the literature use the concept of SDG-washing to describe companies lack of meaningful contribution to the SDGs (Beyne, 2020; Ferrón Vílchez, Ortega Carrasco & Serrano Bernardo, 2022; Heras-Saizarbitoria, Urbieta & Boiral, 2022; Johnsson et al., 2020; Kiesnere & Baumgartner, 2020; Kornieieva, 2020; Kørnøv, Lyhne & Davila, 2020; McCarton, O'Hogain & Reid, 2021; Nishitani et al., 2021; Silva, 2021; van Zanten & van Tulder, 2021; Venturelli, 2021). However, to the authors knowledge besides the work of Ferrón Vílchez, Ortega Carrasco and Serrano Bernardo (2022) there are no empirical analyses which evaluate SDG-washing in companies and research its' prevalence. Therefore, this thesis provides a useful insight into SDG-washing in firms.

The main finding of the empirical analysis is that 35% of the firms who claimed to contribute to the SDGs were found to be SDG-washing. This still leaves approximately two thirds of the firms who did not engage in SDG-washing. Therefore, SDG-washing is not prevalent but still a considerable share of large listed European companies are SDG-washing. Of the 139 companies 27% of were found to be rainbow washing, 14% cherry-picking and also 14% reporting only positive contributions and ignoring negative impacts on the SDGs. SDG-washing mainly appeared through three indicators: (1) objectives were not set to all prioritized SDGs indicating rainbow-washing, (2) SDG prioritization process was not explained indicating cherry-picking and (3) not a single negative impact or improvement area was brought out in the context of SDGs indicating to the SDG-washing element of reporting only positive contributions and ignoring negative impacts.

In the analysis it was observed that in some cases firms added SDG icons to different sections of the reports but did not elaborate on how the contribution is made to the SDGs. This corresponds with the literature – it has been found that companies in some cases include SDG icons in their reports for just design purposes (Ferrón Vílchez, Ortega Carrasco & Serrano Bernardo, 2022; Heras-Saizarbitoria, Urbieta & Boiral, 2022) and do not elaborate how specifically they contribute to the SDGs but only indicate that there is a connection (Heras-Saizarbitoria, Urbieta & Boiral, 2022). One analyzed gambling firm expressed contribution to SDGs and placed four SDG icons onto their sustainability strategy's figure. However, in the whole document no other mention of SDGs was made or how it connects with their sustainability strategy. This example highlights the problem of rainbow washing – superficial contributions and using SDGs only as design elements and for their positive image. Also, some companies were found to show contribution to the SDGs by mapping the goals to existing activities, projects and initiatives but failed to set any objectives and use SDGs a guiding framework for future activities. This confirms what other authors have found in their analyses (Mhlanga, Gneiting & Agarwal, 2018; Silva, 2021; van der Waal & Thijssens, 2020). It is very important that firms also measure and report on their progress towards the SDGs (GRI & UNGC, 2018), however it has been found that only a few companies do it (PwC, 2019). The same was found in this analysis, only a very low number of companies reported on the progress on the SDGs. However, reporting on the progress shows transparency and indicates meaningful contribution.

In this paper rainbow washing appeared in 27% of the companies when comparing to all of the analyzed 139 firms who claimed to contribute to the SDGs. Rainbow washing was mostly identified when a firm did not provide any objectives – not qualitative nor quantitative to the prioritized SDGs. Hummel and Szekely (2022) examined SDG reporting quality which was among other indicators measured with the existence of qualitative and quantitative objectives in firms' reports. They used also a similar sample – STOXX Europe 600 and evaluated SDG reporting quality in companies' annual reports (for the years 2015-2018) and found that the quality is rather low (Hummel & Szekely, 2022). They found that 45% of the reports had qualitative objectives in the context of SDGs and 31% of the reports quantitative (Hummel & Szekely, 2022) while this paper suggests that 74% use qualitative and 32% quantitative objectives. The comparison suggests that with the years there has been an improvement in setting qualitative objectives, however the share of companies setting quantitative objectives has remained the same. As a note it should be kept in mind that it cannot be determined how Hummel and Szekely (2022) exactly approached to assessing qualitative objectives but this paper also included vague qualitative objectives. In the GRI and UNGC practical guide (GRI & UNGC, 2018) it is emphasized that besides qualitative targets it is also important to report on quantitative objectives to provide an adequate picture of the companies' SDG impacts. Yet, the analyzed companies were still found largely to avoid using quantitative objectives.

