Received: 27 January 2022 | Revised: 13 May 2022 | Accepted: 25 May 2022

DOI: 10.1002/sd.2354

RESEARCH ARTICLE

Sustainable Development

WILEY

The importance of institutional differences among countries in SDGs achievement: A cross-country empirical study

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Abstract

Based upon the "quintuple helix" model (Carayannis et al., 2012; Carayannis & Campbell, 2010), this research analyzes whether the differences in the level of achievement of the Sustainable Development Goals (SDGs) among 64 countries worldwide can be explained by a series of 19 institutional variables related to five dimensions such as cultural orientation, economic development, the education-labor system, the political-legal system and innovation. Our results highlight the crucial role of public policies in attaining SDGs through the improvement of institutional quality, governance systems and economic freedom as well as with the promotion of education and the innovation ecosystem. In this regard, the adoption of the "quintuple helix" model through the interrelation of the government, Universities and the private sector is deemed relevant in order to face the social and environmental challenges posed by the SDGs.

KEYWORDS
institutions, public policies, SDGs, sustainability

1 | INTRODUCTION

The 193-Member United Nations General Assembly formally adopted the *2030 Agenda for Sustainable Development* on September 25, 2015, along with a set of bold new sustainable development goals (hereafter, SDGs) with 169 targets that constitute an ambitious plan to integrate economic and social development with environmental sustainability worldwide. These goals seek to reconcile economic prosperity with the reduction of inequalities and to address issues related to the climate crisis or the loss of biodiversity.

SDG engagement and reporting has received increasing research attention, and is an emerging research area (Tsalis et al., 2020). Previous research has mainly focused on the factors that drive firms to engage with the SDGs and to integrate them into their reports (Martínez-Ferrero & García-Meca, 2020; Pizzi et al., 2021; van der Waal & Thijssens, 2020). However, the collective success in SDGs achievement will depend, to a large extent, on a series of particular country-specific institutional conditions that provide incentives for their implementation and compliance (Biermann et al., 2017). In this regard, the political, cultural, educational and economic institutional framework that surround firms directly affects their sustainability performance by defining the "rules of the game" that grant them legitimacy (Cahan et al., 2016; Delmas & Toffel, 2008; Halkos & Skouloudis, 2016; Ioannou & Serafeim, 2012; Jackson & Apostolakou, 2010; Rosati & Faria, 2019a). Specifically, with respect to sustainability reporting, the organization's home country has been found to have an effect on the adoption, scope and quality of sustainability reporting (Bose & Khan, 2022; Buhr & Freedman, 2001; Chen & Bouvain, 2009; Fortanier et al., 2011; Frías-Aceituno et al., 2013; Hahn & Kühnen, 2013; Jensen & Berg, 2012; Prado-Lorenzo et al., 2009; van der Waal & Thijssens, 2020; van Zanten & van Tulder, 2018; Vormedal & Ruud, 2009).

The growth of multinational companies in the global market, the importance in the economic and social sphere of emerging countries and the need for managers, shareholders and other stakeholders to know and understand the rules, social and cultural aspects of different countries has led to the application of the so-called *institutional theory*

(DiMaggio & Powell, 1983; North, 1990) in many studies in the field of business administration. In this sense, firms are considered to be economic units that operate within contexts formed by a nexus of institutions that affect their behavior and impose expectations on them (Campbell, 2007). Thus, organizations operating in countries with similar institutional structures tend to adopt homogeneous forms of behavior (Campbell, 2007; Claessens & Fan, 2002; La Porta et al., 1998). DiMaggio and Powell (1983) call this process "isomorphism" and argue that it reinforces firms' stability and survival by facilitating their institutional legitimacy. Institutional pressures at country level also have an indirect effect through their moderating impact on institutional investors' behavior and, consequently, on their influence on the implementation and achievement of the SDGs by the companies in which they invest (García-Sánchez, Aibar-Guzmán, Núñez-Torrado, & Aibar-Guzmán, 2022; García-Sánchez, Rodríguez-Ariza, et al., 2020).

