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"Antecedents and Outcomes of United Nations' Sustainable Development Goals Implementation in Luxury Fashion Companies"

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Firma dello studente

To

MAHSA AMINI,

MOHSEN MOHAMMADPOOR,

NAVID AFKARI,

And all my friends who are seeking freedom in my country, Iran

به

مهسا امینی،

محسن محمدپور،

و

نوید افکاری،

و تمام دوستان آزادی‌خواهم در وطنم، ایران

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ABSTRACT

Rising awareness about sustainability and sustainable development has been widely discussed in many contexts. Recently companies around the world have paid more attention to this concept. Many companies started reporting on their sustainability activities by reflecting the values of the United Nations Sustainable Development Goals (SDGs). Moreover, harmful activities of companies in the luxury fashion sector have been a topic of discussion by stakeholders. Previous literature has discussed the different notions of sustainability reporting. However, a lack of research has been detected on the antecedents and outcomes of implementing SDGs in the corporate activities of luxury fashion companies. This study intends first to investigate the antecedents of implementing SDGs by luxury fashion companies and, second, to understand the possible outcomes of SDG implementation on the corporate performance of these companies. The methods used in this study was Quantitative Content Analysis. The results of this research indicate the board size of luxury fashion companies as an antecedent for SDG implementation. This means the higher the board size of the companies, the more probable they report on the SDGs. Furthermore, another result suggests statistically significant effects of SDG implementation on companies' ESG scores and Governance Pillar scores. However, no effects have been detected on the Financial performance of companies in the luxury fashion sector.

INTRODUCTION

Growing concern about sustainability has influenced companies worldwide to embrace sustainable practices and show interest in corporate sustainability. The Brundtland report, considered the first document to introduce the concept of sustainable development, emphasizes businesses' essential role in controlling the impacts of societies on the environment (Montiel and Delgado-Ceballos, 2014; Salzmann et al., 2005). Moreover, the United Nations' 2030 Agenda for Sustainable Development introduced 17 Sustainable Development Goals (SDGs) to be achieved by 2030. Many companies have adopted these SDGs as a guideline for practicing sustainability and tend to reflect them in their sustainability reports.

The fast-growing market for luxury goods and rising awareness of consumers has brought attention to unsustainable practices in the luxury fashion industry. Once silent about their unsustainable behavior, luxury fashion houses started to report on sustainability practices more recently (Kapferer and Michaut-Denizeau, 2020).

Although a body of literature exists on the SDGs implementation by corporates, its drivers, and potential effects on corporate performance, research on the integration of SDGs in the context of luxury fashion businesses has remained unexplored. This thesis will further investigate the antecedents and outcomes of SDGs implementation in luxury fashion companies.

The first chapter is dedicated to introducing the concept of sustainability, from its history to its interpretations and importance in corporate performance. Furthermore, the importance of SDGs implementation and SDG reporting will be discussed in the first chapter. Also, we will present the concept of sustainability in the context of fashion companies. The second chapter is devoted to studying the history of luxury as a concept and further investigating luxury fashion, its market, and sustainability within the luxury fashion business, discovering their divergence and convergence. The third chapter presents the methodology used in this study, introduces sample companies, and presents the variables to be measured in the research analysis. In the fourth chapter, a descriptive analysis of the data will be exhibited, followed by a regression analysis of the data. The fifth chapter will discuss the findings of the research, presenting what factors influence luxury fashion companies to implement SDGs in their business and report on whether such action affects their financial or ESG performance.

CHAPTER 1

SUSTAINABILITY AND SDGs

Due to increased awareness of an impending climate disaster, the notions of "sustainability" and "sustainable development" are now believed to be significant drivers of the world in the twenty-first century.

To better understand the concept of "sustainability", we will observe its origin, definition, and importance in this section. Moreover, we will have a deeper look at the Sustainable development Goals and their importance in corporate performance. Furthermore, we will take a glance at the concept of sustainability in the fashion sector.

1.1. The origins of sustainability

Dixon & Fallon (2008) note that "sustain" is rooted in the Latin word "sustenere", which means "to hold up or keep elevated" (Dixon and Fallon, 2008). Even if the term "sustainability" is considered a recent phenomenon, the concept can be traced in history. According to Jacobus A. Du Pisani (2007), Environmental issues such as deforestation, salinization, and loss of soil fertility, which we now refer to as sustainability issues, were present in ancient Egypt, Mesopotamia, ancient Greece, and the civilizations of Rome.

In the 18th century, a growing concern over the scarcity of wood developed in Europe. This resulted from the overconsumption of wood for different purposes, including the construction of ships and mining (van Zon and Kuipers, 2002). Jacobus A. Du Pisani (2007) indicates that for the first time, "sustainability" as a term was used in "German forestry circles by Hans Carl von Carlowitz in Sylvicultura Oeconomicain 1713" (du Pisani, 2007). Spindler (2013) believes that the work of Von Carlowitz stands out because it was written with an economics focus, and Von Carlowitz understood that the whole economy is what is needed to save the forests rather than only the forestry industry.

Overpopulation was another source of worry in the 18th century. Several pieces of literature exist about the consequences of a growing population. In his book Essay on Population in the late 18th century, Thomas Malthus "argued that the tendency of population towards geometric growth meant that it would always outstrip the growth in the food supply" (Dresner, 2012). Later, Malthus's statements were criticized by the communists such as Marx.

The extensive usage of coal, the primary energy source at the time, was the subject of dispute in the nineteenth century. "Our wonderful century", Alfred Russell Wallace's retrospective of the achievements and failures of the nineteenth century, published in 1898, included a chapter on the plunder of the earth. He believed that the irresponsible destruction of nature's stored-up goods, including coal, oil, gas, and minerals, and the exploitation of rain forests was an injury to future generations (du Pisani, 2007).

Jacobus A. Du Pisani (2007) demonstrates that sustainable development as we know it today came into being in the twentieth century. It started with the growing alarm for overconsumption of oil, which was yet another energy source, replacing the coil and driving the unlimited desires of humankind. The advancement of science and technology at the beginning of the 20th century promised infinite possibilities for growth for human beings. With two global wars coming ahead in the first half of the century, all these promises seemed to be fading, but not for long. (du Pisani, 2007).

The current view of "sustainability" and "sustainable development" can be traced back to the late 60s early 70s, after the club of Rome's publication of *The limits to growth*. According to du Pisani (2007), this publication was released to warn about the limited supply of the resources on earth and that overusing them might end in disaster for humankind. The next milestone for "sustainability" was the United Nations Conference on the Human Environment in 1972 in Stockholm, where 113 nations participated in signing a declaration. According to Caradonna (2014), "The declaration deals with safeguarding the natural environment and social issues such as colonialism and oppression. Also, around this time, the UN began discussing the relationship between human-caused air pollution and global climate change" (Caradonna, 2014). A significant outcome of the Stockholm conference was the establishment of the United Nations Environment Programme (UNEP).

The next milestone and maybe the most important one for "sustainability" is the publication of "our common future" known as the "Brundtland report" by the World Commission on Environment and Development (WCED), chaired by the prime minister of Norway Gro Harlem Brundtland. Almost all the literature about "sustainability" and "sustainable development" mentions this particular publication and its popular definition of the concept:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987)

According to Kuhlman & Farrington (2010), The concept of sustainability was first introduced in this report, giving it the wide recognition it has today. This report also elaborates on the relationship between environment, economics, and social issues (Caradonna, 2014)

The Rio conference called "Earth Summit" in 1992 took the concept to a new level. Many UN members and NGOs attended that conference to discuss environmental and development issues. Compared to previous summits, the Earth Summit brought together a more significant number of country and state leaders, and global coverage of the Earth Summit was widespread (Grubb *et al.*, 2019). Also, different binding and non-binding agreements came out of the Rio conference. "Principle 3 basically re-states the main definition of sustainable development in *Our Common Future*." (Caradonna, 2014)

The worldwide attention to sustainability after *"Our Common Future"* and the *"Earth Summit"* brought world leaders together many times. An important landmark was the "United Nations Millennium Development Goals" conference in 2000 "to tackle major issues under a global partnership commitment by 2015". Manning & Report (2009) state that an essential purpose of this conference was international thought on how to promote the progress of developing countries and societies in general, and all developing and developed countries, took part.

In 2015, the United Nations approved the 2030 Agenda for Sustainable Development. Considered a milestone for sustainability and sustainable development, the 2030 Agenda Adopted 17 broad goals known as "Sustainable Development Goals" or SDGs and 169 targets to achieve the goals. The Sustainable Development Goals were developed after two years of consultation with civil society and other stakeholders all around the world (United Nations, 2015)

The 2030 agenda set out a vision for a world free of poverty, hunger, and disease where all life can thrive with access to clean water, quality education, healthy food, and energy and where human rights and dignity are respected. As the United Nations declares, all major United Nations conferences and summits have been reaffirmed in the 2030 Agenda, which include the Rio Declaration on Environment and Development, the World Summit on Sustainable Development, the World Summit for Social Development, the Programme of Action of the International Conference on Population and Development, and the Beijing Platform for Action (United Nations, 2015).

The 2030 Agenda tends to build on the 2000 Millennium Development Goals and tries to accomplish what has been overlooked to achieve, especially in helping the most vulnerable

in the societies. The SDGs were announced to come into effect on January 1st, 2016, and to guide the decision makings in the remaining 15 years before 2030. The United Nations reaffirms that the 2030 Agenda is to be implemented in a way to ensure consistency with international law. Furthermore, the SDGs and their corresponding targets are integrated and applicable universally. They also consider the realities of nations and their capabilities with respect to their national policies and priorities (United Nations, 2015).

Figure 1 displays the 17 Sustainable Development Goals, and Table 1 provides an overall description of each goal's main targets.

Figure 1. Sustainable Development Goals

Source: https://www.un.org/sustainabledevelopment/sustainable-development-goals/

Table 1. Sustainable Development Goals

SDGs	SDG Name	Description

SDG1	**No Poverty**	The main goal here is to put an end to poverty everywhere in all formats. Seeking out the most vulnerable populations and supporting those affected by climate-related disasters. The main targets associated with this goal include reducing the proportion of people living in poverty by half by 2030, implementing social protection systems for all on a national scale, ensuring equal access to economic resources for the poor and vulnerable population, building resilience, and decrease the exposure of the vulnerable population to the extreme events related to climate, ensuring that the resources are mobilized significantly with attention to the developing countries, and to create an efficient policy framework to support the investments in actions related to putting an end to poverty.
SDG2	**Zero Hunger**	The second sustainable development goal seeks to put an end to hunger and malnutrition and to achieve food security. It aims to endorse sustainable agriculture, ensure a sustainable food-producing system, and increase investments in infrastructure for agricultural research and activities.
SDG3	**Good Health and Well-being**	The third goal seeks to ensure healthy lives and to promote the well-being of all at all ages. Reducing maternal mortality, preventable deaths of children who are less than five years old and newborns, ending the epidemic of diseases, ensuring global access to sexual and reproductive health care services, achievement of universal health coverage, prevention, and treatment of substance abuse, supporting the r&d of vaccines and medicines of communicable and non-communicable diseases are the main mentioned targets to be achieved by 2030 for the third sustainable development goal.

SDG4	**Quality Education**	This goal aims to ensure inclusive and equitable quality education and to promote lifelong opportunities for learning opportunities for all people. The targets of this goal include ensuring access to free quality primary and secondary education for all boys and girls and ensuring equal access to further education for all men and women
SDG5	**Gender Equality**	To achieve equal rights for genders and to empower all women and girls around the world. To eradicate all forms of discrimination, violence, and harmful practices against women and girls. Ensuring equal social participation and opportunities for all women. Provision of universal access to sexual and reproductive health for women and girls.
SDG6	**Clean Water and Sanitation**	To ensure sustainable management and availability of water and sanitation, and hygiene for all people. Improving waste quality by reducing water pollution, wastewater management, and safe recycling of water. Increasing global partnerships in infrastructure expansion for water and sanitation activities in developing countries.
SDG7	**Affordable and Clean Energy**	To achieve access to sustainable, affordable, reliable, and modern energy for all. Increase the share of renewable energy globally and increase energy efficiency.
SDG8	**Decent Work and Economic Growth**	To ensure sustainable and inclusive economic growth and productive employment. Improve global resource efficiency, fight youth unemployment, eradicate forced labor and human trafficking and eliminate child labor and use of child soldiers.
SDG9	**Industry, Innovation, and Infrastructure**	To build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation. Increasing the access of different enterprises to financial resources and ensuring their integration into the value chains. Enhancing scientific research in developing countries. Supporting access to information and communication technologies globally.

SDG10	**Reduced Inequalities**	To reduce the inequalities globally. Achieving income growth, promoting inclusion of all people with no regard for race, sex, age, disability, and other status. Ensuring equal opportunities for all, and eliminating discriminatory laws and policies. To facilitate mobility and migration of people.
SDG11	**Sustainable Cities and Communities**	To make the cities inclusive, safe, resilient, and sustainable. Ensuring access to safe and affordable housing, providing more efficient public services for all, and enhancing inclusive and sustainable urbanization. Protecting and natural cultural heritage. Reduce the number of deaths affected by economic losses or natural disasters. Reducing the environmental impact of the cities. Supporting positive economic, social, and environmental lings in urban and rural areas.
SDG12	**Responsible Consumption and Production**	Taking action towards sustainable production, consumption, and sustainable management and use of natural resources. Management and reduction of chemicals and waste in their lifecycle, and promotion of recycling and reusing. Support of sustainable public procurement practices. Promoting awareness about sustainable development practices.
SDG13	**Climate Action**	Taking action to fight climate change and its effects. Strengthening resilience to climate-related hazards and natural disasters. Increase awareness about climate change and global warming.
SDG14	**Life Below Water**	To conserve the ocean, seas, and marine resources and use them more sustainably. Prevent marine pollution, protect the marine and coastal resources and prevent harmful fishing practices.
SDG15	**Life on Land**	Sustainable use of terrestrial ecosystems, protecting them and restoring them. Sustainable management of forests. Fighting deforestation and desertification and reversing and halting land degradation and biodiversity loss. Conservation of mountain ecosystems and their biodiversity. Taking action to end wildlife trafficking. Reducing the impact of invasive alien species.

SDG16	**Peace, Justice, and Strong Institutions**	Promotion of inclusive and peaceful societies for sustainable development, making access to justice for all possible and building effective, inclusive, and accountable institutions at all levels. Reduce all forms of violence and death rates related to violence, including abuse, exploitation and trafficking, and torture. Fighting financial corruption. Providing legal identity for all and protecting fundamental freedoms.
SDG17	**Partnerships for the Goals**	To strengthen the means of implementation and revitalize the global partnerships for sustainable development in different aspects, including financial cooperation, technology, information and communication, capacity building, trade, and systemic issues.

Source: Sustainable Development Goals | United Nations Development Programme. Available at:
https://www.undp.org/sustainable-development-goals

1.2. Definition of sustainability

Given the fact that today, sustainability is a widespread concept, some authors, such as (Dixon and Fallon, 2008) and (White, 2013), recall the term as hard to define. According to Bell & Morse (2012), almost all published literature on sustainability points out that the concept of sustainability is broad in meaning, there is a lack of unified definitions, and authors tend to give a definition that they prefer to the concept. Bell & Morse (2012) explain that the lack of a unique definition for sustainability was actually a reason behind the "popularity" that It has today. "This flexibility as to what sustainability means can also be a great strength in a very diverse world. People differ in the environmental, social, and economic conditions within which they have to live, and having a single definition that one attempts to apply across this diversity could be both impractical and dangerous" (Bell & Morse, 2012). Nevertheless, according to several authors such as(Dresner, 2012; Kuhlman and Farrington, 2010; Pezzey, 2017), the definition of the Brundtland report which we mentioned earlier ("Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987)) is believed to be the establisher that gave the concept of sustainability the current fame and reputation.

Two notions of sustainability have also been mentioned within the existing literature: "strong sustainability" and "weak sustainability". Kuhlman & Farrington (2010) suggest that "Strong sustainability can be seen as a series of thresholds that must not be crossed", and how to set the thresholds depends on the recovering capacity of the environment from possible

exploitations. Whereas in "weak sustainability", such thresholds might be passed as long as a new form of capital replaces the exploited capital (Kuhlman and Farrington, 2010).

Several works of the literature suggest that sustainability stands on three equally important pillars, namely: "Economy", "Environment", and "Social". According to Moldan et al. (2012) (see Purvis et al. (2019) p.6), the three-pillar paradigm is referenced chiefly to "the Brundtland report, Agenda 21 and the 2002 World Summit on Sustainable Development" (Moldan *et al.*, 2012).

Purvis et al. (2019) indicate that the first time the interconnected circles emerged as a figure of the three-pillar model was by Barbier (1987). Despite the widespread use of this model in the literature, it seems that no theoretical development has been done around its meaning. However, the academic interpretation of it has been divided into two approaches. First, the "systems" approach is "three distinct systems with their own goals, and the interactions of these systems must be managed to meet these goals and the emergent goal of sustainability or sustainable development" (Purvis *et al.*, 2019). The second is the "distinct" approach which illustrates the three pillars as distinct perspectives of sustainability. Figure 2 shows the different graphical variations of sustainability by (Purvis *et al.*, 2019)

Figure 2. graphical variations of sustainability pillars
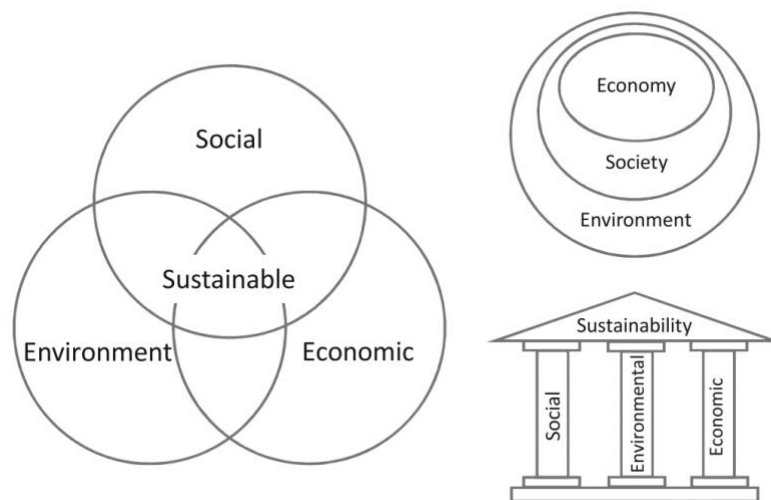
Source: Purvis et al., 2019

1.3. Why is sustainability important for companies?

In the previous parts of this chapter, we illustrated the importance of sustainability as a growth plan that preserves environmental equity for future generations. Now we want to discuss which aspects of sustainability can benefit the corporates that commit to their values.

Chang & Kuo (2008) studied the effects of sustainable development on the financial performance of corporates. Their studies suggest that sometimes the profitability of the "higher sustainability performers" is positively affected by their "sustainability performance". Furthermore, they indicate a "reciprocal influence between sustainability and profitability within the same period" (Chang and Kuo, 2008). However, their study shows that the profitability of the "lower sustainability performers" can negatively influence sustainability performance, which demonstrates no reciprocal impact in this group (Chang and Kuo, 2008).

Moreover, Hawn et al. (2018) studied whether the investors think corporate sustainability "pays off" or not. Their result indicates that even if investors previously did not show interest in sustainability activities since they supposed sustainability investments move the financial focus away from more profitable investments. However, they also demonstrate a recent positive shift in investors' perception of sustainability practices which can be a sign that, Afterall, investors seem to believe that sustainability "pays off" (Hawn *et al.*, 2018).

Furthermore, Eccles et al. (2014) indicate that companies with high sustainability are more likely to have developed processes to engage stakeholders. Also, high sustainability companies are more likely to be focused on long-term results, and over the long-term, they perform better than their competitors in terms of accounting performance and the value in the stock market. Eccles et al. (2014) point out that highly sustainable firms are defined by specific mechanisms of governance that involve the board of directors in issues related to sustainability. These firms are more likely to have deeper levels of stakeholder engagement. In contrast, companies with low sustainability consider social and environmental issues as externalities (Eccles *et al.*, 2014).

According to de Leaniz & del Bosque (2013), a firm's reputation is "the perceptions of its relevant stakeholders, such as customers, employees, owners, suppliers, and strategic partners, society and community (ranging from both local to international, including current and future generations), government or non-governmental organizations, among others." (de Leaniz and del Bosque, 2013). Esen (2013) specifies some determinants of corporate reputation, such as "emotional appeal, products and services, vision and leadership, workplace environment, financial performance, and social responsibility" (Esen, 2013). In a study of sustainability activity's influence on firms' reputation, de Leaniz & del Bosqueede demonstrate a high level of interrelation between the two, meaning that corporate sustainability exercises can enhance corporate reputation (de Leaniz & del Bosque, 2013). The study of Esen (2013) on the "influence of corporate social responsibility activities on building corporate reputation" confirms the findings of de Leaniz & del Bosque. Findings indicate that corporate social

responsibility can build up a corporate reputation among a variety of firms' stakeholders (Esen, 2013).

Moreover, the study of S. Kim (2019) illustrates that companies communicate their corporate social responsibility activities, enhancing consumer trust and, therefore, corporate reputation for those companies. Furthermore, corporate sustainability can be helpful for enhancing the brand image of companies. (Parguel *et al.*, 2011) suggest that companies with low sustainability ratings tend to have lower brand evaluations. In other words, sustainability ratings help consumers to evaluate the brands they buy from clearer.

Another study by Lo & Sheu (2007) shows that in the case of publicly traded firms in the United States, sustainable firms enjoy a valuation that is higher than those companies that do not tend to act sustainably. Their study indicates that "corporate sustainability is strongly associated with market value" (Lo and Sheu, 2007). The study of Artiach et al. (2010) also shows that those companies with higher corporate sustainability performance show higher rates of return on equity and higher levels of growth than other firms.

We established that embracing sustainability can be beneficial for companies around the world. It can enhance financial performance, help corporate reputation, engage stakeholders to the brand and the company, raise brand awareness and consumer trust, higher the valuation of the brand, and higher the growth rate for the companies.

1.4. SDGs in the literature

According to Whittingham et al. (2022), even though the Sustainable Development Goals can be considered a recent phenomenon, they have attracted fairly significant attention from scholars. Among the large body of research on the SDGs, scholars in management have made considerable contributions in several distinct areas, driven by their ability to work across levels of analysis and integrate complexity. The SDGs are receiving increasing attention worldwide and may create normative pressure on firms to disclose their sustainability practices and gain legitimacy in pursuit of market share (Whittingham *et al.*, 2022). In fact, Pizzi et al. (2020) believe that it is necessary for enterprises to get involved in overcoming the challenges that the SDGs bring to governments worldwide due to the pressures made created by different stakeholders.

The literature on Sustainable Development Goals reporting mainly discusses the institutional or structural characteristics of the firms which address the SDGs, while studies on the effects of SDGs reporting on the corporate performance of companies are still limited.

Research by Whittingham et al. (2022) seeks to better understand how the launch of SDGs has changed the sustainability reporting of companies. The result of their study indicates a shift towards more contribution to the achievement of SDGs. However, as (Heras-Saizarbitoria *et al.*, 2022; Lu *et al.*, 2018; van der Waal and Thijssens, 2020; Whittingham *et al.*, 2022)indicate, these contributions may be uneven, and companies show a tendency to focus on selected SDGs or "cherry pick" them, and do not concentrate on the rest in order to gain social or stakeholder legitimacy.

Moreover, a stream of literature studies the structural characteristics of companies that addressed the Sustainable Development Goals in their sustainability reports. According to the results (Pizzi *et al.*, 2021; Rosati and Faria, 2019; van Zanten and van Tulder, 2018), companies of larger size with access to more resources showed a higher probability of addressing SDGs in their sustainability report. Also, higher levels of intangible assets proved to be another factor that motivated companies to engage with SDGs before their peers. Moreover, the adoption of external assurance was another action that such companies were more likely to take. Also, companies with special attributes to their boards, such as a higher proportion of younger board members, higher proportions of female board members, and higher presence of independent board members, show more likability on average to engage more in addressing SDGs in their sustainability reports. Having more expertise in non-financial reporting and the length of the report also has been proven to affect SDG reporting.

Another stream of literature studies the relationship between reporting on the SDGs and institutional factors. Results of (Bose and Khan, 2022; Rosati and Faria, 2019) indicate a higher chance of SDG reporting for companies that are "located in countries with higher levels of climate change vulnerability, national corporate social responsibility, company spending on tertiary education, indulgence and individualism, and lower levels of market coordination, employment protection, power distance, and long-term orientation" (Rosati and Faria, 2019). Bos(Bose and Khan, 2022; Simnett *et al.*, 2009)e and Khan (2022) found SDG reporting to be higher in companies that are in shareholder-oriented countries than companies in stakeholder-oriented countries. Shareholder-oriented businesses are more likely to be in common law countries such as the United Kingdom, United States, or Australia, and stakeholder-oriented businesses are commonly present in code law countries such as France, Switzerland, Italy, or Germany (Ball *et al.*, 2000). In shareholder-oriented countries, companies are mostly perceived as facilitators of value creation and maximization for shareholders. Hence, other stakeholders are not as influential in the activities of companies. In contrast, in stakeholder-oriented countries, stakeholders are influential in companies' activities regarding the "adoption of

stakeholder-oriented corporate governance models" or reporting for non-financial activities. Moreover, the SDGs have been emphasized more in the reports of companies in developing countries than the companies located in developed countries.

However, the study of Lu et al. (2021) points out some negative antecedents of SDGs addressing the Corporate Social Responsibility activities of the companies. Lu et al. (2021) specify the following issues. First the implementation of selective SDGs, which Whittingham et al. (2022) also mentioned. Companies tend to apply some SDGs that may be practically ineffective but bring them positive brand value and reputation or, in general, be beneficial for their own sake. Another issue is that companies may act socially responsible for equalizing their corporate social irresponsibility. Acting responsibly can be an instrument for companies to compensate for their irresponsible behavior to prevent possible penalties derived from conflicts with stakeholders' social values. Moreover, greenwashing seems to be a reason for SDGs reporting. According to Delmas & Burbano (2011), greenwashing means misleading consumers about the environmental exercises of a firm or the benefits of a product or service to the environment.

On the effects of SDGs reporting on the performance of companies, some literature reports a lack or even an adverse impact. Emma and Jennifer (2021) conclude that SDG reporting lacks impact on company performance, except in companies operating in either controversial or environmentally sensitive industries. Examples of controversial sectors include alcohol, tobacco, or gambling, and examples of environmentally sensitive industries include oil & gas or mining. The study of Emma and Jennifer (2021) indicates that the role of SDGs reporting can be a tool to influence stakeholders' perceptions instead of contributing to environmental and social change. While for companies whose activities are under high scrutiny from their stakeholders, the situation can be different, and SDGs reporting can actually generate value for the firm. Moreover, the study by (Lassala *et al.*, 2021) shows an adverse impact of SDGs reporting on the financial performance of companies. It is important to note that the negative impact of the Sustainable Development Goals can be attributed to their medium- to long-term nature, which means the companies are still in process of integrating them into their core businesses.

Having an overview of the concept of sustainability, the history behind it, and its importance, we further explored Sustainable Development Goals and their role in sustainability activities and reporting of the companies. In section 6, we will gain an understanding of harmful practices and the concept of sustainability within the fashion industry.

1.5. Sustainability in the fashion industry

Earlier in this chapter, we introduced the concept of sustainability and discussed its importance of it in modern times. We now analyze relevant topics in sustainability practices in the world of fashion.

1.5.1. Growth of the fashion industry

The apparel and textile industry has been facing enormous growth over the past twenty years. This growth has resulted in rising concerns about the environmental impacts of the industry. Among the destructive environmental effects of this industry, we can mention water pollution in the stages of dyeing and textile treatment, use of harmful chemicals, and energy consumption in the entire supply chain, as well as leading to massive textile waste due to short life and low quality of garments produced (Niinimäki *et al.*, 2020). Consumption of apparel and, thereby, production of textiles are major contributors to the rising environmental impact. According to Niinimäki et al. (2020), Textile production per capita worldwide increased from 5.9 kg to 13 kg between 1975 and 2018. It is estimated that by 2030, global textile consumption will reach 102 million tons each year, which is a tremendous increase over the previous number of 62 million tons annually. Consequently, fashion brands now produce almost two times more garments than before 2000. As shown in Figure 4, a report by (Quantis (2018) demonstrates that the Apparel and footwear industry accounts for approximately 8.1% of global climate impacts, and this impact has increased by 35% from 2005 to 2016 for the apparel industry.

Figure 4. Total apparel & footwear industries' impacts compared to total global impacts in 2016

	%	MILLION METRIC TONS CO$_2$eq
Apparel	6.7%	3,290
Footwear	1.4%	700
Total apparel & footwear impacts	**8.1%**	**3,990**
Compared to:		
Total global CO$_2$eq impacts	100%	49,300

Source: (Quantis, 2018)

The industry has proven to be highly dependent on the "fast fashion" business model. The fast-fashion model offers consumers a variety of cheap and trendy products. It places major emphasis on "recurring consumption and impulse buying", promoting a sense of urgency when purchasing the products (Niinimäki *et al.*, 2020). As a result of a business model that encourages consumption behavior toward disposable products of low quality, the apparel and textile industry has exacerbated its already negative impact on the environment (Kozlowski *et al.*, 2015).

Figure 5. the environmental price of fast fashion
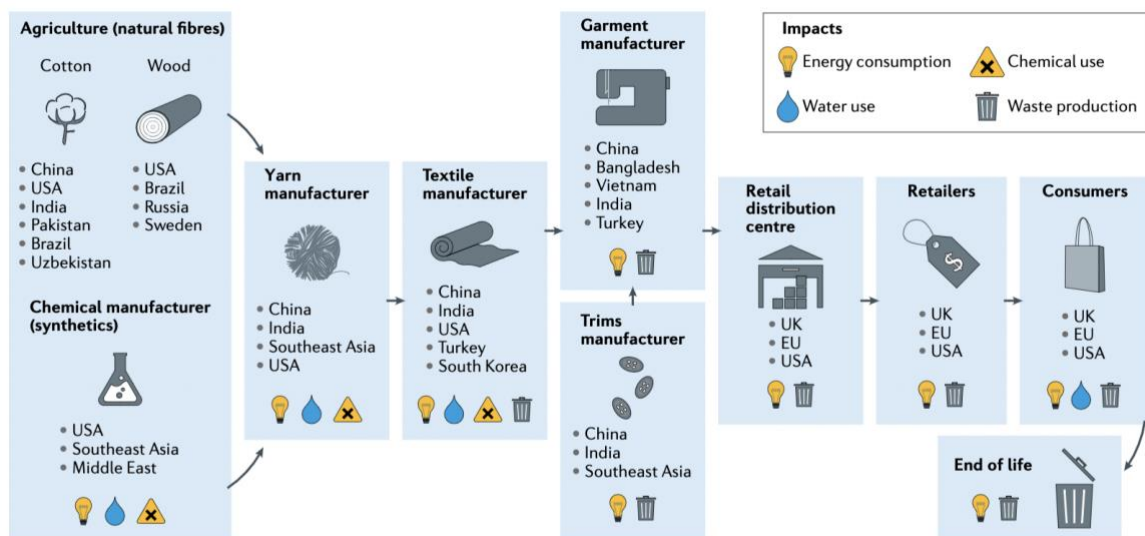
Source: Niinimäki et al., 2020

Figure 5 illustrates the supply chain of manufacturing a garment and indicates the different environmental impacts of the industry at each stage, as well as the main countries that participate in completing each stage. According to Niinimäki et al. (2020), Most of the apparel companies in the "global north" outsource their production process from the agricultural stage to yar, textile, and the final garment manufacturing to low-cost countries, while the designs are done in the home country of the company. After the production of final products, garments are distributed to the retail distribution centers and finally to the retailers, where items are sold to the final customers. The shipment of garments to the retail centers is usually made by cargo ships and now with air transport for the time efficiency which is significantly contributing to the air pollution problem. After the consumer is done wearing the garment, it usually ends up in landfills in developing countries or sometimes gets recycled.

1.5.2. Sustainable fashion practices

As a result, a call for action is needed, and a more sustainable attitude begins to emerge, giving rise to a focus on circularity throughout the organization and the whole production process

(Thorisdottir and Johannsdottir, 2019). Now, more attention is drawn to the environmental impacts of apparel in the industry, which is forcing companies to take more responsible action toward the environment.

Many authors have been working on the topic of sustainability in the apparel and textile industry in the past decade, analyzing the different aspects of the topic and providing a structure for companies to integrate sustainability in their operations and supply chain. Yang et al. (2017) analyze the current studies in sustainable retailing in the fashion sector through a systematic literature review of 48 relevant journal articles. Their study assesses four main trending areas on this topic and points some other relevant areas out of the scope of their study. They analyzed five areas are "(1) sustainable retailing in disposable fashion, fast fashion, and slow fashion; (2) green branding and eco-labeling. According to Hartmann et al. (2005) Green branding corresponds to "an active public communication and differentiation of the brand from competitors through the environmentally sound attributes" (Hartmann *et al.*, 2005). (3) retailing of secondhand fashion; 4) reverse logistics in fashion retailing; (5) emerging retailing opportunities in e-commerce" (Yang *et al.*, 2017), and other areas include "corporate social responsibility in fashion retailing, evolution strategy in sustainable retailing, the effect of sustainable retailing on financial performance, small-scale retailers in the fashion industry, sustainable retailing in luxury fashion brands, sustainable retailing choice evaluation, the ethics of sustainable retailing, sustainable fashion retail supply chains, fashion quick-response systems, inventory models in sustainable fashion retailing, and the future of sustainable fashion retailing" (Yang *et al.*, 2017)

Yang et al. (2017) also conclude that how consumers in developing countries perceive sustainability in fashion retailing is much different from how the concept is perceived in developed countries. Studies show that in developing countries, sustainability is viewed as "either legal compliance or corporate philanthropy" (Yang *et al.*, 2017). Another important notion of their study is about the retailers, which rarely provide "detailed information" about the sustainability aspects of their production, which can lead to skepticism of consumers about their environmental claims. (Yang *et al.*, 2017)

Kong et al. (2016) discuss how consumers perceive sustainable fashion products in the Korean market. Their intention was to discover the sources that the customers rely the most on to get information about sustainability issues and sustainable products. Their results suggest that Korean consumers get their sustainability knowledge from the companies themselves. So, companies must promote their sustainability activities in their marketing strategies. (Kong *et al.*, 2016)

Joy et al. (2012) did a similar analysis on fashion consumers in Canada and Hong Kong-based on interviewing them. They determine that even if the consumers have concerns about sustainability matters, they usually do not consider the sustainability factor in their outfit purchases. Quoting Bonini and Oppenheim (2008), They provide some reasons which hold consumers back from buying sustainable fashion products: Lack of awareness, negative perceptions, distrust, high prices, and low availability." (Bonini *et al.*, 2008; Joy *et al.*, 2012)

Joy et al. (2012) believe that the consumers who currently overconsume fashion products on a short-term basis have to change their view and desire what is sustainable instead. In fact, luxury fashion brands can have a good impact on this shift in consumer behavior. "Luxury brands can become the leaders in sustainability because of their emphasis on artisanal quality; why toss an item designed to last, with timeless—as opposed to deliberately time-limited style?" (Joy *et al.*, 2012)

In another article with a systematic literature review method, Jia et al. (2020) analyze the literature on "The circular economy (CE) in the textile and apparel (T&A) industry". According to Gazzola et al. (2020), "A circular economy is an economy designed to be able to regenerate itself, using two types of materials: those organic or renewable, designed to be reused and re-entered at the end of their life cycle in the biosphere, and technical or non-renewable ones, designed to switch cyclically from production to consumption with a minimum loss of quality or value." (Gazzola *et al.*, 2020)

Jia et al. (2020) illustrate four themes in the literature. The first theme is the "drivers" of applying a circular approach in the supply chain. They suggest three main drivers. The first driver is organizational, which emerges internally by "employee participation" or externally by pressures from competitors. The second driver is institutional drivers, for example, authorities' reinforcements and laws that force companies to adopt CE strategies. The third driver is the customer driver when companies correspond to the rising awareness of customers about environmental and sustainability issues. The next theme indicated by Jia et al. is the "barriers". The paper classifies the barriers into organizational barriers, financial barriers, and policy barriers. Financial barriers might be a significant issue in adapting CE practices. Typically, it needs massive investments in different parts of the supply chain to implement such strategies. The third theme in the article is the different "practices" of CE. There are: 1) product design, 2) product stewardship, 3) pollution prevention by decreasing the waste in production processes and increasing product life cycles, and 4) closing the loop with practices such as reverse logistics. The last theme is "performance" indicators, and there are economic performance, environmental performance, and commercial growth. (Jia et al., 2020).

