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Research article

Spanish business commitment to the 2030 Agenda in uncertain times

Francisco Manuel Somohano-Rodríguez[1,*], Fátima David[2] and Tania Cristina Azevedo[3]

[1] Santander Financial Institute, Universidad de Cantabria, Spain
[2] Instituto Politécnico de Guarda, Portugal
[3] Universidade Estadual de Feira de Santana, Brasil

*** Correspondence:** Email: fm.somohano@unican.es.

Abstract: Sustainability has become strategic since companies are aware that they must make a positive contribution to society and the environment in which they operate. At the same time, alliances have been formed and pacts have been made among nations to attempt to solve the social, economic and environmental problems that today's society faces. This is the case of the UN's 2030 Agenda and the Sustainable Development Goals (SDGs). This action plan entails the development of different initiatives to help face the challenges of this century, which have increased notably with the COVID-19 pandemic. The objective of this study is to carry out an analysis of Spanish companies' commitment to the 2030 Agenda and the SDGs and verify what types of activities they propose to ratify their commitment in an uncertain period for firms. For a sample of 100 observations of Spanish firms in 2020 and 2021, we evidence that SDGs 4 (Quality education), 8 (Decent work and economic growth), 9 (Industry, innovation, and infrastructure), 13 (Climate action) and 17 (Partnerships for the goals) have been adopted by many companies, which have presented initiatives, projects and programmes to achieve their goals. Commitment to the SDGs had a positive evolution in 2021, i.e., firms created economic value, protected the environment and contributed to greater social well-being. Our results show companies' preferences in terms of stakeholders as their SDGs' actions focus on women, older people, young people, workers and trade unions, local governments and researchers in issues related to climate change. The paper contributes with a global assessment of companies' initiatives and helps to determine the impact of uncertain environments on business commitments to the 2030 Agenda.

Keywords: SDG; impact; commitment; COVID-19; stakeholders; dilemma

1. Introduction

Since the beginning of the century, different global problems have been identified and attempts have been made to solve them by establishing a set of objectives common to all nations [1]. The results are varied; some problems have been satisfactorily solved, but others have not. With the passage of time and globalisation, other issues have arisen, such as sustainable development, energy prosperity, security, gender equality and peace [2]

At the end of 2015, the member states of 193 countries belonging to the United Nations (UN) established a new action plan, the 2030 Agenda [2]. Its objective is to mitigate the problems that countries continue to endure and face new problems that will appear in an increasingly globalised society by the year 2030. To do this, the Agenda has seventeen Sustainable Development Goals (SDGs), which include 169 targets, to guide countries in prioritising efforts to fulfil global commitments by 2030. This must be done in a way that guarantees human rights, ends hunger and poverty, fights against inequality and injustice, achieves gender equality and the empowerment of women and girls, takes action to protect the environment and climate change and addresses challenges to ensure that people can live safely and sustainably in cities.

Achieving the SDGs requires the collaboration of different agents, including business actors. This is why corporate social responsibility (CSR) has become important in recent years [3]. CSR focuses on sustainable development, promoting business behaviour that, in addition to benefiting companies, fosters social well-being and protection of the environment in line with the provisions of the 2030 Agenda [4]. In the corporate scenario, the topic has been strengthened by organisations that encourage the business sector to incorporate actions and commitments to implement the SDGs in their business strategies [5]. To do this, companies promote an internal culture that favours good practices, regulatory compliance, transparency and alliances among firms, especially to face environmental problems.

To facilitate the implementation and monitoring of these actions, companies can use an internationally recognised holistic model, the SDG Compass [6]. This model provides current and future information that is consistent, comparable and material, so that both positive and negative externalities are reported with an appropriate format and content to meet the expectations and demands of different stakeholders [7–10].

García-Sánchez et al. have empirically highlighted how useful the SDG Compass is for investors and analysts in assessing the information issued by companies regarding their contribution to the SDGs [1,4,11]. Specifically, these authors observed that institutional investors favourably value the information issued by companies concerning the 2030 Agenda, perhaps because their commitment to the 2030 Agenda is usually symbolic and does not consist of significant action [12–16].

However, this knowledge is limited since, according to the 2021 Sustainable Development Goals Report, the COVID-19 pandemic has reversed years or even decades of development progress, leading to greater inequalities within and among countries [17,18]. There is a gap in the literature about the effect of unforeseen events (i.e., the pandemic) on SDG implementation. The objective of this study is to analyse the extent of business commitment to the 2030 Agenda and the SDGs in 2020 and 2021 with the following research questions: What has the effect of the pandemic been on Spanish business commitment to the 2030 Agenda? Which stakeholders remain priorities? We take listed Spanish companies as a sample and observe whether there is growing business awareness about and

incorporation of the SDGs in the CSR strategies of these companies. To this end, an examination has been made of the annual, sustainability and CSR reports the companies publish on their websites to check what initiatives, programmes and projects have been carried out to achieve these goals. For a final sample of 100 observations of Spanish firms in 2020 and 2021, a biplot analysis has been performed to identify the SDGs that companies prioritise.

The results show a significant degree of business involvement with some of the SDGs of the 2030 Agenda, with a positive evolution in establishing initiatives based on the seventeen SDGs. Furthermore, we identify a tendency to adopt different initiatives with the less developed objectives. These results contribute to the previous literature by evidencing companies' current commitment to sustainable development, specifically analysing the 2030 Agenda, which outlines society's most pressing problems. Moreover, our analysis complements previous knowledge since we observe firms' initiatives in a period of uncertainty due to the COVID-19 pandemic.

The rest of the paper proceeds as follows: the next section presents the theoretical framework developed to analyse the integration of the SDGs in firms' sustainability strategies. The third section describes the impact of COVID-19 on the 2030 Agenda. The fourth section sets out the empirical framework. The fifth section summarizes the main results of the analysis of businesses' commitment and evolution along with the discussion. Finally, the last section presents the main conclusions and implications of our study as well as its limitations and research proposals for new developments.

2. Literature review

2.1. The 2030 Agenda

In light of the pressing problems facing future generations and today's society, at the 2015 United Nations General Assembly, countries worldwide agreed that different actions were necessary to achieve and cope with development. As a consequence, the document *Transforming Our World: The 2030 Agenda for Sustainable Development* was written, with a new "Agenda" or global agreement for human rights and climate change to achieve sustainable development. This agreement contained seventeen aggregate goals for sustainable development and 169 more specific targets, among which the eradication of inequalities, poverty and other social problems, fighting climate change and the protection of the environment should be achieved by 2030.