Research on these institutional factors could have important implications for managers, investors and those responsible for designing country-specific strategies, investments and policies to support the SDGs (Halkos & Skouloudis, 2016, 2017; Jensen & Berg, 2012). As indicated by Halkos and Skouloudis (2016), the previous studies on corporate social responsibility (CSR) have focused on the micro or organizational level within certain national settings while research at the macro or supranational level including a sample of different countries is limited. Ringov and Zollo (2007) point out the lack of a solid empirical basis for relating national specificity to CSR, and studies are needed to answer the following critical questions: (a) why are companies in certain countries more socially responsible than those in other countries? (b) what institutional parameters facilitate strong SDG penetration in a given national economy?

In this sense, this research contributes to the CSR and institutional theory literature by examining the impact of institutional differences among countries on the SDGs attainment. To this end, based on the "quintuple helix" model (Carayannis et al., 2012; Carayannis & Campbell, 2010), we analyze whether the differences among countries in SDGs achievement can be explained by a series of institutional variables related to five dimensions such as culture, economic development, the educational-labor system, the legal-political system, and innovation.

Our study complements and extends the previous literature on SDGs (Bose & Khan, 2022; García-Sánchez et al., 2022; García-Sánchez, Aibar-Guzmán, et al., 2020; García-Sánchez et al., 2021; García-Sánchez, Rodríguez-Ariza, et al., 2020; Pizzi et al., 2021; Rosati & Faria, 2019b, Rosati & Faria, 2019a; Schramade, 2017; van Zanten & van Tulder, 2018; Yamane & Kaneko, 2021) by theoretically motivating the institutional dimensions considered based on the "quintuple helix" model. Unlike Rosati and Faria (2019a), our dependent variable is based on a numerical score that captures the level of SDG achievement *at the country level* instead of being a dichotomous variable at the company level tracking whether or not organizations have addressed the SDGs in their sustainability reports. Moreover, we also carry out a multivariate analysis in order to take into account the joint effect of all the variables.

The structure of the remainder of the paper is as follows. The second section presents the theoretical framework as well as the hypotheses tested. The third section presents the methodology and sample of the study explaining the measurement of the different variables used. In the fourth section we show the results obtained from the statistical techniques used. Finally, we present the main conclusions and implications of our work.

2 | THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

2.1 | The quintuple helix model applied to the sustainable development

The "quintuple helix" model (Carayannis et al., 2012; Carayannis & Campbell, 2010), reflected in Figure 1, represents an extension of the "triple helix" (Etzkowitz & Leydesdorff, 2000) and "quadruple helix" (Carayannis & Campbell, 2009) models in order to generate and promote sustainable development for society. The "triple helix" model of innovation consists of a set of interactions between academia (*human capital*), industry (*economic capital*), and governments (*legal capital*) to foster economic and social development, linking the creation and exchange of knowledge between these three subsystems. Later, Carayannis and Campbell (2009) recognized the nonlinear dynamics within the "triple helix" and extended this to the "quadruple helix" by incorporating "*social capital*" (composed of tradition, values, and culture) as the fourth subsystem. Subsequently, Carayannis and Campbell (2010) further developed the "quadruple helix" by adding the fifth subsystem (the environment or *natural capital*) to the knowledge and innovation model. The aim and interest of the "quintuple helix" model is to include the environment as a new subsystem of knowledge and innovation modeling, being particularly appropriate in the context of SDGs.

Therefore, this "quintuple helix" highlights the importance of analyzing the following five institutional dimensions referred to below in order to explain the differences in SDGs achievement: (a) cultural system; (b) political and legal system; (c) economic system; (d) educational system, and (e) innovation.

2.2 | Hypotheses related to the institutional factors

2.2.1 | Cultural system

Culture is framed within the "informal" institutional factors that are reflected in the values and customs of the citizens of a given country. In this sense, institutional theory allows a comparative examination of the effects of culture on the sustainability practices of companies, as it assumes that corporations are integrated into a nexus of formal and informal institutions, including culture, which directly influence their activities (Miska et al., 2018).