1.6. Conclusion

The concept of sustainability dates to ancient Egypt, Greece, and the civilization of Rome; however, the term "sustainability" and the current understanding of it came to be known in the early 70s. in 2015, the 2030 Agenda for Sustainable Development introduced the 17 Sustainable Development goals to be achieved by 2030. The urgency of the goals and worldwide attention to them encouraged the businesses to further engage with the SDGs and integrate these values into their strategies.

Furthermore, the concept of sustainability within the fashion industry was discussed in the first chapter by looking at the development of the industry and its harmful footprints on the environment. Moreover, current sustainability trends in the fashion industry were discussed in this chapter.

CHAPTER 2

SUSTAINABILITY IN THE LUXURY FASHION INDUSTRY

After understanding the concepts of sustainability, SDGs, and their importance in the fashion sector, in this chapter, we will explore the topic of sustainability within the luxury fashion sector. To better understand this topic, we first define luxury. Then we will have an overview of the global luxury goods market. Next, we will discover the luxury fashion segment and its global market outlook. The third part of the chapter is dedicated to understanding sustainability in the luxury fashion industry.

2.1. What is luxury

2.1.1. Definition of luxury

Luxury as a concept has been reprimanded for an extended period because of its very nature, being excessive and unnecessary. Nevertheless, now, the situation might have changed, probably in favor of the concept. McNeil & Riello (2016) indicates that in an era where individualism is common in societies and social and economic inequality is increasing. Luxury has found its place in our common lives, in a newspaper, or on advertising billboards, and in general, people are seeking uniqueness and exclusivity through luxury commodities. Thus, we might consider "luxury" with a negative meaning as well. In fact, the roots of the word itself may prove this notion of negativity.

As Sombart (1967) states (see (Cabigiosu, 2020)), luxury is "any expense that exceeds what is necessary" (Sombart, 1967). Cabigiosu 2020 indicates that there is no unique definition of luxury, and to define the concept, one might have to take time and space as well as context into account. Kovesi (2015) believes that one's ordinary might be another's luxury, and the luxury of today maybe becomes the necessity of life soon.

Kapferer & Bastien (2012) consider luxury as a culture that, if you want to practice well, you need to understand first. Kovesi (2015) believes that despite the common belief about the creation of luxury, in the origins of the concept, luxury did not mean to describe the consumption of the elites of societies but a term used to contemptuously mock newly emerging

wealthy members of communities. Kovesi (2015) mentions "early modern Italy" as a key period and place in the evolution of luxury.

Kapferer & Bastien (2012) argues that luxury has roots in ancient Egypt, a civilization characterized by highly hierarchical code and customs. They point out that Egypt fully adhered to luxury codes and came up with new approaches for this purpose, the most well-known of which is the use of glass to protect perfumes (Kapferer and Bastien, 2012). According to Cabigiosu (2020), with the growth of the civilization of ancient Egypt and Rome, the wealth of some classes of people increased as well. Owning luxurious unnecessary items was a way of showing off this difference in wealth. In some religious beliefs, Luxury was criticized for being involved with self-desires, whereas in some others, it was a "tangible proof of mundane success which is in turn linked to divine grace" (Cabigiosu, 2020).

These controversies in the perception of Luxury are still in debate, which can be a sign of change in the general perception of the concept through time. Although luxury roots back to ancient times, the current understanding of it may originate in recent times. Many scholars highlight the second industrial revolution as a point of transition in the According to Kapferer & Bastien (2012), In the 19th century, the rise of liberalistic ideologies benefited the idea of trading luxury for the purpose of creating wealth, and the emergence of democratic societies eased the access of luxury to public. Moreover, traces of moving towards "female emancipation" can be found in the 19th century. The authors recall the 20th century as a breakthrough for Luxury. A sector that has been previously serving mostly top elites of nations turned to become a welcoming global industry. Kapferer and Bastien believe that this significant shift is triggered by four significant drivers: 1- the democratization of societies, 2- the increase in spending power, 3- globalization, and 4- communication. (Kapferer and Bastien, 2012)

2.1.2. Global luxury sector

Despite all the controversies that the concept of luxury encompasses, the sector of luxury is growing in size year by year. Kapferer (2017) justifies the growth of the sector mainly by the rise of the "newly rich" phenomenon. He states in countries with economies that are recently developing, the people that are enjoying their recent affluence would like to express their wealth and status by conspicuous consumption of luxury items. Furthermore, Kapferer (2017) indicates that a great number of consumers, so-called "excursionists," might be another reason behind the growth in the luxury industry. This group of consumers is not necessarily rich people who want to act like the wealthy. They usually look for more affordable items from their favorite luxury brands, such as an accessory, cosmetics items, or perfume.

According to Bain & Company (2021) global luxury market was valued at around 1.14 trillion euros. As shown in Figure 6, among the segments of the luxury industry, the biggest share belongs to luxury cars with 551 billion euros, followed by personal luxury goods, luxury hospitality, fine wines & spirits, gourmet food & fine dining, high-end furniture & housewares, fine arts, private jets & yachts, and luxury cruise with 283, 79, 77, 49, 45, 34, 22, and less than 1 billion dollars respectively.

Figure 6. value of various global luxury markets in 2021, by market type

Source: Statista Personal luxury goods industry worldwide report. available at:
https://www.statista.com/study/12091/luxury-goods-industry-worldwide-statista-dossier/

Since the luxury fashion market is within the personal luxury goods segment, we will have a deeper look at the personal luxury goods, as Bain & Company (2021) calls it, "the heart of the whole luxury industry". The personal luxury goods sector consists of Luxury Apparel, Footwear, Watches & Jewelry, Cosmetics & Fragrances, and eyewear. Luxury apparel and footwear together build the luxury fashion segment.

Figure 7. revenue of the luxury goods market worldwide in 2021 by segment
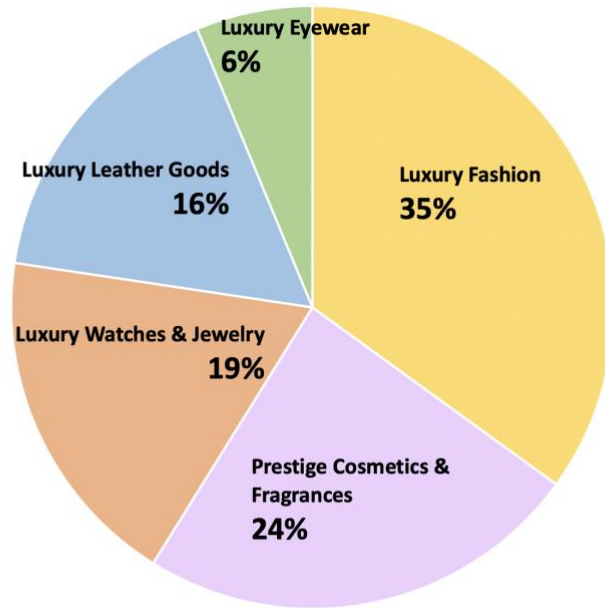
Source: Statista consumer market outlook. available at:https://www.statista.com/forecasts/1294611/global-personal-luxury-goods-market-value-segment)

As shown in figure 7, in terms of market share, Luxury fashion has 35 percent of the global luxury goods market with approximately 91 billion euros of revenue, followed by prestige cosmetics & fragrances with 24 percent of market share and around 62 billion euros of revenue, luxury watches & jewelry with 16 percent and total revenue of 48 billion euros, luxury leather goods with 16 percent of share in the market and 42.5 billion euros of revenue and the smallest segment is luxury eyewear with 6 percent of share and 16.2 billion euros of revenue generation.

Figure 8. share of the personal luxury goods market worldwide in 2021, by consumer nationality*
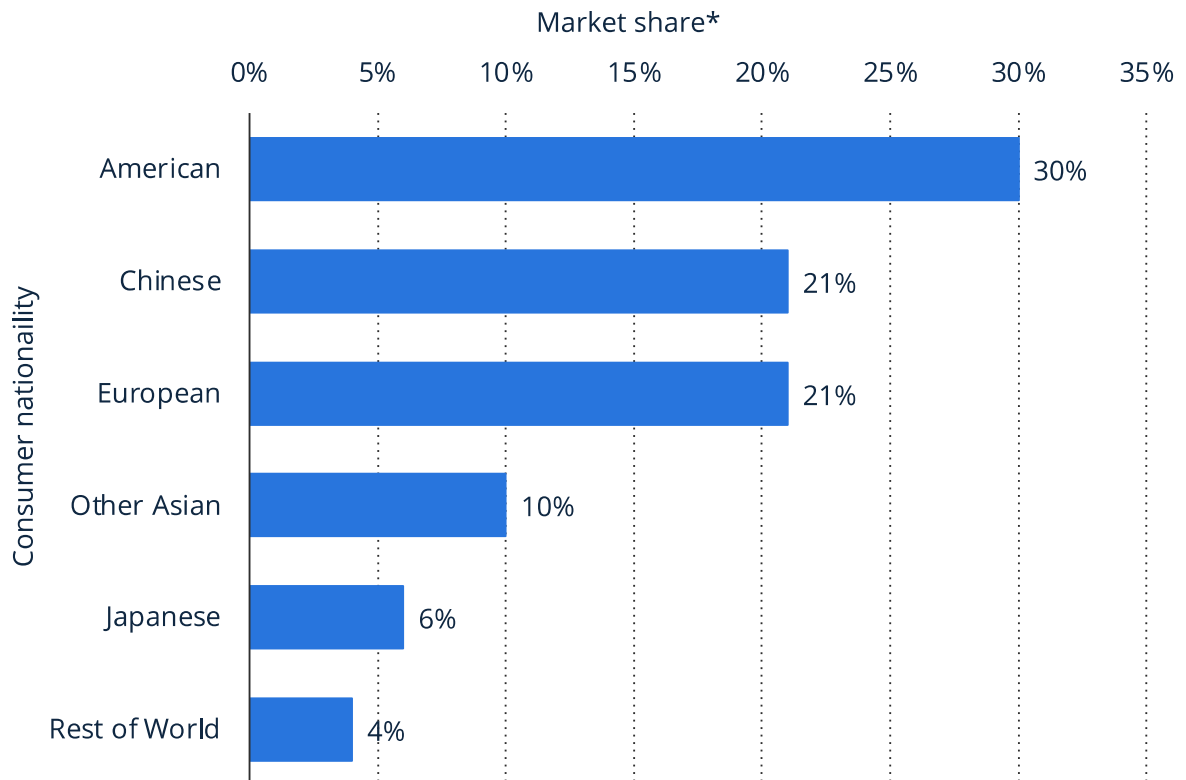
Source: Statista Personal luxury goods industry worldwide report. available at:
https://www.statista.com/study/12091/luxury-goods-industry-worldwide-statista-dossier/

Figure 8 shows that in 2021 main consumers of personal luxury goods are Americans with 30 percent of the total luxury consumption share and Chinese customers with 21 percent. Another 21 percent were of European nationalities, 6 percent were Japanese, 10 percent were other Asians, and 4 percent were from other countries of the world.

There is not a clear statistic about the number of global workforces in the luxury industry, but according to the European Commission (see (Commission & Directorate-General for Internal Market Entrepreneurship and SMEs, 2019) page 8), the luxury sector (called "high-end industries" in the report) employs more than one million people in Europe.

Besides the immersive growth of luxury that makes this sector interesting to investigate, another special feature attributed to the luxury sector is in terms of brand management. Kapferer (2017) indicates that to operate in the luxury sector, one must be, as economists call, "irrational". In classical theories of economics, the economic equilibrium is where demand and supply meet, whereas, in luxury brand management, it is quite the opposite. The goal of luxury brand management is to make extra demand without providing enough supply for it. The reason is if a luxury brand has an excessive presence in the market, it might hurt its exclusive nature. Kapferer (2017) adds that the so-called "luxury strategy" seeks to provide "intangible value" to

become and maintain incomparability factors. To build such incompatibility, Kapferer (2017) suggests adding "time, space, and blood" to the brands.

Time corresponds to the history and heritage of a company; brands tend to emphasize their craftsmanship and the work of their dedicated artisans. Space refers to the location or production. Producing in countries of origin helps the products to account for more credibility to themselves. Delocalizing production in lower-cost countries is a must-not for luxury companies. Blood refers to proving the authenticity of luxury companies. Kapferer (2017) points out that many luxury houses are named after their founder and creator, such as Giorgio Armani, Ermenegildo Zegna, Yves Saint Laurent, Brunello Cucinelli and etc.

Looking at a brief history of Luxury as a concept and its market, we can now move forward to observe the luxury fashion industry.

2.2. Luxury fashion

2.2.1. History of the luxury fashion industry

As long as Luxury has existed, Luxury fashion has been present in civilizations. Fashion and style always had a special place among the elite class of societies. According to (Okonkwo (2016), similar to the concept of "Luxury" itself, modern "luxury fashion" was initiated in the 19th century, when many of the current well-known apparel brands such as Burberry, Louis Vuitton, and Guerlain were established. However, maybe the activities of one man were the most influential of all. Charles Fredrich Worth introduced the concept of Haute Couture. He initiated many of the modern fashion concepts, such as runways which also started the modeling business as well (Okonkwo, 2016).

Okonkwo (2016) states that fast growth in the fashion industry was fueled by industrial advancements. The French revolution was an influential point in style to move towards simplicity and comfort in apparel and fashion. The 19th-century global fashion outlook was also affected by the American market. In America, the demand for the French style was high. The elites could wear the imported French outfits while the less fortunate asked for the locally copied versions, thanks to the invention of mechanical sewing machines. Americans also came with their own fashion houses in the 19th century with brands such as Macy's or Lord & Taylor. (Okonkwo, 2016)

Later in their studies, Okonkwo (2016) identifies some trends of the 20th century, which was a start for niche luxury fashion businesses by some pioneers such as Chanel and Lanvin. Also, cosmetics and accessories joined the fashion houses' portfolios. They initiated their first

line of branded make-up products and fragrances. After the wars of the 20th century, some houses like Chanel spotted a significant shift in consumer taste towards more uncomplicated and comfortable garments, which gave the houses huge benefits and fame. Also, cinema became a major influential factor for consumer demands. Cinema stars were the ones that people were seeking to choose their outfits. In the 1970s, manufacturing advancements contributed to ready-to-wear fashion products, which changed the whole fashion outlook afterward. It initiated the fast-fashion model of production that became a hotter topic in the 90s. The ready-to-wear concept was a threat to the French Haute Couture, leading to a decline in its fame in the 20th century. The 1980s marked a significant era for luxury fashion management with its wave of mergers, acquisitions, and strategic alliances. The creation of LVMH led to the formation of other rival conglomerates such as the Swiss group Richemont, owning many brands such as MontBlanc, Cartier, Chloè, and Chaumet, and the French-based Kering group formerly known as PPR, with brands such as Gucci, Balenciaga, YSL and Bottega Veneta in their portfolio (Okonkwo, 2016).

The 21st century can be considered the period of technological adaptation for luxury fashion companies. The rise of online retail also influenced the luxury fashion segment. Luxury houses that were previously reluctant to e-commerce started to adapt to this trend. Luxury companies did not want to lose the luxurious touch that consumers had with their products. Another trend of the 21st century is the rise of consumer awareness of ethical and moral aspects of the luxury experience, which affects their expectation of luxury brands. Thus, brands tend to act more socially and environmentally sustainable to maintain consumers' trust. Also, the immersive expansion of luxury companies to new markets is another trend in the luxury fashion industry in the 21st market (Okonkwo, 2016).

2.2.2. Luxury fashion market outlook

As presented in Figure 9, in 2020, the luxury fashion sector generated 85.57 million USD of revenue which is estimated to arrive at $127.76 million in 2027.

Figure 9. luxury fashion market size by segment

The biggest markets for products are Europe, America, and Asia with 36%,31%, and 28% of the revenue share, respectively (p9)

Figure 10 shows that in 2020 online sales consisted 16.4% of total revenues, which is estimated to become 26.3% by 2025.

Figure 10. sales channel share in the luxury fashion market
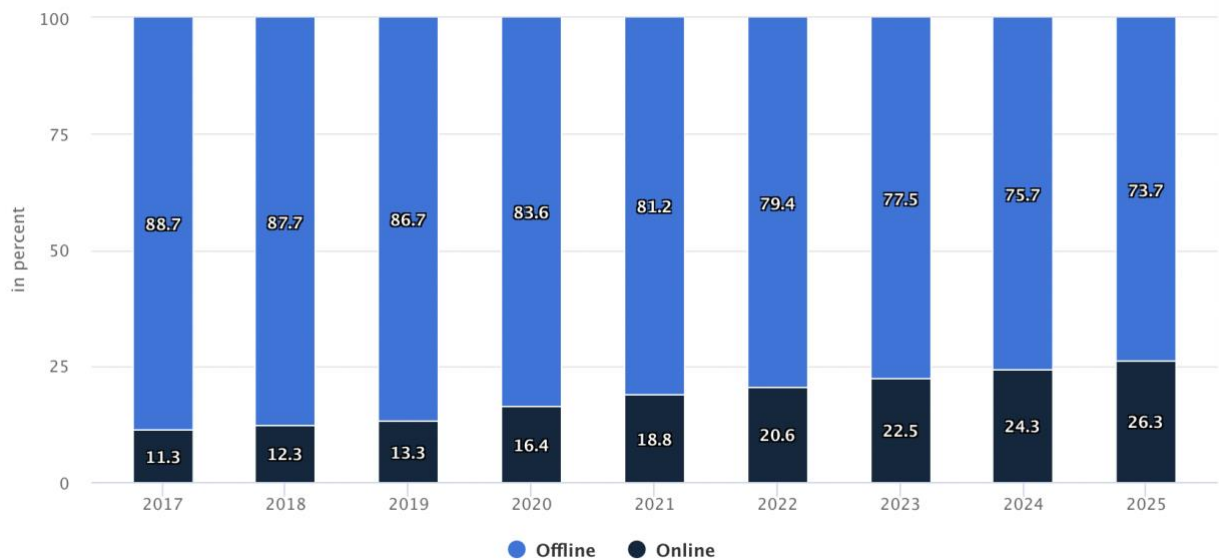
Figure 11 illustrates the biggest companies in the luxury fashion sector. Chanel, LVMH, and PVH are the top players with 10% of the market share each, followed by Kering group and Ralph Lauren with a 5% share for each group.

Figure 11. Luxury fashion market share by company
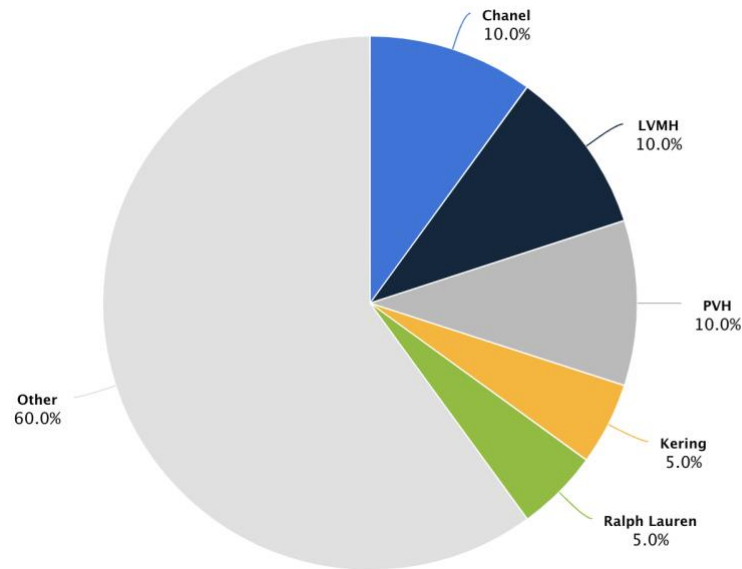
2.3. Sustainability in the luxury fashion industry

2.3.1. Sustainable luxury

As we emphasized earlier in our study, the meaning of luxury can be manifold, so defining it effectively is extremely difficult because of its subjectivity (Kapferer and Michaut-Denizeau, 2017a).

According to Kapferer (2010), sustainability and luxury can converge in some respects. The author points out "rarity" as a characteristic of luxury that is naturally in line with principles of sustainability, for example, "rare animal skins", "rare leather", or "rare craftsmanship". Companies have relied much on the rarity of their resources that they put so much effort into sustaining them for long periods. Another point of convergence between sustainability and luxury is the durability of luxury products. The durability of the products helps in favor of preserving the environment by avoiding waste (Guercini and Ranfagni, 2013). The true luxury product must be durable by nature, and a luxury house is administered with a long-term outlook. Amatulli et al. (2021) add "quality" and "heritage" to the previously mentioned characteristics of luxury that could bridge luxury and sustainability together. Luxury companies emphasize a lot on their heritage, and even if they reinvent their brands from time to time by hiring new designers to engage younger customers, the focus is still on reflecting the heritage of their brand (Kapferer, 2010).

On the other hand, there might be a divergence between the concepts of luxury and sustainability as well. According to Kapferer & Michaut-Denizeau (2017), "despite the claims

of craftsmanship, handmade items or the perpetuation of tradition, many luxury brands are growing by expanding their operation to low-cost factories" (Kapferer & Michaut-Denizeau, 2017). Among the companies, there are familiar names such as Prada, Burberry, Coach, and Ralph Lauren. Such actions are not in line with their usual image of savoir-faire and handmade products made by experienced artisans. Luxury companies tend to stay silent or disclose limited information about their sustainability practices. Some are frightened that the greenwashing issue, which is hurting sustainability massively, might backfire against their true intentions (Kapferer & Michaut-Denizeau, 2017).

Kapferer & Michaut-Denizeau (2017) further explain that the nature of what the luxury sector has been blamed for is different from any other sector. Usually, the attention of environmental activists is on the operations of those industries which massively harm the environment. Some examples are oil & gas, the mass killing of underwater animals in the fishery, sweatshops with inappropriate working conditions, etc. what luxury is mostly criticized for is the unclear condition of the sourced raw materials, such as the following examples.

- Working conditions of farmers
- The exploitation of rare animals' skin
- Environmental pollution of local communities by the manufacturers of raw materials

Luxury consumers seek to expose their ethical and environmental concerns by purchasing luxury goods, so they expect the luxury giants such as Louis Vuitton, Gucci, or Prada to lead the "pursuit of sustainability standards" (Amatulli *et al.*, 2017). According to Kim et al. (2012), companies can benefit from adopting sustainable development values in their operations and supply chains with a brand differentiation technique. By doing such, they can take advantage of rising consumer awareness of sustainability issues (Kim *et al.*, 2012). Amatulli et al. (2017) indicate that companies tend to integrate sustainability in procurement processes, production efficiency, packaging, logistics, and disposal of waste. We take a glance at some sectors inside the luxury industry, explore the environmental critics against them and analyze company activities to respond to the social and environmental concerns.

Cosmetics & Fragrance sector: Cosmetics and fragrance is a sector facing challenges regarding the issue of sustainability. Consumers tend to seek more prestigious and personalized beauty products which are at the same time made with natural and non-toxic ingredients. Some of what has been the issue for the industry are, for instance, the rising worry about animal testing, disposing of toxins in the landfills and water, also unsustainable materials in the product (Amatulli *et al.*, 2017).

Amatulli et al. (2017) add that as a response to the rising public awareness, companies took initiatives to use more sustainable and natural materials and to behave more responsibly towards the environment and communities. For example, "Shiseido", a Japanese luxury cosmetics group founded in 1872 by Arinobu Fukuhara, is constantly adopting strategies to reduce its environmental impact and contribute to tackling the global warming issue. The company reduced its CO_2 emissions by 12% in 2020 from the previous year, and it is aiming to achieve carbon neutrality by 2026. It also reduced its water consumption by 16% from 2014 to 2020, and the goal is to make it 40% by 2026. Shiseido also aims to transform its product packaging and make product packages that are made from plastic, either biodegradable, reusable, or recyclable, by 2025. The company has also stopped animal testing in its product development (Shiseido, 2020).

Watchmaking and jewelry sector: Moreover, Amatulli et al. (2017) point out the sustainability issues in the watches and jewelry sector. A great concern about this sector is the consumption of metals and gems and the dependency of the industry on the mining sectors. So many environmental and social issues related to the mining industry (for example, providing safe working conditions, child labor, overexploitation of limited natural resources, and pollution of water) are interconnected to the watchmaking and jewelry industry as well. The mining industry has been blamed for unsustainable operations for years. For instance, the issue of child labor and their exposure to toxic metals like mercury in gold mines of Tanzania or worker exploitations in the diamond mining processes. Amatulli et al. (2017) express that now, big luxury watchmakers and Jewelry companies are taking initiatives to act more sustainably and source their raw materials from suppliers who act responsibly towards the environment and local communities. Among the companies, there are names of giant luxury brands such as Chopard, Tiffany&Co. and Bulgari.

In the next part, we discuss the issue of sustainability in the luxury fashion industry, and we will investigate a different aspect of the issue.

2.3.2. Sustainable luxury fashion

According to Godart & Seong (2017), to achieve "eco-sustainability", there are more challenges to be faced for the luxury fashion sector compared to other luxury sectors such as jewelry and watchmaking or automotive since those products are "made to last". In luxury fashion, traditionally, consumers are not simply looking only for luxury goods but also want to follow the trends coming from fashion cycles.

According to Amatulli et al. (2017), sustainability problems in the fashion industry are manyfold. Some are particular to the fast-fashion or luxury fashion industry, and some are common among both. Plenty of the issues related to sustainability in luxury fashion belong to the production processes and sourcing of raw materials. Amatulli et al. (2017) use a Calvin Klein pair of jeans as an example to illustrate that different stages of the production process may be done in various parts of the world, which makes it difficult for the companies to track down the produced parts and to contribute to the local communities of the producers of raw materials.

Karaosman et al. (2020) take some examples from famous luxury fashion companies where that failed to act sustainably over the past decade. For example, Louis Vuitton shoes are made in a lower-cost country such as Romania and shipped to Italy to be marked as "Made in Italy". Or famous brands such as Dior, Louis Vuitton, and Hermès tested positive for including toxic chemicals in children's clothes. Also, Dior got a zero score in the transparency index of the Fashion Revolution organization.

Karaosman et al. (2020) indicate that the apparent increase in environmental and social engagement of the companies can be addressed by the "increasing stakeholder pressure from regulators, NGOs, consumers, and the media, including high profile campaigns such as Greenpeace's 'Detox', Fashion Revolution's 'Who Made My Clothes?' and Zero Discharge of Hazardous Chemicals (ZDHC) program to eliminate hazardous chemicals from global supply chains" (Karaosman *et al.*, 2020)

Godart & Seong (2017) illustrate the challenges and opportunities for sustainability in the luxury fashion sector and how each principle of fashion accommodates them in the table 2 below. The following principles are built on Godart's (2012) six principles of fashion.

Table 2. Challenges and opportunities for sustainability in luxury fashion

Principle	Limitations for sustainability	Opportunities for sustainability
Affirmation	Consumers' desire to assert their individuality and social affiliation by being 'in fashion', which prompts regular changes of clothes. This leads to, and is reinforced by, inflated production cycles	Institutionalising the practice of sustainable fashion by changing consumers' perception of buying sustainable fashion items as a socially accepted or 'in fashion' practice

Convergence	Local styles converge with dominant fashion design trends that are formulated, updated and disseminated by big fashion capitals. These dominant designs are not always compatible with local climates	Increasing consumers' preference for purchasing sustainable fashion items (principle 1: affirmation) in order to prompt the convergence of producers around producing sustainable fashion
Autonomy	The fashion industry maintains its autonomy when it cornes to the choice of fashion styles and designs. This autonomy makes it difficult for third party actors to push the sustainability agenda in the production process	Encouraging actors within the fashion industry to develop aesthetically appealing designs that are also high on the eco-sustainability agenda
Personalization	Market audiences share their belief in individual fashion designers' creative autonomy. This makes it difficult for third party actors to push the sustainability agenda in the production process	Encouraging each designer to use his/her autonomous influence to set a pro-sustainability trend and let it spill over from the fashion industry to other social spheres
Symbolization	Fashion brands symbolise a power engine behind a stylistic trend change in the fashion industry. This may not go hand-in-hand with the notion of sustainability	Encouraging each fashion brand to leverage on, and reshape, its existing identity to include a proactive message on environmental issues
Imperialization	business groups play a major role in the industry. The sheer size and power centrality of these business groups can make adoption of changes in favour of sustainability difficult	Using the power of business groups to influence individual fashion brands and even other luxury segments via ripple effects to adopt and implement a large-scale sustainability agenda

Source: Godart and Seong, 2017

On the topic of challenges and opportunities in the luxury fashion sector, Godart & Seong (2017) suggests that stakeholders of the industry "can actively use these principles in favor of

propelling eco-sustainable development, with mutual support coming from both producers and consumers" (Godart and Seong, 2017). Furthermore, Godart & Seong (2017) suggest three scenarios that the stakeholders of the industry can implement to achieve sustainability and provides the goals, implications, challenges, and requirements in each of them. The scenarios are the following "institutional change through slow luxury fashion; innovative luxury fashion; and upgrading luxury fashion through regulation" (Godart and Seong, 2017).

2.3.3. Luxury fashion's shift to sustainable consumption and production

2.3.3.1. consumers' shift to sustainable consumption

According to Ki & Kim (2016), traditionally, luxury purchases have been made due to their extravagant nature, as luxury is thought of as unnecessary and desired products that symbolize wealth and status when they are compared to necessities.

Recently, consumers have been paying more attention to environmental and social issues, which affect their consumption behavior. It triggers them to consume more sustainably and to stay up to date about brands they buy from and their products. Luxury buyers usually express their own identity and desire through what they buy. They want to signal their personal concerns about the products they own as well, including their concerns about social and environmental issues (Hennigs *et al.*, 2013)

In the discussion around sustainable luxury purchasing, Amatulli et al. (2017) bring up the concepts of 'externalized' luxury purchases versus "internalized" ones. According to the authors, 'externalized' luxury purchases happen when the consumers are in seek others' approval and are more likely to buy products from more famous brands that are well-known within their community. Dissimilar to the 'externalized' purchasers, 'internalized' luxury purchasers typically buy luxury products for their own satisfaction and seek to show their own desires and taste in beauty.

Furthermore, Amatulli et al. (2017) explain that valuing sustainability is more likely to be a characteristic of 'internalized' luxury purchasers. This group can be more sensitive to a brand's social and environmental values. The growth of the so-called 'conscientious consumption' in luxury consumption characterizes the 'internalized' luxury consumers who want to express their personal values and concerns for ecological and social issues in what they buy and use.

Ki & Kim (2016) also investigates sustainable luxury purchases. Similar to what Amatulli et al. (2017) notes about 'internalized' and 'externalized' luxury consumption, Ki & Kim (2016) explain "intrinsic values" and "extrinsic values" that lead to luxury purchases. The

characteristics that Ki & Kim (2016) associates with "intrinsic values" are "seeking personal style", "environmental consciousness", and "social consciousness". And the characteristics that the authors associate with "extrinsic values" are "seeking the latest fashion", "public self-consciousness", and "status consciousness". Interestingly, the results of Ki & Kim (2016) research suggest that consumers put social values and personal style ahead of environmental concerns in sustainable luxury purchasing. This means that luxury customers may still value product quality and personal desires before their environmental worries. Similarly, results of research by Achabou & Dekhili (2013) suggest that "product quality" and "brand reputation" are the key decision-making factors in luxury purchasing. Despite the increasing concerns for social and environmental issues among consumers. It notes that since consumers value quality as an important factor associated with a product, they are willing to buy an "environmental-friendly" garment if the quality of the item is a traditional item of clothing (Achabou and Dekhili, 2013).

2.3.3.2. sustainable production practices

As a response to the growing concerns of consumers about sustainability and social concerns, companies have initiated many sustainability programs and behave more responsively towards the environment and communities (Achabou and Dekhili, 2013; Amatulli *et al.*, 2021; Campos Franco *et al.*, 2020; Ki and Kim, 2016).

The creation of the "Fashion Pact" in 2019 can be considered a milestone for sustainable fashion production, especially in the luxury fashion segment. The pact has been signed by more than sixty fashion and textile companies. Twenty-three of them are luxury and premium apparel companies. Among these companies, there are Kering, Salvatore Ferragamo, Ermenegildo Zegna, Moncler, Farfetch, Gruppo Armani, Tapestry, Stella McCartney, etc. the pact is organized as a "CEO-led coalition". The creation of KPIs around three pillars enables the members to recognize and measure the progress of their actions. The three pillars are "climate", "biodiversity," and "ocean". The targets to achieve in the climate pillar involves better sourcing of raw materials and increasing the usage of renewable energy. For the biodiversity pillar, targets include the support of "sustainable forest management" and "zero deforestation". The targets associated with the ocean pillar contribute to the decrease in the usage of plastic packaging and ensure the plastics used are from recycled plastic (The Fashion Pact, 2020)

At the company level, also many Luxury companies and fashion houses have initiated activities that contribute to the environment and communities. Some of them disclose their sustainability activities in their annual report, some issue separate sustainability reports called

"Corporate social responsibility" reports, and some of them only disclose limited information about their sustainability exercises.