This new agenda is based on the Millennium Development Goals (MDGs) prepared in 2000, which focused on reducing poverty, disease, hunger and gender inequality and guaranteeing access to water. The new goals of the 2030 Agenda support initiatives to reach the goals not achieved years ago and include new ones of a social, economic and environmental nature. Specifically, the 2030 Agenda encourages sustainable societies that promote equality, solidarity and shared economic prosperity to attain environmental and social protection. It also requires the participation of all interested countries and their citizens and comprises seventeen objectives made up of different targets related to people, the planet, prosperity, partnership and peace.

Achieving the SDGs requires different actors in societies –public and private organisations, the third sector and civil society agents –to mobilise their efforts to reach sustainable development. This includes, for example, tax planning and reformulation implementing sustainable and green tax reforms

as tools to mitigate environmental impacts and damage [19–21]. It represents cooperation that is essential through and beyond the COVID-19 pandemic [22], in which the SDGs provide a clear path to face current health, economic and social challenges [3,23]. In short, the 2030 Agenda is an appropriate framework to explore the implementation of measures in an international context.

2.2. Sustainability Strategy and the SDGs

Sustainability involves organisations' commitment to sustainable development, guaranteeing the creation of economic value, environmental protection and greater social well-being. However, there is enormous scepticism regarding some sustainability strategies. This has prompted specialists in this field to analyse the benefits of CSR practices and whether these effects lead managers to implement sustainability policies and actions. Their motivation can range from self-centredness to managerial altruism [24], without the decisions being detrimental to owners and investors [25]. Thus, we know that economic agents –investors, analysts and financial entities –identify the quality of responsible policies and assign positive value to firms that implement them, favouring their profitability ratios and market value [26].

To aid companies in contributing to the goals of the 2030 Agenda, the UN, the World Business Council for Sustainable Development and the Global Reporting Initiative (GRI) have produced a guide and the SDG Compass tool to explain how companies can integrate the SDGs into their CSR strategies and establish a non-financial information disclosure system, whether it is an independent report or companies use CSR reports prepared following GRI guidelines [27]. This guide proposes integrating the seventeen commitments of the 2030 Agenda in the business sector by adopting instruments and tools that place sustainability at the centre of its strategies. It indicates that companies will have new growth opportunities with the SDGs. This includes reducing their risk profiles, developing and offering solutions to achieve the goals, thus being able to use the SDGs as an overall framework to shape, direct, communicate and report on their strategies, goals and activities. Businesses can then capitalise on a series of benefits [5,27]. Adopting this tool allows stakeholders to become involved and informed about the contribution of business to the 2030 Agenda.

However, it is surprising how few companies communicate their contributions to the SDGs through their sustainability reports [28,29]. This indicates that the commitment of these companies to the 2030 Agenda is usually symbolic and does not consist of significant action [16]. These practices are not in line with companies' professed values since more than 70% of firms believe that implementing SDG measures favours dialogue with stakeholders and boosts corporate reputation. In addition, 45% of companies believe that the SDGs allow new ways of doing business or customer segments to be found [30].

Specific studies have shown that Italian companies working in passenger air transport present less complete information than that established in the SDG Compass [31]. Gunawan et al. observed that many companies in Indonesia report on their contributions to the 2030 Agenda, mainly on five of the SDGs that do not correspond to the challenges established as priorities in their country [32]. Poddar et al., with a sample of 500 Indian companies, showed that there are critical areas of the SDGs that are neglected by these companies, which prefer to contribute to climate change, biodiversity and sustainable production and consumption [33].

Loreto, Azevedo, and Mariano analysed the CSR practices integrated into the 2030 Agenda adopted by a Bahian accounting services company [5]. The research revealed that in 2017, the company carried out some practices aligned with the Sustainable Development Goals, with an emphasis on the number of female employees occupying leadership positions (SDG 5). They finally made up the absolute majority of this company. However, actions and initiatives to promote greater environmental responsibility and disseminating innovative and sustainable technologies could be expanded as a commitment to the 2030 Agenda.

Rosati and Faria analysed 2,413 sustainability reports published by companies from 90 different countries [34]. The results showed that organisations that report on Sustainable Development Goals are more likely to be in countries with greater vulnerability to climate change. More recently, the evidence of Heras-Saizarbitoria et al. [14] suggested that business commitment to the SDGs is superficial because the information reported in CSR reports is limitated in terms of exhaustiveness (detailed coverage), materiality (relevance of the information on impacts) and precision (evaluation of performance), in addition to other limitations mentioned in Diaz-Sarachaga [35] and Nylund et al. [15] that specific internal governance mechanisms could mitigate [11].

In a global demographic analysis, the study carried out by van Zanten and Tulder [36] concluded that practically all economic activities have a positive impact on SDG 9 (Industry, innovation and infrastructure) and SDG 8 (Decent work and economic growth). However, few companies contribute to SDGs 2, 3, 4, 6, 7 and 11, helping to meet basic needs. In this regard, SDG 11 aims to improve life in cities and proposes ten commitments for cities to achieve sustainable urban development. These are especially focused on municipalities and efforts to integrate urban environmental sustainability into planning and objectives [37,19]. It is also necessary to highlight the negative impacts that affect human health (SDG 3), climate change (SDG 13), and ecosystems (SDGs 14 and 15). Johannes et al. [38] and van der Waal et al. [38] obtained similar results through the analyses of patents and other sustainable development initiatives relating to the 2030 Agenda that large multinational and small companies have developed.

In summary, despite the fact that managers' perceptions and researchers' results indicate that commitment to the SDGs brings benefits for companies, the reality is that there are deficiencies in their integration. They are merely symbolically or partially adopted, sometimes due to ignorance and serious conceptual confusion that hinder businesses' contribution to the SDGs [39]. Therefore, it is necessary to understand that firms have varied interactions with the SDGs due to complex dilemmas [40,41] and the mediating role of innovation [42] or ownership typology [40,44].