Hofstede et al. (2010, p.6) define culture as "the collective programming of the mind that distinguishes members of a group or category of people from others". As Prado Lorenzo et al. (2013) point out, culture has an important impact on the ethics of decision-making

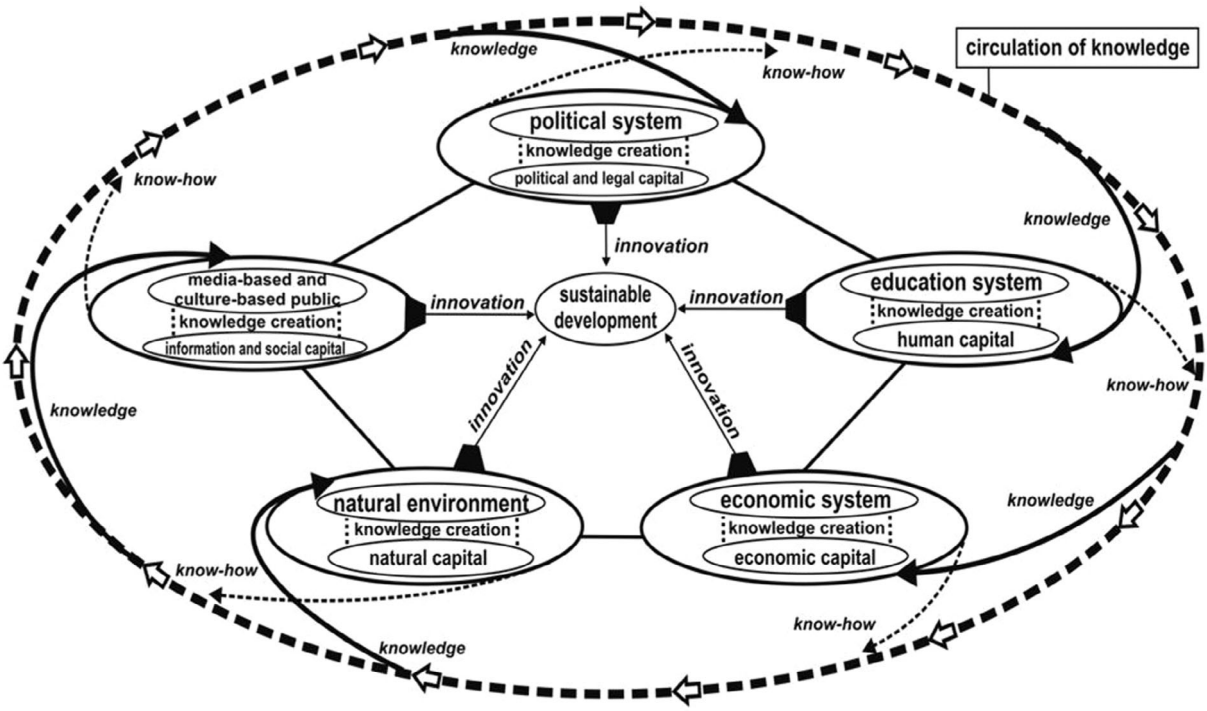

FIGURE 1 The quintuple helix model (Carayannis et al., 2012)

processes, on the behavior of managers and on business performance as it will generate an orientation towards more or less sustainable business behavior. According to Caprar & Neville (2012, p. 236), "culture is the antecedent, or the condition, that influences the adoption of sustainability." In this sense, several studies identify culture as an important variable that explains the variations between different countries in the issues related to sustainability (Ioannou & Serafeim, 2012; Parboteeah et al., 2012; Ringov & Zollo, 2007) as well as in the awareness of consumers toward social and environmental issues (Cubilla-Montilla et al., 2019; Szőcs et al., 2016; Williams & Zinkin, 2008).

In their work, Hofstede et al. (2010) identified six dimensions of national culture that have been widely used in various academic fields, including CSR (Fernandez-Feijoo et al., 2012; Garcia-Sanchez et al., 2016; García-Sánchez et al., 2013; Halkos & Skouloudis, 2017; Kim & Kim, 2010; Maignan, 2001; Ringov & Zollo, 2007; Williams & Zinkin, 2008) and sustainable and environmental development (Vachon, 2010; Kumar et al., 2019). These dimensions are: masculinity, individualism, power distance, uncertainty avoidance, long-term orientation, and indulgence versus moderation, although the first five are the most widely accepted and are referred to below.