The luxury fashion house Valentino is one of those brands that has recently joined the sustainability road. Private company Valentino launched its first environmental-friendly product line in early 2022. The new sneakers line presented in figure 12 is called "open for a change" and features Valentino's signature designs, including "rockstud untitled" and "open two-tone" sneakers. The products are made from bio-based and recycled materials, and the packaging of them is made from recycled paper sourced from forests that are sustainably managed and recycled cotton. The company also has committed to going fur-free in 2022. Since joining Greenpeace's Detox Solution Commitment in 2013, the company has been devoted to eliminating all hazardous chemicals from its supply chain and successfully reduced around 63% of the chemical substances. (WWD, 2022).

Figure 12. Valentino's "Open for a Change" Sneakers

Source: Valentino's website. Available at https://www.valentino.com/it-it/experience/valentino-garavani-open-for-a-change-sneakers

LVMH is another luxury group that expressed its concerns about the issue of sustainability. In 2021, the group announced the launch of Nona Source and an online platform designed for the resale of the group's unused fabrics and leather materials. Presented in figure 13, this platform allows smaller businesses to access LVMH's exceptional high-quality fabrics and avoids the waste of good-to-use materials. Nona source provides video overviews of all the fabrics for sale as well as a view of them on a mannequin to deliver the closest customer experience to the actual feeling of the materials.

Figure 13. Nona Source textile resale platform
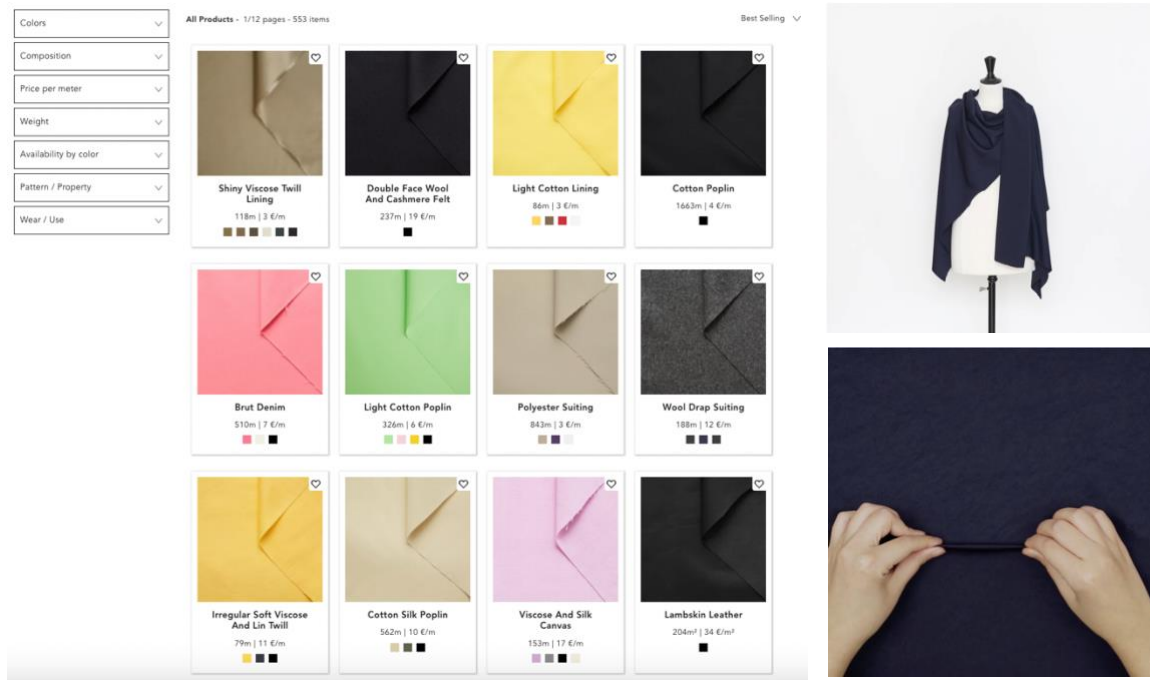
Source: Nona Source web page

Furthermore, LVMH initiated the LIFE program to improve its environmental performance at the product and supply-chain level around particular objectives by 2020. Having achieved its targets, in 2020, LVMH created the new LIFE365 program with targets to be achieved in the next 3,6, and 10 years. This program is based on four main pillars that are product-based. "product biodiversity", "fighting climate change", "circular economy", and "transparency.

Kering is another company that is actively participating in sustainability activities. According to the group, Kering -formerly known as PPR- established its codes of ethics for the first time in 1996, and later, in 2003, the group assembled a sustainability team which led to the creation of a sustainability department in 2007. In 2011, Kering coined a trial Environmental Profit & Loss account known as EP&L, which is according to the group, "an innovative tool that measures, in monetary terms, the impact of business activities on the environment" (Kering, 2022). According to the Dow Jones Sustainability Index in 2017, Kering was named the leader of the Textiles, Apparel, and Luxury Goods industry, and the group was ranked the "second most sustainable company in the world in the 2019 Corporate Knights' Global 100 ranking" (Kering, 2022). Kering also announced to go fur-free starting from their Fall 2022 collection.

The companies that we just mentioned were only some examples of many luxury companies that integrated sustainability in their operations and supply chain. Innovation and technological advancements play an important role in the product development processes of a

sustainable luxury fashion item. We take a look at the role of innovation and technology as a key sustainability drivers in luxury fashion.

According to Amatulli et al. (2017), there are main characteristics associated with the luxury concept such as "beauty", "prestige", or "exclusivity," but the idea of what is considered luxury changes over time depending on different factors such as the "social norms" and "varying aspirations". Now, the growing concern of luxury consumers about environmental and social issues is a key factor for being innovative in luxury product development.

Stella McCartney, for instance, is a pioneer in sustainable fashion. Established in 2001 by Stella McCartney, the company started operating with the commitment of not using animal fur, feather, skin, or leather. This means that innovation plays a key role for the company to operate in the competitive field of luxury. For example, the company makes some lines of its products using Alter-nappa. Alter-nappa is a kind of faux leather used by Stella McCartney that is made from polyester (that is partly recycled) and polyurethane. In collaboration with Bolt Threads which is a biotechnology company, Stella McCartney developed a plant-based leather from mycelium, which is the "underground root structure of mushrooms". Stella McCartney is planning to develop products at a large scale using this plant-based leather (Stella McCartney, n.d).

A recently popular concept named NFT is also contributing to sustainable luxury and luxury fashion. NFT is short. For "non-fungible token". According to (Swan, 2015), NFT is a unique type of cryptocurrency based on Ethereum smart contracts and despite other cryptocurrencies such as bitcoin that one bitcoin is "equivalent and indistinguishable" to and from one another, NFTs are not the same as each other and cannot be traded as "like-for-like". NFTs can enable intellectual property protection (Wang *et al.*, 2021). NFTs are created through blockchain technology. "Blockchain is a decentralized transaction and data management technology" (Yli-Huumo *et al.*, 2016). According to Deloitte (2021), a very important contribution of NFTs to the luxury industry can be their ability to provide traceability for a product. Counterfeits are a big issue for the luxury industry and NFTs enable the producers to mark their products with a unique identifier that can easily tell if a product is authentic or not. According to McKinsey & Company & Business of Fashion (2022), "product passports" enabled by technologies such as blockchain can entail information about the products, such as materials that the product is made from, the place it was made, and even the working conditions of the workers who made the item. Transparency about a product's supply chain is a move for luxury companies towards sustainability. LVMH, Prada and Richemont-owned brand Cartier have created the Aura Blockchain Consortium. This provides the customers the ability to prove

the authenticity of the products and access information about the history of the luxury item or garment (Aurora Blockchain Consortium, n.d.). Also, OTB joined the consortium in 2021 (Deloitte, 2021). Product passport also contributes to the resale market of luxury goods. The resale business is growing like never before. According to Business of Fashion, the resale market will reach $57 Billion by 2025 from its current $27 Billion market value. Product passports can ease the resale of luxury items and garments by providing authentication and valuation also by providing information about the history of a product, and resale platforms such as Vestiaire Collective and RealReal can benefit from this upcoming technology (McKinsey & Company and Business of Fashion, 2022).

2.4. Research question

In this section, we will introduce the research question of this study. In chapter 1, we investigated the literature about sustainability and its contribution to corporate performance and antecedents & outcomes of SDGs implementation and reporting in different institutional and structural contexts. What remains unexplored is what drives luxury fashion companies to implement SDGs in their core business and if acting sustainably pays off for these companies.

The first question we want to investigate on in this research will be:

What are the governance-related antecedents of SDG implementation?

The second question to be explored is:

What are the financial and ESG outcomes of implementing SDGs?

2.5. Conclusion

The luxury concept, as argued by Kapferer and Bastien (2012), roots back in ancient Egypt, and it has always been present throughout history. Luxury has faced many controversies, but despite that, the luxury and luxury fashion industry has been growing significantly, which has some consequences. Even if there are some convergences between luxury and sustainability, the industry's practices have harmful effects on the environment and social communities, which must be changed.

In this chapter, we looked further at the shift towards sustainable production of the companies and sustainable consumption of the consumers as well.

CHAPTER 3
METHODOLOGY

In this chapter, we will discover the methodology used. First, we will look at the stages of collecting data for our research. Then we continue to the next step, which is the sample selection process. We will continue by explaining the methodology used for the analysis, and then we will look at the variables of interest and their indicators for our analysis. The selected variables are Antecedents variables, Outcome variables, and Control variables.

3.1. Data collection

The sector we focus on in our research is "luxury fashion". Based on the "Statista Consumer Market Outlook" Methodology, luxury fashion includes "Luxury apparel" and "luxury footwear" (Statista, 2021).

To identify the top global luxury fashion companies, we used the "Global powers of luxury goods 2021" done by Deloitte. This report ranks the top 100global "Luxury goods" companies.   The term "luxury goods" refers to "personal luxury products and includes the following product categories: "designer clothing and footwear (ready-to-wear), luxury bags and accessories (including eyewear), luxury jewelry and watches, and prestige cosmetics and fragrances". The term also excludes: "automobiles; travel and leisure services; boating and yachts; fine art and collectibles; and fine wines and spirits, it also excludes the retailers who resell premium brands" (Deloitte, 2021).

Since our research only focuses on "Luxury fashion" companies, we exclude those companies which are only active in the following sectors: "luxury bags and accessories (including eyewear), luxury jewelry and watches, and prestige cosmetics and fragrances". For instance, Luxottica, an eyewear manufacturer, is not considered in our criteria.

The ranking of the companies by Deloitte 2021 is based on their "consolidated sales of luxury goods in FY2020". We must consider that the actual ranking includes all "Personal luxury goods" categories, which affects the position of big conglomerates such as LVMH, Kering, and Richemont. These companies own different brands in a diverse portfolio, such as apparel and footwear, jewelry, watchmaking, etc. For example, LVMH owns BVLGARI

(mainly active in jewelry and watchmaking) and Rimowa (luxury bags & luggage company). Kering owns Pomellato, a jewelry-making company, and Richemont owns many watchmaking and jewelry brands such as Piaget, MontBlanc, Cartier, IWC Schaffhausen, etc. Although the ranking of the companies may be different if we only consider apparel and footwear product lines, our selection of the companies is not affected by the position of the companies in the original ranking.

We have selected the following luxury fashion companies for further research in Table 3:

Table 3. . luxury fashion companies within Deloitte's "Global powers of luxury goods 2021" ranking

Rank	Name of company	FY2020 sales (US$M)	Rank	Name of company	FY2020 sales (US$M)
1	LVMH Moët Hennessy-Louis Vuitton SE	33,976	24	Ted Baker plc	805
2	Kering SA	14,930	25	TOD'S SpA	737
3	Compagnie Financière Richemont SA	13,183	26	Cole Haan, Inc.	720
4	Chanel Limited	10,108	27	Brunello Cucinelli SpA	620
5	PVH Corp	8,380	28	TFG Brands (London) Limited	495
6	Hermès International SCA	7,282	29	MCM Group	478
7	Ralph Lauren	6,160	30	Kurt Geiger Limited	443
8	Capri Holdings Limited	5,551	31	Vera Bradley, Inc.	429
9	Tapestry, Inc.	4,961	32	Marc O'Polo	422
10	Burberry Group plc	3,345	33	Sociedad Textil Lonia SA	419
11	Prada Group	2,761	34	Zadig & Voltaire	388
12	Hugo Boss AG	2,218	35	Liu.Jo SpA	346

13	Giorgio Armani SpA	1,822	36	Furla SpA	331
14	Moncler SpA	1,642	37	J Barbour & Sons Ltd	307
15	OTB SpA	1,445	38	Aeffe SpA	307
16	Max Mara Fashion Group Srl	1,366	39	Golden Goose SpA	303
17	Dolce & Gabbana	1,284	40	True Religion Apparel, Inc.	259
18	Tory Burch LLC	1,200	41	Fashion Box SpA	256
19	Ermenegildo Zegna Holditalia SpA	1,156	42	Acne Studios Holding AB	246
20	Salvatore Ferragamo SpA	1,041	43	Paul Smith Group Holdings Limited	223
21	Valentino SpA	1002	44	Gefin SpA	218
22	SMCP SAS	995	45	Mulberry Group plc	191
23	Farfetch Limited	823	46	Cris Conf SpA	182

Source: (Deloitte, 2021)

We decided to proceed with companies that provide at least three years of sustainability reports or comprehensive disclosure of non-financial statements in their annual consolidated financial statement. We chose the years 2018 to 2020 for the following reasons. First, after the United Nations' 2030 agenda, "Transforming Our World: 2030 Agenda for Sustainable Development" in 2015, companies started implementing the 17 Sustainable Development Goals in their strategies. Even though the Agenda was agreed on in 2015, it came to effect in 2016. Since it takes time for companies to implement the SDGs in their strategies, activities, and reporting, and, companies normally report on the activities initiated in the previous financial year, I chose 2018 as the benchmark year for the analysis. Second, we chose consecutive financial years to be able to record any possible trend or pattern in their activities and disclosures. Choosing 2020 as the final year of the period was due to the unavailability of sustainability reports for FY 2021 for more than five companies at the time of data analysis. We eliminated twenty-one of the forty-six selected companies from consideration since they either do not disclose any sustainability report or just disclose limited company initiatives or

goals in their website or financial statements. Another five companies got eliminated due to the unavailability of three years or more sustainability reports.

3.2. Sample description

The following companies are selected for further investigation; we provide a short profile of each company with an overview of their sustainability disclosures.

1- LVMH Moët Hennessy-Louis Vuitton SE

LVMH is an international holding company active in the personal luxury goods sector. LVMH was founded in 1987 by Bernard Arnault, Alain Chevalier, and Henry Racamier; it is headquartered in Paris, France, and owns over seventy-five main sectors and subsidiaries.1) 1) Wines & Spirits, including the following brands: Clos Des Lambrays, Château D'yquem, Dom Pérignon. Ruinart, Moët & Chandon, Hennessy, Veuve Clicquout, Château Galoupet, Ardbeg, Château Cheval Blanc, Glenmorangie, Krug, Mercier, Chandon, Cape Mentelle, Newton Vineyard, Cloudy Bay, Belvedere, Terrazas De Los Andes, Bodega Numanthia, Cheval Des Andes, Woodinville, Ao Yun, Clos19, Volcan De Mi Tierra, and Eminente.

2) Fashion and leather goods, including Loewe, Moynat, Louis Vuitton, Berluti, Rimowa, Patou, Loro Piana, Fendi, Celine, Christian Dior, Emilio Pucci, Givenchy, Kenzo, and Marc Jacobs.

3) Perfumes & Cosmetics with brands such as Acqua di Parma and Guerlain, Officine Univereslle Buly, Parufms Christian Dior, Givenchy Parfums, Perfumes Loewe, Benefit Cosmetics, Make Up For Ever, Kenzo Parfums, Fresh, KVD Beauty, Maison Francis Kurkdjian, Mark Jacobs Beauty, Cha Ling and, Fenty Beauty by Rihanna.

4) Watches & Jewelry, including Bulgari, Chaumet, Tiffany&Co, Tag Heuer, Zenith, Fred, Repossi, and Hublot.

5) Selective retailing with the following brands: Le Bon Marché Rive Gauche, La Grande Epicerie De Paris, Starboard Cruise Services, DFS, and Sephora

6) Other activities include Cova, Royal Van Lent, Jardin D'acclimatation, Les Echos, Le Parisien, Connaissance Des Arts, Investir, Belmond, Radio Classique, and Cheval Blanc.

As of 2020, LVMH discloses its Sustainability activity as a "Social and environmental responsibility report". Previously they released separate documents, "Social responsibility report" and "Environmental report".

2- Kering SA

Kering is a French international holding headquartered in Paris, France. François Pinault founded the company in 1963. The company's portfolio is divided into three sectors.

1) Couture & Leather goods, including the following houses: Gucci, Saint Laurent, Bottega Veneta, Balenciaga, Alexander McQueen, and Brioni.

2) Watches and Jewelry, including Boucheron, Pomellato, DoDo, Qeelin, Ulysse Nardin, and Girard-Perregaux (Ulysse Nardin and Girard-Perregaux are not part of Kering since Jan2022).

3) Kering eyewear, which is the manufacturer of eyewear for Kering brands and the licensee manufacturer for some other luxury brands out of Kering's main portfolio.

Since 2015, Kering has published the "Environmental Profit & Loss" report, which includes quantifying the company's impact on the environment. It also released a "sustainability progress report", which contains the environmental and social activities of the company from 2017 to 2020. Moreover, the company also publishes "Integrated reports", which demonstrate the company's contributions to the United Nations' Sustainable Development Goals.

3- Compagnie Financière Richemont SA

Richemont is an international luxury goods holding company founded in 1988 by Johann Rupert and is headquartered in Bellevue, Switzerland. The profile of the companies owned by Richemont is divided into four categories.

1) Jewelry Maisons, including Buccellati, Cartier, and Van Cleef & Appels.

2) Specialist Watchmakers, with the following brands: IWC Schaffhausen, Piaget, Jaeger LeCoultre, A. Lange & Söhne, Baume & Mercier, Panerai, Roger Dubuis, and Vacheron Constantin

3) Online distributions, including YOOX, Net-a-porter, Watchfinder & Co., Mr Porter, and, The Outnet.

4) Fashion & Accessories / Others, including, Chloé, Delvaux, Dunhill, MontBlanc, Alaïa, AZ Factory, Peter Millar, Purdey, Serapian, and Timevallée.

Richemont discloses its sustainability activities in "Corporate social responsibility" reports annually.

4- PVH Corp

PVH is an American public company founded in 1881. Their headquarters is in New York, United States. PVH is the parent company of famous high-end fashion brands, including Tommy Hilfiger and Calvin Klein, Warner's, Olga, and True&Co.

Tommy Hilfiger and Calvin Klein are American lifestyle premium fashion brands. Warner's, Olga, and True&Co specialize in women's underwear and lingerie. PVH company discloses its sustainability practices in the annual "corporate responsibility report".

5- Hermès International SCA

Hermès is a French Luxury goods company famous for its leather goods. The company was founded in 1837 in Paris by Thierry Hèrmes, and the current headquarters of the company is in Paris, France. Current product lines of the company are Leather Goods & Saddlery, Ready-to-wear and Accessories, Silk and Textiles, Perfumes, Watches, and other products. Hermès is a publicly-traded company that releases annual sustainability reports called "Corporate social responsibility extract – non-financial performance statement".

6- Ralph Lauren

Ralph Lauren is a public American fashion company founded by Ralph Lauren in 1967. Company's headquarters is located in New York, United States. The company owns the following brands: Ralph Lauren Collection, Ralph Lauren Purple Label, Polo Ralph Lauren, Double RL, Lauren Ralph Lauren, Polo Ralph Lauren Children, and Chaps. The product categories of Ralph Lauren include apparel, accessories, home, fragrances, and hospitality. The company releases annual "global citizenship & sustainability" reports communicating its sustainability initiatives.

7- Tapestry, inc.

Founded in 1941 by1 Lillian Cahn in New York, Tapestry is an international Luxury fashion holding company. Their headquarters is located in New York, United States. The company owns three prestigious Luxury fashion houses: Coach, Kate Spade, and Stuart Weitzman.

Coach and Kate Spade are lifestyle brands from New York, the US, and they were founded in 1941 and 1993, respectively. Stuart Weitzman was founded in 1986, and it is specialized in luxury footwear. Tapestry releases annual "Corporate responsibility" reports informing its stakeholders about the company's sustainability activities.

8- Burberry Group

Founded in 1856 by Thomas Burberry, the British luxury fashion house Burberry is headquartered in London, England. In addition to the famous trench coats, the company offers leather goods, footwear, fashion accessories, eyewear, fragrances, and cosmetics.

Burberry currently reports on its sustainability initiatives and activities in its annual report's "Environmental, Social and Governance" section.

9- Prada Group

Prada is a publicly traded luxury fashion holding company founded in 1913 by Mario Prada, and its headquarters is located in Milan, Italy. Subsidiaries of the Prada group are Prada, Miu Miu, Chuch's and Car shoe, and Pasticeria Marchesi.

1)Prada: Prada manufactures and sells clothing, footwear, and leather goods for men and women. The company also offers eyewear and fragrances through licensing agreements with third-party manufacturers. 2) Miu Miu: Established in 1993, Miu Miu's spirit is considered a personal reflection of Miuccia Prada's vision. Miu Miu offers a wide range of products for women, including ready-to-wear, accessories, bags, and footwear. The brand also offers fragrances and eyewear through licensing contracts. 3) Church's: Founded in England in 1873 by Thomas Church, the brand is a premium footwear manufacturer for men and women. It also offers accessories and bags.4) Car Shoe: Founded by Gianni Mostile in 1963 in Italy, Car Shoe is a high-end footwear brand specializing in loafer shoes. 4) the Marchesi family founded Pasticeria Marchesi in Italy. Marchesi pastry shop is present in four prestigious locations in Milan and London.

Prada releases annual "social responsibility" reports to disclose its sustainability activities and environmental impact.

10- Hugo Boss AG

Founded in 1924 by Hugo Boss in Metzingen, Germany, Hugo Boss is a high-end fashion house. Hugo Boss owns two brands, BOSS and HUGO. Both brands offer a wide selection of products to men and women. BOSS brand is mainly targeting millennials, and HUGO is aimed at Gen-Z. The company releases an annual "sustainability report" to inform its stakeholders about their sustainability practices.

11- Giorgio Armani SpA

Armani is an international luxury fashion house headquartered in Milan, Italy, and it was founded in 1975 by Giorgio Armani. Armani owns two groups of brands in its portfolio: fashion and lifestyle brands.

Fashion brands include Giorgio Armani, Emporio Armani, EA7, and Armani Exchange.

The fashion brands of Armani have been split into three different price positionings, aiming at customers of different purchasing powers and from different generations. While the Giorgio Armani brand is positioned as a luxury brand, Emporio Armani and Armani Exchange target a younger audience, who want to own an Armani product at a more affordable price. EA7 is also part of the Emporio Armani brand, focusing on sportswear collections.

Armani lifestyle brands include Armani Casa, Armani Beauty, Armani Dolci, Armani Fiori, Armani Clubs, Armani Hotels, Armani Restaurants, and Armani Silos. The lifestyle brands are mostly operated by licensing agreements with third-party organizations.

The company communicates its corporate social responsibility by releasing annual "the Armani group and sustainability" reports.

12- Moncler SpA

Moncler is an Italian luxury fashion house famous for its down jackets and skiwear. The company was founded in 1952 by René Ramillon and André Vincent in f Monestier-de-Clermont, France. In 2003, Remo Ruffini, the current CEO of Moncler, took over the company, moved its headquarters to Milan, and started to expand Moncler globally. Moncler has been listed on the Italian stock exchange since 2013. Furthermore, the group acquired the Italian sportswear, Stone Island in 2021. The company releases an annual "Sustainability Report" to communicate its corporate social responsibility.

13- Salvatore Ferragamo SpA

The company was founded in 1927 by Salvatore Ferragamo in Florence, Italy, where the company's headquarters is currently located. Salvatore Ferragamo is a public luxury goods company mainly famous for its leather goods & footwear, and ready-to-wear collections. Until the financial year of 2019, the company published separate non-financial consolidated reports called "sustainability reports" to disclose its CSR strategies and activities. From the financial year 2020, the same documentation became part of the company's annual report called "Consolidated Non-Financial Statement".

14- Ted Baker plc

Ted Baker was founded by Ray Kelvin in Glasgow, the United Kingdom, in 1988. The company is a publicly traded British high-end fashion company. The company offers a wide range of products, including ready-to-wear, bags and footwear, and accessories for women, men, and

children. Ted Baker also has homeware collections. Ted Baker limitedly reports its sustainability acts and responsibilities in its annual statements.

15- TOD'S SpA

TOD'S is an Italian luxury goods brand famous for its leather goods and footwear. Furthermore, The company was founded in 1920 by Filippo Della Valle, headquartered in the province of Marche, Italy. TOD'S is the parent company of the following brands: TOD'S, Hogan, Fay, and Roger Vivier. TOD'S is considered a lifestyle brand offering a wide range of products, including ready-to-wear, bags, footwear, and accessories for men, women, and children. Fay is well-known for its iconic jackets, while Hogan for men and Roger Vivier for women are famous for footwear and bags. The group actively discloses its sustainability and CSR actions in its annual reports.

16- Brunello Cucinelli SpA

Founded in 1978 by Brunello Cucinelli, the company is located in Solomeo, Italy. Brunello Cucinelli is an Italian luxury fashion house, mainly famous for its cashmere apparel. Brunello Cucinelli offers ready-to-wear, bags, footwear, accessories, and lifestyle items & home décor. The company actively informs its stakeholders about its environmental and social responsibilities by releasing a "consolidated non-financial statement" annually.

17- TFG Brands (London) Limited

TFG brands London is a part of TFG group, a South African fashion group headquartered in Cape Town, South Africa. The portfolio of the London company includes the following brands: Hobbs, Phase Eight, Whistles, and, Damsel in a Dress. The four brands offer ready-to-wear apparel, bags, footwear, and accessories for women. The parent organization publishes a "sustainability report" annually to inform its stakeholders about the company's environmental impacts and sustainability activities.

18- Marc O'Polo

Headquartered in Stephanskirchen, Bavaria, Germany, Marc O'Polo is a Swedish-German high-end fashion company known for its casual wear. The company was established in 1967 in Stockholm, Sweden. The company's product range includes ready-to-wear apparel, footwear, bags, and accessories for men, women, and kids. It also has a "living" product line offering lifestyle and house décor products. Marc O'Polo releases an annual "sustainability report" to announce its sustainability approach and corporate social responsibility activities to its stakeholders.

19- Aeffe SpA

Founded in 1980 by Alberta Ferretti, Aeffe is an Italian company headquartered in Milan, and it is the house to luxury brands including Moschino, Alberta Ferretti, Philosophy, and Pollini. Moschino was founded by Franco Moschino in 1983 and is an Italian luxury fashion house offering ready-to-wear apparel, bags, footwear, and accessories for men, women, and children. Moschino was acquired by Aeffe in 1999. Alberta Ferretti brand offers ready-to-wear apparel, shoes, and accessories for women. Pollini was founded in 1953 in Italy, specializing in footwear and leather goods. Currently, the company offers shoes, bags, and accessories for men and women. Philosophy was founded in 1984 by Alberta Ferretti, offering ready-to-wear apparel, bags, shoes, and accessories for women. It also has a product line for kidswear.

Aeffe SpA discloses sustainability activities inside its annual Consolidate and Statutory Financial Statements as Consolidated Non-Financial Declaration.

20- Acne Studios Holding AB

Acne Studios is a Swedish luxury fashion company founded by Jonny Johansson and Jesper Kouthoofd in 1996. The company mainly specializes in ready-to-wear collections for men, women, and children. It also offers bags, shoes, and accessories. Acne studios reports on its environmental and social responsibility in the annual "sustainability report" published by the company.

3.3. Measures

3.3.1. Intensity of SDGs implementation

To better understand the intensity of SDGs implementation by the companies in the sample group, a content analysis of sustainability reports of these companies will be performed. NVivo software will be the main instrument of this method. We will use a keyword search for each of the 17 SDGs to measure the intensity of SDGs implementation. We will now take a further look at the content analysis research method and will have an introductory look t NVivo software and its capabilities.

3.3.1.1.Content analysis

According to Krippendorff (2018), content analysis is a research method for drawing valid and replicable inferences from texts or other types of content to the contexts in which they were used. Content analysis can be considered as a "scientific tool" which requires specific techniques to apply. Replicability of a content analysis method means that if researchers are

applying this method to the same data at different times and in different settings, they should reach similar findings. By validity of the content analysis research, we mean that the research effort can be carefully scrutinized, and the claims that may result from them can be validated if those claims are backed by credible evidence. A researcher can draw content analysis not only to text but also to other forms of content such as images, videos, audio content maps, artworks or signs and symbols (Krippendorff, 2018)

There can be different implications for conducting content analysis research. Stemler (2019) indicates some examples, such as "determining authorship," in which, based on the written texts of known authors, it is possible to find the identity of a suspected author. Another implication of content analysis is to identify patterns and trends. Also, it is a powerful tool "for monitoring shifts in public opinion" (Stemler, 2019). Furthermore, other functions for this method have been mentioned by Krippendorff (2018), such as confirming previous findings, deconstructing the "optical illusions" of experts, resolving disputes among experts, and drawing and testing hypotheses about contents.

Schreier (2012) mentions the necessary steps to develop content analysis research as the following:

1- To develop a research question
2- Material selection
3- Coding frame construction
4- To identify the material to units of coding
5- To try the coding frame
6- To evaluate and modify the coding frame
7- To perform the main analysis
8- To interpret and present the findings

The first and the last steps are important, and they should be applied regardless of the methodology used. The second is to select the proper material and content on which we would like to perform the content analysis procedure. Next is to build a suitable coding frame, which includes selecting the proper data, choosing which dimensions we want to structure our data, and generating appropriate subcategories for those dimensions. Then it is necessary to define the categories and revise and expand the coding frame. A coding frame is a way of structuring the material into specific categories and subcategories, and it helps us to specify the related meaning of different aspects of our context. A code can be a word or a phrase to help us understand what a piece of context refers to. The fourth step includes segmenting our material so that each unit fits one of the categories of our coding frame. Units of analysis refer to each

case of our research. The fifth step is to apply our coding frame to a portion of our material to identify possible issues with our coding frame as early as possible. The next step is to evaluate and modify the coding frame and check its reliability and validity. The following steps are to perform the main content analysis based on the coding frame and, finally, to interpret the results and present the research findings (Schreier, 2012).

Content analysis can be qualitative or quantitative, but it is difficult to draw a distinct line between them (Schreier, 2012). It is typical of a study that is considered qualitative to have quantitative nature as well (Neuendorf, 2017). Furthermore, Neuendorf (2017) mentions that the purpose of quantitative analysis is to build "counts" of essential categories and assess the quantities of certain variables. Schreier (2012) indicates the differences between qualitative and quantitative content analysis methods. Quantitative content analysis focuses on the manifest and the literal meaning where not a lot of context is needed, while qualitative content analysis is more focused on latent meaning where a larger context is needed. In quantitative content analysis, reliability is handled strictly, and reliability checks are more crucial than validity checks, whereas in qualitative content analysis, reliability checks are varied, and validity checks are considered more important than reliability checks. The coding frame in quantitative content analysis is "partly concept-driven", and the method is used to test hypotheses, while in qualitative content analysis, the coding frame is "partly data-driven", and the method is used to describe the material. In quantitative content analysis, the inferences to authors, recipients, and context are fewer than in qualitative content analysis. Finally, in quantitative content analysis, the order of steps is stricter than in qualitative content analysis. After having a better understanding of the differences between qualitative and quantitative content analysis methods, we selected the quantitative content analysis as the research method in this dissertation.

3.3.1.2.NVivo software

To proceed with our content analysis research, we chose NVivo software as the main tool. NVivo is a qualitative data analysis software package enabling researchers to manage their qualitative data. "This software allows for qualitative inquiry beyond coding, sorting, and retrieval of data. It was also designed to integrate coding with qualitative linking, shaping, and modelling" (Wong and Li Ping, 2008).

Some main features of NVivo are building and linking codes, building cases and adding attributes to those cases, making memos, building models to show relationships, or creating queries to explore the qualitative data easily. All of this had to be done manually without the presence of Nvivo. The software is suitable for analyzing different data formats such as text

files (e.g., PDF questionnaires, bibliography), audio recordings, video recordings, images, or maps. Researchers can use NVivo as their analysis tool using different research designs, meaning that NVivo does not affect the design of research (Zamawe, 2015).

Moreover, Jackson and Bazeley (2019) mention five areas where NVivo can help researchers the most. First, in managing data, NVivo helps organize and keep track of any research material. Second, in managing thoughts, it facilitates the organization of conceptual ideas. Third, NVivo supports the query of data to help the researcher to retrieve answers to different questions from the vast amount of data. Fourth, in visualizing the data and visual representation of the relationships between different contents of the research. Furthermore, fifth, NVivo helps in generating reports from the research material. All these features and abilities will help us to proceed efficiently in our research.

3.3.2. Measures of antecedent variables

For the selected companies, we have provided the measures of possible antecedents of SDGs implementation in table 4.

Table 4. measures of antecedent variables

Metric	Description
Board size	The number of people in the board of directors (including non-executive and independent directors)
Independent board members	Percentage of independent board members as reported by the company
CEO Duality	Indicates if the CEO and the chairman of the company are the same individuals or not
CSR Sustainability Committee	Does the company have a CSR committee or team?