Having explained the importance of the SDG Compass tool and sustainability reports, to clarify business contributions to the 2030 Agenda, we now focus on understanding companies' commitment to the SDGs by determining the practices carried out and the objectives selected, as well as the evolution of these practices in 2020 and 2021, a period of economic recession due to the effects of COVID-19.

3. The impact of COVID-19 on the 2030 agenda

According to the report "*Shared responsibility, global solidarity: responding to the socio-economic impacts of COVID-19*" by the United Nations [17], the COVID-19 pandemic led to a

significant setback in achieving the SDGs, especially in terms of economic prosperity and eradicating poverty and inequalities.

Between 2015 and 2020, the international community's efforts helped to reduce the number of people in extreme poverty by approximately 96 million, and almost 400 million people had access to electricity for the first time, reducing the number of children without schooling by 5 million. However, the COVID-19 pandemic has slowed down these advances, and its most dramatic consequence must be mentioned, the impact it has had on global health (SDG 3) due to the deaths it has caused worldwide. Additionally, the global economic recession that arose from measures to contain the spread of this epidemic caused the loss of 255 million jobs and seriously affected more than 1.6 billion people working in the informal economy (SDG 8), without social coverage (SDG 1) or access to healthcare (SDG 3). The pandemic resulted in an increase in hunger (SDG 2), global poverty (SDG 1), child labour (SDG 16) and gender inequalities (SDG 5).

The reduction in human activity provided a temporary respite for threatened animal species and plants (SDGs 15 and 14) and climate change (SDG 13), although it has not been extensive enough to have a positive impact on ecosystems.

The economic recession has also created a dilemma for business due to the economic slowdown that companies have had to face. Many companies had to temporarily close, which caused a significant drop in their sales. In this scenario, the dilemma of shareholders' interests against other stakeholders gained strength again [45,46]. Although theorists suggest that companies should bet on fully or partially maintaining their commitment to all stakeholders as a long-term survival strategy, the results of research on business decisions in the toughest moments of COVID-19 show disparate actions [22,43,47,48]. New studies that allow us to understand how companies have responded to this new world scenario are needed [49]. In the next section, we explain the methodology.

4. Method

4.1. Population and sample

To determine the business initiatives being developed in the Spanish sphere related to the seventeen SDGs of the 2030 Agenda, we selected as our target population the companies listed on the Madrid Stock Exchange. These companies are obliged to present a non-financial information statement in accordance with Spanish Royal Decree-Law RDL 18/2017, replaced on December 30, 2018 with Royal Decree-Law RDL 11/2018, which transposes European Directive 2014/95/EU. This report contains information about company policies and strategies concerning social and environmental actions and impacts. In this report, firms disclose their commitment to the 2030 Agenda and the different initiatives taken to comply with each of the SDGs.

We conducted a content analysis of the disclosed information in the non-financial report or on the website of these 160 Spanish firms during the first two weeks of January 2021 and 2022. The information relates to the practices firms carried out to further the 2030 Agenda during the years 2020 and 2021. Therefore, the information available for analysis corresponds to a panel data set determining the different SDG initiatives of Spanish firms.

The information firms reveal about these practices is diverse and mainly non-numerical. Due to these characteristics, using numerical variables to measure firms' contributions is difficult. The variables used in the analysis are dichotomous. Moreover, we have detected inter and intra-differences in the actions that firms have developed for each SDG (see Annex 1). The variables defined to analyse business commitment to the 2030 Agenda take the value 1 if the firms have implemented a specific initiative involving an SDG and 0 otherwise.

The final sample for global analysis comprises 100 observations of Spanish listed companies that showed a commitment to the 2030 Agenda in 2020 and 2021. This commitment is understood as the development of business initiatives that contribute to achieving the SDGs.

4.2. Methodology

As previously indicated, we chose content analysis to carry out our study. We first examined the firms' non-financial reports to identify their commitment to the SDGs, if any [11]. We included activities and measures that would be carried out in the future.

Subsequently, the information that each company offered in relation to each of the SDGs was extracted, and the degree of total commitment of the listed companies by year was evaluated using a comparison table and bar charts. Annex A contains a list of the most interesting initiatives and programmes companies proposed.

To analyse business commitment to the 2030 Agenda, we selected the biplot methodology for several reasons. The first is due to the small number of observations and the dichotomous nature of the variables that determine the existence or not of any firm's initiatives for each SDG. The second is because of the statistical strength of this technique, similar to a regression, and the simplicity of its visual representation for anyone interested in the subject. The analysis techniques are depicted in biplot representations [50], which are useful tools for inspecting multivariate data matrices since their main purpose is to graphically represent the data. In the same way that the joint distribution of two variables is represented with a scatter diagram, a biplot shows three or more variables. In this paper, a variant of the biplot methodology, Logistic Biplot, has been used. We used the MultBiplot package of MultBiplot of Vicente-Villardón [51].

This methodology makes it possible to determine the companies that have promoted SDG initiatives and the interrelationships among practices. That is, the logistic biplot allows us to see whether there is a connection among the initiatives developed for different SDGs, showing business patterns of actions aimed at achieving a specific set of SDGs or whether they correspond to isolated actions for each SDG. This joint consideration allows us to determine commitment to the 2030 Agenda as a whole.

In this methodology, the original matrix is binary: in the rows, we have the companies and in the columns their presence (1) or absence (0) of commitment to each of the seventeen SDGs. When the data are binary, it is not appropriate to use a classic linear biplot since the response throughout the dimensions is linear, as in linear regression. In 1996, Gower and Hand proposed multiple correspondence analysis as a form of biplot for binary or categorical matrices. In their analysis, they considered the "prediction regions" as an extension of the classic linear projections. The representation space is divided into regions that predict each category or combination of categories [52]. Later,

Vicente-Villardón and others proposed a method related to logistic regression similar to a biplot with linear regression, which they called "logistic biplot" [51,53]. This method was extended by Demey et al. [54]. This technique combines principal coordinate analysis and logistic regression in the same algorithm to construct the technique known as "external logistic biplot."