Masculinity

This dimension refers, among other aspects, to the focus on material success as opposed to concern for quality of life. Hofstede (2001, p. 32) argues that, in cultures with a more masculine orientation, a preference for economic growth over environmental conservation is created, leading to a slower adoption of more costly technologies beneficial to their preservation. Thus, in male-oriented cultures there is less institutional and social capacity to achieve sustainable development (Husted, 2005). In this sense, several studies (Fernandez-Feijoo et al., 2012; Orij, 2010; Park et al., 2007; Ringov & Zollo, 2007; Vachon, 2010; Williams & Zinkin, 2008) show that organizations based on countries with a higher value of the masculinity index show lower levels of social and environmental performance. In the same vein, Garcia-Sánchez et al. (2013, 2016) document, based on a sample of 20 countries, that companies located in countries with a more feminist orientation show greater corporate transparency on sustainability issues. Ciocirlan and Pettersson (2012) show, within the Fortune 500 companies, that those with the greatest number of women in their workforces show a greater concern for climate change while Wang et al. (2021) find that femininity is positively related to green proactivity. In the context of SDGs, Pizzi et al. (2022) find that masculinity negatively impacts SDG reporting practices.

Individualism

The individualism/collectivism dimension reflects the prevalence of individual versus collective values and refers to the degree to which people expect to stand on their own feet or, alternatively, act primarily as a member of a group or organization. In this sense, the environmental movement emerged largely as a result of the activity of widely dispersed interest groups rather than centralized associations (Dobson, 1990). Matten and Moon (2008) argue that strong elements of "explicit" CSR, defined as "the result of a deliberate, voluntary and often strategic decision by an organization," are expected to be found in individualistic societies that provide freedom of choice to private economic actors. A meta-analysis conducted by Khlif et al. (2015) on

42 empirical studies published between 1975 and 2013 showed that individualism negatively impacts social reporting. In the same line, Katz, Swanson, and Nelson (2001) point out that the activity of proactive groups in favor of the environment seems to be much more widespread and diverse in individualistic cultures than in collectivistic ones. In similar tems, Vachon (2010) finds that individualism is related to "green" corporatism, environmental innovation, fair labor practices, and involvement in CSR, while Husted (2005), Ioannou and Serafeim (2012) and Peng et al. (2012) observe that countries with greater individualism have greater social and institutional capacity to respond to social and environmental challenges. Vu (2020) shows that the emphasis on personal autonomy and achievement in individualistic cultures positively influences climate change policies by improving the quality of governance mechanisms and promoting innovation. Rosati and Faria (2019a) find that companies reporting on SDGs are located in countries characterized by individualistic cultures.

However, Hofstede et al. (2010) point out that in collectivist societies individuals consider themselves as members of a group and have strong links with society. Thus, there is also the previous research that argues that social and environmental practices can be expected to be more common in collectivist societies where the demands of different stakeholders are considered important, obtaining empirical evidence in this regard (Garcia-Sanchez et al., 2016; García-Sánchez et al., 2013; Ringov & Zollo, 2007). Buhr and Freedman (2001) present evidence that the collectivist Canadian society engages inmore environmental disclosure than the individualist US society. In the specific case of SDGs, Melloni et al. (2020) and Pizzi et al. (2022) find that companies from collective societies tend to disclose more SDG information and in greater detail than companies located in individualistic societies.

Power distance

The power distance dimension measures the degree to which a country's society accepts the unequal distribution of power in institutions and organizations. A high score on this index means that society accepts inequalities in power. Hofstede (2001, p. xix) defined hierarchical distance as "the degree to which less powerful members of organizations and institutions accept and expect power to be distributed unequally." Respect for authority in countries with high power distance leads to a lower capacity for debate and a weaker sensitivity of the private sector to social and environmental problems (Katz et al., 2001). In contrast, in societies with low power distance, people strive to equalize the distribution of power and demand justification for inequalities, being more sensitive to social and environmental issues.

Rosati and Faria (2019a) find that companies reporting on SDGs are located in countries with lower levels of power distance. This is because organizations located in countries with greater power distance tend to have stronger hierarchical structures (Vachon, 2010), less transparency (Pahl-Wostl et al., 2008), less meritocratic systems and stronger degrees of favoritism and loyalty to authority (Husted, 2005). As a result, societies with high power distance are more likely to accept unsustainable organizational practices, including poorer working conditions and more polluted environments (Vachon, 2010), and are less inclined to openly discuss sustainability initiatives and adopt a stakeholder-oriented approach (Ringov & Zollo, 2007).