Source: ORBIS and EIKON database indicator description

Figure 14. number of board members of companies in 2020
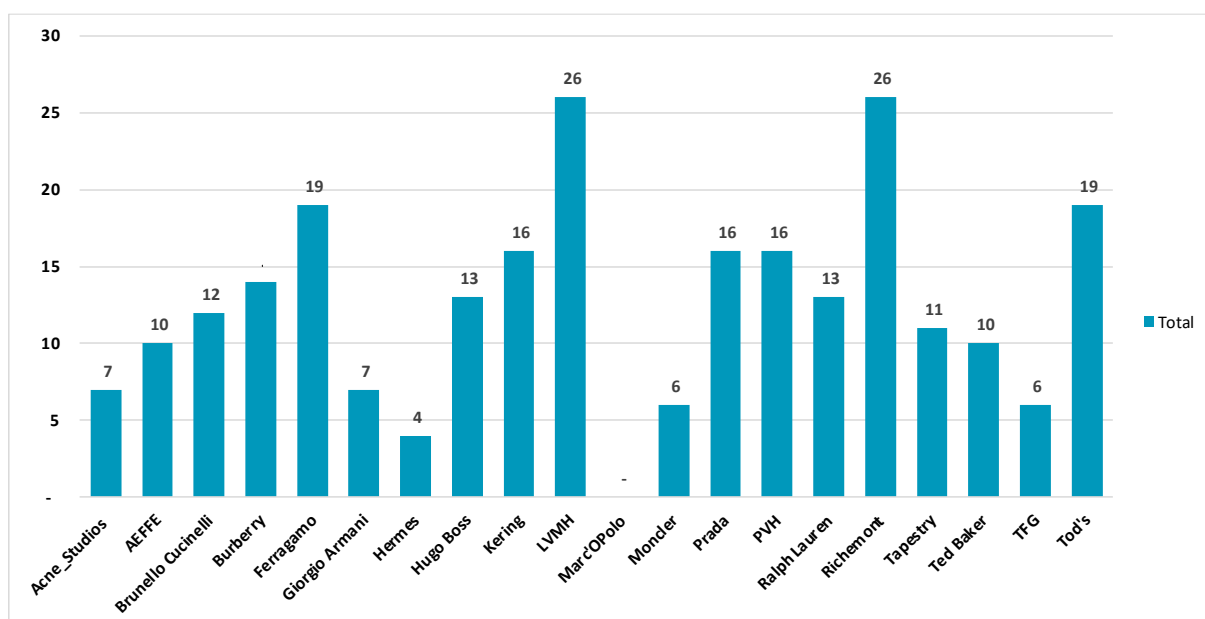
Source: ORBIS database

Figure 14 shows the structure of the boards for each selected company in 2020. The average number of board members of these companies is 13.2, with the highest number for Richemont and LVMH with 26 board members and the lowest for Hermes with four board members.

3.3.3. Measures of outcome variables

For the selected companies, we also collected outcome measures such as financial and ESG metrics, presented in Table 5, from the financial year 2018 to the financial year 2020. All the data have been extracted from ORBIS and EIKON databases:

Table 5. measures of outcome variables

Metric	Description
Revenue	The sales of the company in the indicated financial year
EBITDA/sales	Measures the amount of cash that companies earn for each unit of the revenue of their sales before interest, taxes, and amortization & depreciation. A low EBITDA/sale indicates profitability issues for a company, whereas a high ratio means stable profitability
ROA (Return on Assets, % of net income)	Represents how profitable a company is compared to its total assets
ROE (Return on Equity, % of net income)	Represents the efficiency of profit generation in a company in relation to the shareholder's equity

Tobin's Q	The market capitalization of a company is divided by the amount of its total assets. Tobin's q is a metric to check if a company is overvalued or undervalued
ESG Score	Indication of a company's environmental and social governance performance based on its self-reported information disclosed around the environmental, social, and corporate governance pillars.
Social Pillar Score	It presents a company's capacity to gain the trust and loyalty of its workforce, customers, and society from its management practices. This measure reflects a company's reputation and ability to generate long-term shareholder value based on its license's health.
Governance Pillar Score	Measures how well a company's board members and executives act in the long-term interests of its shareholders. By creating incentives and checks and balances, it indicates the ability of a company to control its rights and responsibilities through its use of best management practices.
Environmental Pillar Score	Measures how a company impacts living and non-living natural systems, including the air, land, and water, as well as the ecosystem as a whole. Using best management practices ensures that a company avoids environmental risks and takes advantage of environmental opportunities in the long run, and generates long-term shareholder value.

Source: ORBIS and EIKON databases

Figure 15. revenue compound annual growth rate of companies from 2018 to 2020
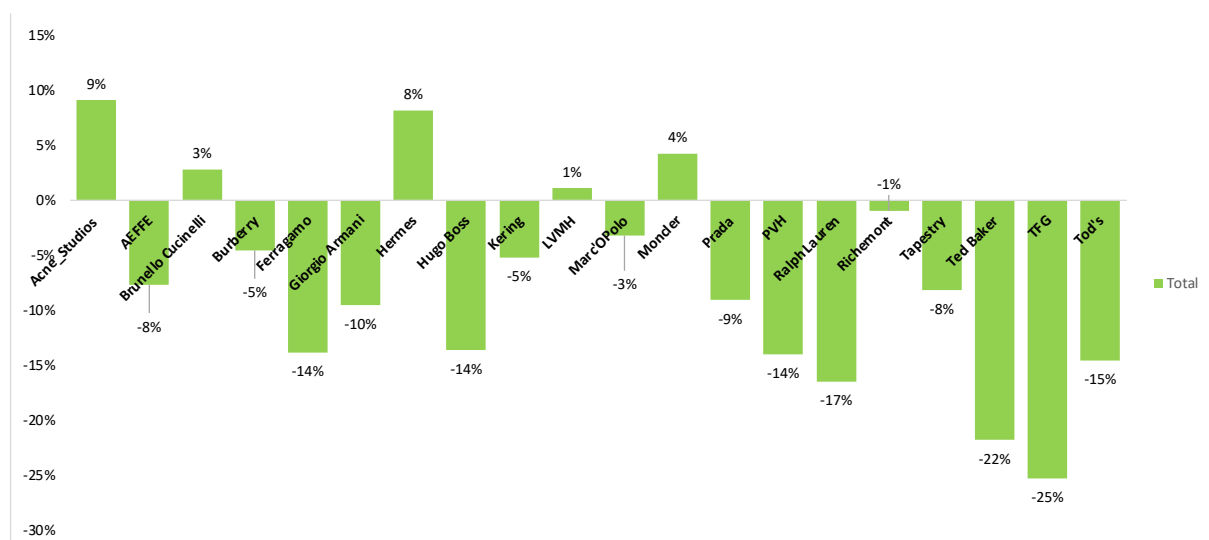
Source: own elaborations, based on ORBIS database

Figure 15 illustrates the compound annual growth rate of the selected companies from 2018 to 2020. Except for five of them, all companies experienced negative revenue growth from 2018 to 2020. The main reason behind this negative growth can be the effects of COVID-19 on companies' businesses. Acne Studios experienced the highest revenue growth with 9% CAGR, Followed by Hermès with 8%, Moncler with 4%, Brunello Cucinelli with 3%, and LVMH with 1% revenue CAGR. On the other side, TFG brands experienced the lowest revenue CAGR with -25%, followed by Ted Baker with -22%.

Figure 16. EBITDA/sales of the companies
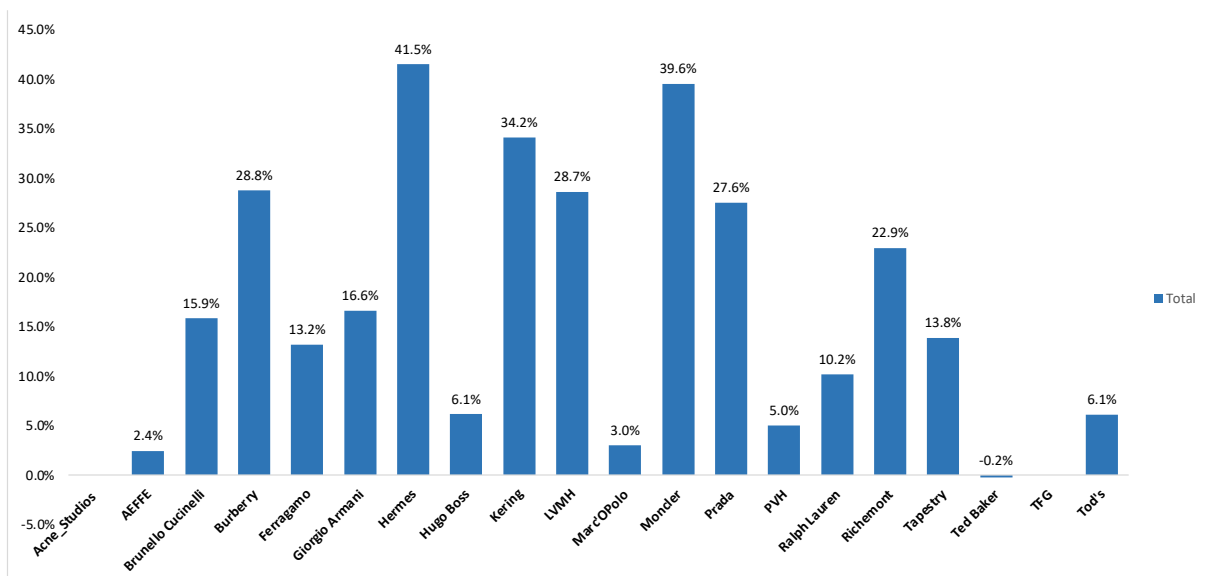
Source: own elaborations, based on ORBIS database

Figure 16 demonstrates the EBITDA/sales ratio for the companies in the financial year of 2020. It can be understood from the chart that some companies are struggling with profitability based on their EBITDA margin. Ted Baker has the lowest margin with 0.2%, followed by AEFFE with 2.4, Marc'OPolo with 3%, PVH with 5%, and Hugo Boss and Tod's with 6.1% EBITDA/sales. On the other hand, companies such as Hermes with 41.5%, Moncler with 39.6%, and Kering with 34.2% EBITDA margin show stronger profitability.

Figure 17. Tobin's Q of the companies from 2018 to 2020
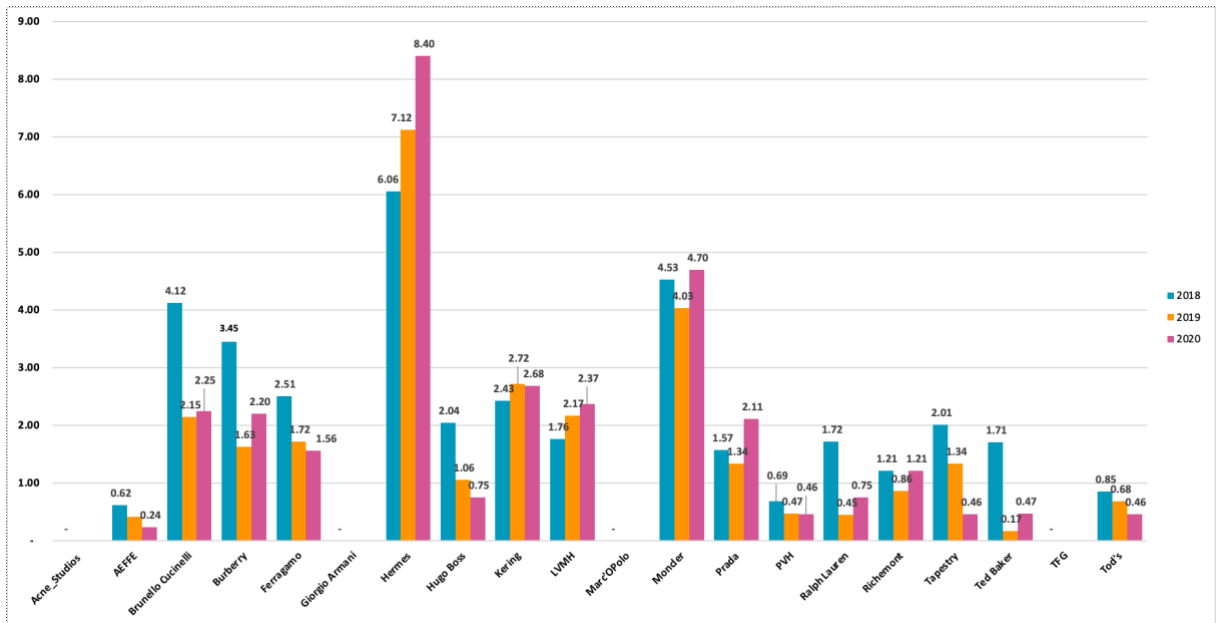
Source: own elaborations, based on ORBIS database

Figure 17 illustrates Tobin's Q of the companies from 2018 to 2020. In 2020, Hermes had the highest Tobin's Q, which is 8.4, indicating a possible overvaluation of the company, followed by Moncler with 4.7, and Kering WITH 2.68. the lowest Tobin's Q belongs to AEFFE with 0.24, PVH, Tapestry, and Tod's with 0.46.

Figure 18. return on equity of the companies from 2018 to 2020 (percent)
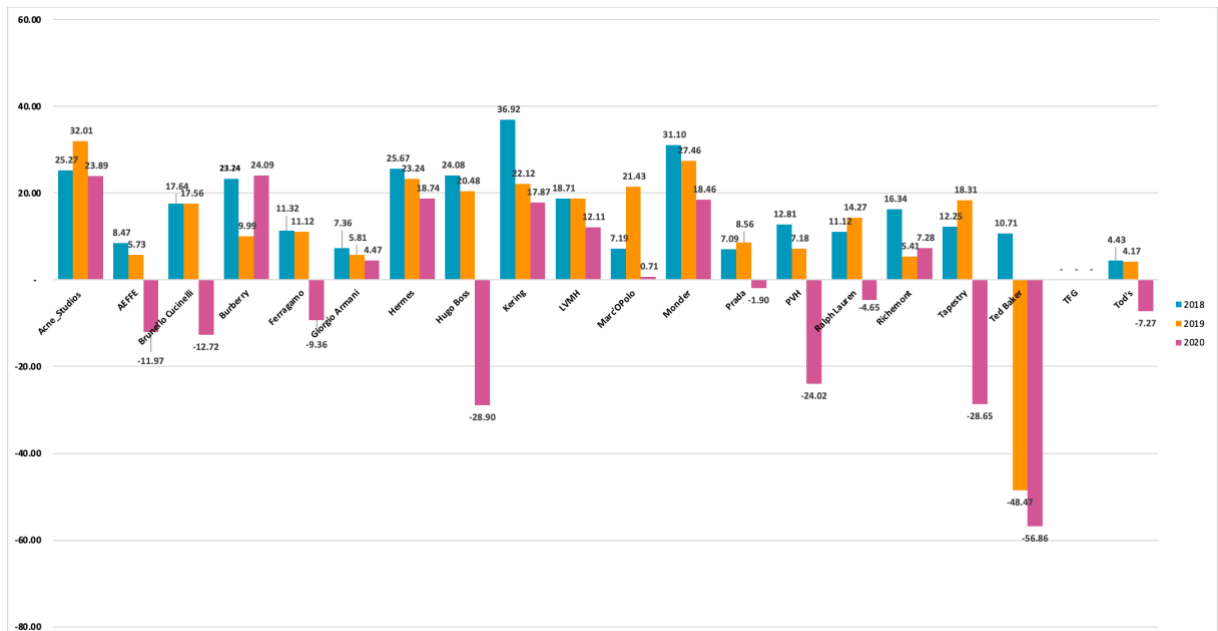
Source: own elaborations, based on ORBIS database

Figure 18 demonstrates the ROE of the companies from 2018 to 2020. All the companies except Burberry experienced a lower return on equity in 2020 than 2in 018. In 2020, which

can be due to the COVID-19 pandemic's effects on the luxury fashion industry. Acne Studios experience steady ROE in all three financial years. In 2020, Burberry recorded the highest ROE among all the companies with 24.09%, followed by Acne Studios with 23.89%, Hermes with 18,74%, Moncler with 18.46%, and Kering with 17.87%. Many companies recorded very low or negative ROE in 2020 due to their negative Net Income recorded in FY2020.

Figure 19. return on assets of companies from 2018 to 2020 (percent)
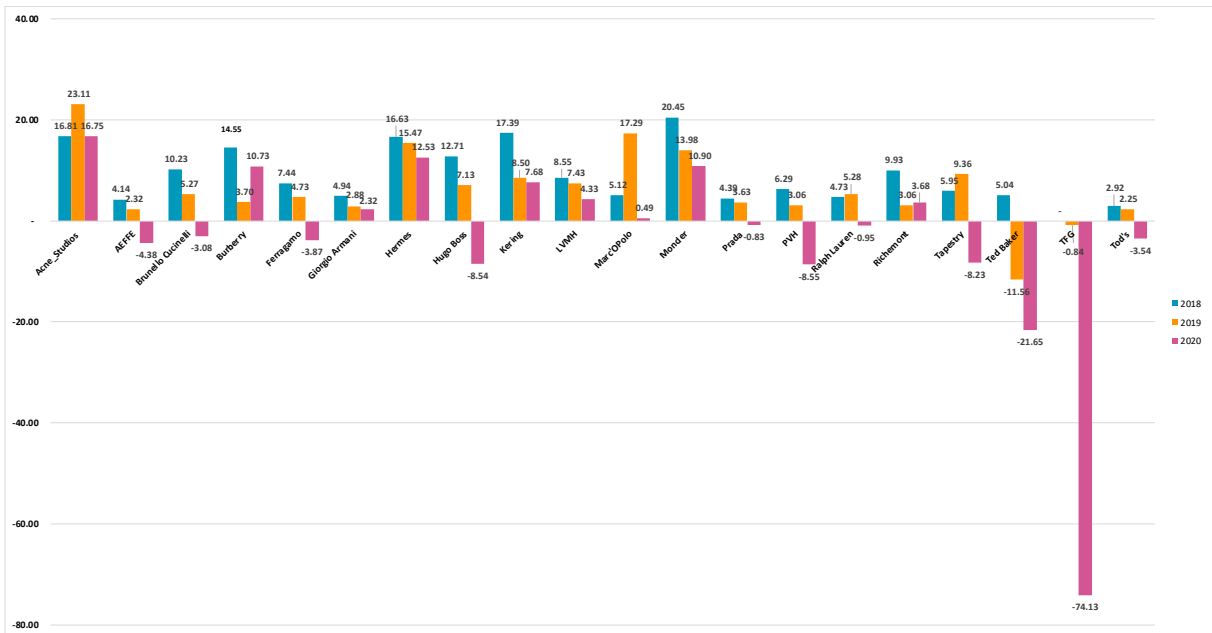
Source: own elaborations, based on ORBIS database

Figure 19 shows the ROA of companies from 2018 to 2020. Similar to ROE, companies experienced a decrease in ROA from 2018 to 2020, which can be related to the effects of the COVID-19 pandemic on the luxury fashion industry and the global economy. The highest ROA in 2020 belongs to Acne Studios, with 16.75%, followed by Hermes, with 12.53

percent. TFG experienced a significantly low ROA in 2020 due to its negative net income in FY2020.

Figure 20. ESG scores of the companies between 2018 to 2020
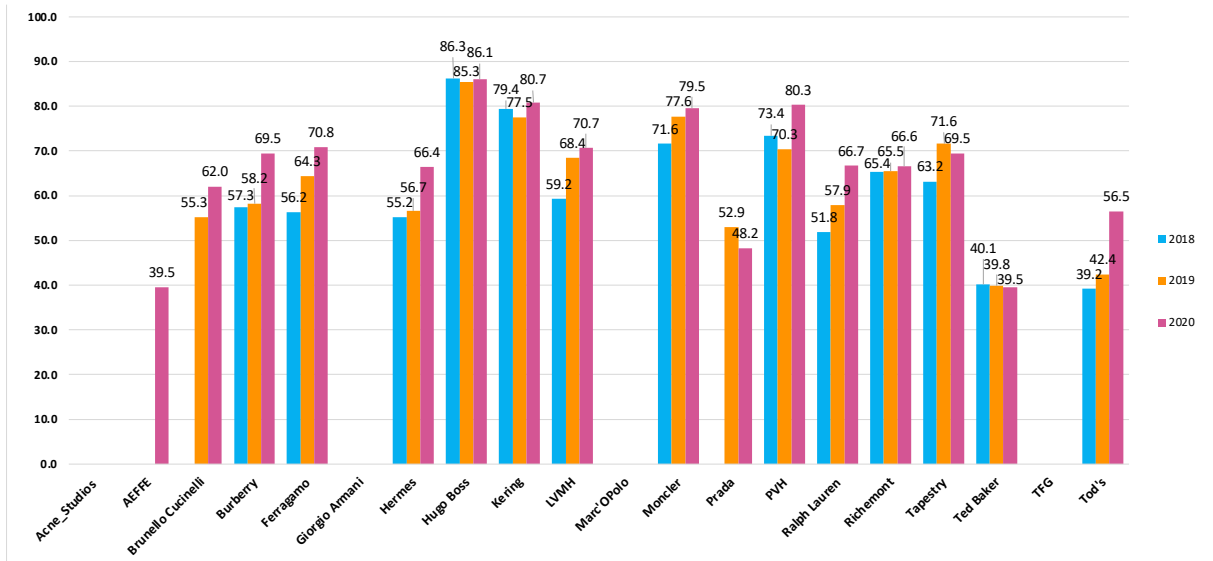
Source: own elaborations, based on the EIKON database

Figure 20 demonstrates the ESG scores of the companies extracted from the EIKON database from the financial year 2018 to 2020. Hugo Boss scores the highest among the selected company with 86.1, followed by Kering, PVH, and Moncler with 80.7, 80.3, and 79.5, respectively.

Figure 21. environmental pillar score of the companies between 2018 to 2020
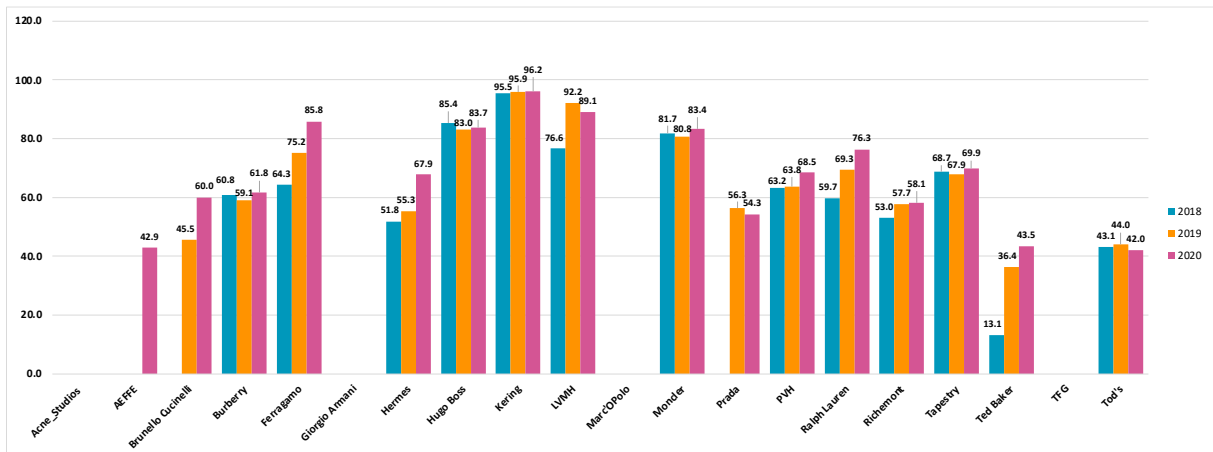
Source: own elaborations, based on the EIKON database

In the environmental pillar, as shown in Figure 21, Kering ranks the highest with a score of 96.2, followed by LVMH with 89.1, Salvatore Ferragamo with 85.8, Hugo Boss with 83.7, and Moncler with 83.4 in 2020.

Figure 22. social pillar score of the companies between 2018 to 2020
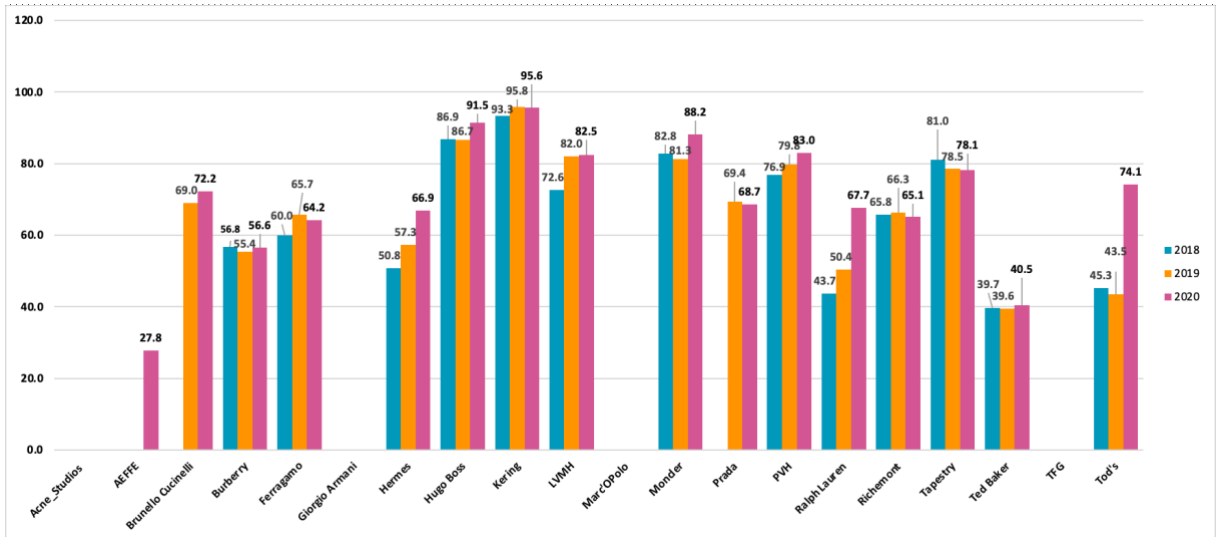
Source: own elaborations, based on the EIKON database

Figure 22 illustrates the social pillar scores of the companies. Kering has the highest social score with 95.6, followed by Hugo Boss with 91.5, Moncler with 88.2, PVH with 83, and LVMH with 82.5 in 2020.

Figure 23. governance pillar score of the companies between 2018 to 2020
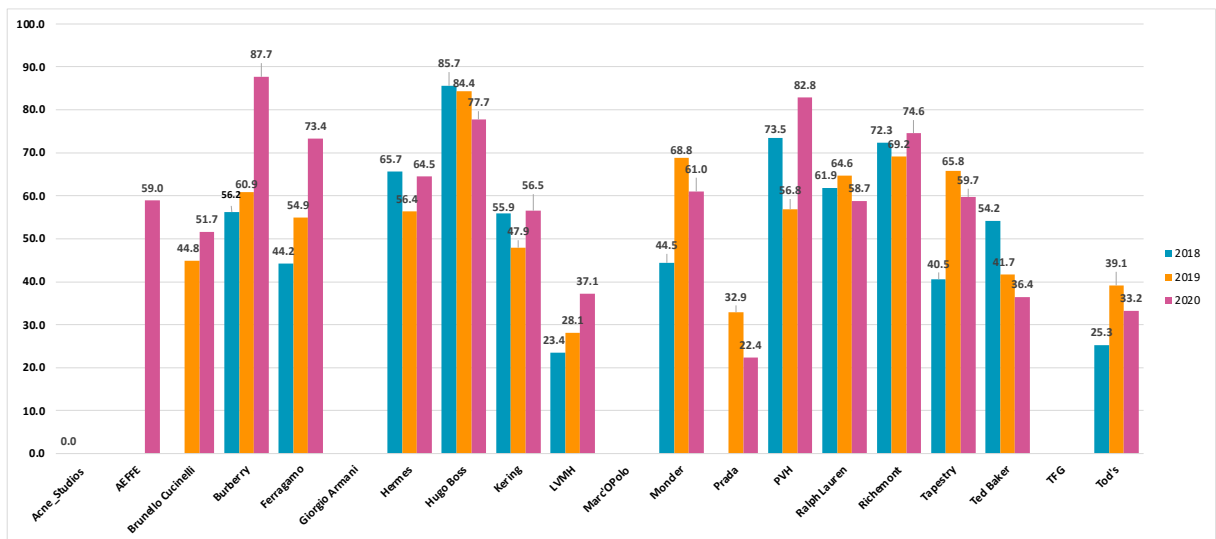
Source: own elaborations, based on the EIKON database

In the Governance pillar, as demonstrated in Figure 23, Burberry ranks top with 87.7, followed by PVH, Hugo Boss, Richemont, and Salvatore Ferragamo with 82.8, 77.7, 74.6, and 73.4, respectively.

3.3.4. Control variables

Moreover, we also provide some control variables that are important to measure, as presented in table 6.

Table 6. control variables

Metric	Description
Revenue Group	Companies categorized into three different revenue groups
Total assets	Book value of all assets (current and fixed assets) that the company possesses
Long-term debt / Equity	Indication of how much a company is under financial risk based on how much leverage a company is taking as debt

Source: EIKON database indicator description

Figure 24. total assets of selected companies in 2020 (thousand USD)
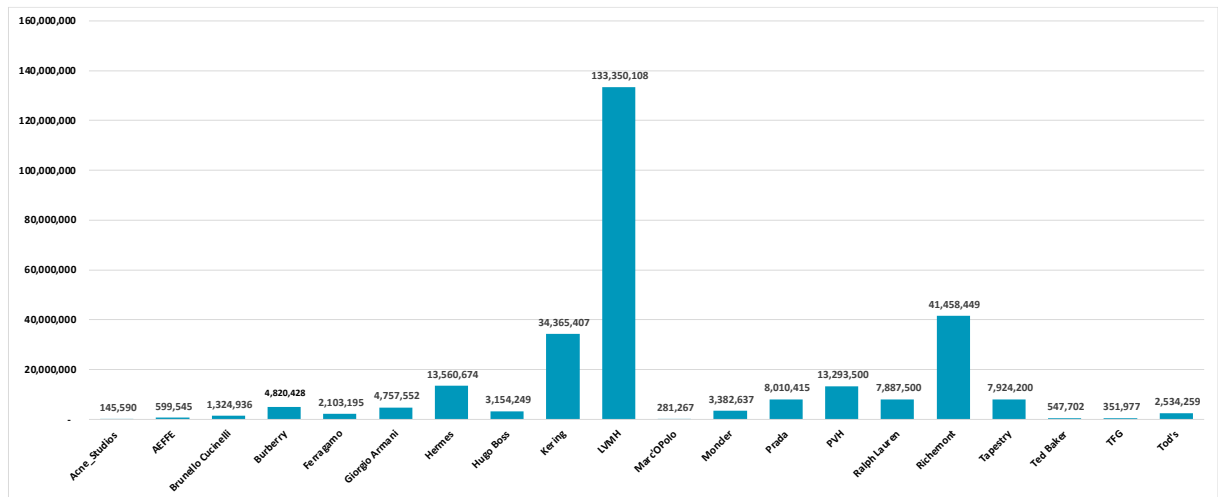
Source: own elaborations, based on ORBIS database
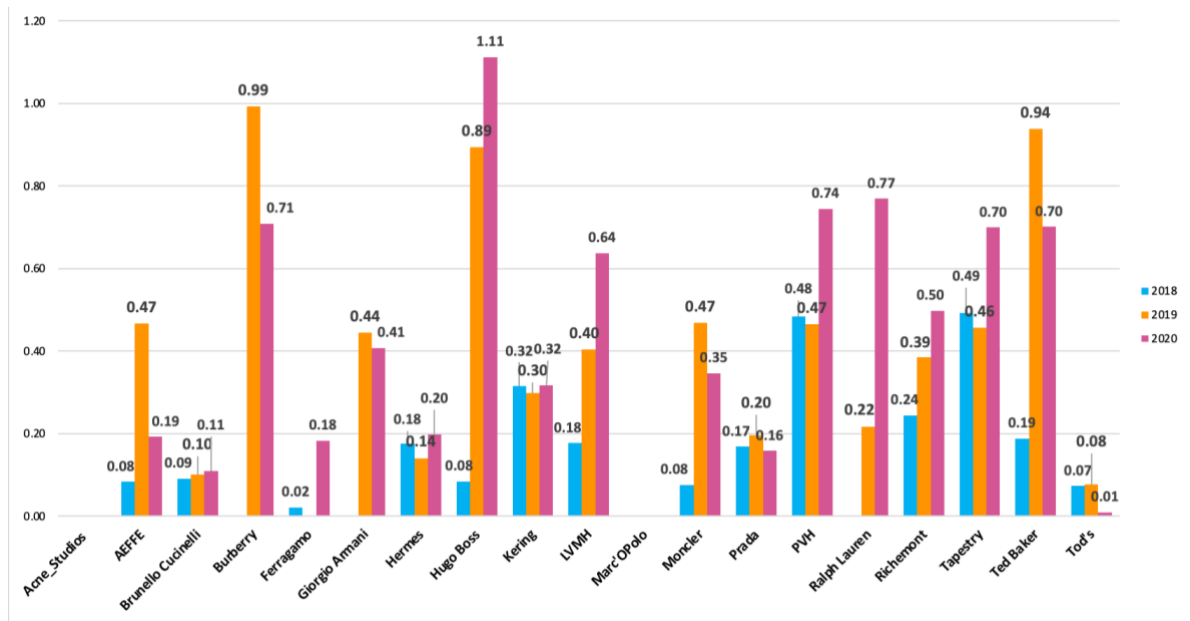
Source: own elaborations, based on ORBIS database

Figure 25 corresponds to the long-term debt to total equity ratio of the companies from 2018 to 2020. As the chart illustrates, many of the selected companies have been leveraging their operations with long-term liabilities in 2019 and 2020. This can be due to the effects of COVID-19 on the businesses of these luxury fashion companies. Hugo Boss, among all the companies, has the highest Long-term debt to total equity ratio in 2020, followed by Ralph Lauren with 0.77, PVH with 0.74, and Burberry, Tapestry, and Ted Baker with 0.71, 0.7, and 0.7 long-term debt to total equity ratio respectively.

CHAPTER 4
EMPIRICAL ANALYSIS

In this chapter we perform two different analyses on the data we gathered in the previous chapter using content analysis in the first part and regression analysis in the second part of the chapter.

4.1. descriptive analysis

As mentioned earlier, the methodology used in this research is content analysis, using NVivo software as the main instrument of the analysis. The earliest step taken for the content analysis was to organize all the sustainability disclosure reports of the companies from the financial years 2018, 2019, and 2020. This step was done by extracting only the sustainability disclosures of the companies from their annual reports for those companies which did not publish a separate sustainability report. One company published two independent reports for environmental and social aspects until the financial year of 2020. I have merged the two files for 2018 and 2019 to make the reports more consistent with one another. All organized reports were imported to NVivo for analysis.

The coding framework was chosen based on the 17 Sustainable Development Goals (SDGs). All the keywords were chosen. The Sustainable Development Goals were adopted within the "2030 Agenda for Sustainable Development" at the "United Nations Sustainable Development" summit in 2015. To know the coding framework better, it is necessary to explore each SDG's details and understand what each of those goals entails. Tsalis et al. (2020) mention that international organizations introduced Sustainable Development Goals to the business communities to the company supply chains. Rosati and Faria (2019) provide the example of the joint initiative by the Global Reporting Initiative (GRI) and the United Nations Global Compact (UNGC), which aims to enable companies to incorporate SDG reporting in their ongoing operations.