The procedure is developed in three steps:

i. From the binary data matrix, the dissimilarities between each pair of companies (matrix rows) are calculated, applying the simple matching coefficient of similarity: $SMC_{ij} = \frac{a+d}{a+b+c+d}$, where a refers to the number of SDGs (matrix columns) present in both companies; b corresponds to the number of SDGs present in company i and absent in company j; c to the number of SDGs absent in i and present in j; and d to the number of SDGs missing in both companies. This coefficient is bounded between zero and one, with one indicating maximum similarity and zero total dissimilarity. Given the calculated similarity SMC_{ij}, the corresponding dissimilarity $\delta_{ij} = \sqrt{(1 - SMC_{ij})}$ is obtained since the applied multivariate analysis requires us to work with dissimilarities, and this is how the dissimilarity matrix Δ is obtained.

ii. Once the matrix Δ has been calculated, the next step is to subject the matrix to a principal coordinate analysis (ACoP) [55]. ACoP is a geometric procedure that allows a configuration to be found in a low-dimensional Euclidean space so that the distances between the points are as close as possible to the observed matrix Δ. The k-dimensional approximation will be found in the first k columns of said configuration, which are called "principal coordinates".

iii. On the main coordinate axes, we project the items (companies). The coordinates on these main axes are considered new variables, and a logistic regression model for each variable of our study (SDG) is fitted on them. The coefficients of the adjusted regression model allow us to locate the direction of projection for the items where the variable (SDG) is present.

After explaining the methodology, we will summarise the main results of business commitment to the SDGs and their evolution in the pandemic in the next section.

5. Analysis

5.1. Logistic biplot results for business commitment to the SDGs

Logistic biplot analysis shows the SDGs for which companies have developed initiatives, their relationships, and the companies' general commitment to the 2030 Agenda. It is a suitable technique because logistic biplot facilitates the representation of binary data.

Prior to their representation, Table 1 shows the goodness-of-fit measures from the analysis. The model presents an overall goodness-of-fit of 82%. This percentage determines the effectiveness of the biplot predictions of the presence or absence of SDG initiatives. In addition, the goodness-of-fit for each of the SDGs is identified by a p-value, where we can see that all the SDGs except SDGs 4, 8 and 12 are highly significant. We can also see the coefficient of determination for each of them, the correct classification percentage, which is quite high in the majority and somewhat lower for SDG 12 and a

measure of its discriminant power. The discriminant power is an inverse measure, so the lower the value, the greater the discriminant power of the variable and the more information it provides.

Table 1. Goodness-of-fit of the columns, Spain 2020–2021.

SDG	p-value	R^2	%Correct	Discriminatory power
SDG1	0.00	0.80	86.67	20.10
SDG2	0.00	0.39	83.33	117.93
SDG3	0.01	0.28	73.33	242.66
SDG4	0.11	0.14	80.00	486.99
SDG5	0.05	0.17	73.33	470.99
SDG6	0.00	0.55	86.67	56.79
SDG7	0.00	0.90	96.67	11.54
SDG8	0.78	0.01	93.33	1686.39
SDG9	0.02	0.25	80.00	171.35
SDG10	0.00	0.57	76.67	69.64
SDG11	0.00	0.40	76.67	102.63
SDG12	0.17	0.08	50.00	884.31
SDG13	0.00	0.73	93.33	31.08
SDG14	0.00	0.46	83.33	88.13
SDG15	0.00	0.58	86.67	46.10
SDG16	0.00	0.74	83.33	27.49
SDG17	0.00	0.78	93.33	37.32

Next, we show the representation of the logistic biplot. The origin of each vector –a dot – corresponds to a 0.50 probability of the presence of the SDG and the end of the vector with the value corresponding to a 0.75 probability. This means that the crosses –in our case companies –positioned in the direction of a vector ahead of a dot have more probability that the SDG in question will be present (see the example with SDG 17 in Figure 1).

Figure 1 shows the projection of each of the companies on SDG 17 (Partnerships for the goals). In this figure, we can see how only six of the forty companies show the absence of this SDG –those marked with a dashed line –behind the vector. The rest of the companies are projected on the extension in a positive direction. It should be noted that one of these six companies is positioned ahead of the vector (red), which seems to indicate the presence of the SDG. However, it appears with a dashed line, which indicates absence. This company (*e33*) is poorly represented since proper representation for this SDG is approx. 93%, and its percentage of presence is 80%. In contrast, *e11* is located slightly behind, but it is highly represented and appears with a solid line.