Cherry-picking appeared in 14% of the firms when comparing to all of the analyzed 139 companies who stated a contribution to the SDGs. Cherry-picking was mostly identified when firms did not explain the SDG prioritization process at all, not even with a few words (in 13% of the cases comparing to 139 companies). Mhlanga, Gneiting and Agarwal (2018) found in their analysis that in many cases firms very briefly with one or two sentences explained the process but did not go any deeper. This was examined in this analysis as well that in many cases firms did not elaborate on the process. However, there were also companies who described in depth how the process was conducted. Hummel and Szekely (2022) looked in their research how many companies provide information on the SDG prioritization process and found that 71% of the analyzed firms do not provide information. This is significantly higher number than found in this paper – 13%. This difference can be explained by two ways – firstly, Hummel and Szekely (2022) conducted research on 2015-2018 reports while this paper focused on 2022 reports and hence with the years firms may have improved in explaining SDG prioritization process and secondly, Hummel and Szekely (2022) methodology can be stricter than in this thesis.

Showing only positive impacts to the SDGs and ignoring negative impacts appeared in 14% of the companies when comparing to all the analyzed 139 firms who claimed to contribute to the SDGs. This was mostly identified when a company did not provide a single improvement area or negative impact in the context of SDGs. In contrast, KPMG (2022) in its' report found that 86% of companies in the sample showed only positive reporting to the SDGs. This is a considerably larger share of companies than was found in this paper. This is probably because KPMG evaluation was much stricter, however KPMG does not provide exact methodology on how this parameter was assessed. KPMG (2022) highlights that for transparency reasons it is important to have balanced reporting – showing both positive as well as negative impacts to the SDGs. Hummel and Szekely (2022) found in their research that 32% of the analyzed companies report on negative impacts as well as positive in the context of SDGs. This is again a slightly higher number than was found in this thesis but considerably lower than what was found by KPMG (2022). Since different works use different methodologies the differences in between similar indicators can be explained.

Prevalence of SDG-washing in different sectors was also assessed and in every sector SDG-washing firms were found. Automotive, Travel & Leisure and Food, Beverage & Tobacco sectors were found to have the highest share of SDG-washing firms and SDG-washing was least found in Industry & Construction and Real Estate sectors. Since every sector was represented by 10-13 companies who claim to contribute to the SDGs, any substantial conclusions cannot be made and these results serve only as a first indication.

SDG-washing is widely explained by legitimation theory by which companies wish to legitimize their business and seem favorable in the eyes of society (Macellari et al., 2021;

Moratis & Melissen, 2019; Silva, 2021). Thus, businesses engage with the SDGs and sometimes not very meaningfully but the target is to satisfy pressures from stakeholders (e.g. consumers, investors). Also, it has been estimated that accomplishing the SDGs creates at least 12 trillion US dollars in market opportunities for businesses (Business & Sustainable Development Commission, 2017). This estimation was mentioned in some of the analyzed companies as a supporting reason to contribute to the SDGs.