Furthermore, Montiel et al. (2021) provide a framework for international businesses to implement the SDGs. The first step is to group the SDGs by the impact they might have on the positive or negative externalities. Positive externalities can be the positive outcomes of company activities such as knowledge, wealth, or health, which the third parties benefit from without paying. And negative externalities are harmful outcomes that third parties suffer from without getting compensated for, such as pollution or overuse of natural resources. The second

step is to position the SDGs alongside the firm's value chain, and the third step is to identify how company investments contribute to the SDGs.

The content analysis within NVivo was performed using the text search option. We analyzed the report of each company for each financial year chosen using important keywords associated with each of the 17 Sustainable Development Goals. Each SDG corresponds to a code. The keywords were selected from "The University of Auckland SDG Keyword Mapping" project (The University of Auckland, 2021). This SDG Keyword Mapping project "combines Elsevier's keywords, a subset of Sustainable Development Solution Network and United Nations keywords, and additional keywords" selected by the University of Auckland based on previous academic publications (The University of Auckland, 2021). All keywords used in the analysis are present in the annex of this research. Using the NVivo text search query option, I searched all the relevant keywords to each sustainable development goal for each company's sustainability report for each financial year from 2018 to 2020. The text search result has been imported to Microsoft Excel for further analysis. At this point, I noticed a comparability issue in the SDG counts of different companies. The length of reports seemed to vary from one company to another. While a company reported more than 150 pages of a report discussing its sustainability activities, another reported less than 50 pages. Even though the different document lengths indicate the importance each company gives to sustainability, we needed a new metric to increase the comparability of companies reporting. Several authors suggest standardization of keyword counts based on the total document size (see Adams et al., 1998; Gill et al., 2008; Landrum and Ohsowski, 2018)). Since the literature, as mentioned earlier, have similar logic, objective, and method as this study, I used the same standardization scheme in my research. I added a ratio of the word counts of each SDG for each company in each financial year to the total word counts in each year's document.

The following charts are derived from the coding process:

Figure 27 represents the total number of each SDGs mentioned by the companies between the financial years 2018-2020. SDG11 ranks top among all the SDG mentions of the selected companies with 4,990 mentions overall, followed by SDG10 with 2,435, SDG12 with 2,108, SDG7 with 1,881 mentions, and SDG3 with 1,589 overall mentions between 2018 to 2020. This chart also shows an increase in the number of times companies have addressed SDGs over time. Furthermore, the chart indicates that the number of times that SDG3 and SDG11 have been mentioned in the financial year of 2020 increased significantly, showing a recent interest by the companies in these categories.

This figure also can confirm the findings of (Lu et al., 2018; van der Waal and Thijssens, 2020; Whittingham et al., 2022), who stated that companies tend to "cherry-pick" some SDGs and pay attention to specific Sustainable Development Goals while leaving some rather important ones behind such as SDG1-No Poverty or SDG2-Zero Hunger.

Figure 26. total SDGs mentioned from 2018 to 2020
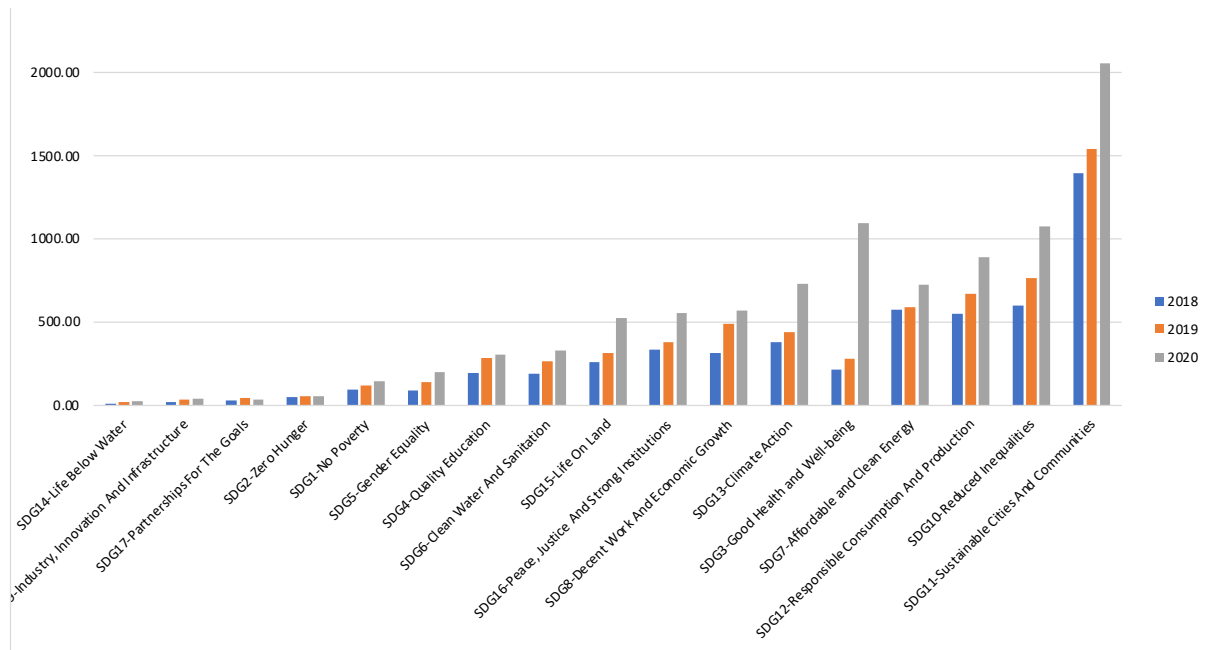
Source: own elaborations

Figure 28 illustrates the average number of times that each SDG is addressed by companies based on their revenue group between 2018-2020. The larger companies, in terms of revenue generation with revenues of more than 5 billion dollars, show relatively greater attention to the SDGs on average, which also confirms the findings of Rosati and Faria (2019a), which indicated greater attention to the SDGs among companies of larger size.

Figure 27. Average of SDG references based on the size of the company (revenue group)
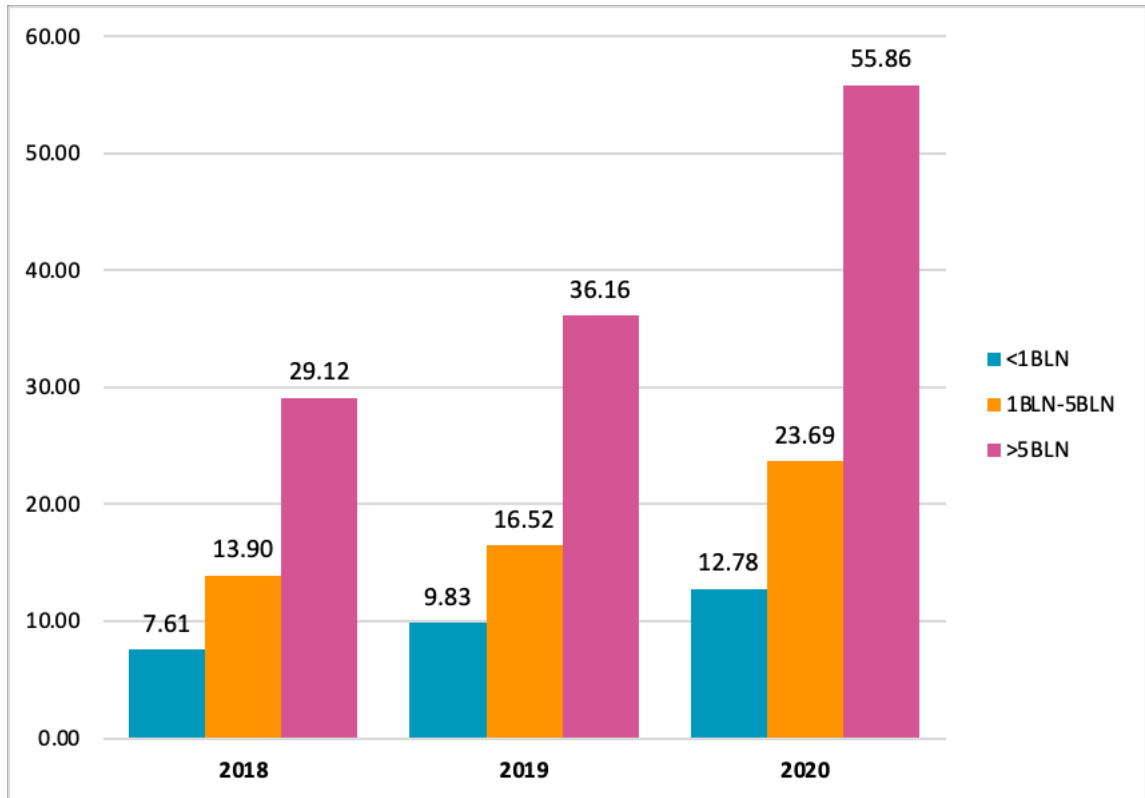
Source: own elaborations

Figure 29 shows, based on the CEO duality, how much, on average, the SDGs have been mentioned by companies through 2018-2020. Chart five highlights a higher average of SDGs mentioned within the companies where the same person held the chairman and CEO positions.

Figure 28. average of SDG counts, based on CEO duality
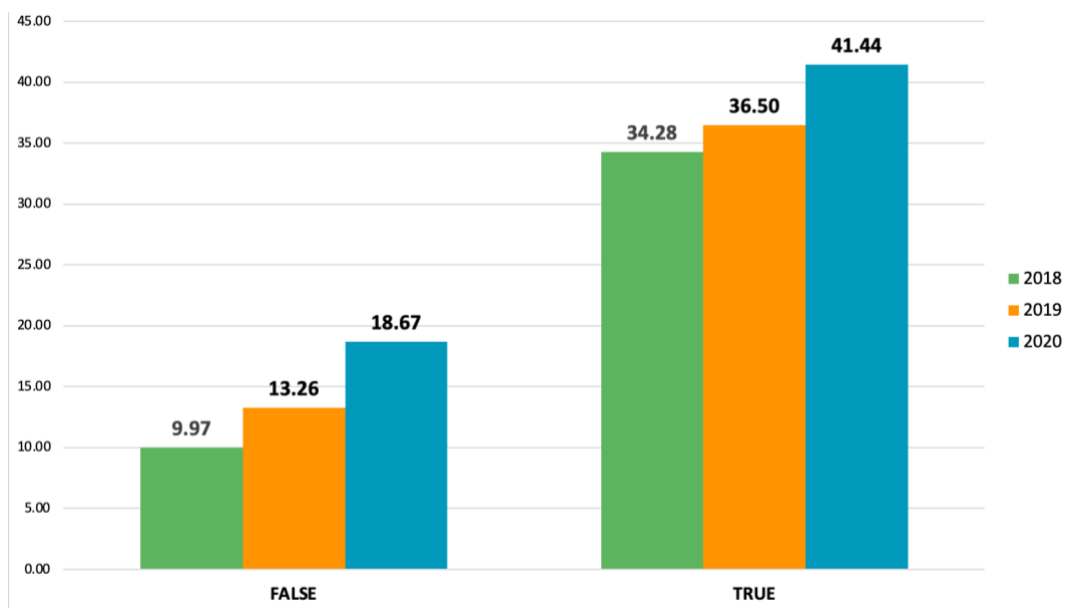
Source: own elaborations

Figure 30 shows the average number of times the SDGs have been mentioned each year based on the presence of a sustainability committee in the company. As the chart presents, the

companies which possess a sustainability committee in their decision-making levels dedicate significantly greater attention to the Sustainable Development Goals in their reporting.

Figure 29. average SDGs mentioned based on the presence of a sustainability committee
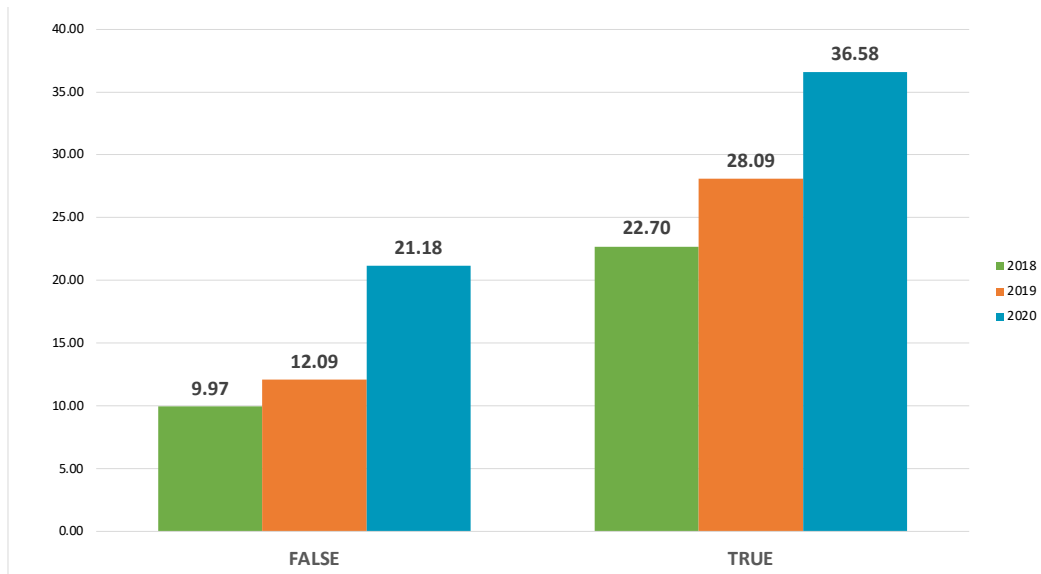
Source: own elaborations

Figure 30 shows the SDG mentions of companies in shareholder-oriented and stakeholder-oriented countries. As mentioned in the first chapter, shareholder-oriented companies are mostly present in common-law countries, which in our sample are companies in the United Kingdom and the United States. Furthermore, stakeholder-oriented companies are more common in code-law countries, which in our sample are companies headquartered in Italy, France, Switzerland, Germany, and Sweden. As shown in Figure 30, companies in stakeholder-oriented countries report more about SDGs on average. However, as illustrated in Figure 31, on average, companies in shareholder-oriented countries dedicate more space to their sustainability reports on SDGs than stakeholder-oriented ones. What Figure 31 represents can confirm the findings of Bose and Khan (2022), which indicated SDG reporting to be higher in countries located in shareholder-oriented countries than in stakeholder-oriented countries.

Figure 30. average SDG mentions of companies based on the country's shareholder or stakeholder orientation
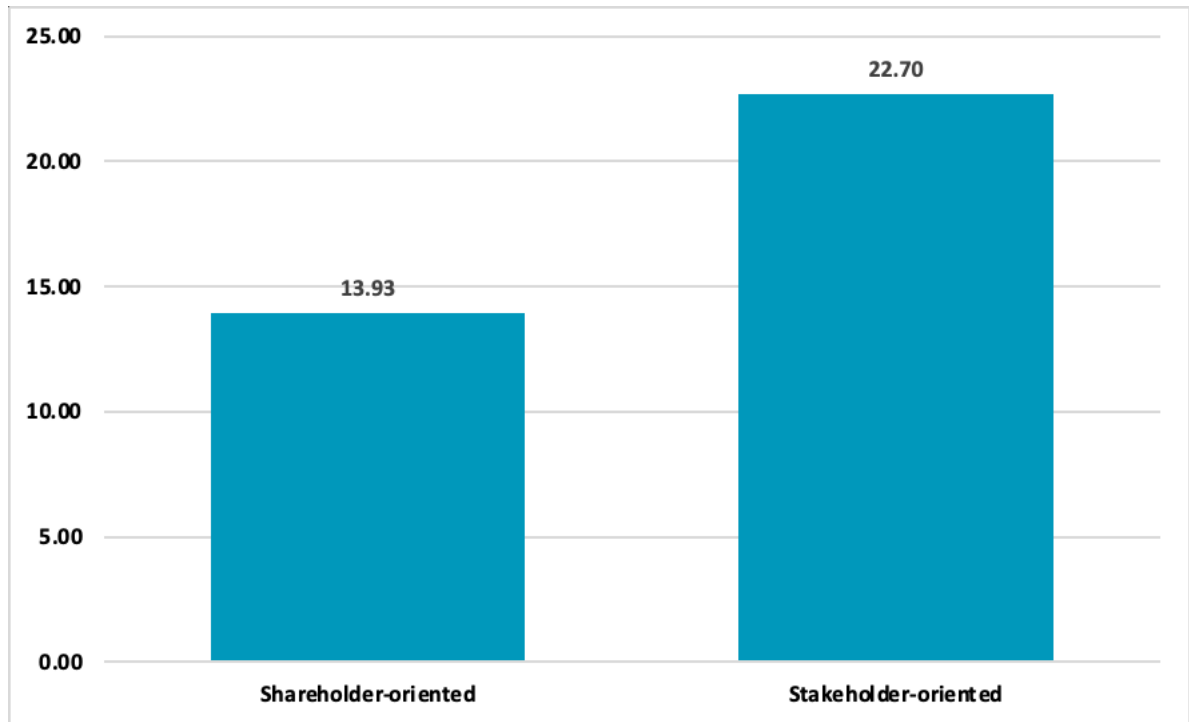
Source: own elaborations

Figure 31. average standardized SDG mentions of companies based on the country's shareholder or stakeholder orientation
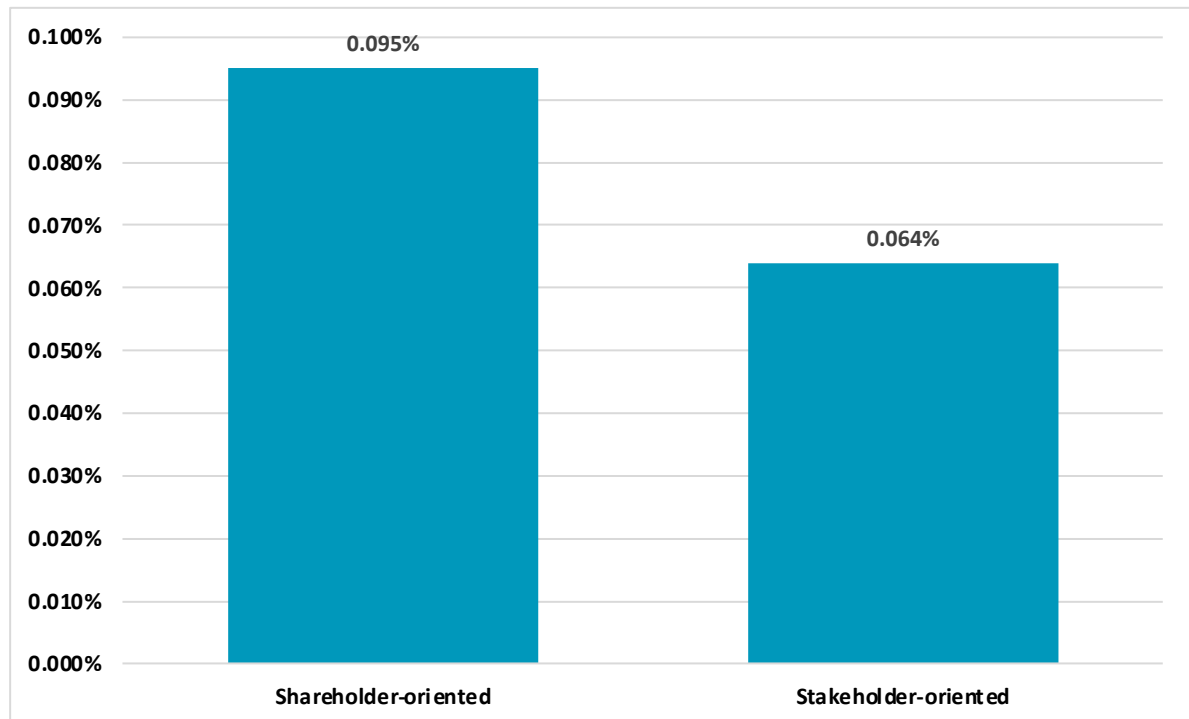
Source: own elaborations

Figure 33 illustrates the standardized SDG mentions of the companies in the financial year 2020. Ralph Lauren ranks top among all selected companies with 0.145% mentions, followed by Burberry with 0.136%, PVH with 0.118% mentions, Hugo Boss with 0.111%, Tapestry with 0.109%, and LVMH with 0.103% mentions.

Figure 32. SDG mentions of the companies standardized by document length (FY2020)
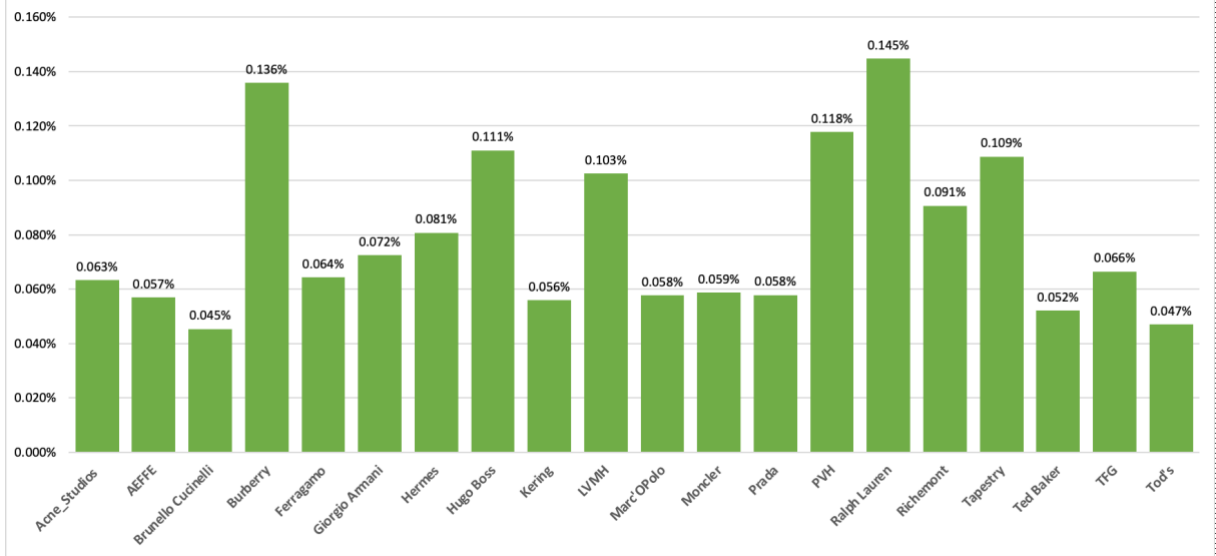
Source: own elaborations

Figure 34 illustrates the top 3 SDGs for each company by financial year.

Figure 33. top 3 SDGs mentioned by companies by financial year
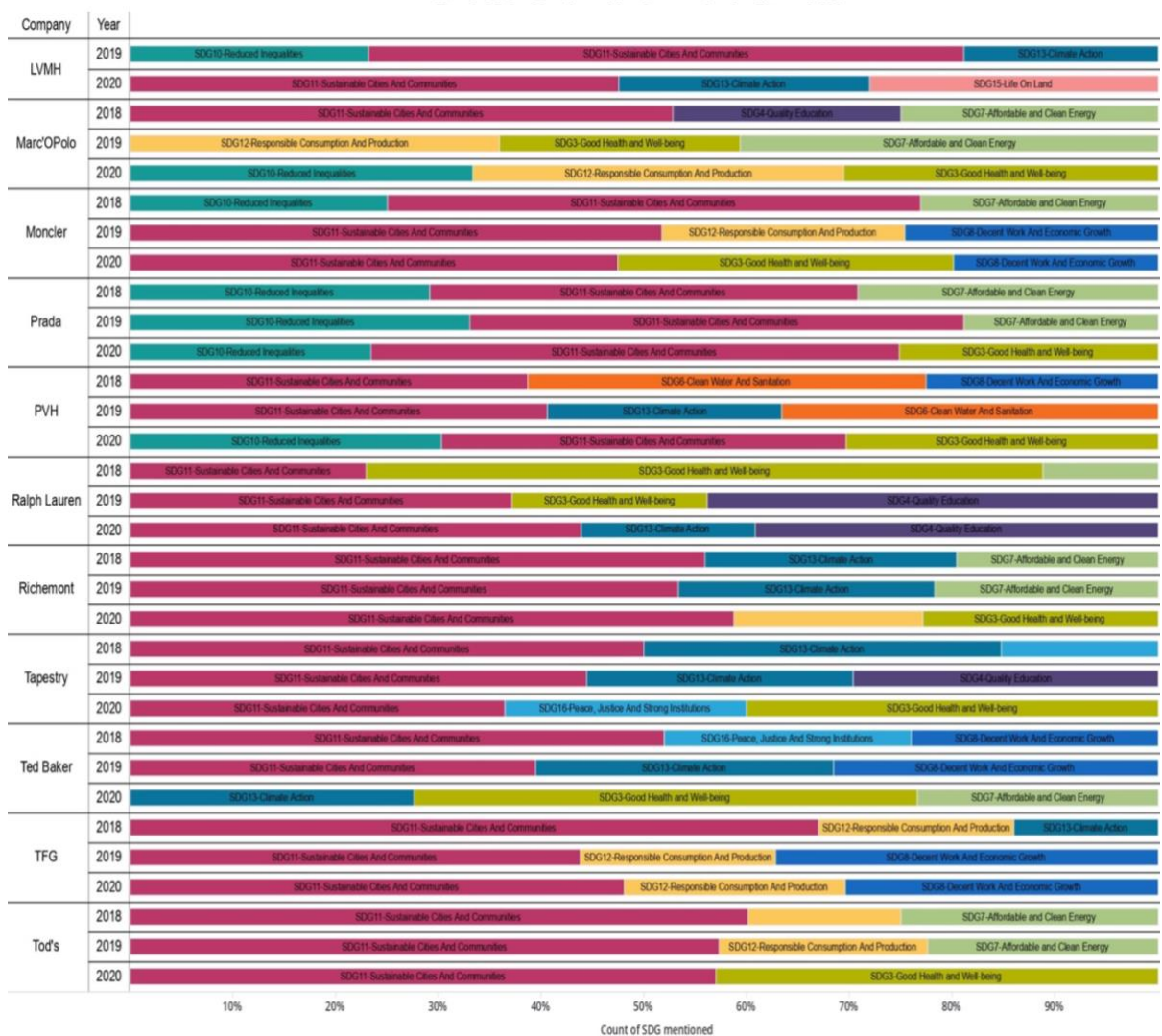
Source: own elaborations

4.2. Regression analysis

After a descriptive analysis of SDG reporting data of the companies, in this section, we will perform a longitudinal regression analysis.

Table 7 reports the correlations of variables used in the regression analysis. Based on the correlation matrix, Standardized SDG mentions of companies in their sustainability reports significantly correlate with the Government pillar score of the companies with a 45% significance and 95% confidence based on the P value. CEO duality does not show a correlation with any of the variables. Moreover, independent board members correlate with Standardized SDG mentions of companies with a confidence of 95%.

Table 7. correlation of variables used in regression analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Tobin'sQ	1									
(2) ESG Score	0.1093	1								
(3) Government Pillar Score	0.0434	0.5490*	1							
(4) Standardized SDG Mentions of Companies	-0.1015	0.3066	0.4487*	1						
(5) CEO duality	0.3157	0.2602	-0.1286	0.1747	1					
(6) CSR Sustainability Committee	0.1010	0.3930*	0.3300	0.1534	0.4323*	1				
(7) Board Size	-0.4925*	0.0100	-0.2650	0.2500	0.0818	0.0548	1			
(8) Independent Board Members	-0.5135*	0.4066*	0.4457*	0.5311*	-0.0488	-0.0195	0.0500	1		
(9)Total Assets	-0.0048	0.1656	-0.3768*	0.0800	0.4984*	0.2907	0.1847	0.0260	1	
(10) Long-term Debt to Total Equity	-0.2344	0.3157	0.4360*	0.1149	0.0867	0.2479	0.1800	0.5599*	-0.0894	1

Note: *P < 0.05; **P < 0.01; ***P < 0.00

Table 8 represents the results of the regression analysis done on the antecedent variables to check which variable affects the SDG reporting of companies in the sample group. Model 1 checks the effect of the presence of Independent Board Members on SDG reporting, which

reports no statistically significant effect. Model 2 checks for the effect of Board size which is statistically significant with confidence of 95% [beta = 0.000187| P <0.05] . This means that the size of the board of directors positively affects SDG reporting of luxury fashion companies in our sample group. As for CEO duality (model 3) and CSR/sustainability committee (model 4), both did not show any statistically significant effect on the SDG reporting of the companies.

Table 8. regression analysis results for the antecedent variables

VARIABLES	(Model 1) Standardized SDG Mentions of Companies	(Model 2) Standardized SDG Mentions of Companies	(Model 3) Standardized SDG Mentions of Companies	(Model 4) Standardized SDG Mentions of Companies
Independent Board Members	0.000113			
	(0.000108)			
Board Size		0.000187**		
		(8.91e-05)		
CEO Duality			0.000972	
			(0.00193)	
CSR Sustainability Committee				0.00110
				(0.00337)
Total Assets	0	-0**	0	0
	(8.41e-11)	0	0	0
Long-term Debt to Total Equity	0.00488**	0.000262	0.00589**	0.00579**
	(0.00213)	(0.000185)	(0.00244)	(0.00230)
Constant	0.00512	0.0105***	0.00846*	0.00935
	(0.00648)	(0.00118)	(0.00455)	(0.00621)
Observations	43	60	57	43
Number of company_num	15	20	19	15
R-squared	0.229			

Notes: Standard errors in parentheses - *** p<0.01, ** p<0.05, * p<0.1

Table 9 illustrates the result of regression analysis for the outcome variables. The dependent variables are the financial and ESG outcome variables of interest, and the independent variable tested in the regression analysis is the SDG reporting of the companies. Tobin's Q represents the financial performance indicator, and ESG score, Social pillar score, Environmental pillar score, and Government pillar score represent the ESG performance of the companies. As shown in Table 9. SDG reporting does not affect Tobin's Q as a financial performance indicator since there is no evidence of a positive or negative relationship between the two in the regression result. However, a statistically significant positive association has been observed between the SDG reporting of the sample companies and their ESG score at a level of 99% [beta=838.3 | P

<0.01]. Moreover, the positive relation between SDG reporting and the Government pillar score is statistically significant at the level of 95% [beta=1.403| P <0.05], and there has been no evidence of a relation between SDG reporting and the Social pillar score or Environmental pillar score.

Table 9. regression analysis results for the outcome variables

VARIABLES	Tobin's Q	ESG Score	Social Pillar Score	Environmental Pillar Score	Government Pillar Score
Standardized SDG Mentions of Companies	9.635 (59.82)	838.3*** (314.7)	-130.6 (275.7)	1.001 (644.0)	1.403** (711.6)
Total Assets	2.88** (1.26)	2.16** (1.00)	2.57*** (9.73)	3.89** (1.69)	-1.97 (1.39)
Long-term Debt to Total Equity	-1.324 (1.081)	-4.311 (5.957)	10.29* (5.265)	-9.371 (11.98)	1.050 (12.83)
Board size	-0.228*** (0.0641)	-0.742 (0.672)	-0.484 (0.804)	-0.877 (0.957)	-0.221 (0.714)
Constant	5.322*** -1027	59.03*** (10.23)	67.19*** (12.38)	59.73*** (14.71)	39.96*** (11.97)
Observations	32	28	28	28	28
Number of companies	16	15	15	15	15
R-squared					

Notes: Standard errors in parentheses - *** p<0.01, ** p<0.05, * p<0.1

CHAPTER 5

DISCUSSION

In recent years, especially after the United Nations' 2030 Agenda for Sustainable Development, companies have paid more attention to the topic of sustainability. Many also report on their sustainability activities and practices annually in a report. Literature has widely discussed different notions of sustainability and SDGs implementation drivers and outcomes for companies; however, a gap in outcomes of SDGs implementation outcomes has been observed in the literature. Moreover, the notions of SDG reporting antecedents and outcomes have also been unexplored in the literature.

This research aimed to understand the antecedents and outcomes of SDG implementation for companies in the luxury fashion sector. In part 4.1, a descriptive analysis was implemented using the content analysis method by NVivo software. We performed the study based on a keyword search for each SDG in sustainability reports of the companies in the sample group from 2018 to 2020. The descriptive analysis of SDGs reporting in the sample group of companies has shown some interesting results. First, the top three SDGs that the companies mentioned are SDG11-Sustainable Cities and Communities, SDG10-Reduce Inequalities, and SDG12-Responsible Consumption and Production; while SDG3-Good Health and Well-being experienced significant attention by the companies in 2020 which ranks this SDG the third in SDG mentions of 2020.

Additionally, SDGs mentioned by companies: Among the companies in the sample group, Ralph Lauren with 0.145%, Burberry with 0.136%, PVH with 0.118%, and Hugo Boss with 0.111% were proven to report more on the SDGs between 2018 to 2020. Moreover, in the descriptive analysis, a relation between the size of the company and average SDG mentions was observed. The companies with CEO duality and those with a CSR/sustainability committee were also perceived to report more on SDGs.

However, the regression analysis for understanding the antecedents and outcomes of SDGs implementation in the companies showed some contradictory results to what had been observed in the descriptive study. In the antecedent variable regression analysis, between CEO duality, Independent board members, CSR/sustainability committee, and Board size, the only variable that was observed to have affected the SDG reporting of sample companies was the Board size of the companies with a positive relation on SDG reporting. Moreover, in the

regression analysis for the outcome variables, we tested the SDGs implementation of sample companies to see if addressing SDGs in the sustainability reports affects the Financial and ESG performance of the companies. The results indicated no effects of SDGs implementation on the financial performance of companies. Still, the ESG pillar score and Governance pillar score of companies were affected by SDGs implementation at a statistically significant level, with [P<0.01] and [0.05], respectively. Moreover, we detected no effects on the social and environmental pillar scores since no statistically significant relationship existed between these scores and SDGs implementation.

CONCLUSION

Research conclusion

The concept of sustainability has attracted significant attention in the past years among different stakeholders. Many scholars have covered different notions of this concept in recent years. Moreover, the worldwide attention on sustainability has been inviting companies to embrace this concept and implement it in their strategies and operations and to report on their responsibility towards the environment and communities. Furthermore, a differentiative factor to address sustainability based on the new sustainability concept has been observed (Jensen and Berg, 2012). In 2015, the United Nations' 2030 Agenda for Sustainable development Introduced 17 goals, known as Sustainable Development Goals or SDGs. Many companies took the initiative to implement the SDGs in their businesses. The reflection of integrating the SDG values can be traced in the CSR/Sustainability reports of these companies.