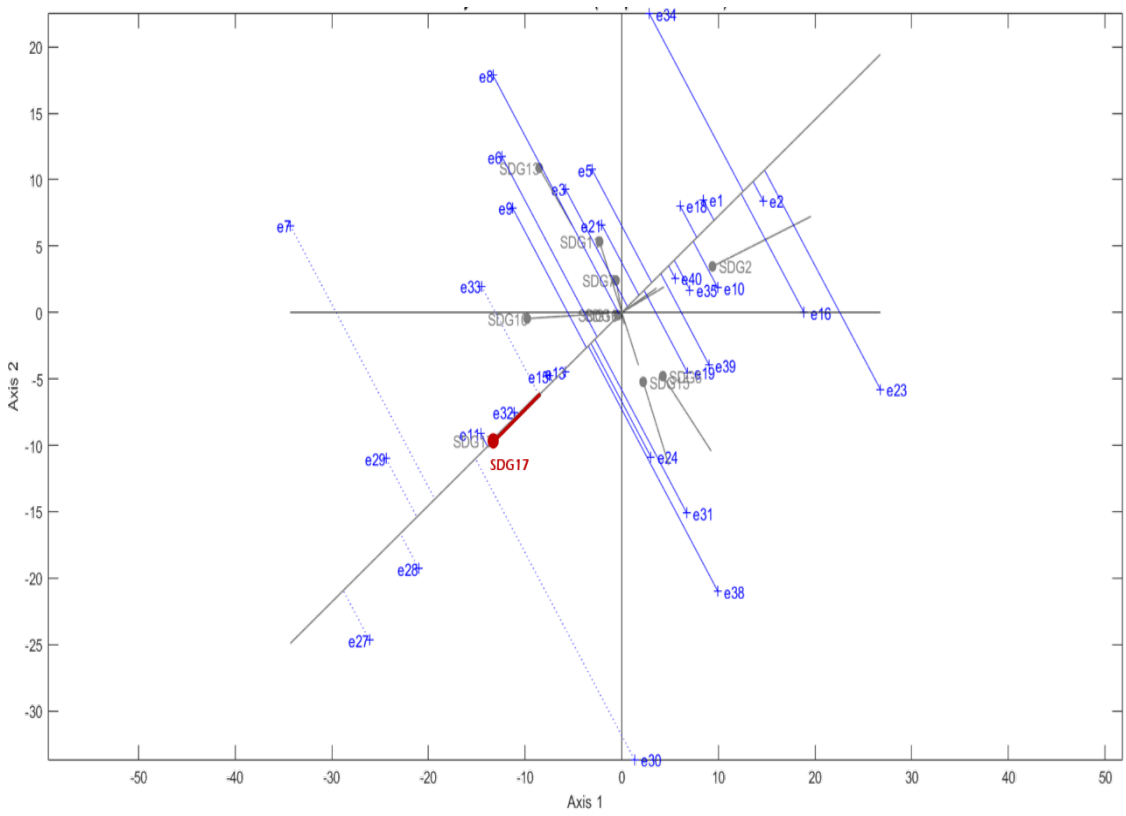
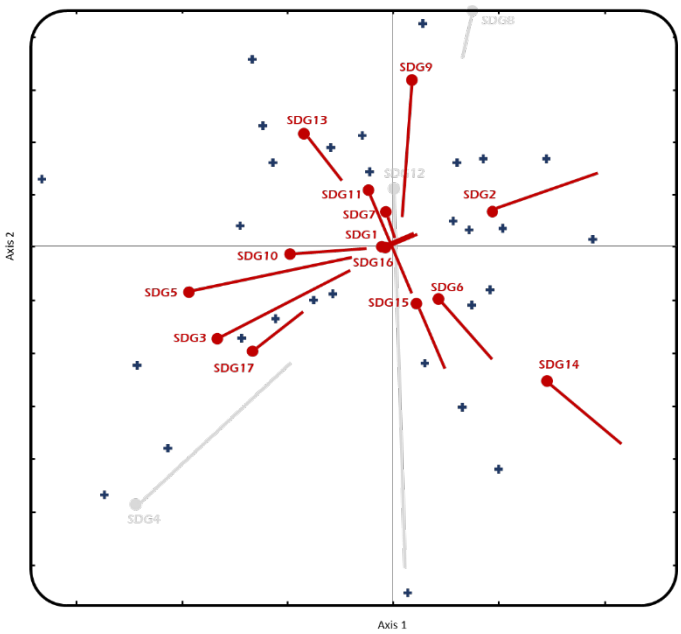


Figure 1. Projections of Spanish firms' commitment to the SDGs.

With the interpretation of this type of graph explained using SDG 17, we move on to its joint representation with the seventeen SDGs in Figure 2. In this figure, SDG 8 (Decent work and economic growth), SDG 4 (Quality education) and SDG 12 (Responsible production and consumption) appear in grey because they are not significant variables for the model. Moreover, they have low discriminatory power, which tells us that these variables are not very informative, with presence percentages of 90%, 83% and 63%, respectively. In the case of SDG12 (Responsible production and consumption), this is due to its low percentage of correct representation on the graph.



SDG	*% Presence*
SDG 8	*90%*
SDG 4	*83%*
SDG 13	*83%*
SDG 9	*80%*
SDG 17	*80%*
SDG 3	*75%*
SDG 5	*73%*
SDG 10	*70%*
SDG 11	*68%*
SDG 7	*65%*
SDG 12	*63%*
SDG 1	*55%*
SDG 16	*55%*
SDG 15	*48%*
SDG 6	*45%*
SDG 2	*40%*
SDG 14	*30%*

Figure 2. Logistic Biplot for Spanish firms´ commitment to the SDGs.

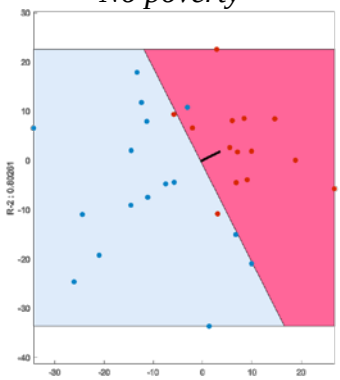
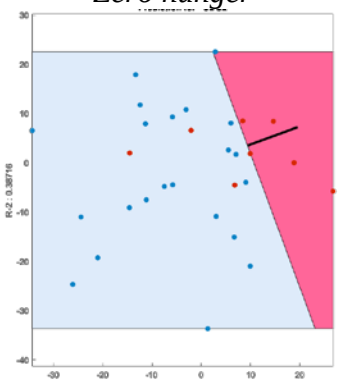
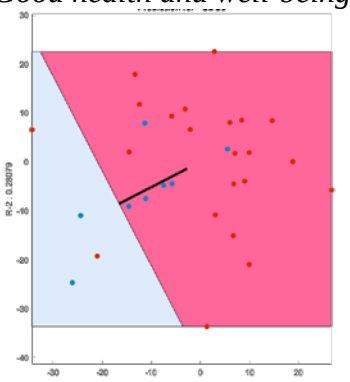
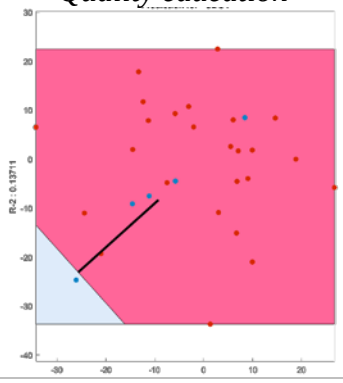
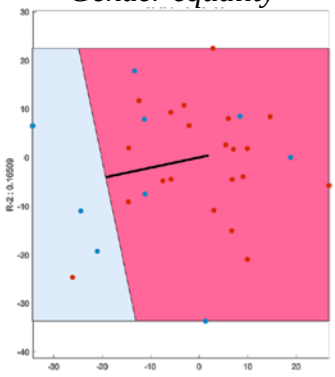
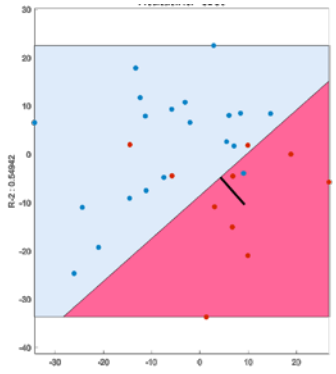
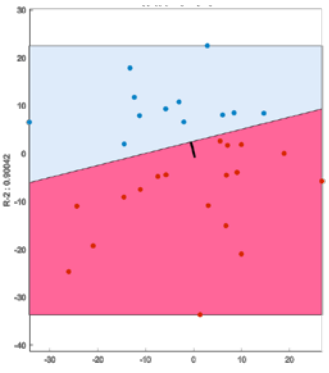
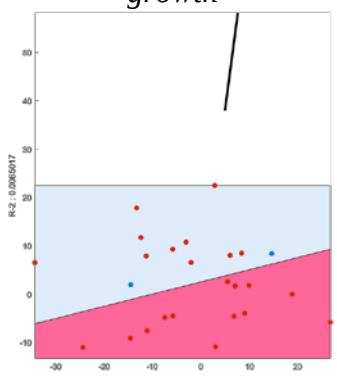
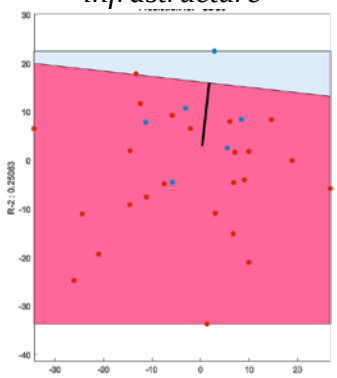
First of all, it should be noted that the indicators that are most interesting for companies correspond to SDG 8 (Decent work and economic growth), SDG 4 (Quality education), SDG 13 (Climate action), SDG 9 (Industry, innovation and infrastructure) and SDG 17 (Partnerships for goals). Their positions are far from the origin of the coordinates, with most of the companies ahead of the vector, indicating their presence in these indicators. The presence rate of these indicators reaches 80% or higher, highlighting 90% for SDG 8.