The prioritization of SDGs was also assessed in this thesis which is well covered in the literature. The results found in this analysis correspond with the literature. The most prioritized SDGs were found to be SDG 13 (climate action), SDG 8 (decent work and economic growth), SDG 12 (responsible consumption and production) and the least prioritized SDGs were found to be SDG 2 (zero hunger), SDG 1 (no poverty), SDG 14 (life below water). These results echo the findings from the literature which have found the same SDGs as most and least prioritized (Curtó-Pagès et al., 2021; Hummel & Szekely, 2022; KPMG, 2022; PwC, 2019). The least prioritized SDGs might be largely unaddressed because companies do not find direct ways to contribute to these goals and the opposite is likely true for the most prioritized SDGs. As van Zanten and van Tulder (2018) note firms tend to engage more with SDGs which are internally actionable (do not need collaboration with other organizations) and less with SDGs which are externally actionable (need collaboration with other organizations). A very high proportion, 94% of the analyzed companies prioritize SDG 13 which aim is to reduce greenhouse gas emissions. One rationale behind such a high uptake is that climate issues have received a lot of attention in the past years and the challenge reminds itself every time after climate change related natural disasters emerge. Therefore, the stakeholders of the companies see climate change as a very important topic and expect firms to address it. Companies wish to satisfy stakeholders and therefore make efforts to report on plans to tackle climate change (e.g. reduce greenhouse gas emissions).

The framework for identifying SDG-washing was designed keeping in mind what would be the minimum requirements for companies when they report on the SDGs and claim to contribute to the SDGs. Hence, 35% of the analyzed companies did not meet the minimum requirements and could be assessed as to be SDG-washing. Among the other 65% firms there are companies who put considerable and meaningful effort into achieving the SDGs and also companies who put quite low effort but still exceed the minimum requirement. Hence if the framework for identifying SDG-washing would be stricter the number of SDG-washing firms would be higher.

Some of the indicators – SDGs are not prioritized based on impact/importance and companies claiming to support all SDGs but not all SDGs have objectives – should be modified or discarded when undertaking further research. The first of the two proved to be not very useful since in words every company was found to base SDGs on impact or importance not on what is the easiest to achieve. It is implausible that firms would claim honestly the latter. Therefore, the usefulness of the indicator is questionable. After the analysis it was concluded that the false commitment element of SDG-washing is a special case of rainbow washing. In the case a firm claims to contribute to all SDGs but fails to contribute meaningfully and hence for example does not provide objectives to every SDG. Therefore in further research false commitment as a separate element of SDG-washing should be reviewed.

Also in further research, identifying SDG-washing could be combined with assessing SDG reporting quality since they largely overlap. Hence the framework could be for assessing SDG reporting quality and in the case a company does not meet the minimum requirements in that framework then it would be identified as SDG-washing. For this however, the current indicators should be reviewed and new ones added as is reasonable. This approach would also be beneficial for identifying the best SDG-reporting companies and sectors which was out of the scope in this thesis.

Most of the empirical works that were introduced in this thesis have so far used in the analysis one or many type company reports (Curtó-Pagès et al., 2021; Heras-Saizarbitoria, Urbieta & Boiral, 2022; Hummel & Szekely, 2022; Izzo, Ciaburri & Tiscini, 2020; Silva, 2021; Tsalis et al., 2020; van der Waal & Thijssens, 2020). However, in this paper firms webpages were included in the analysis and as was observed the companies webpages contain sometimes important and valuable SDG related information that is not included in the reports. Therefore, it is important that in further analyses webpages are also included, otherwise an important source is left unexamined and this can lead to biased results.

5 Conclusions

The aim of this thesis was to research the prevalence of SDG-washing in large listed European companies and for this three research questions were formed: (1) what is SDG-washing, (2) how to identify SDG-washing and (3) what is the prevalence of SDG-washing in large European listed companies. Due to the scarcity of literature on SDG-washing, it was first necessary to define the dynamic and changing concept of SDG-washing and then develop a framework for identifying SDG-washing in companies.