Based on the previous arguments, several studies have found that countries with greater power distance have lower social and institutional capacity for environmental sustainability (Husted, 2005) and lower scores on the Environmental Sustainability Index developed by the World Economic Forum (Park et al., 2007). Similarly, Ringov and Zollo (2007) and Garcia-Sanchez et al. (2016) document that power distance has a significant negative effect on the social and environmental performance of companies.

Uncertainty avoidance

Hofstede (2001, p.xix) describes a culture's aversion to uncertainty as "the extent to which a culture programmes its members to feel uncomfortable or comfortable in unstructured situations." This dimension reflects the degree to which society has an aversion to the unknown, so that a high value for it implies a culture that is less opening to change and less tolerant. Societies with a greater aversion to uncertainty tend to issue strict rules on the behavior of individuals, showing a greater aversion to change and innovation (de Mooij & Hofstede, 2010; Yaveroglu & Donthu, 2002), while societies with a lower value for this dimension are more flexible in accepting ideas and behavior by encouraging citizen participation and debate.

Thus, organizations in countries with greater uncertainty avoidance may find it more difficult to adapt to new sustainability demands and practices that involve a more disruptive and innovative approach (Ringov & Zollo, 2007). Consequently, previous studies hypothesize a negative effect of uncertainty avoidance on social and institutional capacity for environmental sustainability (Husted, 2005), social and environmental performance (Garcia-Sanchez et al., 2016; Ringov & Zollo, 2007) and sustainable practices (Vachon, 2010). Wang et al. (2021) find that firms in countries with higher uncertainty avoidance areless likely to undertake a proactive response to climate change, probablybecause decarbonization would entail significant large-scale social andeconomic restructuring. Because reporting on SDGs is a very new and challenging practice for organizations around the world, we argue that it will be more difficult to implement in societies with more aversion to uncertainty.

Long-term orientation

This cultural dimension refers to the importance given in a culture to long-term life planning as opposed to immediate concerns. In this sense, an important aspect is that sustainability emphasizes the long-term nature of the benefit that businesses are expected to provide to society. This is because sustainability aims at intergenerational equity (Bansal, 2005) and in this sense the needs of the current generations should not compromise those of the future generations. This is aligned with cultures where long-term success is valued and where organizations have a more long-term strategic orientation.

Thus, the costly environmental and other investments needed to achieve a sustainable society imply, in most cases, a tradeoff between

short-term profitability and long-term success and competitive advantage. In this sense, it is not surprising that the previous studies (Garcia-Sanchez et al., 2016; Parboteeah et al., 2012) have shown a positive association between long-term orientation and the propensity to disclose and support sustainability initiatives. In the same vein, the work of Durach and Wiengarten (2017), in a sample of eight countries, documents that investments in environmental practices are more systematically made in those countries with a more long-term orientation. In the context of SDGs, Pizzi et al. (2022) find that long term orientation positively impacts SDG reporting practices.

Based on the previous arguments related to the five cultural dimensions, we posit the following hypothesis:

> **H1.** The level of SDGs achievement is higher in more collectivistic countries, with a lower power distance, a lower uncertainty avoidance and a higher long-term orientation.

2.2.2 | Political and legal system

The role of government can be critical in promoting sustainable business practices that mitigate market failures related to social and environmental externalities. Bernauer and Koubi (2009) show that good governance and institutional quality results in more stringent environmental regulations and greater investment in environmental-friendly technologies. In the same line, Fredriksson et al. (2007) show that countries with democratic institutions are more likely to ratify multilateral agreements on climate change such as the Montreal or Kyoto Protocols.

Kaufmann et al. (2011) define the governance system of a country as the set of traditions and institutions that determine how authority is exercised in that country. This includes:

- the process of selecting, monitoring, and replacing governments;
- the government's ability to formulate and effectively implement appropriate policies; and
- respect by citizens and the State for the institutions that govern their economic and social relations.

In this sense, there is extensive previous research, based on institutional theory, which shows that political and legal conditions are among the most important external factors that explain the differences between countries in the level of disclosure of social and environmental information by companies (Adams, 2002; Coluccia et al., 2018; De Villiers & Marques, 2016; Ioannou & Serafeim, 2012; Jo et al., 2016; Keig et al., 2015; Knudsen, 2011; Mitchell Williams, 1999; Orij, 2010). The general conclusion of these studies is that countries with weaker regulatory environments provide fewer incentives for companies to develop proactive actions with society and the environment.