In contrast, we can observe how SDG 14 (Life below water), SDG 2 (Zero hunger), SDG 6 (Clean water and sanitation) and SDG 15 (Life on land) are the objectives that currently least concern Spanish companies. These SDGs are all located in the right half of the biplot, with few companies ahead of their vectors and absence percentages above 50%. It should be noted that SDGs 6, 14 and 15 have a close relationship, and companies group them together in their policies.

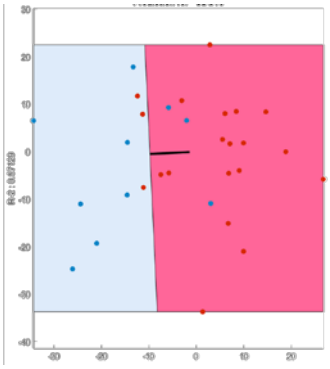
We find a positive relationship among SDG 17 (Partnerships for the goals), SDG 3 (Good health and well-being) and SDG 5 (Gender equality). They are placed close together in a similar direction, with a presence of between 75–80%. SDG 10 (Reduction of inequalities) is also close to these, but with a lower presence of 70%. We can also highlight the relationship between SDG 1 (No poverty) and SDG 16 (Peace, justice and strong institutions). Both are in the same location (at the origin of the coordinates) and direction and have the same vector length, with a presence rate of 55%. Finally, we note the relationship between SDG 7 (Affordable and clean energy) and SDG 11 (Sustainable cities and communities), with a presence percentage of 65–68%.

To delve into the goodness-of-fit of the model, the predictions of the most relevant indicators are presented in Figure 3. In the plots, it is possible to see the (in)correct classification of the initiative

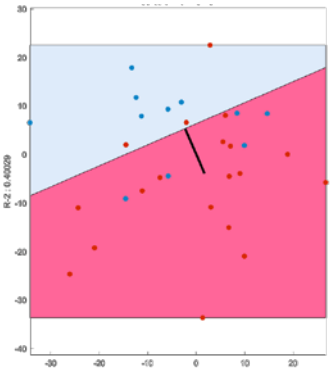
through the biplot technique, but it also allows us to determine companies' commitment to each SDG. Each graph shows the name of the SDG and its percentage of presence above. They are divided into two areas, a blue one representing absence and a red one representing presence. The dots located in the area of the same colour are well represented in the logistic biplot. When the colours of the dots and areas do not coincide, they are poorly represented.

SDG1 prediction (55% presence) *No poverty* 	SDG2 prediction (40% presence) *Zero hunger* 	SDG3 prediction (75% presence) *Good health and well-being* 
SDG4 prediction (83% presence) *Quality education* 	SDG5 prediction (73% presence) *Gender equality* 	SDG6 prediction (45% presence) *Clean water and sanitation* 
SDG7 prediction (65% presence) *Affordable and clean energy* 	SDG8 prediction (90% presence) *Decent work and economic growth* 	SDG9 prediction (80% presence) *Industry, innovation and infrastructure* 

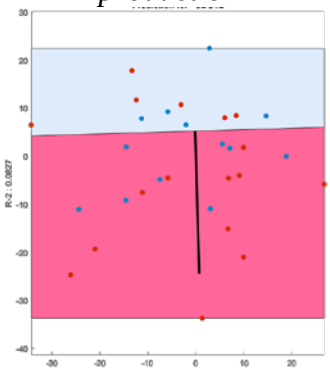
DG10 prediction (70% presence)
Reduced inequalities



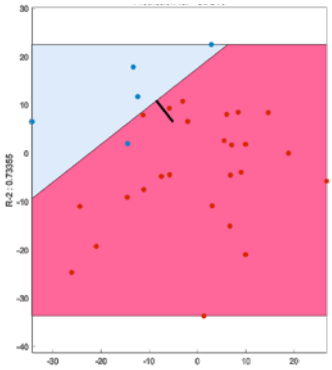
SDG11 prediction (68% presence)
Sustainable cities and communities



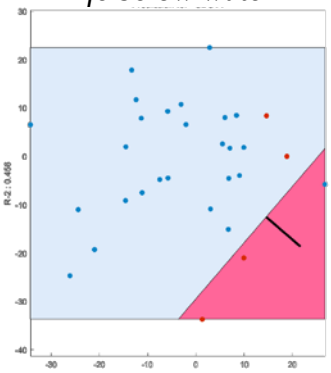
SDG12 prediction (63% presence)
Responsible consumption and production