In the theoretical section of the thesis SDG-washing concept was analyzed and defined based on existing literature. SDG-washing appears when an organization claims to contribute to the SDGs but in reality does not do so meaningfully. SDG-washing consists of five elements: (1) rainbow washing – superficial contributions to the SDGs and using SDGs for design and positive image purposes, (2) cherry-picking – prioritizing the easiest achievable SDGs and not the ones that the company has the most impact on, (3) reporting only on positive contributions and ignoring significant negative impacts on the SDGs, (4) disclosing false or misleading information and (5) claiming to contribute to all SDGs but failing to report on them all. After the empirical analysis the last element was concluded to be closely linked with the element of rainbow washing and hence in further research should not be brought out separately but included under rainbow washing.

In the methodology section a framework consisting of eight binary indicators was developed for identifying SDG-washing. The framework was developed based on the aforementioned SDG-washing elements and on previous empirical analyses on SDG reporting. The indicators were designed to represent minimum requirements of SDG reporting when a company claims to contribute to the SDGs. Hence if a company claims to contribute to the SDGs but fails to exceed the very low bar/minimum requirements then it would be found to be SDG-washing. If already only one of the eight indicators resulted as true for the company, then the firm was deemed to be SDG-washing. For the disclosing false or misleading information element, feasible indicators were not found that would fit in the scope of this thesis and therefore the element was dropped from further analysis.

For evaluating the prevalence of SDG-washing in large listed European companies, 156 firms were chosen from the STOXX Europe 600 Index. The index consists of 600 largest public companies in Europe. To also give a first indication of inter sector view of SDG-washing, the sample was made up of 13 largest companies from twelve sectors hence totaling to 156 firms. The sample companies reports and webpages which mentioned SDGs were analyzed with the framework for identifying SDG-washing. It was found that 17 companies did not express a contribution to the SDGs and were therefore dropped from further analysis.

From the remaining 139 companies it was found that 35% were SDG-washing. Thus SDG-washing is not prevalent but still a significant share of large European listed companies were found to be SDG-washing. 27% of companies were found to engage with the rainbow washing element of SDG-washing, 14% with cherry-picking element and also 14% with reporting only on positive contributions and ignoring significant negative impacts element. SDG-washing mainly appeared through three indicators: (1) objectives were not set to all prioritized SDGs indicating rainbow-washing, (2) SDG prioritization process was not explained indicating cherry-picking and (3) not a single negative impact or improvement area was brought out in the context of SDGs, indicating reporting only positive contributions and ignoring negative impacts.

Every analyzed sector was found to have firms who engaged with SDG-washing. Automotive, Travel & Leisure and Food, Beverage & Tobacco sectors were found to have the highest share of SDG-washing firms and SDG-washing was least found in Industry & Construction and Real Estate sectors. Since every sector was represented by only 10-13 companies who claim to contribute to the SDGs, any substantial conclusions cannot be made and these results serve as a first indication. During the analysis the prioritization of specific SDGs was also examined. The most prioritized SDGs were found to be SDG 13 (climate action), SDG 8 (decent work and economic growth), SDG 12 (responsible consumption and production) and the least prioritized SDGs were found to be SDG 2 (zero hunger), SDG 1 (no poverty), SDG 14 (life below water). The prioritization results correspond with the literature.

The extensive analysis of SDG-washing concept, developed framework for identifying SDG-washing and results of SDG-washing in large listed European companies are relevant contributions to the literature on SDG-washing and SDG reporting. The results of this thesis as well as the developed framework can be used for further research on SDG-washing. Also, based on the empirical analysis recommendations for the companies to avoid SDG-washing are to clearly articulate how a contribution is made to the prioritized SDGs, explain SDG prioritization process, set qualitative as well as quantitative objectives regarding each SDG and being honest and sharing negative as well as positive impacts in relation to the SDGs.

The limitations of this thesis are that only large listed companies were examined and in addition, only European firms were analyzed giving a region specific view. The sample size of 156 companies is not enough to make very wide generalizing conclusions. Moreover, only 13 firms were included in every sector and hence substantial conclusions cannot be made between sectors differences. The element of disclosing false or misleading information was not included in this analysis since it proved to be unfeasible in this scope of the thesis.