To measure the impact of a country's political-legal system, the World Bank's "Worldwide Governance Indicators" (WGI) have been used. These indicators cover some 200 countries and comprise six dimensions (voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law and control of corruption) that change annually and are measured on a scale of −2.5 to 2.5, where the highest values correspond to better institutional quality. In this sense, Knudsen (2011) uses an aggregate index, obtained by adding the six previous governance dimensions of the World Bank, finding that countries with higher values in that index are less likely to abandon the commitment to the 10 principles of the UN Global Compact. We therefore state the following hypotheses:

> **H2.** The level of SDGs achievement is higher in those countries with higher levels of voice and accountability, government effectiveness, political stability and absence of violence, regulatory quality, rule of law and control of corruption.

2.2.3 | Economic development

As indicated by Husted (2005), economic development is the main driver of social and institutional capacity for environmental sustainability. Welford (2005)'s study of 15 countries pointed to a link between country economic development and the development of CSR policies. In the same line, Baughn et al. (2007) document that higher levels of wealth provide more resources and technology for social and environmental initiatives. Higher levels of wealth per capita could also allow a country's citizens to make greater demands for corporate responsibility (Ramasamy & Ting, 2004). Further, advanced economies are more likely to have well established laws and policies to address corporate behavior, while developing economies suffer from poorer enforcement mechanisms (Nwabuzor, 2005). Along the same lines, Jensen and Berg (2012) and Fasan et al. (2016) postulate that the macroeconomic environment directly affects sustainability reporting practices.

Another important variable to consider is economic freedom, which assumes that basic institutions that protect the freedom of individuals to pursue their own economic interests result in greater prosperity for society. Indeed, previous studies (Fasan et al., 2016; Graafland & Noorderhaven, 2020; Jensen & Berg, 2012; Roy & Goll, 2014) have found that a country's economic freedom can exert a positive influence on its sustainability performance, constituting a factor for increasing the level of disclosure on sustainability issues to the extent that it can reduce the effects of corruption and encourage firms to take responsibility for their impact on social welfare (Baughn et al., 2007; Nwabuzor, 2005). As Baughn et al. (2007) point out, government intervention in the economy of developing countries often inhibits the entry of foreign companies. In so doing, a potentially important vector for the institutionalization of CSR norms from outside countries is shut off. We therefore propose the following hypothesis:

> **H3.** The level of SDGs achievement is higher in those countries with higher levels of economic development and economic freedom.

2.2.4 | Education and labor system

Previous research has evidenced that education can influence citizens' attitudes, towards social responsibility and business ethics (Dellaportas, 2006; Elias, 2004; Luthar et al., 1997; Rosati et al., 2018). At the country level, the study by Park et al. (2007) shows that there is a positive association between a country's higher education levels and its level of environmental sustainability. Other studies have also found that, on average, individuals with higher levels of education show greater orientation and expectations towards sustainability (Calabrese et al., 2016; Quazi, 2003).

With regard to the labor system, the previous research (de Geer et al., 2009; Jensen & Berg, 2012) assumes that a high density of trade unions in a country is positively related to employee participation in decision making and socio-political progress, and therefore greater sensitivity to ODS can be expected. Therefore, we propose the following hypothesis:

> **H4.** The level of SDGs achievement is higher in those countries with higher public spending on education and trade union density.

2.2.5 | Innovation

In the national innovation systems and the political economy approach, Lundvall, 1992) explicitly defines the concept of a "national innovation system" in a broad sense, including all aspects and areas in the economic structure and institutional organization that affect learning and research and exploration, resulting in greater social anchorage in innovation. In this sense, Mathur and Berwa (2017) emphasize the important role of innovation and technology in achieving sustainable growth, showing in their study of 113 countries that those with high scores in innovation are also those that achieve the best values in the sustainability index developed by the World Economic Forum.