Previous literature has studied what motivates companies in Sustainability and SDGs implementations and what can affect their corporate performance. However, the effects of SDGs implementation have not been studied as much as the other notions mentioned. In this research, we intended to investigate the antecedents and outcomes of SDGs implementation for companies in the luxury fashion sector. The luxury fashion sector has faced many controversies due to the unnecessity of its nature and has been blamed for unsustainable activities. However, luxury fashion companies have shown efforts to change their attitude with a more positive one toward the environment and social communities.

To design this research, we selected the luxury fashion companies that reported on their sustainability activities from the Deloitte list of global top 100 luxury goods companies in 2021 (Deloitte, 2021). We selected twenty luxury fashion companies from this list for the research analysis. Moreover, we designed a content analysis research method to investigate further the sustainability reports of the selected companies from FY2018 to FY2020. The content analysis process was done thanks to NVivo software based on searching keywords for each SDG in sustainability reports of the selected companies in each financial year. Moreover, we set measurement variables for Antecedents of SDGs implementation and measurement variables for outcomes of SDGs implementation, which we further investigated in part 4.2. In part 4.2, we performed a descriptive analysis of the SDG reporting of the selected companies.

The results of the descriptive analysis showed indicated a focus on specific SDGs. The following SDGs ranked top in the mentions by companies' reports: SDG11-Sustainable Cities

and Communities, SDG10-Reduce Inequalities, and SDG12-Responsible Consumption and Production. At the same time, most companies in the sample group have not investigated some vital SDGs, such as SDG2-Zero Hunger and SDG1-No Poverty. Additionally, the descriptive analysis identified some other results, such as more SDG reporting by companies with CEO duality or with CSR/sustainability committees. However, the regression analysis results in part 4.2 did not show a statistically significant relationship between CEO duality or the presence of CSR/sustainability committees with SDG reporting. The results of the random-effects regression analysis showed that between the selected antecedent variables, the only antecedent that triggered the companies to report on SDGs was the board size, which was in contradiction to the findings of Pizzi et al. (2020), which did not find any relation between SDGs implementation and size of the board of directors. This contradiction could be due different nature of the luxury fashion industry. Moreover, the results indicated no trace of effects of SDGs implementation on Financial performance, confirming the findings of Emma and Jennifer (2021), But statistically significant impacts on ESG score and Governance pillar score of the companies in the luxury fashion sector.

Limitations of the study

This study has potential limitations. In the methodology section, while choosing the proper keywords for each sustainable development goal, I realized a difference in keyword amount between each SDG. This means that some SDG keywords were larger in amount than other ones. Even though it would be better to have a similar number of keywords for all the Sustainable Development Goals, the SDGs mentioned by companies seemed to be not affected by this issue. Another limitation to this study could be unavailability of some financial and ESG data for private companies. Moreover, the small size of sample data was a limitation to this study. We suggest further research to study this subject on a bigger sample of companies.

Appendix

Appendix I – data for outcome variables of the sample companies

Table 10. Financial outcome variables of the companies

Company	Year	Revenue (th USD)	EBITDA (th USD)	EBITDA/sales	ROA (using net income)	ROE (using net income (%))	Tobin' s Q
LVMH Moët Hennessy-Louis Vuitton SE	2018	53,622,667	13,572,837	0.25	8.55	18.71	1.76
	2019	60,292,870	17,757,581	0.29	7.43	18.69	2.17
	2020	54,791,211	15,699,508	0.29	4.33	12.11	2.37
Kering SA	2018	17,884,337	4,965,868	0.28	17.39	36.92	2.43
	2019	17,848,577	6,684,678	0.37	8.5	22.12	2.72
	2020	16,076,228	5,492,865	0.34	7.68	17.87	2.68
Compagnie Financière Richemont SA	2018	15,718,882	3,096,365	0.20	9.93	16.34	1.21
	2019	15,601,342	3,347,058	0.21	3.06	5.41	0.86
	2020	7,132,600	358,200	0.05	-8.55	-24.02	0.46
PVH Corp	2018	9,656,800	1,224,600	0.13	6.29	12.81	0.69
	2019	9,909,000	1,013,500	0.10	3.06	7.18	0.47
	2020	7,132,600	358,200	0.05	-8.55	-24.02	0.46
Hermès International SCA	2018	6,859,126	2,899,943	0.42	16.63	25.67	6.06
	2019	7,755,840	3,185,625	0.41	15.47	23.24	7.12
	2020	8,017,867	3,255,494	0.42	12.53	18.74	8.4
Ralph Lauren	2018	6,313,000	1,006,200	0.16	7.25	13.11	1.15
	2019	6,159,800	674,200	0.11	5.28	14.27	0.45
	2020	4,400,800	447,000	0.10	-0.95	-4.65	0.75
Tapestry, Inc.	2018	5,880,000	950,600	0.16	5.95	12.25	2.01
	2019	6,027,100	1,110,100	0.18	9.36	18.31	1.34
	2020	4,961,400	686,700	0.14	-8.23	-28.65	0.46
Burberry Group	2018	3,564,960	730,239	0.20	14.55	23.24	3.45
	2019	3,254,642	670,681	0.21	3.7	9.99	1.63
	2020	3,247,616	929,758	0.29	10.73	24.09	2.2
Prada Group	2018	3,597,761	622,569	0.17	4.39	7.09	1.57
	2019	3,623,632	1,106,829	0.31	3.63	8.56	1.34
	2020	2,972,941	819,323	0.28	-0.83	-1.9	2.11
Hugo Boss AG	2018	3,202,468	545,580	0.17	12.71	24.08	2.04
	2019	3,239,948	796,191	0.25	7.13	20.48	1.06
	2020	2,387,743	146,813	0.06	-8.54	-28.9	0.75

Company	Year	Revenue (th USD)	EBITDA (th USD)	EBITDA/sales	ROA (using net income (%))	ROE (using net income (%))	Tobin's Q
Giorgio Armani SpA	2018	2,418,136	366,882	0.15	4.94	7.36	-
	2019	2,424,860	559,600	0.23	2.88	5.81	-
	2020	1,978,095	325,865	0.17	2.32	4.47	-
Moncler SpA	2018	1,625,986	538,834	0.33	20.45	31.1	4.53
	2019	1,828,562	744,726	0.41	13.98	27.46	4.03
	2020	1,767,525	699,204	0.40	10.9	18.46	4.7
Salvatore Ferragamo SpA	2018	1,553,814	245,255	0.16	7.44	11.32	2.51
	2019	1,570,571	390,758	0.25	4.73	11.12	1.72
	2020	1,152,468	148,354	0.13	-3.87	-9.36	1.56
Ted Baker plc	2018	842,076	89,723	0.11	5.04	10.71	1.71
	2019	827,786	33,546	0.04	-11.56	-48.47	0.17
	2020	515,683	- 1,065	0.00	-21.65	-56.86	0.47
TOD' S SpA	2018	1,087,985	135,496	0.13	2.92	4.43	0.85
	2019	1,151,062	286,913	0.28	2.25	4.17	0.68
	2020	793,986	48,477	0.06	-3.54	-7.27	0.46
Brunello Cucinelli SpA	2018	634,839	107,418	0.17	10.23	17.64	4.12
	2019	683,687	189,306	0.28	5.27	17.56	2.15
	2020	670,959	105,867	0.16	-3.08	-12.72	2.25
TFG Brands (London) Limited	2018	-	-	-	-	-	-
	2019	485,221	57,852	-	-0.84	-	-
	2020	270,511	- 224,664	-	-74.13	-	-
Marc O' Polo	2018	457,867	27,298	0.06	5.12	7.19	-
	2019	489,823	65,175	0.14	17.29	21.43	-
	2020	428,779	12,736	0.03	0.49	0.71	-
AEFFE	2018	403,047	51,002	0.13	4.14	8.47	0.62
	2019	406,072	60,511	0.15	2.32	5.73	0.42
	2020	343,101	8,056	0.02	-4.38	-11.97	0.24
Acne Studios Holding AB	2018	227,549	-	-	16.81	25.27	-
	2019	258,552	-	-	23.11	32.01	-
	2020	270,797	-	-	16.75	23.89	-

Source: ORBIS database

Appendix II – ESG data of the sample companies

Table 11. ESG outcomes variables of the companies

Company	Year	ESG Score	Social Pillar Score	Governance Pillar Score	Environmental Pillar Score
Acne Studios AB	2018	-	-	-	-
	2019	-	-	-	-
	2020	-	-	-	-
Aeffe SpA	2018	-	-	-	-
	2019	-	-	-	-
	2020	39.5	27.8	59.0	42.9
Brunello Cucinelli SpA	2018	-	-	-	-
	2019	55.3	69.0	44.8	45.5
	2020	62.0	72.2	51.7	60.0
Burberry Group PLC	2018	57.3	56.8	56.2	60.8
	2019	58.2	55.4	60.9	59.1
	2020	69.5	56.6	87.7	61.8
Salvatore Ferragamo SpA	2018	56.2	60.0	44.2	64.3
	2019	64.3	65.7	54.9	75.2
	2020	70.8	64.2	73.4	85.8
Giorgio Armani SpA	2018	-	-	-	-
	2019	-	-	-	-
	2020	-	-	-	-
Hermes International SCA	2018	55.2	50.8	65.7	51.8
	2019	56.7	57.3	56.4	55.3
	2020	66.4	66.9	64.5	67.9
Hugo Boss AG	2018	86.3	86.9	85.7	85.4
	2019	85.3	86.7	84.4	83.0
	2020	86.1	91.5	77.7	83.7
Kering SA	2018	79.4	93.3	55.9	95.5
	2019	77.5	95.8	47.9	95.9
	2020	80.7	95.6	56.5	96.2
LVMH Moet Hennessy Louis Vuitton SE	2018	59.2	72.6	23.4	76.6
	2019	68.4	82.0	28.1	92.2
	2020	70.7	82.5	37.1	89.1
Marc O Polo AG	2018	-	-	-	-
	2019	-	-	-	-
	2020	-	-	-	-
Moncler SpA	2018	71.6	82.8	44.5	81.7
	2019	77.6	81.3	68.8	80.8
	2020	79.5	88.2	61.0	83.4
Prada SpA	2018	-	-	-	-
	2019	52.9	69.4	32.9	56.3
	2020	48.2	68.7	22.4	54.3
PVH Corp	2018	73.4	76.9	73.5	63.2
	2019	70.3	79.8	56.8	63.8
	2020	80.3	83.0	82.8	68.5
Ralph Lauren Corp	2018	51.8	43.7	61.9	59.7
	2019	57.9	50.4	64.6	69.3
	2020	66.7	67.7	58.7	76.3
Compagnie Financiere Richemont SA	2018	65.4	65.8	72.3	53.0
	2019	65.5	66.3	69.2	57.7
	2020	66.6	65.1	74.6	58.1
Tapestry Inc	2018	63.2	81.0	40.5	68.7
	2019	71.6	78.5	65.8	67.9
	2020	69.5	78.1	59.7	69.9
Ted Baker PLC	2018	40.1	39.7	54.2	13.1
	2019	39.8	39.6	41.7	36.4
	2020	39.5	40.5	36.4	43.5
TFG Brands (London) Ltd	2018	-	-	-	-
	2019	-	-	-	-
	2020	-	-	-	-
Tod's SpA	2018	39.2	45.3	25.3	43.1
	2019	42.4	43.5	39.1	44.0
	2020	56.5	74.1	33.2	42.0

Source: EIKON database

Appendix III – Antecedent variables data of the sample companies

Table 12. antecedent variables of the companies

Company	Year	Board size	Independent Board Members	CEO duality	CSR Sustainability Committee
Acne_Studios		7	-	FALSE	-
AEFFE		10	-	FALSE	-
Brunello Cucinelli		12	36.36	FALSE	FALSE
Burberry		14	76.92	FALSE	TRUE
Giorgio Armani		7	-	TRUE	-
Hermes		4	28.57	TRUE	TRUE
Hugo Boss		13	83.33	FALSE	TRUE
Kering		16	60.00	TRUE	TRUE
LVMH		26	55.56	TRUE	TRUE
Marc'OPolo	2020	-	-	FALSE	-
Moncler		6	58.33	FALSE	TRUE
Prada		16	44.44	FALSE	FALSE
PVH		16	84.62	TRUE	TRUE
Ralph Lauren		13	76.92	FALSE	TRUE
Richemont		26	65.00	FALSE	TRUE
Ferragamo		19	28.57	FALSE	TRUE
Tapestry		11	90.00	FALSE	FALSE
Ted Baker		10	54.55	FALSE	TRUE
TFG		6	-	-	-
Tod's		19	53.33	FALSE	FALSE

Source: EIKON and ORBIS database

Appendix IV – Control variables data of the sample companies

Table 13. control variables date of the companies

Company	Revenue Group	Year	Long-term debt to total equity	Total assets (th USD)
Acne_Studios	<1BLN	2018	-	107,923
		2019	-	117,149
		2020	-	145,590
AEFFE	<1BLN	2018	0.08	462,436
		2019	0.47	566,862
		2020	0.19	599,545
Brunello Cucinelli	<1BLN	2018	0.09	567,640
		2019	0.10	1,119,948
		2020	0.10	1,324,936
Burberry	1BLN-5BLN	2018	0.00	3,056,466
		2019	0.99	4,069,323
		2020	0.71	4,820,428
Giorgio Armani	1BLN-5BLN	2018	0.00	3,522,060
		2019	0.44	4,653,409
		2020	0.41	4,757,552
Hermes	>5BLN	2018	0.18	9,677,430
		2019	0.14	11,100,426
		2020	0.20	13,560,674
Hugo Boss	1BLN-5BLN	2018	0.08	2,128,049
		2019	0.89	3,232,544
		2020	1.11	3,154,249
Kering	>5BLN	2018	0.32	24,465,800
		2019	0.30	30,498,284
		2020	0.32	34,365,407
LVMH	>5BLN	2018	0.18	85,073,543
		2019	0.40	108,415,950
		2020	0.64	133,350,108
Marc'OPolo	<1BLN	2018	-	242,082
		2019	-	257,180
		2020	-	281,267
Moncler	1BLN-5BLN	2018	0.08	1,861,362
		2019	0.47	2,881,996
		2020	0.35	3,382,637
Prada	1BLN-5BLN	2018	0.17	5,357,242
		2019	0.20	7,906,981
		2020	0.16	8,010,415
PVH	>5BLN	2018	0.48	11,863,700
		2019	0.47	13,631,000
		2020	0.74	13,293,500
Ralph Lauren	1BLN-5BLN	2018	0.00	5,942,800
		2019	0.22	7,279,900
		2020	0.77	7,887,500
Richemont	>5BLN	2018	0.24	31,501,803
		2019	0.39	33,373,068
		2020	0.50	13,293,500
Ferragamo	1BLN-5BLN	2018	0.02	1,359,266
		2019	0.00	2,071,412
		2020	0.18	2,103,195
Tapestry	>5BLN	2018	0.49	6,678,300
		2019	0.46	6,877,300
		2020	0.70	7,924,200
Ted Baker	<1BLN	2018	0.19	638,170
		2019	0.94	774,325
		2020	0.70	547,702
TFG	<1BLN	2018	-	-
		2019	-11.51	547,991
		2020	-1.78	351,977
Tod's	<1BLN	2018	0.07	1,851,378
		2019	0.08	2,253,313
		2020	0.01	2,534,259

Source: ORBIS database

Appendix V – SDGs Keywords used in the analysis process

SDG1	"SDG1" , "No poverty" , "Child Labor Laws" , "Child Labour" , "Child Support Grant" , "Child Welfare" , "Conditional Cash Transfer" , "Conditional Cash Transfer Program" , "Development Aid" , "Development Aid" , "Development Assistance Committee" , "Disaster Risk Reduction" , "Eradicate Extreme Poverty" , "Extreme Poverty" , "Low Income" , "Low Income Countries" , "Low Income Population" , "Low Socioeconomic Status" , "Micro Finance Institutions" , "Microfinance" , "Official Development Assistance" , "Official Development Assistance" , "Poor Countries" , "Poverty Alleviation" , "Poverty Alleviation" , "Poverty Alleviation Program" , "Poverty Eradication" , "Poverty Levels" , "Poverty Line" , "Poverty Reduction Strategy Paper" , "Small Island Developing States" , "Social Assistance" , "Social Protection" , "Social Protection Floor" , "Social Protection Spending" , "Social Protection System" , "Social Safety Net" , "Social Security" , "Social Support" , "Social Welfare" , "Targeted Poverty Alleviation" , "Child Labor Regulations" , "Disaster Risk Reduction Strategies" , "Distributional Effect" , "Economic Resource AND Access" , "End Poverty" , "Financial Aid AND North-South Divide" , "Financial Aid AND Poor" , "Financial Aid AND Poverty" , "Financial Development AND Poverty" , "Financial Empowerment" , "Food Bank" , "Global Poverty" , "Income Poverty" , "International Poverty Line" , "Microfinanc*" , "Poverty Reduction" , "Resilience of The Poor" , "Safety Net AND Poor OR Vulnerable" , "Sendai Framework for Disaster Risk Reduction" , "Social Protection AND Access" , "Social Protection System" , "Social Protection Systems" , "Urban Poverty" , "Child Labor" , "CSG" , "Conditional Cash Transfer Programs; Conditional Cash Transfers; CCT; CCTs" , "Conditional Cash Transfer Programs" , "International Development Aid; Foreign Aid; International Aid" , "DAC" , "Microfinance Institutions; MFIs" , "Microcredit" , "Official Development Aid; ODA" , "Alleviating Poverty" , "Poverty Alleviation Programs; Poverty Alleviation Programme; Poverty Alleviation Programmes" , "Poverty Reduction Strategy Papers" , "SIDs" , "Social Protection Systems" , "Social Safety Nets" , "Distributional Effects" , "Economic Resources AND Access" , "Food Banks" , "Micro-Financ*" , "SDG1" , "No poverty"
SDG2	"SDG2" , "zero hunger" , "Agricultural Development" , "Agricultural Land" , "Agricultural Management" , "Agricultural Practices" , "Agricultural Production" , "Agricultural Production System" , "Agricultural Productivity" , "Agricultural Soils" , "Agricultural Systems" , "Agri-Food Supply Chain" , "Arable Land" , "Common Agricultural Policy" , "Conservation Agriculture" , "Crop" , "Crops" , "Crop Growth" , "Crop Management" , "Crop Productivity" , "Crop Yield" , "Cropping Systems" , "Dietary Diversity" , "European Food Safety Authority" , "Farming System" , "Farming Systems" , "Farmyard Manure" , "Fertilizer" , "Fertilizer Application Rates" , "Food Availability" , "Food Insecurity" , "Food Prices" , "Food Production" , "Food Production Systems" , "Food Security" , "Food Security Policy" , "Food Security Status" , "Food Security Survey Module" , "Food Supply" , "Food Supply Chain" , "Food Supply Chain Management" , "Food System" , "Genetically Modified Food" , "Global Food Security" , "Global Food Supply" , "Global Food System" , "Good Agricultural Practices " , "Grain Yield" , "Household Dietary Diversity Score" , "Household Food Insecurity" , "Household Food Insecurity Access Scale" , "Household Food Security" , "Household Food Security Status" , "Hunger" , "Integrated Soil Fertility Management " , "Irrigation" , "Land Management" , "Land Reform" , "Land Rights" , "Land Tenure" , "Local Food Production" , "Low Food Security" , "Malnutrition" , "Malnutrition Universal Screening Tool" , "Manure" , "Mini Nutritional Assessment " , "Nutritional Risk Screening" , "Nutritional Status" , "Obesity" , "Severe Acute Malnutrition" , "Smallholder" , "Smallholder Farmers" , "Smallholder Farming" , "Smallholder Farming Systems" , "Smallholder Farms" , "Soil Fertility" , "Soil Fertility Management" , "Supplemental Nutrition Assistance Program" , "Sustainable Agriculture" , "Sustainable Land Management" , "Urban Food Security" , "Acute Severe Maternal Undernutrition" , "Agricultural Export Subsidies" , "Agricultural Innovation" , "Agricultural Markets" , "Agricultural Production" , "Agriculture AND Potassium" , "Agroforestry Management" , "Agroforestry Practices" , "Doha Development Round" , "Early Life Nutrition" , "End Hunger" , "Fertili?er" , "Fertiliser Application Rates" , "Fertilizers" , "Food Commodity Market" , "Food Commodity Markets" , "Food Gap" , "Food Governance" , "Food Insecurity Experience Scale" , "Food Market AND Access" , "Food Market AND Development Governance" , "Food Market AND North South Divide" , "Food Market AND Restriction" , "Food Market AND Tariff" , "Food Nutrition Improvement" , "Food Price Anomalies" , "Food Price Volatility" , "Food Productivity" , "Food Reserves" , "Food Security AND Genetic Diversity" , "Food Supply Chain" , "Food Value Chain" , "Genetic Diversity AND Cultivated Plants" , "Genetic Diversity AND Domesticated Animals" , "Genetic Diversity AND Farmed Animals" , "Genetic Diversity AND Seeds" , "Genetically Modified Food" , "GMO AND Food" , "Hidden Hunger" , "High Nutrition Risk" , "Indicator of Food Price Anomalies" , "Land Right" , "Livestock AND Gene Bank" , "Local Breeds AND Extinction" , "Malnutrition Risk" , "Maternal Nutrition" , "Maternal Periconceptional Undernutrition" , "Maternal Undernutrition" , "Nutrition Risk" , "Periconceptional Undernutrition Alters Fetal Growth" , "Plant AND Gene Bank" , "Plant Bank" , "Prenatal Nutrition" , "Prepregnancy Nutritional Status" , "Productive Agriculture" , "Resilient Agricultural Practices" , "Resilient Agriculture" , "Small-Scale Food Producers" , "Sustainable Food Production" , "Total Official Flows AND Agriculture" , "Agricultural Productions" , "Agricultural Production Systems" , "Crops" , "Crop Yields" , "Cropping System" , "EFSA" , "FYM" , "Fertilizers" , "Food Supply Chains; FSC" , "Food Systems" , "Genetically Modified Foods; GMF" , "Grain Yields" , "HDDS" , "HFI" , "HFIAS" , "ISFM" , "Land Reforms" , "Manures" , "MNA" , "NRS" , "FIES" , "Extreme Food Price Volatility" , "IFPA" , "Land Rights" , "Livestock AND Gene Banks" , "Maternal Periconceptual Undernutrition" , "Plant AND Gene Banks" , "Plant Banks"

SDG3	"SDG3" , "Good Health and Wellbeing" , "Adolescent Birth Rate" , "AIDS" , "Alcohol Use" , "Alcoholism" , "Battered Child Syndrome" , "Cancer*" , "Cardiovascular Disease" , "Chagas" , "Child Abuse" , "Child Mortality" , "Child Neglect" , "Child Well-Being Index" , "Childbirth Complications" , "Cholera" , "Chronic Respiratory Disease" , "Communicable Disease" , "Contamination AND Death OR Illness" , "Dengue" , "Diabet*" , "Diarrhea" , "Dysentery" , "Ebola" , "Health Policy" , "Health Risk" , "Health System Access" , "Health System AND Access OR Accessible " , "Healthy Lifestyle" , "Hepatitis" , "HIV" , "Human AND Disease*" , "Human AND Health*" , "Human AND Illness*" , "Human AND Medicine*" , "Human AND Mortality" , "Inclusive Health" , "Indigenous And Health" , "Infant Mortality" , "Infectious Disease" , "Life Expectancy" , "Malaria" , "Maternal Health" , "Maternal Mortality" , "Measles" , "Mental Disorder" , "Mental Health" , "Neglected Disease" , "Neonatal Mortality" , "Obesity" , "Polio" , "Polio*" , "Postnatal Depression" , "Premature Mortality" , "Preventable Death" , "Preventable Deaths" , "Psychological Harm" , "Psychological Wellbeing" , "Public Health" , "Quality Adjusted Life Year" , "Schistosomiasis" , "Sexual Health" , "Sexually Transmitted Disease" , "Sleeping Sickness" , "Social Determinants of Health" , "Substance Abuse" , "Substance Addiction" , "Suicide" , "Tobacco Addiction" , "Tobacco Control" , "Tobacco Use" , "Traffic Accident" , "Tropical Disease" , "Tuberculosis" , "Typhoid Fever" , "Vaccin*" , "Water-Borne Disease" , "Youth Well-Being Index" , "Zika Virus" , "Acute Coronary Syndrome" , "Acute Respiratory Distress Syndrome" , "Acute Rheumatic Fever" , "Affordable Medicines" , "AIDS" , "Alcohol Abuse" , "Alcohol Consumption" , "Alcohol Use Disorder" , "Alzheimer'S Disease" , "Anemia" , "Antenatal Care" , "Antineoplastic Agent" , "Antiretroviral Therapy" , "Antiretroviral Therapy" , "Blood Pressure" , "Body Mass Index" , "Brain Injury" , "Breast Cancer" , "Breast Neoplasms" , "Cancer Cell" , "Cardiovascular Risk" , "Cardiovascular Risk Factors" , "Cause of Death" , "Child Deaths" , "Child Health" , "Chronic Disease" , "Chronic Obstructive Pulmonary Disease" , "Congenital Heart Disease" , "Contraception" , "Contraceptive Use" , "Coronary Artery Disease" , "COVID-19" , "Depression" , "Diabetes" , "Diet" , "Disease Burden" , "Disease Transmission" , "District Health Boards" , "Drug Safety" , "Drug Users" , "Ebola" , "Emerging Infectious Disease" , "Epidemic" , "Epidemiology" , "Essential Health-Care Services AND Access" , "Essential Medicines AND Access" , "Essential Vaccines AND Access" , "Family Planning" , "Fetal Growth Restriction" , "Gestational Age" , "Gestational Diabetes" , "H1N1" , "Health Care" , "Health Care Delivery" , "Health Care Quality" , "Health Emergency Preparedness" , "Health Outcomes" , "Health Service" , "Health Services" , "Health System" , "Health Worker" , "Health Worker Density" , "Heart Disease" , "Heart Failure" , "Hepatitis" , "HIV" , "HIV Infection" , "Huntington's Disease" , "Hypertension" , "Immunology" , "Inflammatory Bowel Disease" , "Intensive Care Unit" , "International Health Policy" , "International Health Regulations" , "Live Birth Rate" , "Low Birth Weight" , "Lung Cancer" , "Lung Disease" , "Major Depressive Disorder" , "Maternal Mortality" , "Maternal Mortality Rate" , "Medical Care" , "Medicine" , "Mental Disease" , "Mental Health Care" , "Mental Health Service" , "MERS" , "Myocardial Infarction" , "Narcotic Drug Abuse" , "Neglected Tropical Disease" , "Neonatal Intensive Care" , "Neonatal Mortality Rate" , "Neoplasm" , "Nonalcoholic Fatty Liver Disease" , "Non-Communicable Disease" , "Non-Small Cell Lung Cancer" , "Official Development Assistance AND Medical OR Basic Health" , "Pandemic" , "Parkinson'S Disease" , "Patient Satisfaction" , "Pneumonia" , "Pollution AND Death* OR Illness*" , "Post-Traumatic Stress Disorder" , "Pregnancy" , "Pregnant Women" , "Primary Care" , "Reproductive Health" , "Reproductive Health Care" , "Respiratory Distress Syndrome" , "Respiratory Tract Infection" , "Rheumatic Heart Disease" , "SARS" , "Severity of Illness Index" , "Sexual And Reproductive Health-Care" , "Sexual Risk Behavior" , "Sexually Transmitted Infection" , "Smoking Cessation" , "Substance Use Disorders" , "Sudden Infant Death Syndrome" , "Suicide Mortality Rate" , "The Trips Agreement And Public Health" , "Traffic Accident AND Death* OR Injur*" , "Traumatic Brain Injury" , "Tumor" , "Tumor Necrosis Factor" , "Under-5 Mortality" , "Universal Health" , "Universal Health Coverage" , "Vaccination" , "Vaccine" , "Vaccine Preventable Diseases" , "Water, Sanitation and Hygiene" , "Water-Borne Disease" , "World Health Organization" , "World Obesity Federation" , "BCS" , "Cardiovascular Diseases; CVD; CVDs" , "Child Death" , "Child Wellbeing Index" , "Chronic Respiratory Diseases; CRD, CRDs" , "Communicable Diseases" , "Pollution AND Death OR Illness" , "Diarrhoea" , "Health Care Policy" , "Health Risks" , "Accessible Health System; Health Services Accessibility" , "Human Immunodeficiency Virus" , "Infectious Diseases" , "Life Expectancies" , "Mental Disease; Mental Disorders; Mental Illness; Mental Illnesses; Psychiatric Disorder" , "Neglected Diseases" , "Poliomyelitis" , "Post-Natal Depression" , "Preventable Deaths" , "Psychological Well-Being; Psychological Well Being" , "Quality-Adjusted Life-Year; QALY" , "Sexually Transmitted Diseases; STD, STDs" , "African Trypanosomiasis" , "Drug Abuse" , "Drug Addiction" , "Traffic Accidents" , "Tropical Diseases" , "Typhoid" , "Water Borne Disease; Water Borne Diseases; Water-Borne Diseases" , "Youth Wellbeing Index" , "ZKV" , "ACS" , "ARDS" , "Acquired Immunodeficiency Syndrome" , "Alzheimer Disease; AD" , "Antineoplastic Agents" , "Antiretroviral Treatment; Highly Active Antiretroviral Therapy; Combined Antiretroviral Therapy; ART" , "BMI" , "Cancer Cells" , "CVD Risk Factors" , "COPD" , "CHD" , "Contraceptive Use" , "Coronary Heart Disease; CAD, CHD" , "Coronavirus Disease 2019" , "Diabetes Mellitus; Type 1 Diabetes; Type 2 Diabetes; DM" , "Ebola Virus Disease" , "Emerging Infectious Diseases; EID" , "Epidemics" , "Healthcare" , "Health Care Delivery System; Health Care Delivery Systems" , "Health Services" , "Healthcare Services; Health Care Services" , "Health Care System" , "Health Care Workers; Healthcare Professionals; Health Care Personnel" , "Congestive Heart Failure" , "Hepatitis-B; Hepatitis-C" , "HIV-1; HIV-2; Human Immunodeficiency Virus" , "Hiv Infections; Human Immunodeficiency Virus Infection; Human Immunodeficiency Virus Infections" , "High Blood Pressure; HBP; HT; HTN" , "Inflammatory Bowel Disease; LBD" , "ICU" , "IHR" , "Live Birth Rates" , "Lung Carcinoma" , "Major Depression; MDD" , "Maternal Death" , "Maternal Mortality Ratio" , "Medicines" , "Mental Health Services" , "Middle East Respiratory Syndrome" , "Acute Myocardial Infarction; Heart Infarction; MI" , "Neglected Tropical Diseases; NTD, NTDs" , "Neonatal Intensive Care Unit; NICU" , "Neoplasms" , "NAFLD" , "Non-Communicable Diseases; NCD, NCDs" , "Non-Small Cell Lung Carcinoma; NSCLC" , "Pandemics" , "Parkinson Disease; PD" , "Contamination AND Death* OR Illness*" , "PTSD" , "Primary Health Care; Primary Healthcare" , "Reproductive Healthcare" , "RDS" , "Respiratory Tract Infections; RTI " , "Severe Acute Respiratory Syndrome" , "Sexual Risk Behaviors; Sexual Risk Behaviour; Sexual Risk Behaviours" , "Sexually Transmitted Infections; STI, STIs" , "SIDS" , "Traffic Accidents AND Death* OR Injur*" , "Tumors" , "TNF" , "Under-Five Mortality" , "UHC" , "Vaccines"
SDG4	"SDG4" , "Quality Education" , "Academic Achievement" , "Adult Basic Education" , "Basic Education" , "Basic Education Development Index" , "Compulsory Secondary Education" , "Dynamic Indicators of Basic Early Literacy Skills" , "Early Childhood Development" , "Early Childhood Education" , "Early Childhood Education Policy" , "Early Childhood Special Education" , "Early Years Learning Framework" , "Education Institutions" , "Education Policy" , "Education Reform" , "Education Reform" , "Education Research" , "Educational Attainment" , "Educational Inequality" , "Educational Status" , "Elementary School" , "European Higher Education Area" , "Formal Education" , "Global Citizenship Education" , "Global Education Reform Movement" , "High School" , "High School Education" , "High School Graduation Rates" , "Higher Education" , "Higher Education Institutions" , "Higher Education Policy" , "Higher Education Reform" , "Inclusive Education" , "Individualized Education Program" , "Individuals with Disabilities Education Improvement Act" , "Initial Teacher Education" , "Inservice Teacher Training" , "Learning Environment" , "Learning Opportunities" , "Learning Outcomes" , "Lifelong Learning" , "Literacy" , "Literacy Skills" , "Lower Secondary Education" , "Massive Open Online Courses" , "National Assessment Program – Literacy and Numeracy" , "Open Educational Resources" , "Open Educational Resources " , "Pedagogical Content Knowledge" , "Pre-Service Teacher Education" , "Primary Education" , "Primary School" , "Professional Development" , "Programme for International Student Assessment " , "Public Education" , "Public Schools" , "School Attendance" , "School Enrollment" , "Science Technology Engineering Mathematics" , "Secondary Education" , "Secondary School" , "Special Education" , "Teacher Education" , "Teacher Training" , "Tertiary Education" , "The Dundee Ready Educational Environment Measure" , "Universal Primary Education" , "Upper Secondary Education" , "Upper Secondary School" , "Vocational Education" , "Vocational Training" , "Access AND Technical Education" , "Access AND Tertiary Education" , "Access AND Vocational Education" , "Adult Literacy" , "Affordable Education" , "Child Labour" , "Childhood Curriculum" , "Completion Rate AND Primary Education OR Secondary Education" , "Culturally Diverse Students" , "Curriculum Reform" , "Developing Countries AND School Effects" , "Development Aid AND Teacher Training" , "Discriminatory" , "Early Childhood Care" , "Early Childhood Curriculum" , "Early Childhood Education" , "Early Childhood Pedagogy" , "Education Dropouts" , "Education Exclusion" , "Education Expenditure" , "Education Facilities" , "Education Indicators" , "Education Policy" , "Education Quality" , "Educational Access" , "Educational Enrolment" , "Educational Environment" , "Educational Financial Aid" , "Educational Gap" , "Educational Governance" , "Educational Outcomes" , "Educational Reform AND Developing Countries" , "Environmental Education" , "Equal Access AND Education" , "Equal Education" , "Equal Opportunities" , "Foreign Aid" , "Formal Education" , "Gender Disparity AND Education" , "Global Citizenship" , "Inclusive Education System" , "Information And Communications Technology Skills" , "International Education" , "Learning Opportunities AND Gender Disparities OR Empowerment" , "Lifelong Learning Opportunities" , "Māori And Pacific Admission Scheme" , "National Education Policies" , "Non-Formal Education" , "Numeracy" , "Numeracy Rate" , "Official Development Assistance AND Scholarship* OR Education" , "Organized Learning" , "Pasifika Early Childhood Education" , "Poverty Trap AND Schooling" , "Pre-Primary Education" , "Pre-Service Early Childhood Education" , "Professional Learning" , "Safe OR Non-Violent OR Inclusive OR Effective AND Learning Environment*" , "Safety In School" , "Scholarships" , "School Curriculum" , "School Enrolment" , "School Enrolment" , "School Safety" , "Schooling AND Ethnic Disparities" , "Schooling AND Gender Disparities" , "Schooling AND Racial Disparities" , "Special Education Needs" , "Special Education Policy" , "Student Assessment" , "Sustainable Development Education" , "Te Whāriki" , "Teacher Attrition" , "Teacher Training AND Developing Countries" , "Technology Education" , "Tertiary Institutions" , "Universal Education" , "Women Empowerment" , "Youth Empowerment" , "Dibels" , "ECD" , "ECE" , "Educational Institutions" , "Educational Policies; Educational Policies; Educational Policy" , "Educational Reform" , "Educational Research" , "EHEA" , "GCE" , "High Schools" , "HEIS" , "IEP" , "ITE" , "MOOCS" , "NAPLAN" , "OER" , "PCK" , "Primary Schools" , "STEM" , "Secondary Schools" , "Dreem" , "Child Labor" , "Educational Policies" , "Educational Enrollment" , "Formal Traning" , "Gender Disparities AND Education" , "ICT Skills" , "Learning Opportunity AND Gender Disparities OR Empowerment" , "MAPAS" , "Non-Formal Traning" , "School Enrollment"