There are several avenues for further research. SDG-washing could be analyzed also in smaller companies and in different regions. A longitudinal analysis could be useful in assessing how the prevalence of SDG-washing has changed through the years. Another potential future research option would be to examine the SDG-washing element of disclosing false and misleading information by comparing information provided by the companies with information from independent sources. Lastly, further research could conduct interviews with companies on the subject of SDG-washing and inquire about SDG reporting practices to collect more in-depth information from the companies themselves.

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Appendix A

Rearrangement of sectors

Sectors in this paper	STOXX sectors
1. Energy & Utilities	Energy, Utilities
2. Basic Resources	Basic Resources
3. Industry & Construction	Industrial Goods & Services, Chemicals, Construction & Materials
4. Automotive	Automobiles & Parts
5. Healthcare	Health Care
6. Finance & Insurance	Banks, Insurance, Financial Services
7. Technology	Technology
8. Food, Beverage & Tobacco	Food, Beverage & Tobacco
9. Retail & Consumer Products/Services	Consumer Products & Services, Personal Care, Drug & Grocery Stores, Retail
10. Telecom & Media	Telecommunications, Media
11. Real Estate	Real Estate
12. Travel & Leisure	Travel & Leisure

Appendix B

Detailed results of the analysis by sector. Number of companies that were identified by a specific indicator to be SDG-washing.

SDG-washing element	**Rainbow washing**				**Cherry-picking**				**Reporting only on positive & ignoring negative impacts**			**False commitment**		**No. of firms SDG-washing**	**Total no. of firms**
Indicator	A.1	A.2	A.3	Result	B.4	B.5	BC.6	Result	BC.6	C.7	Result	D.8	Result		
Total	5	31	1	37	18	0	3	20	3	18	20	0	0	49	139
Automotive	0	5	1	6	4	0	0	4	0	4	4	0	0	7	12
Food, Beverage & Tobacco	0	5	0	5	2	0	0	2	0	0	0	0	0	6	12
Basic Resources	0	1	0	1	4	0	1	4	1	2	2	0	0	5	13
Travel & Leisure	1	2	0	3	4	0	0	4	0	0	0	0	0	5	10
Healthcare	0	4	0	4	2	0	0	2	0	3	3	0	0	4	13
Finance & Insurance	2	1	0	3	1	0	0	1	0	3	3	0	0	4	12
Technology	0	4	0	4	0	0	0	0	0	1	1	0	0	4	12
Telecom & Media	0	3	0	3	1	0	0	1	0	2	2	0	0	4	11
Energy & Utilities	1	2	0	3	0	0	0	0	0	2	2	0	0	3	12
Retail & Consumer Products/Services	0	2	0	2	0	0	1	1	1	0	1	0	0	3	10
Industry & Construction	1	1	0	2	0	0	0	0	0	1	1	0	0	2	11
Real Estate	0	1	0	1	0	0	1	1	1	0	1	0	0	2	11

Note: The numbers show how many companies were identified to be SDG-washing through a specific indicator. One firm can be identified through several indicators at the same time and hence summing up different indicator results does not give a meaningful outcome.

Appendix C

Shapiro-Wilk test on the continuous variable (Refinitiv ESG score) to test for normal distribution

	Obs.	**W**	**V**	**Z**	**p-value**
ESG score	136	0.92	8.04	4.80	0.00

Mann-Whitney U test: Refinitiv ESG scores of non SDG-washing and SDG-washing companies

Group	**Obs.**	**Rank sum**	**Expected**
Non SDG-washing companies	89	6353	6096.5
SDG-washing companies	47	2963	3219.5
Unadjusted variance = 47 755.92			
Adjusted variance = 47 669.11			
Z-value = 1.175		p-value = 0.2401	