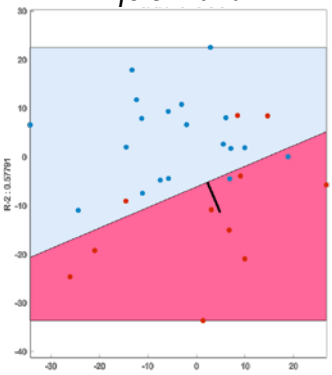
SDG13 prediction (83% presence)
Climate action



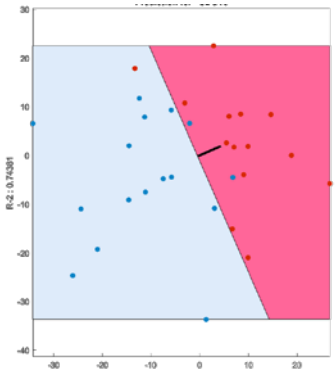
SDG14 prediction (30% presence)
Life below water



SDG15 prediction (48% presence)
Life on land



SDG16 prediction (55% presence)
Peace, justice and strong institutions



SDG17 prediction (80% presence)
Partnership for the goals

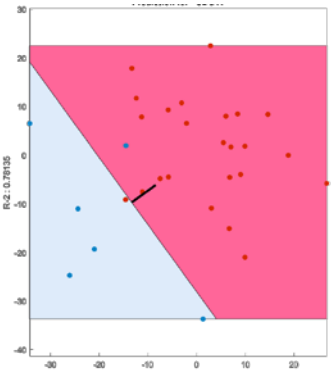


Figure. 3. Predictions of the seventeen Spanish firms' commitment to each SDG, area of presence (red) vs. area of absence (blue).

In view of the figures of the seventeen SDGs from the logistics biplot, we can evaluate their percentage of correct classification and extract relevant information. First, we highlight that the indicators that are most interesting for companies correspond to SDGs 8, 4, 13, 9 and 17, as we can

see that the red area of SDG presence is much larger than the blue area (indicating absence). Therefore, most companies support these goals. In contrast, we observe how SDGs 14, 2, 6 and 15 are the objectives that currently least concern Spanish companies since they have the largest blue areas of the study.

If we look more closely at these graphs, we can see how SDG 8 is located far apart from the rest, which is why it appears in grey in the global representation. SDG 8 is the priority SDG for all the companies in the study. SDG 12 has the worst percentage of correct classification in the global representation. The graph shows that there are many companies with a different colour than the region in which they are located, and since their vector is long, we detect little discriminatory capacity in the study. A similar, although less pronounced situation, occurs with SDGs 4 and 5.

The results obtained by the logistic biplot show patterns similar to what other researchers have obtained. So, business commitment to the 2030 Agenda is oriented towards specific SDGs [36], especially those related to the priorities of the country [31–33] and environment [38] in which they operate. Furthermore, although contributing to the SDGs fosters innovation, there are trade-offs among different SDGs.

The next step in our study is to compare the results obtained for the year 2021 with those of 2020 to analyze the impact of COVID-19 on SDG achievements.

5.2. Evolution of business commitment to the 2030 Agenda in 2021

We begin by representing with a Parallel Coordinates graph the presence percentages of each SDG in decreasing order for the year of study, 2021. This information is available in Figure 4.

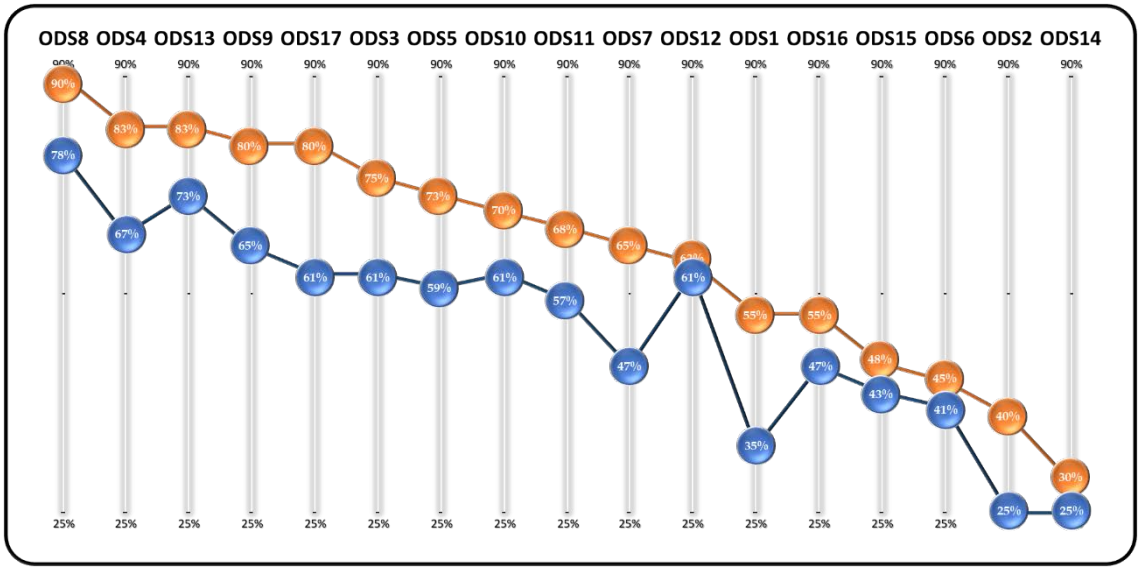


Figure 4. Parallel Coordinates, presence percentage of the seventeen SDGs for Spanish companies, 2021 (orange) vs. 2020 (blue)

In 2015, the 2030 Agenda established a plan to achieve the seventeen goals in fifteen years, so it is expected that over the course of the years, companies should increase their involvement. However,

the evidence from several reports suggests that the COVID-19 pandemic reversed this progress. In contrast to the global evolution, our results confirm a positive trend since every one of the seventeen SDGs had a higher presence percentage in the most current year of study, 2021.

Concerning the importance of each SDG, the order of priority is maintained to a certain extent, with the most interesting SDGs for companies (8, 4, 13, 9 and 17) and the least interesting (14, 2 and 6). However, there have also been notable changes. SDG 1 (No poverty), SDG 17 (Partnerships for the goals) and SDG 7 (Affordable and clean energy) have seen 18–20% of companies increase their commitment. Therefore, the improvements show a preference for women, older people, young people, workers, and trade unions, local governments and researchers in areas of climate change.