SDG5	"SDG5" , "Gende Equality" , "Adolescent Sexual and Reproductive Health" , "Battered Women" , "Child Sexual Abuse" , "Child Sexual Exploitation" , "Commercial Sexual Exploitation" , "Commercial Sexual Exploitation of Children" , "Domestic Minor Sex Trafficking" , "Domestic Violence" , "Domestic Violence Abuse " , "Family Violence" , "Female Genital Mutilation" , "Female Labour Force" , "Female Labour Force Participation" , "Female Sex Workers " , "Feminism" , "Gender Discrimination" , "Gender Disparities" , "Gender Equality" , "Gender Equity" , "Gender Gap" , "Gender Inequality" , "Gender Wage Gap" , "Gender-Based Violence" , "International Human Rights Law" , "Intimate Partner Violence" , "Intimate Partner Violence Against Women" , "Lesbian Gay Bisexual Transgender" , "Physical, Psychological and Sexual Violence" , "Psychological Physical Sexual Emotional Violence" , "Reproductive Health" , "Reproductive Rights" , "Sex Offenses" , "Sexism" , "Sexual Abuse" , "Sexual and Reproductive Health" , "Sexual and Reproductive Health and Rights" , "Sexual and Reproductive Health Care" , "Sexual Assault" , "Sexual Crime" , "Sexual Education" , "Sexual Gender-Based Violence" , "Sexual Violence" , "Spouse Abuse" , "Violence Against Women Act" , "Women's Empowerment" , "Women's Rights" , "Access AND Family Planning Services" , "Access AND Reproductive Healthcare" , "Agrarian Feminism" , "Antiwomen" , "Benevolent Sexism" , "Child Marriage" , "Contraceptive Behaviour" , "Contraceptive Use" , "Discrimination AND Women OR Girls" , "Early Marriage" , "Employment Equity" , "Empower Girls" , "Empower Women" , "Empowerment of Women" , "Equality AND Divorce Rights" , "Equality AND Reproductive Rights" , "Equality AND Sexual Rights" , "Female Entrepreneurship" , "Female Exploitation" , "Female Genital Mutilation" , "Female Genital Mutilation" , "Female Infanticide" , "Female Leader" , "Female Managers" , "Female Ownership" , "Female Political Participation" , "Female Politician" , "Female Smallholder" , "Feminist Critiques" , "Forced Marriage" , "Forced Marriages" , "Forced Prostitution" , "Foreign Aid AND Women's Empowerment" , "Gender Inequality" , "Gender Injustice" , "Gender Mainstreaming" , "Gender Parity" , "Gender Participation" , "Gender Quota" , "Gender Segregation" , "Gender-Based Violence" , "Gender-Responsive Budgeting" , "Honour Killing" , "Hostile Sexism" , "Household Equity" , "Human Trafficking" , "Information and Communications Technology AND Women OR Female" , "Intra-Household Allocation" , "Managerial Positions AND Women OR Female" , "Microfinance" , "Misogyny" , "Occupational Segregation" , "Physical and Sexual Abuse" , "Physical and Sexual Violence" , "Physical Violence AND Women OR Girls" , "Psychological Violence AND Women OR Girls" , "Reproductive Health Care" , "Sexual and Reproductive Health" , "Sexual and Reproductive Health Rights" , "Sexual and Reproductive Primary Care" , "Sexual Exploitation" , "Sexual Exploitation and Abuse" , "Unpaid Care Work AND Gender Inequality" , "Unpaid Work AND Gender Inequality" , "Violence Against Women" , "Violence AND Women OR Girls" , "Women AND Violence" , "Women In Leadership" , "Women Labour Force Participation" , "Women's Autonomy" , "Women's Economic Development" , "Womens' Employment" , "Women's Empowerment" , "Women's Livelihood" , "Women's Ownership" , "Women's Power" , "Women's Sexual and Reproductive Health" , "Women's Underrepresentation" , "Women's Unemployment" , "Battered Woman" , "CSA" , "CSE" , "CSEC" , "DVA" , "Female Genital Cutting; Female Genital Mutilation/Cutting; FGM; FGMC; FGC" , "Female Labor Force Participation" , "FSWS" , "Gender Inequalities" , "GBV" , "Sexual Intimate Partner Violence; IPV" , "IPVAW" , "LGBT" , "Women's Sexual and Reproductive Health; Reproductive and Sexual Health; SRH" , "SRHR" , "Sex Education" , "SGBV" , "VAWA" , "Anti-Women" , "Child Marriages" , "Female Infanticides" , "Women's Political Participation" , "Gender Injustices" , "Honor Killing; Honour Killings; Honor Killings" , "ICT and Women OR Female" , "Girl* AND Violence" , "Female Leadership" , "Women Labor Force Participation" , "Female Employment" , "Girls' Empowerment; Female Empowerment" , "Female Unemployment"
SDG6	"SDG6" , "Clean Water And Sanitation" , "Access AND Safe Drinking Water" , "Activated Sludge" , "Activated Sludge Process" , "Advanced Wastewater Treatment" , "Aquatic Ecosystems" , "Aquatic Environment" , "Aquifer" , "Chemical Oxygen Demand" , "Clean Drinking Water" , "Clean Water" , "Desalination" , "Domestic Wastewater Treatment" , "Drinking Water" , "Drinking Water Distribution" , "Drinking Water Distribution Systems" , "Drinking Water Quality" , "Drinking Water Sources" , "Drinking Water Supply" , "Drinking Water Treatment" , "Drinking Water Treatment Plants" , "Fresh Water" , "Freshwater Resources" , "Groundwater Pollution" , "Groundwater Quality" , "Groundwater Resources" , "Integrated Water Resources Management" , "Irrigation Water" , "Membrane Bioreactor" , "Moving Bed Biofilm Reactor" , "Potable Water" , "Quality Drinking Water" , "Quality Water" , "Recycled Water" , "Recycled Water" , "Reverse Osmosis" , "Safe Drinking Water" , "Sewage Treatment" , "Sewage Treatment Plant" , "Sewage Treatment Plants" , "Soil Water Assessment Tool" , "Sustainable Water Management" , "Tap Water" , "Total Suspended Solids" , "Treated Water" , "Urban Wastewater" , "Urban Wastewater Treatment" , "Urban Wastewater Treatment Plants" , "Waste Water" , "Waste Water Management" , "Waste Water Treatment" , "Wastewater" , "Wastewater Effluent" , "Wastewater Reclamation" , "Wastewater Reuse" , "Wastewater Treatment" , "Wastewater Treatment Facility" , "Wastewater Treatment Plant" , "Wastewater Treatment Process" , "Wastewater Treatment System" , "Wastewater Treatment Technology" , "Water Analysis" , "Water Availability" , "Water Bodies" , "Water Conservation" , "Water Contamination" , "Water Demand" , "Water Desalination" , "Water Distribution System" , "Water Efficiency" , "Water Environment" , "Water Filtration" , "Water Footprint" , "Water Management" , "Water Pollutant" , "Water Pollution" , "Water Purification" , "Water Quality" , "Water Quality Index" , "Water Quality Parameters" , "Water Quality Standards" , "Water Recycling" , "Water Resource" , "Water Resource Management" , "Water Reuse" , "Water Scarcity" , "Water Source" , "Water Stress" , "Water Supply" , "Water Supply System" , "Water Treatment" , "Water Treatment Plants" , "Water Treatment Processes" , "Water Use" , "Water, Sanitation and Hygiene" , "Affordable Drinking Water" , "Black Water" , "Blue Water" , "Clean AND Drinking Water" , "Clean AND Water Source" , "Dairy Farm Wastewater" , "Domestic Wastewater" , "Drinking Water Services" , "Equitable Sanitation" , "Freshwater AND Groundwater" , "Freshwater AND Sanit*" , "Freshwater AND Sewer*" , "Freshwater AND Waste Water AND "Treatment"" , "Freshwater AND Water Conservation" , "Freshwater AND Water Footprint" , "Freshwater AND Water Infrastructure" , "Freshwater AND Water Pollution" , "Freshwater AND Water Purification" , "Freshwater AND Water Quality AND Pollutant" , "Freshwater AND Water Security AND "Treatment"" , "Freshwater AND Water Shortage AND "Treatment"" , "Freshwater AND Water Use" , "Freshwater Availability" , "Freshwater Ecosystems" , "Green Water" , "Grey Water" , "Hand-Washing Facility" , "Inadequate Water Supply" , "Industrial Wastewater" , "Industrial Wastewater Treatment" , "Lake Water Quality" , "Official Development Assistance AND Water AND Sanitation " , "Open Defecation" , "Pit Lake Water Quality" , "Protect* AND Aquifer*" , "Protect* AND Water AND Ecosystem*" , "Protect* AND Wetland*" , "Restor* AND Water AND Ecosystem*" , "Restor* AND Wetland*" , "River Bank Filtration" , "Safe AND Drinking Water" , "Safe AND Water Access" , "Sanitation Services" , "Sustainable Supply AND Freshwater" , "Sustainable Withdrawals AND Freshwater" , "Transboundary Cooperation" , "Ultrafiltration" , "Untreated Wastewater" , "Wastewater Treatment Systems" , "Water AND Ecosystem AND Endocrine Disruptor AND Not Marine" , "Water AND Ecosystem AND Protection of AND Not Marine" , "Water AND Quality AND Antifouling Membrane" , "Water AND Quality AND Aquatic Ecotoxicology" , "Water AND Quality AND Aquatic Toxicology" , "Water AND Quality AND Clean Water" , "Water AND Quality AND Hygienic Toilet" , "Water AND Quality AND Water Management" , "Water AND Quality AND Water Supply" , "Water AND Quality AND Water-Use Efficiency" , "Water AND Resource AND Antifouling Membrane" , "Water AND Resource AND Aquatic Ecotoxicology" , "Water AND Resource AND Aquatic Toxicology" , "Water AND Resource AND Clean Water" , "Water AND Resource AND Hygienic Toilet" , "Water AND Resource AND Water Management" , "Water AND Resource AND Water Supply" , "Water AND Resource AND Water-Use Efficiency" , "Water AND Sanitation & Hygiene AND Antifouling Membrane" , "Water AND Sanitation & Hygiene AND Aquatic Ecotoxicology" , "Water AND Sanitation & Hygiene AND Aquatic Toxicology" , "Water AND Sanitation & Hygiene AND Clean Water" , "Water AND Sanitation & Hygiene AND Hygienic Toilet" , "Water AND Sanitation & Hygiene AND Water Management" , "Water AND Sanitation & Hygiene AND Water Supply" , "Water AND Sanitation & Hygiene AND Water-Use Efficiency" , "Water AND Sanitation AND Hygiene AND Antifouling Membrane" , "Water AND Sanitation AND Hygiene AND Aquatic Ecotoxicology" , "Water AND Sanitation AND Hygiene AND Aquatic Toxicology" , "Water AND Sanitation AND Hygiene AND Clean Water" , "Water AND Sanitation AND Hygiene AND Hygienic Toilet" , "Water AND Sanitation AND Hygiene AND Water Management" , "Water AND Sanitation AND Hygiene AND Water Supply" , "Water AND Sanitation AND Hygiene AND Water-Use Efficiency" , "Water and Sanitation Management" , "Water AND Water Management AND Pollutant Removal" , "Water AND Water Management AND Pollution Remediation" , "Water Cooperation" , "Water Ecosystems" , "Water Harvesting" , "Water Pollution AND Waste Water AND "Treatment"" , "Water Resources Management" , "Water Sources" , "Water Supplies" , "Water Supply Resilience" , "Water Supply Systems" , "Water-Related Ecosystems" , "Water-Use Efficiency" , "Potable Water" , "Drinking Water Supplies" , "Integrated Water Resource Management; IWRM" , "MBR" , "MBBR" , "Reclaimed Water" , "STPS" , "Wastewater Treatment Facilities" , "Wastewater Treatment Plants; Waste Water Treatment Plant; Waste Water Treatment Plants; WWTP; WWTPs" , "Wastewater Treatment Processes" , "Wastewater Treatment Systems" , "Water Distribution Systems" , "Water Resources" , "Water Resources Management" , "Water Sources" , "Freshwater AND Ground Water; Freshwater AND Ground-Water" , "Freshwater AND Wastewater AND "Treatment"" , "Freshwater AND Water Uses" , "Fresh Water Availability" , "Water AND Ecosystem AND Endocrine Disruptors AND Not Marine; Water AND Eco-System AND Endocrine Disruptor AND Not Marine; Water AND Eco-System AND Endocrine Disruptor AND Not Marine" , "Water AND Eco-System AND Protection of AND Not Marine" , "Water AND Quality AND Antifouling Membranes; Water AND Quality AND Anti-Fouling Membrane; Water AND Quality AND Anti-Fouling Membranes" , "Water AND Quality AND Water Ecotoxicology" , "Water AND Quality AND Water Toxicology" , "Water AND Quality AND Hygienic Toilets" , "Water AND Quality AND Water Supplies" , "Water AND Resource AND Antifouling Membranes; Water AND Resource AND Anti-Fouling Membrane; Water AND Resource AND Anti-Fouling Membranes" , "Water AND Resource AND Water Ecotoxicology" , "Water AND Resource AND Water Toxicology" , "Water AND Resource AND Hygienic Toilets" , "Water AND Resource AND Water Supplies" , "Water AND Sanitation & Hygiene AND Antifouling Membranes; Water AND Sanitation & Hygiene AND Anti-Fouling Membrane; Water AND Sanitation & Hygiene AND Anti-Fouling Membranes" , "Water AND Sanitation & Hygiene AND Water Ecotoxicology" , "Water AND Sanitation & Hygiene AND Water Toxicology" , "Water AND Sanitation & Hygiene AND Hygienic Toilets" , "Water AND Sanitation & Hygiene AND Water Supplies" , "Water AND Sanitation and Hygiene AND Antifouling Membranes; Water AND Sanitation AND Hygiene AND Anti-Fouling Membrane; Water AND Sanitation AND Hygiene AND Anti-Fouling Membranes" , "Water AND Sanitation and Hygiene AND Water Ecotoxicology" , "Water AND Sanitation and Hygiene AND Water Toxicology" , "Water AND Sanitation and Hygiene AND Hygienic Toilets" , "Water AND Sanitation AND Hygiene AND Water Supplies"

SDG7	"SDG7" , "Affordable and Clean Energy" , "Alternative Energy Sources" , "Battery Electric Vehicles" , "Battery Energy Storage System" , "Biofuel" , "Blade Element Momentum Theory" , "Bulk Heterojunction Solar Cells" , "Clean Energy" , "Compressed Air Energy Storage" , "Concentrated Solar Power" , "Dye-Sensitized Solar Cells " , "Energy Conversion System" , "Energy Efficiency" , "Energy Management System" , "Energy Storage System" , "Energy Storage System " , "Fuel Cell" , "Home Energy Management System" , "Horizontal Axis Wind Turbine" , "Hybrid Electric Vehicles" , "Hybrid Energy Storage System" , "Hybrid Energy System" , "Hybrid Power Generation System" , "Hybrid Renewable Energy System" , "Hybrid Renewable Energy System" , "Hydroelectric Power" , "Intermittent Renewable Energy" , "Intermittent Renewable Energy Sources" , "Large Scale Wind Power" , "Large-Scale Wind Power Integration" , "Lithium Ion Battery" , "Maximum Power Point Tracking" , "National Renewable Energy Laboratory" , "Offshore Wind Energy" , "Offshore Wind Farm" , "Offshore Wind Turbines" , "Organic Solar Cells" , "Permanent Magnet Synchronous Generator" , "Perovskite Solar Cells" , "Photocatalytic Water Splitting" , "Photoelectrochemical Pec Water Splitting" , "Photoelectrochemical Water Splitting" , "Photovoltaic" , "Photovoltaic Cells" , "Photovoltaic System" , "Plugin Electric Vehicles" , "Plugin Hybrid Electric Vehicle" , "Polymer Solar Cells" , "Renewable Energy" , "Renewable Energy Generation" , "Renewable Energy Production" , "Renewable Energy Source" , "Renewable Energy System" , "Renewable Energy Technologies" , "Renewable*" , "Smart Grid" , "Smart Grid Technology" , "Smart Meter" , "Smart Power Grids" , "Solar Cell" , "Solar Energy" , "Solar Energy Conversion" , "Solar Energy Conversion Efficiency" , "Solar Power" , "Superconducting Magnetic Energy Storage" , "Sustainable Energy" , "Thermal Energy" , "Thermal Energy Storage" , "Thermal Power Plants" , "Variable Speed Wind Turbine" , "Vertical Axis Wind Turbine" , "Water Splitting" , "Wind Energy" , "Wind Energy Conversion" , "Wind Energy Conversion System" , "Wind Energy System" , "Wind Farm" , "Wind Power Development" , "Wind Power Generation" , "Wind Power Generation System" , "Wind Power Integration" , "Wind Power Penetration" , "Wind Power Plants" , "Wind Power System" , "Wind Turbine" , "Wind Turbine Blade" , "Wind Turbine Generator" , "Wind Turbine Generator System" , "Wind Turbine Power Curve" , "2000 Watt Society" , "Advanced Fossil-Fuel Technology" , "Affordable Electricity" , "Affordable Energy" , "Alternative Energy" , "Battery Energy Storage" , "Clean Cooking Fuel" , "Clean Energy Development" , "Clean Energy Research" , "Clean Energy Technology" , "Clean Fuel" , "Clean Fuel" , "Clean Fuel Technology" , "Clean Fuels" , "Cleaner Fossil Fuel Technology" , "Cleaner Fossil-Fuel Technology" , "Dielectric Elastomer Generators" , "Diffuser-Augmented Wind Turbine " , "District Heat" , "Domestic Energy Consumption" , "Electric Vehicle " , "Electricity Consumption" , "Electromagnetic Energy Harvester" , "Energiewende" , "Energy Access" , "Energy Conservation" , "Energy Consumption" , "Energy Development AND Developing Countries" , "Energy Equity" , "Energy Governance" , "Energy Infrastructure" , "Energy Intensity AND GDP" , "Energy Intensity AND Primary Energy" , "Energy Justice" , "Energy Ladder" , "Energy Policy" , "Energy Poverty" , "Energy Research" , "Energy Security" , "Energy Storage" , "Energy Technology" , "Energy Transition" , "Foreign Development Aid AND Renewable Energy" , "Fuel Poverty" , "Fuel Switching" , "Galloping-Based Piezoelectric Energy Harvester" , "Heat Network" , "Hybrid Energy" , "Hybrid Energy Storage" , "Hydroelectric" , "Hydrogen Production" , "Life-Cycle Assessment" , "Lithium-Ion Battery" , "Low-Carbon Society" , "Modern Electricity" , "Modern Energy" , "Official Development Assistance AND Electricity" , "Photocatalytic Activity" , "Photochemistry AND Renewable Energy" , "Power Consumption" , "Reliable Electricity" , "Reliable Energy" , "Renewable Energy" , "Renewable Energy Resources" , "Renewable Power" , "Residential Energy Consumption" , "Rural Electrification" , "Smart Microgrid" , "Solar Radiation AND Electricity" , "Sustainable Energy Services" , "Wind Power" , "Wind Turbine System" , "BEVs" , "Battery Energy Storage Systems; BESS" , "CAES" , "DSSCs; DSCs" , "EMS" , "Energy Storage Systems" , "ESS" , "Fuel Cells" , "Horizontal Axis Wind Turbines; HAWT" , "Hybrid Electric Vehicle; HEV; HEVs" , "Hybrid Power System" , "Hybrid Renewable Energy Systems" , "Hybrid Renewable Energy Systems; HRES" , "Lithium Ion Batteries; Lithium-Ion Battery; Lithium-Ion Batteries; LIB; LIBs" , "MPPT" , "NREL" , "Offshore Wind Farms" , "PMSG" , "PEVS" , "Plugin Hybrid Electric Vehicles; PHEVs" , "Renewable Energies" , "Renewable Energy Sources; RES" , "Renewable Energy Systems" , "Smart Grids" , "Smart Grid Technologies" , "Smart Meters" , "Solar Cells" , "Variable Speed Wind Turbines" , "VAWT" , "Wind Power" , "Wind Energy Systems" , "Wind Farms" , "Wind Power Generation Systems" , "Wind Power Plant" , "Wind Power Systems" , "Wind Turbines; WT" , "Wind Turbine Blades" , "Wind Turbine Generators; WTG; WTGs" , "Clean Fuels" , "Diffusern Augmented Wind Turbine; DAWT" , "District Heating" , "Electric Vehicles; EV, EVs" , "EMEH" , "Galloping Based Piezoelectric Energy Harvester" , "Life Cycle Assessment; Life-Cycle Assessments; Life Cycle Assessments" , "Lithium-Ion Batteries" , "Smart Microgrids; Smart Micro-Grid; Smart Micro-Grids"
SDG8	"SDG 8" , "Decent Work And Economic Growth" , "*Touris* AND GDP" , "Active Labour Market Policies" , "Circular Economy" , "Circular Economy" , "Computable General Equilibrium" , "Computable General Equilibrium Model" , "Economic Activity" , "Economic Development" , "Economic Development Level" , "Economic Growth" , "Economic Growth" , "Economic Growth AND Renewable Energy" , "Economic Growth AND Trade Openness" , "Economic Growth Rates" , "Economic Impact" , "Ecotourism" , "Electricity Consumption AND Economic Growth" , "Financial Development AND Economic Growth" , "Financial Development Trade Openness" , "General Equilibrium Model AND Econ*" , "Gross Domestic Product Growth" , "Gross Domestic Product per Capita" , "Human Capital Economic Growth" , "Job Creation" , "Job Destruction" , "Labour Market Institutions" , "Labour Market" , "Local Economic Development" , "Micro And Small Enterprises" , "Micro, Small And Medium Enterprises" , "Micro-Enterprises" , "Microfinanc* " , "Microfinance" , "Microfinance Institutions" , "Negative Impact AND Economic Growth" , "Real Gross Domestic Product" , "Small And Medium Enterprise" , "Small, Medium And Micro Enterprises" , "Socio-Economic Development" , "Sustainable Economic" , "Sustainable Economic Development" , "Sustainable Economic Growth" , "Sustainable Growth" , "Sustainable Tourism AND GDP" , "Sustainable Tourism Development" , "Tourism AND Economic Growth" , "Tourism Development AND Gdp" , "Trade Union" , "Trade Union Movement" , "Access to Banking" , "Aid for Trade" , "Average Hourly Earnings" , "Carbon Offset" , "Child Labour" , "Child Soldier" , "Child Soldiers" , "Climate Action" , "Community-Based Tourism" , "Community-Based Tourism" , "Cradle to Cradle AND Economy" , "Decent Job" , "Decent Work" , "Domestic Financial Institutions" , "Domestic Material Consumption" , "Economic Benefits" , "Economic Decoupling" , "Economic Development Policy" , "Economic Development Strategy" , "Economic Diversification" , "Economic Globalisation" , "Economic Growth AND Employment" , "Economic Growth AND Productivity" , "Economic Growth Rate" , "Economic Productivity" , "Employment Contracts Act" , "Employment Opportunities" , "Employment Policy" , "Employment Protection" , "Entrepreneurship" , "Equal Income" , "Equal Pay for Work of Equal Value" , "Equal Wages" , "Fatal Occupational Injuries" , "Financial Inclusion" , "Forced Labour" , "Foreign Development Investment" , "Full Employment" , "Global Jobs" , "Global Jobs Pact" , "Global Trade" , "Growth Rate AND Real Gdp" , "Human Trafficking" , "Inclusive Economic Growth" , "Inclusive Economy" , "Inclusive Growth" , "Informal Employment" , "International Labour Organization" , "Labour Market" , "Labour Market Disparities" , "Labour Market Institution" , "Labour Right" , "Labour rights" , "Living Wage" , "Local Economic Development Policy" , "Low-Carbon Economy" , "Material Footprint" , "Medium Enterprise" , "Medium Entrepreneur" , "Micro Finance" , "Micro-, Small- And Medium-Sized Enterprises" , "Microcredit*" , "Microenterprise*" , "Migrant Workers" , "Minimum Wage" , "Modern Slavery" , "Non-Fatal Occupational Injuries" , "Not In Education, Employment, or Training" , "Offset Project" , "per Capita Gross Domestic Product" , "Precarious Employment" , "Precarious Job" , "Productive Employment" , "Quality Job" , "Quality Jobs" , "Rate of Economic Growth" , "Resource Efficiency" , "Rural Economy" , "Safe Work" , "Safe Working Environment" , "Safe Working Environments" , "Secure Work" , "Secure Working Environments" , "Small Business" , "Small Enterprise" , "Small Enterprises" , "Small Entrepreneur" , "Social Entrepreneurship" , "Stable Employment" , "Stable Jobs" , "Starting Entrepreneur" , "Sustainable Tourism" , "Sustainable Tourism Policy" , "The 10-Year Framework of Programmes on Sustainable Consumption And Production" , "The Enhanced Integrated Framework for Trade-Related Technical Assistance to Least Developed Countries" , "The International Labour Organization" , "Total Factor Productivity" , "Total Factor Productivity Growth" , "Tourism AND GDP" , "Tourism Economics" , "Tourism Employment" , "Unemployment" , "Unemployment Rate" , "Work Opportunities" , "Working Poor" , "World Trade" , "Youth Employment" , "Youth Minimum Wage" , "Youth Unemployment" , "ALMPS" , "CGE Model" , "Economic Activities" , "Economic Growths" , "Economic Growth AND Renewable Energy Consumption" , "Economic Growth Electricity Consumption" , "Economic Growth AND Financial Development" , "GDP Growth" , "GDP per Capita" , "Labor Market; Labour Markets; Labor Markets" , "MSES" , "MSMES" , "Micro-Financ* " , "MFIS" , "Real GDP" , "Small and Medium Enterprises; Small and Medium-Sized Enterprise; Small and Medium-Sized Enterprises; Small- and Medium-Sized Enterprises; SME; SMEs" , "SMMES" , "Trade Unions" , "Carbon Offsetting; Carbon Offsets" , "Child Labor" , "Child Soldiers" , "CBT" , "Decent Jobs" , "Economic Development Strategies" , "Economic Globalization" , "Economic Growth Rates" , "Forced Labor" , "Labor Market Institution; Labour Market Institutions" , "Labor Right; Labour Rights; Labor Rights" , "Medium Enterprises" , "Medium Entrepreneurs" , "Micro-Credit* " , "Micro-Enterprise*" , "Offset Projects" , "per Capita GDP" , "Precarious Jobs" , "Quality Jobs" , "Small Businesses" , "Small Enterprises" , "Small Entrepreneurs" , "Starting Entrepreneurs" , "TFP Growth"

SDG9	"SDG 9" , "Industry, Innovation And Infrastructure" , "Inclusive OR Sustainable AND Industrialization" , "Access AND Information and Communications Technology" , "Access to the Internet" , "Accessible Transportation" , "Asian Infrastructure Investment Bank" , "Broadband Access AND Developing Countries" , "Clean Industrial Processes" , "Clean Technologies" , "Closed Loop Supply Chain" , "Community Innovation Survey" , "Conducive Policy AND Industrial Diversification" , "Conducive Policy AND Inter Alia" , "Conducive Policy AND Value Addition" , "Cradle To Cradle AND Industry" , "Development AND Information Communication Technology" , "Development AND Small Medium Enterprises" , "Domestic Technology Development" , "Environmentally Sound Industrial Processes" , "Environmentally Sound Technologies" , "Foster Innovation" , "Green Product" , "ICT Infrastructure" , "Inclusive Innovation" , "Inclusive Transportation" , "Industrial Development" , "Industrial Diversification" , "Industrial Emissions AND Mitigation" , "Industrial Growth" , "Industrial Performance" , "Industrial Waste Management" , "Industrial Waste Treatment" , "Industrial AND Innovation" , "Industry 4.0" , "Information and Communications Technology for Development" , "Infrastructural Development" , "Infrastructure Development" , "Infrastructure Investment" , "Infrastructure Investment" , "Innovation Management" , "Innovation Processes" , "Innovation System" , "Manufacturing Employment" , "Manufacturing Firms" , "Manufacturing Industry" , "Manufacturing Innovation" , "Manufacturing Investment" , "Manufacturing Value" , "Medium Enterprise" , "Medium Entrepreneur" , "Microenterprise*" , "Official Development Assistance AND Infrastructure" , "Official International Support AND Infrastructure" , "Process Innovation" , "Product AND Process Innovation" , "Product Innovation" , "Public Infrastructure" , "Public Infrastructure" , "R&D Investment" , "Regional Infrastructure" , "Regional Innovation System" , "Resilient Infrastructure" , "Resilient Infrastructure" , "Resource-Use Efficiency" , "Retrofit Industries AND Sustainable" , "Small Enterprise" , "Small Entrepreneur" , "Small-Scale Industries" , "Sustainable Industrialisation" , "Sustainable Infrastructure" , "Sustainable Manufacturing" , "Sustainable Transportation" , "Technological Innovation" , "Technology Innovation" , "The National Innovation System " , "Traffic Congestion" , "Transborder Infrastructure" , "Transborder Infrastructure" , "Transportation Services" , "Upgrade Infrastructure AND Sustainable" , "Value Chain Management" , "Access AND Information and Communications Technologies; Access AND Information and Communication Technology; Access and Information AND Communication Technologies; Access AND ICT" , "AIIB" , "" , "Green Products" , "ICT4D" , "Infrastructural Investment" , "Medium Enterprises" , "Medium Entrepreneurs" , "Micro-Enterprise*" , "Product Process Innovations" , "Public Infrastructures" , "Resilient Infrastructures" , "Small Enterprises" , "Small Entrepreneurs" , "Transborder Infrastructures"
SDG10	"SDG 10" , "Reduced Inequalities" , "Affordable Housing" , "Ageism" , "Bilateral Foreign Direct Investment" , "Bilateral Investment Treaties" , "Corporate Social Responsibility" , "Economic Inequality" , "Equal Opportunities" , "Female Genital Mutilation " , "Financial Assistance" , "Foreign Aid" , "Gender Differences" , "Gender Equality" , "Gender Inequality" , "Health Care Access" , "Health Disparities" , "Health Disparity" , "Health Inequalities" , "Health Status Disparities" , "Healthcare Disparities" , "Homophobia" , "Homosexuality" , "Household Income Inequality" , "Human Rights" , "Human Rights Law" , "Human Rights Violations" , "Income Inequality" , "International Human Rights" , "International Human Rights Law" , "International Human Rights Standards" , "International Human Rights Treaties" , "International Humanitarian Law" , "Intimate Partner Violence" , "LGBT" , "Low Socioeconomic" , "Low Socioeconomic Status" , "Official Development Assistance" , "Preferential Trade Agreements" , "Racism" , "Sex Difference" , "Sexism" , "Sexual Minority" , "Social Class" , "Social Discrimination" , "Social Dominance Orientation" , "Social Economic" , "Social Exclusion" , "Social Inclusion" , "Social Inequality" , "Social Isolation" , "Social Justice" , "Social Policy" , "Social Protection" , "Social Security" , "Social Stigma" , "Social Support" , "Social Welfare" , "Socioeconomic Inequality" , "Socioeconomic Position" , "Socioeconomic Status" , "Universal Health Coverage" , "Ambivalent Sexism" , "Ambivalent Sexism Theory" , "Benevolent Sexism" , "Developing AND Duty-Free Access" , "Developing AND Tariff" , "Developing AND Zero-Tariff" , "Developing Countries AND Zero-Tariff" , "Development Assistance" , "Development Gap" , "Discriminatory Law*" , "Discriminatory Policy" , "Discriminatory Practices" , "Economic Empowerment" , "Economic Inclusion" , "Economic Marginali?Ation" , "Economic Reform Policy" , "Economic Transformation" , "Emigration AND Immigration" , "Emigration AND NOT Biodiversity" , "Emigration AND NOT Chemistry" , "Emigration AND NOT Disease" , "Equal Opportunity" , "Equality AND Economic" , "Equality AND Financial" , "Equality AND Socio-Economic" , "Ethnic Minority" , "Feminism" , "Financial Soundness Indicators" , "Fiscal Protection Policies" , "Foreign Direct Investment" , "Foreign Direct Investment " , "Foreign Investment" , "Global Market AND Empowerment" , "Growth AND Household Expenditure" , "Health Care Disparity" , "Hostile Sexism" , "Human Dignity" , "Human Rights Abuse" , "Immigration AND NOT Biodiversity" , "Immigration AND NOT Chemistry" , "Immigration AND NOT Disease" , "Income Growth" , "Indigenous AND *Equali*" , "Indigenous People AND *Equali*" , "Inequality AND Economic" , "Inequality AND Financial" , "Inequality AND Socio-Economic" , "Intimate Partner Violence " , "Labour Share" , "Least Developed Countries AND Zero-Tariff" , "Migrant Remittance" , "Migrant Remittances" , "Migration Policies" , "Migration Policy" , "North-South Divide" , "Official Development Assistance" , "Political Inclusion" , "Reduce Inequalities" , "Remittance Corridors" , "Remittance Costs" , "Responsible Migration" , "Social Dominance" , "Social Dominance Orientation " , "Social Protection Policy" , "Social Responsibility" , "Socioeconomic Deprivation" , "Wage Protection Policies" , "FGM" , "Health Disparities" , "Lower Socioeconomic" , "Lower Socioeconomic Status" , "ODA" , "PTAs" , "Social Inequalities" , "Socioeconomic Inequalities" , "Developing AND Tariffs" , "Development Gaps" , "Discriminatory Policies" , "Economic Reform Policies" , "FDI" , "Human Rights Abuses" , "IPV" , "Migration Policies" , "SDO" , "Social Protection Policies"
SDG11	"SDG 11" , "Sustainable Cities And Communities" , "Air Pollutant" , "Air Pollution" , "Air Pollution AND Particulate Matter" , "Air Pollution AND Public Health" , "Air Pollution AND Urban Areas" , "Air Pollution Control Measures" , "Air Pollution Exposure" , "Air Pollution Exposure" , "Air Pollution Index" , "Air Pollution Levels" , "Air Pollution Levels" , "Air Pollution Monitoring" , "Air Quality" , "Air Quality AND Human Health" , "Air Quality AND Urban Areas" , "Air Quality Index" , "Air Quality Management" , "Air Quality Model" , "Air Quality Monitoring" , "Air Quality Monitoring Network" , "Air Quality Monitoring Station" , "Ambient Air" , "Ambient Air Pollution" , "Ambient Air Quality" , "Ambient Air Quality Monitoring" , "Ambient Fine Particulate Matter" , "Atmospheric Pollution" , "Bus Rapid Transit" , "City Planning" , "Cultural Heritage" , "Disaster Risk Reduction" , "Fine Particulate Matter" , "Green Space" , "Greenhouse Gas Emissions" , "Health Effects AND Air Pollution" , "Indoor Air Quality" , "Intelligent Transportation System" , "Local Air Quality" , "Multiscale Air Quality Model" , "Municipal Solid Waste" , "Municipal Solid Waste Generation" , "Municipal Solid Waste Incineration" , "Municipal Solid Waste Landfill" , "Municipal Solid Waste Management" , "Municipal Solid Wastes" , "Municipal Wastewater" , "Municipal Wastewater Treatment" , "Municipal Wastewater Treatment Plant" , "National Ambient Air Quality Standards" , "Organic Fraction of Municipal Solid Waste" , "Particulate Matter" , "Particulate Matter AND Aerodynamic Diameter" , "PM10" , "PM2.5" , "Public Transport" , "Public Transport System" , "Regional Air Quality" , "Smart City" , "Smart City Concept" , "Smart City Development" , "Smart City Services" , "Solid Waste Incineration" , "Solid Waste Management" , "Solid Waste Management System" , "Sustainable City" , "Sustainable City" , "Sustainable Urban Development" , "Sustainable Urban Planning" , "The Sendai Framework for Disaster Risk Reduction" , "Total Suspended Solids" , "Traffic Congestion AND Air Pollution" , "Transportation System" , "Urban Air Pollution" , "Urban Air Quality" , "Urban Development" , "Urban Environment" , "Urban Green Spaces" , "Urban Planning" , "Urban Planning Development" , "Urban Planning Management" , "Urban Policy" , "Urban Public Transport" , "Urban Sustainability" , "Urban Traffic" , "Urban Transport" , "Urbanization" , "Volatile Organic Compound" , "Waste Incineration" , "Waste Management" , "Waste Management System" , "Waste Treatment" , "Waste Water" , "Wastewater Treatment" , "Wastewater Treatment Plant" , "Water Pollutant" , "Accessibility AND Public Transport" , "Activated Sludge" , "Aerosol Optical Thickness" , "Affordable Housing" , "Air Pollution Model" , "Basic Service" , "Black Carbon" , "Building Design" , "Circular Economy" , "Citizen Participation" , "Collaborative Planning" , "Congestion" , "Development Planning" , "Disaster" , "Disaster Management" , "Disaster Risk Management" , "Disaster Risk Reduction Strategies" , "Disaster Strategy" , "Ecological Footprint" , "Environmental Footprint" , "Gentrification" , "Governance" , "Green Spaces" , "Housing" , "Human Settlements" , "Inadequate Housing" , "Inclusive Urbanization" , "Inclusiveness" , "Informal Settlements" , "Land Consumption AND Population Growth" , "Local Air Pollution" , "Local Fiscal Space" , "Low Impact Urban Design Development" , "Membrane Bioreactor" , "Moving Bed Biofilm Reactor" , "Municipal Solid Waste" , "Natural Heritage" , "Nature Inclusive" , "Nature Inclusive Building" , "Participatory Planning" , "Pollutant*" , "Pollution" , "Public Space" , "Public Spaces" , "Public Transit" , "Public Transport Users" , "Recycling" , "Residential Areas" , "Residential Development" , "Resilient Building" , "Resilient Buildings" , "Resource Efficiency" , "Sendai Framework" , "Slum" , "Slum*" , "Slums" , "Solid Waste" , "Sustainable Building" , "Sustainable Urbanisation" , "Territorial Development" , "Total Municipal Waste" , "Total Solids" , "Town Planning" , "Transport Systems" , "Transportation" , "Unesco" , "Urban Air" , "Urban Design" , "Urban Growth" , "Urban Housing" , "Urban Morphology" , "Urban Policies" , "Urban Transportation" , "Urbani?Ation" , "Waste" , "Waste Water Management" , "Wastewater Treatment Plants" , "Zero Energy Building" , "Air Pollutants" , "Exposure to Air Pollution" , "Levels of Air Pollution" , "AQI" , "Air Quality Monitoring Stations" , "DRR" , "Green Spaces" , "GHG Emissions" , "IAQ" , "Municipal Solid Wastes" , "MSW" , "Municipal Solid Waste Incinerator; Municipal Solid Waste Incinerators; MSWI" , "MSWM" , "MSW" , "Municipal Wastewater Treatment Plants" , "NAAQs" , "OFMSW" , "Public Transport Systems" , "Smart Cities" , "SWM" , "Solid Waste Management Systems" , "Sustainable Cities" , "TSS" , "Transportation Systems" , "Urban Environments" , "UGS" , "Volatile Organic Compounds; VOC; VOCs" , "Wastewater Treatment Plants; WWTP; WWTPs" , "Basic Services" , "Buildings Design" , "Sustainable Urbanization" , "LIUDD" , "MBR" , "MBBR" , "Nature Inclusive Buildings" , "Public Spaces" , "Resilient Buildings" , "Slums" , "Sustainable Buildings" , "WWTPS" , "Zero Energy Buildings; Zero-Energy Building; Zero-Energy Buildings"