The improvements in SDGs 1 and 17 can be explained, at least partially, by the package of important economic measures the Spanish Government established in 2020 (164.1 billion Euros) that increased health spending, subsidies to protect income for self-employed workers and firms, public guarantees for loans and exemptions and extensions in tax payments [56]. The measures were set out in four Royal Decree-Laws. It is worth mentioning the one-time unemployment benefit for temporary workers, the partial waiver of conditions for drawing cessation of activity benefits for the self-employed, expanding coverage for the most vulnerable households, with essential utilities guaranteed, and different moratoria established for rent payments and mortgage and non-mortgage loan repayments [57].

The increase in SDG 7 can also be explained by the European Union measures included in the European recovery plan Next Generation EU for economic recovery and resilience, through which Spain can receive around 140 billion Euros between grants and loans for four years [56]. The investment initiatives should be oriented towards improving productivity and fostering innovation for digital and green transition objectives. Since Spain is one of the EU members with the greatest vulnerability to climate change, the European Commission lagged the acceleration of the transition with more public and private investment in energy infrastructure, the reduction of energy consumption in private and public buildings, sustainable transport, the development of renewable energies, water and waste management and circular economy initiatives, among others [58].

Among the forgotten SDGs, commitment to them remains worrying, with only a 2–5% increase in SDG 6 (Clean water and sanitation), SDG 15 (Life on land) and SDG 14 (Life below water). For SDG 12 (Responsible production and consumption), the commitment does not change. Commitment to SDG 2 (Zero Hunger) has increased by 15%, although it continues to be the penultimate in importance with a 40% presence.

These results show the effect institutional characteristics have on business commitments to CSR [59–61], and they could confirm the differences observed at the national level in previous studies on the 2030 Agenda [31–34,36,38]. The difference in Spanish firms´ commitment to the 2030 Agenda compared to the worldwide dynamic could be a consequence of different forces at the country level associated with an increased need for legitimacy. Commitment to the SDGs could be used to send positive signals to company shareholders and other stakeholders. Spain's results are equivalent to other international statistics, e.g., SDG 16 shows medium commitment (63%), equivalent to the Spanish position in indexes like Transparency International, reflecting the perception of corruption.

Considering the SDGs like levers of collaboration among stakeholders affected by the pandemic downturn, the forgotten SDGs outline companies' preferences for collaboration with civil society,

NGOs, law enforcement, governments, researchers and academia. Since companies are the subjects of this research, SDG 12 demands more attention in the explanation. Previous studies found that sustainability positively influences business performance [62], and estimated the period necessary to achieve positive results [9], even with only an indirect effect [63]. The lack of resources and scepticism concerning what constitutes a circular economy business model are examples of important barriers to implementing a more sustainable strategy [64,65]. Furthermore, although the EU's policies promote waste management to improve recycling rates, Ghisellini et al. did not find studies that assess them under the consideration of future undesired consequences [13]. Zink and Geyer explained that there are limits to the circulation of materials with the possibility of rebound effects [66].

6. Conclusions

This study analyses the business commitment of companies listed on the Madrid Stock Exchange to the 2030 Agenda and the SDGs in 2020 and 2021. To this end, annual reports, non-financial information statements, and sustainability reports that companies publish annually have been examined. With all the data collected, a multivariate analysis was carried out on a general level, verifying and confirming what initiatives are carried out to achieve the different SDG goals.

This research can help to make a global assessment of how companies propose initiatives to achieve the goals set by the 2030 Agenda and determine whether there is an upward trend in adopting measures and initiatives to advance the SDGs. The economic effects of the pandemic resulted in the prevalence of some stakeholders over others (the dilemma). The results show that business commitment is oriented towards specific SDGs, especially those related to Spanish social and economic priorities (SDGs 8 "Decent work and economic growth", 4 "Quality education", 13 "Climate action", 9 "Industry, innovation and infrastructure" and 17 "Partnerships for the goals"). Furthermore, we assume that firms benefited from public resources to compensate the impact of COVID-19, and this had a positive effect on the SDGs. Specifically, we identified a group of SDGs (1 "No poverty", 17 "Partnership for the goals" and 7 "Affordable and clean energy") that experienced an 18–20% boost in company commitment. The improvements show firms' preference for the following stakeholders: women, older people, young people, workers and trade unions, local governments and researchers in areas of climate change. In contrast, SDG 6 (Clean water and sanitation), 15 (Life on land), 14 (Life below water) and 12 (Responsible production and consumption) have small variations. Hence, pro–environmental NGOs have not been considered by companies in the area of conservation and the improvement of wildlife.

Companies' awareness of compliance with the 2030 Agenda is growing since the SDGs propose a cultural change, and a global commitment is necessary. Therefore, more and more companies will adopt measures in this regard. However, we have detected that companies lack understanding of the 2030 Agenda. This leads them to implement initiatives by isomorphism, frequency or traits, which means that many companies adopt only those SDGs that agree with or are directly related to their business activity. Although this approach is not negative, better knowledge of initiatives being developed for other SDGs could facilitate their integration into industries that are not currently committed to them.

This research contributes to the previous literature by helping to determine the impact that uncertain environments have on business commitments to the 2030 Agenda and the procedure that companies use to gain legitimacy under negative conditions. From a practical point of view, we highlight business knowledge about and commitment to the SDGs and the contribution companies can make to the world's current problems. We conclude by recommending that public institutions and the third sector promote the road map established by the United Nations.

Finally, this paper presents a set of limitations that must be considered in subsequent studies. These limitations involve the geographical scope of the study and the national nature of the data used in the analysis. A more in-depth view of the relationship between stakeholders and the SDGs is necessary. Second, to analyse whether companies adopt SDG measures can be a consequence of specific market-related circumstances (e.g. energy prices). Third, the SDGs are individually considered to explain the relationships among stakeholders. Researchers should focus their interests to reveal the impact that these commitments have on society in greater depth. Lastly, in general terms, comparative studies should be carried out that analyse SDG commitments in companies by nations (European versus non-European) or even economic blocks (for example, BRICS, OECD member countries and Latin America, among others). Also, a deeper view of the relationship between EU recovery and resilience funds and the SDGs would be of interest.

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