SDG12	"SDG 12" , "Responsible Consumption And Production" , "Anaerobic Digestion" , "Biochemical Methane Potential" , "Building Energy Efficiency" , "Circular Economy" , "Circular Economy " , "Combined Heat and Power" , "Education for Sustainable Development" , "Energy Efficiency Buildings" , "Energy Saving" , "Environmental Impact Assessment" , "Environmental Impact Categories" , "Environmental Life Cycle Assessment" , "Environmental Policy" , "Environmental Technology" , "Food Waste" , "Green Supply Chain Management" , "Hazardous Chemicals" , "Hazardous Waste" , "Hazardous Waste Management" , "Heavy Metal AND Pollut*" , "Heavy Metal Pollution" , "Household Food Waste" , "Hydraulic Retention Time" , "Industrial Waste" , "Integrated Solid Waste Management" , "Life Cycle Energy Analysis" , "Life Cycle Impact Assessment" , "Low Carbon Economy" , "Lowcarbon Economy" , "Material Flow Analysis" , "Municipal Solid Waste" , "Municipal Solid Waste" , "Municipal Solid Waste Generation" , "Municipal Solid Waste Incineration" , "Municipal Solid Waste Management" , "Municipal Wastewater Treatment" , "Municipal Wastewater Treatment Plant" , "Organic Fraction of Municipal Solid Waste" , "Persistent Organic Pollutants" , "Phase Change Materials" , "Potential Environmental Impacts" , "Power Conversion Efficiency" , "Renewable Energy Technologies" , "Sewage Sludge" , "Solid Waste" , "Solid Waste Disposal" , "Solid Waste Generation" , "Solid Waste Incineration" , "Solid Waste Management" , "Solid Waste Management System" , "Sustainable AND {Production AND Consumption}" , "Sustainable Consumption" , "Sustainable Consumption Production" , "Sustainable Production" , "Sustainable Supply Chain" , "Sustainable Tourism" , "Sustainable Tourism Development" , "The Resource Conservation Recovery Act" , "Volatile Fatty Acid" , "Waste Management" , "Waste Management System" , "Waste Recycling" , "Waste Treatment" , "Wastewater Treatment" , "Wastewater Treatment Plant " , "Water Pollutants AND Chemical" , "Biobased Economy" , "Building Energy Management" , "Chemical Pollution" , "Consumer Behaviour" , "Consumption AND Resource Use" , "Consumption AND Spill" , "Corporate Social Responsibility" , "Corporate Sustainability" , "Cradle to Cradle" , "Deep Decarbonisation" , "Domestic Material Consumption" , "Efficient Use AND Natural Resources" , "Efficient Use of Resources" , "Energy Conservation" , "Energy Efficiency" , "Energy Efficient" , "Energy Management" , "Energy Management Systems" , "Energy Saving" , "Energy Utilization" , "Environmental Footprint" , "Environmental Pollution" , "Food Loss" , "Food Loss Index" , "Food Spill" , "Food Waste Index" , "Fossil Fuel Subsidies" , "Fossil-Fuel Expenditure" , "Fossil-Fuel Subsidies" , "Global Citizenship Education" , "Global Food Waste" , "Global Resource Extraction" , "Green Computing" , "Green Consumption" , "Harvest Efficiency" , "Harvest Losses" , "Hazardous Chemical" , "Hazardous Waste AND Treatment" , "Heavy Metals AND Pollut*" , "Life Cycle Analysis" , "Life Cycle Assessment" , "Low Carbon Economy" , "Low Power Consumption" , "Market Distortions" , "Material Flow Accounting" , "Material Footprint" , "Monitoring Sustainable Development" , "Multilateral Environmental Agreements" , "National Recycling Rate" , "Overconsumption" , "Ozone Depletion" , "Pesticide Pollution" , "Pesticide Reduction" , "Pesticide Stress" , "Phase Change Material" , "Post-Harvest Losses" , "Production AND Resource Use" , "Production AND Spill" , "Public Procurement AND Sustainable" , "Reduce Waste Generation" , "Renewable Energy-Generating" , "Resource Efficiency" , "Resource Recycling" , "Resource Reuse" , "Resource Spill" , "Responsible Production Chains" , "Societal Metabolism" , "Sustainability Label" , "Sustainable Consumption Patterns" , "Sustainable Development AND Education" , "Sustainable Food Consumption" , "Sustainable Management" , "Sustainable Practices" , "Sustainable Procurement" , "Sustainable Production Patterns" , "Sustainable Public Procurement" , "Sustainable Public Procurement Policies" , "Sustainable Resource Use" , "The 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns" , "The Organic Fraction of Municipal Solid Waste" , "Toxic Chemical" , "Waste Generation" , "Wasteful Consumption" , "Water Pollution" , "Zero Waste" , "BMP" , "ESD" , "Heavy Metals AND Pollut*" , "HRT" , "LCIA" , "MFA" , "Municipal Solid Wastes" , "MSWI" , "MSWM" , "Municipal Wastewater Treatment Plants" , "OFMSW" , "POPs" , "SWM" , "Solid Waste Management Systems" , "Volatile Fatty Acids; VFA; VFAs" , "Waste Management Systems" , "Wastewater Treatment Plants; WWTP; WWTPs" , "Consumer Behavior; Consumer Behaviors; Consumer Behaviours" , "Deep Decarbonization" , "Energy Savings" , "Food Losses" , "Hazardous Chemicals" , "Life Cycle Analyses; Life-Cycle Analysis; Life-Cycle Analyses" , "Low-Carbon Economy" , "Phase Change Materials, PCM;PCMs" , "Sustainability Labelling" , "OFMSW" , "Toxic Chemicals"
SDG13	"SDG 13" , "Climate Action" , "Anthropogenic Climate" , "Anthropogenic Climate Change" , "Anthropogenic Greenhouse Gas" , "Anthropogenic Greenhouse Gas Emissions" , "Atmospheric Carbon Dioxide" , "Carbon Capture" , "Carbon Emissions" , "Carbon Footprint" , "Change Adaptation Strategies" , "Clean Development Mechanism" , "Climate AND Natural Disaster*" , "Climate Change" , "Climate Change Adaptation" , "Climate Change Adaptation Measures" , "Climate Change Adaptation Planning" , "Climate Change Adaptation Policy" , "Climate Change Adaptation Strategy" , "Climate Change Impact" , "Climate Change Mitigation" , "Climate Change Mitigation Policy" , "Climate Change Mitigation Strategies" , "Climate Change Policy" , "Climate Change Risk" , "Climate Forcing" , "Climate Impacts" , "Climate Mitigation" , "Climate Policy" , "Climate Variability" , "Disaster Risk Reduction" , "Extreme Weather" , "Global Climate Model" , "Global Temperature" , "Global Warming" , "Global Warming Potential" , "Greenhouse Gas" , "Greenhouse Gas Emission" , "IPCC" , "Nitrous Oxide Emissions" , "Regional Climate Model" , "Regional Climate Model " , "Sea Ice Loss" , "Sea Level" , "Sea Level Change" , "Sea Level Rise" , "Sea Level Rise" , "The Kyoto Protocol" , "The Paris Agreement" , "Acclimatization Thermal Strain Index" , "Acidification AND Seawater" , "Antarctic Cold Reversal" , "Average Global Temperature" , "Carbon Dioxide Emissions" , "Climate Action" , "Climate Adaptation" , "Climate AND Adaptive Management" , "Climate AND Anthropocene" , "Climate AND Atmospher*" , "Climate AND Awareness" , "Climate AND Bioeconomy" , "Climate AND Carbon" , "Climate AND Clean Development Mechanism" , "Climate AND Consumption" , "Climate AND Decision-Making" , "Climate AND Disaster Risk Reduction" , "Climate AND Emission*" , "Climate AND Energy Conservation" , "Climate AND Environmental Education" , "Climate AND Extreme" , "Climate AND Food Chain" , "Climate AND Framework" , "Climate AND Glacier Retreat" , "Climate AND Greenhouse" , "Climate AND Hazard*" , "Climate AND Ice-Ocean Interaction" , "Climate AND Island*" , "Climate AND Land Use" , "Climate AND Megacit*" , "Climate AND Nitrogen Cycle" , "Climate AND Ocean Acidification" , "Climate AND Ozone" , "Climate and Politics" , "Climate AND Production" , "Climate AND Radiative Forcing" , "Climate AND Sea Ice" , "Climate AND Sea Level" , "Climate AND Small Island Developing States" , "Climate AND Sustainable Development Education" , "Climate AND Thermal Expansion" , "Climate AND UNFCCC" , "Climate AND Warming" , "Climate Capitalism" , "Climate Change" , "Climate Change AND Adaptation" , "Climate Change AND Early Warning" , "Climate Change AND Impact Reduction" , "Climate Change AND Management" , "Climate Change AND Mitigation" , "Climate Change AND Planning" , "Climate Change Effects" , "Climate Change Financing" , "Climate Change Management" , "Climate Change Planning" , "Climate Change Scenarios" , "Climate Early Warning" , "Climate Effect" , "Climate Equity" , "Climate Feedback" , "Climate Finance" , "Climate Governance" , "Climate Hazards" , "Climate Impact" , "Climate Investment" , "Climate Justice" , "Climate Model" , "Climate Models" , "Climate Prediction" , "Climate Related Hazards" , "Climate Risk" , "Climate Service" , "Climate Signal" , "Climate Tipping Point" , "Climate Variation" , "Climate Warming" , "CO2 Capture" , "COP 21" , "COP 22" , "Disaster Risk Reduction Strategies" , "Ecoclimatology" , "Extreme Weather Events" , "Global Temperature" , "Green Climate Fund" , "Greenhouse Gas Emissions" , "Ice Loss" , "Interdecadal Pacific Oscillation" , "Marine Isotope Stage" , "Ocean Warming" , "Regional Climate" , "Sea Surface Temperature" , "Southern Oscillation Index" , "The Sendai Framework for Disaster Risk Reduction 2015–2030" , "The United Nations Framework Convention on Climate Change" , "Urban Climate" , "Atmospheric CO2" , "Carbon Dioxide Emission; Carbon Dioxide Emissions; CO2 Emission; CO2 Emissions" , "CDM" , "Climate Changes" , "CCA" , "Climate Change Adaptation Policies" , "Climate Change Adaptation Strategies" , "Climate Change Impacts" , "Climate Change Mitigation Policies" , "Climate Change Policies" , "Climate Change Risks" , "Climate Policies" , "Climate Variation" , "DRR" , "Global Climate Models; GCM; GCMs" , "GWP" , "Greenhouse Gases; GHG" , "Greenhouse Gas Emissions; Greenhouse Gases Emission; Greenhouse Gases Emissions; GHG Emission" , "N2O Emissions" , "REGCM" , "Regional Climate Models; Rcm; Rcms" , "Rising Sea; Rising Sea Level" , "Sealevel Rise; Rising Sea Level; Rising Sea Levels; Slr" , "ASTI" , "ACR" , "Climate AND Food Chains" , "Climate AND Ice-Ocean Interactions" , "Climate AND Nitrogen Cycles" , "Climate AND Sea Levels" , "Climate Models; Climate Modeling; Climate Modelling" , "Climate Predictions" , "Climate Risks" , "Climate Services" , "Climate Signals" , "Climate Variations" , "Eco-Climatology" , "Global Mean Temperature" , "IOD" , "MIS" , "Regional Climates" , "SST" , "SOI" , "Urban Climates"

SDG14	"SDG 14" , "Life Below Water" , "*Forest*" , "Aquatic Ecosystems" , "Aquatic Food Webs" , "Baltic Sea Action Plan" , "Coastal Environment" , "Coastal Habitat" , "Coastal Management" , "Coastal Marine Ecosystems" , "Common Fisheries Policy" , "Convention for The Conservation of Antarctic Marine Living Resources" , "Coral Bleach" , "Coral Reef" , "Coral Reef Ecosystem" , "Coral Reef Fish" , "Ecosystem-Based Fisheries Management" , "Exclusive Economic Zone" , "Fish Populations" , "Fish Species" , "Fish Stocks" , "Fisheries Management" , "Fishery Management" , "Fishing Effort" , "Fishing Pressure" , "Great Barrier Reef" , "Harmful Algal Bloom" , "Integrated Coastal Zone Management" , "Integrated Multi-Trophic Aquaculture" , "Large Marine Ecosystem" , "Marine" , "Marine Ecosystem" , "Marine Environment" , "Marine Fish" , "Marine Food Web" , "Marine Habitats" , "Marine Life" , "Marine Mammals" , "Marine Organisms" , "Marine Protected Area" , "Marine Protected Area" , "Marine Resource Management" , "Marine Spatial Planning" , "Marine Species" , "Marine Stewardship Council" , "No-Take Marine Protected Area" , "No-Take Marine Reserve" , "Ocean Acidification" , "Ocean Acidification" , "Plastic Debris" , "Regional Fisheries Management Organizations" , "Seagrass Bed" , "Species Richness" , "The Marine Strategy Framework Directive" , "Total Allowable Catch" , "United Nations Convention on The Law of The Sea" , "Aquaculture" , "Artisanal Fishers" , "Biogeochemical Cycle" , "Coastal Areas" , "Coastal Biodiversity" , "Coastal Ecosystem" , "Coastal Ecosystems" , "Coastal Ecotourism" , "Coastal Eutrophication" , "Coastal Habitats" , "Community Based Conservation" , "Coral Bleaching" , "Coral Reef" , "Coral Reef System" , "Coral Triangle Region" , "Destructive Fishing" , "Ecological Marine Units" , "Ecosystem-Based AND Marine Areas" , "Ecotourism" , "Eutrophicat*" , "Fish Stocks AND Fisheries Management" , "Fisheries" , "Fisheries Rights" , "Fisheries Subsidies" , "Fishery" , "Fishing Practices" , "Hauraki Gulf Marine Park" , "Healthy Oceans" , "Ice-Ocean" , "Illegal Fishing" , "Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology" , "Kelp" , "Law of the Sea" , "Local Fisheries" , "Marine Acidity" , "Marine Areas" , "Marine Biodiversity" , "Marine Conservation" , "Marine Debris" , "Marine Economy" , "Marine Ecosystems" , "Marine Fisheries" , "Marine Herbivorous Fish" , "Marine Invertebrate" , "Marine Land Slide" , "Marine Natural Product" , "Marine Parks" , "Marine Pollution" , "Marine Quota" , "Marine Reserve" , "Marine Resources" , "Marine Technology" , "Nutrient Pollution" , "Nutrient Runoff" , "Ocean Biogeographic Information System" , "Oceanic Circulation Model" , "Okakari Point Marine Reserve" , "Overfishing" , "Overfishing, Illegal, Unreported and Unregulated Fishing" , "Plastic Density Debris" , "Productive Oceans" , "Sea Grasses" , "Small Island Development States" , "Small-Scale Artisanal Fishers" , "Small-Scale Fisheries" , "Sustainable Fisheries" , "Sustainable Yield" , "Traditional Ecological Knowledge" , "Unregulated Fishing" , "Water Cycle" , "BASP" , "Coastal Environments" , "Coastal Habitats" , "CFP" , "CCAMLR" , "Coral Bleaching" , "Coral Reefs" , "Coral Reef Ecosystems" , "Coral Reef Fishes" , "EFBM" , "Exclusive Economic Zones; EEZ; EEZs" , "Fisheries Management" , "Great Barrier Reef Marine Park" , "Harmful Algal Blooms; HAB; HABs" , "ICZM" , "IMTA" , "Large Marine Ecosystems" , "Marine Ecosystems" , "Marine Environments" , "Marine Food Webs" , "Marine Organisms; Marine Species" , "Marine Mammal Species" , "Marine Protected Areas" , "Marine Protected Areas; Mpa; Mpas" , "MSP" , "MSC" , "No-Take Marine Protected Areas; No-Take Marine Reserve; No-Take Marine Reserves; No-Take Zone; No-Take Zones" , "No-Take Marine Protected Area; No-Take Marine Protected Areas; No-Take Marine Reserves; No-Take Zone; No-Take Zones" , "Marine Plastic Debris" , "RFMO" , "Seagrass Beds; Seagrass Meadow; Seagrass Meadows" , "The EU Marine Strategy Framework Directive; MSFD" , "TAC" , "Biogeochemical Cycles" , "Coastal Ecosystems" , "Community-Based Conservation" , "Coral Reef Systems" , "EMUS" , "Fisheries" , "Marine Herbivorous Fishes" , "Marine Invertebrates" , "Marine Natural Products" , "Marine Reserves" , "OBIS" , "Oceanic Circulation Models; Oceanic Circulation Modelling; Oceanic Circulation Modeling" , "Water Cycles"
SDG15	"SDG 15" , "Life On Land" , "Biodivers*" , "Biodiversity Loss" , "Biodiversity Loss" , "Biological Diversity" , "Corine Land Cover" , "Deforest*" , "Deforest*" , "Desertif*" , "Desertif*" , "Dry Season" , "Dryland*" , "Dryland*" , "Earth System Model" , "Ecosystem Function" , "Ecosystem Service" , "Ecosystem*" , "Endangered Species" , "Endangered Species Act" , "Enhanced Vegetation Index" , "Environmental Change" , "Environmental Factor" , "Environmental Impact" , "Eu Water Framework Directive" , "Fire-Fallow Cultivation" , "Forest Cover" , "Forest Degradation" , "Forest Ecosystem" , "Forest Management" , "Gross Primary Production" , "Habitat Fragmentation" , "Invasive Species" , "Iucn Red List" , "Land Cover Change" , "Land Cover Type" , "Land Data Assimilation System" , "Land Degradation" , "Land Degradation Neutrality" , "Land Management" , "Land Use and Land Cover" , "Land Use/Land Cover Change" , "Leaf Area Index" , "Low Impact Development" , "Mountain*" , "Native Species" , "Natural Vegetation" , "Net Ecosystem Exchange" , "Net Ecosystem Productivity" , "Normalized Difference Vegetation Index " , "Palmer Drought Severity Index" , "Plant Functional Types" , "Plant Species" , "Plant Species Richness" , "Protected Area" , "Revised Universal Soil Loss Equation" , "Soil & Water Assessment Tool" , "Soil and Water Assessment Tool" , "Soil Degradation" , "Soil Erosion" , "Soil Quality" , "Soil Quality Index" , "Soil Water Content" , "Species Distribution" , "Species Diversity" , "Species Richness" , "Terrestrial Ecosystem" , "Terrestrial Water Storage" , "Threatened Species" , "Topographic Wetness Index" , "Trophic Web" , "Tropical Forests" , "Tropical Rainfall Measuring Mission" , "Universal Soil Loss Equation" , "Vegetation Types" , "Wastewater Treatment Plants" , "Wetland" , "Wetland Ecosystem" , "Wetland*" , "Wetlands" , "Yellow River Delta" , "Afforestation" , "Aichi Biodiversity Target 2" , "Biodiversity-Inclusive" , "Bioeconom*" , "Biological Indicators" , "Biological Invasion" , "Biological Production" , "Community Based Conservation" , "Degrad* AND Natural Habitats" , "Degraded Forests" , "Degraded Land" , "Degraded Soil" , "Drought" , "Earth System" , "Ecological Health" , "Ecological Resilience" , "Ecosystem Health" , "Ecosystem Protection" , "Ecosystem Restoration" , "Ecotourism" , "Environmental Degradation" , "Environmental Management" , "Environmental Stress" , "Estuarine Ecosystems" , "Exotic Species" , "Extinct Species" , "Extinction Risk" , "Extinction Wave" , "Forest Auditing" , "Forest Certification" , "Forest Cover Change" , "Forest Stewardship Council" , "Freshwater Biodiversity" , "Freshwater Ecosystems" , "Freshwater Species" , "Genetic Resources" , "Habitat Loss" , "Habitat Restoration" , "Human-Wildlife Conflict" , "Illegal Logging" , "Illegal Wildlife Products" , "Inland Freshwater Ecosystems" , "Invasive Alien Species" , "Invasive Plant Species" , "Invasive Species" , "Land Conservation" , "Land Cover" , "Land Loss" , "Land Restoration" , "Land Use" , "Land Use Change" , "Local Environmental Factors" , "Low Impact Urban Design and Development" , "LULUCF" , "Mountain Biodiversity" , "Mountain Ecosystems" , "Mountain Green Cover Index" , "Mountain Vegetation" , "Mountainous Cover" , "Nagoya Protocol on Access to Genetic Resources" , "National Nature Reserve" , "Native Forest" , "Naturalized Species Richness" , "Official Development Assistance AND Conservation OR Biodiversity" , "Poach*" , "Poach* AND Protected Species" , "Priority Species" , "Protected Fauna" , "Protected Flora" , "Protected Species" , "Rainforest Lliance" , "Red List Index" , "Red List Species" , "REDD" , "Reforestation" , "Riparian Vegetation" , "Riparian Zone Management" , "Silviculture" , "Slash-and-Burn" , "Soil Restoration" , "Strategic Plan for Biodiversity 2011–2020" , "Stream Ecosystem Health" , "Sustainable Land Management" , "Swamp Forest" , "System of Environmental-Economic Accounting" , "Terrestrial Biodiversity" , "Terrestrial Ecosystems" , "Terrestrial Freshwater Ecosystems" , "Terrestrial Species" , "Threatened Native Species" , "Timber Harvest" , "Traffick* AND Protected Species" , "Tree Cover" , "Trophic Cascade" , "Trophic Level" , "Vegetation Communities" , "Vegetation Cover" , "Water Sensitive Design" , "Wildlife Market" , "Wildlife Product" , "Wildlife Traffic" , "Loss of Biodiversity" , "Deforestation" , "Desertification" , "Drylands" , "Earth System Models" , "Ecosystem Functions; Ecosystem Functioning" , "Ecosystem Services" , "Eco-System*" , "Environmental Changes" , "Environmental Factors" , "Environmental Impacts" , "Forest Ecosystems" , "Invasive Alien Species; Alien Species; LAS" , "Land Cover Changes" , "Land Cover Types" , "Land-Use/Cover-Change; Land Use/Land Cover; Land Use Land Cover; LULC" , "Protected Areas" , "Terrestrial Ecosystems" , "Revised Universal Soil Loss Equation; USLE; RUSLE" , "Bio-Econom*" , "Community-Based Conservation" , "Forest Cover Changes" , "Alien Species" , "Land Covers" , "Land Uses" , "Land-Use Change" , "Fire-Fallow Cultivation" , "Wildlife Markets" , "Wildlife Products" , "Wildlife Trafficking"

SDG16	"SDG 16" , "Peace, Justice And Strong Institutions" , "physical violence" , "emotional abuse" , "emotional violence" , "Child Abuse" , "Childhood Sexual Abuse" , "Childhood Trauma Questionnaire" , "Crime" , "Crime" , "Crimes AND Humanity" , "Criminal Activity" , "Criminal Justice" , "Criminal Justice System" , "Criminal Justice System" , "Criminal Law" , "Domestic Violence" , "Human Rights" , "Human Rights Abuses" , "Human Rights AND Fundamental Freedoms" , "Human Rights Violations" , "Human Trafficking" , "International Human Rights Law" , "International Humanitarian Law" , "Intimate Partner Violence" , "Organized Crime" , "Physical Abuse" , "Physical Abuse AND Sexual Abuse" , "Physical Violence" , "Physical Violence AND Sexual Violence" , "Sexual Abuse" , "Sexual Assault" , "Sexual Crime" , "Sexual Violence" , "Terrorism" , "Terrorist Attack" , "Terrorist Attacks" , "Transnational Organized Crime" , "Violent Crime" , "War Crimes" , "(Physical OR Sexual) AND Abuse" , "Aarhus Convention" , "Accountable Institution" , "Accountable Institutions" , "Actual Innocence" , "Arbitrary Detention" , "Arbitrary Justice" , "Armed Conflict" , "Arms Flow" , "Arms Trafficking" , "Birth Registration" , "Bribery" , "Civil Conflict" , "Combat Crime" , "Combat Terrorism" , "Conflict-Related Deaths" , "Corruption AND Bribery" , "Corruption AND Conflict" , "Corruption AND Government" , "Corruption AND Institution" , "Corruption AND Public Official" , "Criminal Tribunal" , "Cybercrime" , "Democrati?Ation AND Conflict" , "Democrati?Ation AND Decision-Making" , "Democrati?Ation AND Financial Aid" , "Democrati?Ation AND Institutional" , "Democrati?Ation AND Politics" , "Democrati?Ation AND Society" , "Democratic Deficit" , "Democratic Institution" , "Effective Institution" , "Effective Rule of Law" , "Ethnic Conflict" , "Exoneration" , "Extremism War Crime" , "Fair Society" , "False Confession" , "Family Violence" , "Formal Dispute Resolution" , "Freedom of Information" , "Freedom of Speech" , "Fundamental Freedom" , "Genocid*" , "Good Governance" , "Homicid*" , "Human Rights Activists" , "Human Rights Institution" , "Human Rights Institution" , "Human Rights Law" , "Illegal Arms" , "Illicit Arms Flows" , "Illicit Financial Flows" , "Illicit Money" , "Illicit Transfer" , "Inclusive Institution" , "Inclusive Institutions" , "Inclusive Societies" , "Inclusive Society" , "Independence of Judiciary" , "Informal Dispute Resolution" , "Insurgence" , "Intentional Homicide" , "Judicial System" , "Justice For All" , "Justice System" , "Legal Identity For All" , "Legal Remedy" , "Murder*" , "Non-Discriminatory Laws" , "Paris Principles" , "Peaceful Societies" , "Peaceful Society" , "Policy AND Sustainable Development" , "Political Decision-Making AND Inclusive" , "Political Decision-Making AND Participatory" , "Political Decision-Making AND Representative" , "Political Decision-Making AND Responsive" , "Political Instability" , "Press Freedom" , "Prevent Violence" , "Psychological Abuse" , "Psychological Violence" , "Refugee*" , "Responsive Institution" , "Rule of Law" , "Separation of Powers" , "Spouse Abuse" , "Terroris*" , "Torture" , "Torture of Children" , "Transparent Institution" , "Unsentenced Detention" , "Violence" , "Violence AND Death Rates" , "Violence Risk" , "Violent Acts" , "Violent Conflict" , "War AND Democracy" , "War AND Geneva Convention" , "War AND Peace" , "War AND Peacekeeping" , "War AND Treaty" , "War AND Warfare " , "War AND Conflict" , "War AND Democracy" , "War AND Geneva Convention" , "War AND Peace" , "War AND Peacekeeping" , "War AND Treaty" , "War AND Warfare " , "War AND Conflict" , "Fire-Fallow Cultivation" , "Wildlife Markets" , "Wildlife Products" , "Wildlife Trafficking" , "Child Sexual Abuse; CSA" , "CTQ" , "Crimes; Criminal " , "Criminal Activities" , "Criminal Justice Systems" , "Terrorist Attacks" , "Violent Crimes" , "Accountable Institutions" , "Armed Conflicts" , "Civil Conflicts" , "Effective Institutions" , "Ethnic Conflicts" , "Fair Societies" , "Fundamental Freedoms" , "Human Rights Institutions" , "Inclusive Institutions" , "Inclusive Societies" , "Independent Judiciary" , "Legal Remedies" , "(Policies AND Sustainable Development)" , "Responsive Institutions" , "Transparent Institutions" , "Violent Conflicts"
SDG17	"SDG 17" , "Partnerships For The Goals" , "Capacity building" , "Civil society partnerships" , "Communication technologies" , "Debt sustainability" , "Development assistance" , "Disaggregated data" , "Doha Development Agenda" , "Entrepreneurship" , "Environmentally sound technologies" , "Foreign direct investments" , "Fostering innovation" , "Free trade" , "Fundamental principles of official statistics" , "Global partnership" , "Global partnership for sustainable development" , "Global stability" , "International aid" , "International cooperation" , "International population and housing census" , "International support" , "International support for developing countries" , "Knowledge sharing" , "Multi - stakeholder partnerships" , "Science cooperation agreements" , "Technology cooperation agreements" , "Technology transfer" , "Weighted tariff average" , "Women entrepreneurs" , "World Trade Organization" , "Civil society partnerships" , "Development assistance" , "Foreign direct investments" , "International population" , "Multi-stakeholder partnerships" , "Public-private partnerships" , "International education" , "Cross-sectoral(NGO) communication" , "Sustainable courses development" , "Multiple issues" , "Regional and national government relations"

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