Other studies have shown that R&D efforts are positively correlated with CSR (Bansal, 2005; Halkos & Skouloudis, 2018; McWilliams & Siegel, 2001), since the implementation of sustainable production systems often requires investment in new clean and environmental-friendly technologies (e.g., renewable energies that replace traditional dependence on fossil fuels, electric or biofuel-powered vehicles, recycling and waste treatment technologies, etc.). It is thus to be expected that those countries with a greater culture of innovation will be better prepared to find the innovative solutions proposed in the SDGs in order to arrive at a global consumption model that allows for the sustainable growth of society. This important role of innovation in 2030 Agenda requires the participation of all the actors involved in knowledge (e.g., companies, universities, government, etc.) to bring together the best human, scientific, academic, business and social capital. In this sense, university-business collaboration is essential as a way of transferring knowledge to the private sector.

Consequently, we formulate the following hypotheses where a series of variables from the World Economic Forum (2017) have been selected to represent the technological knowledge and innovation capacity of the countries:

> **H5.** The level of SDGs achievement is higher in those countries with higher levels of company spending on R&D, University-industry collaboration in R&D, capacity for innovation and technological knowledge.

3 | EMPIRICAL STUDY

3.1 | Sample

The sample in this paper consists of 64 countries around the world for which we have all the necessary data regarding the institutional variables and the SDG indices. This sample includes 35 of the 36 countries that currently make up the OECD (all except Iceland). The details of each of the countries as well as the value for each of the 19 institutional variables are shown in Table A1 in the appendix.

3.2 | Dependent variable: SDG Index

In order to measure country-level performance on SDGs, we have used the Sustainable Development Solutions Network's (SDSN) SDG Index 2019 proposed by Sachs et al. (2019). Since the SDGs were issued at the end of 2015, this will allow us to analyze performance in achieving the SDGs after the first 4 years of their approval. This SDG Index has been developed from a series of 85 indicators proposed by the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) for each of the 17 SDGs.

To calculate the SDG Index, a lower and an upper threshold is determined for each of the indicators. In terms of the best score, in most cases the best score is the explicitly marked target or "technical optimum" in line with the principle of "leaving no one behind" (e.g., zero extreme poverty, zero undernutrition, achieving 100% of full schooling). In some cases there is no such "perfect" target, as the theoretical optimum may not be achievable or may not be defined (e.g., infant mortality rate, number of doctors per inhabitant, traffic deaths, life expectancy, Gini index). In this case, the average of the top 5 values of the sample of countries for that indicator is used. To eliminate the effect of extremes that can bias the results of a composite index, the OECD (2008) recommends truncation of the data by eliminating the extreme 2.5 percentiles of the distribution. We apply this practice to the lower threshold and truncate the data at this level, thereby mitigating the impact of extremes at the lower end of the distribution.

Subsequently, and once the maximum and minimum values have been established for each indicator, a min-max normalization is carried out by linearly transforming the variables on a scale between 0 and 100 so that they are independent of the units of measurement of each indicator. This adjusted indicator score indicates where the

country lies between the worst case (i.e., 0) and the best case (i.e., 100). Analytically

$$I' = \frac{I - \min(I)}{\max(I) - \min(I)}.$$

This makes it easy to compare data between countries. For example, a country that scores 50 on a variable implies that it is just halfway to achieving the optimal value, while another country that scores 75 indicates that it has covered three-quarters of the distance from the worst to the best on that variable. By averaging all the scores of all the standardized indicators applied to each SDG, we arrive at country scores for each of the 17 targets. The final step is to average the country scores for each of the 17 SDGs in order to find the overall SDG Index for each country. Analytically

$$I_i(N_i, N_{ij}, I_{ijk}) = \sum_{j=1}^{Ni} \frac{1}{Ni} \sum_{k=1}^{N_{ij}} \frac{1}{N_{ij}} I_{ijk},$$

where I_i is the SDG index for country i, N_i is the number of SDGs for which data are available for country i, N_{ij} is the number of indicators of the SDG j for country i, and I_{ijk} is the score of the indicator k of the SDG j of country i.

Table A2 in the appendix shows the values for each of the 64 countries in the SDG aggregate index as well as the value and average for each of the 17 SDGs considered individually in order to assess the relative situation of each country. As can be seen, at the aggregate level, the Scandinavian countries (Denmark, Sweden, and Finland) have the highest values in the index, reflecting their traditional focus on sustainability and advocacy for the environment and social rights. They are followed by France, Austria, and Germany.

3.3 | Explanatory variables related to the institutional factors

With regard to the *legal and political system*, we have used the following six World Bank governance indicators, which are measured on a scale of −2.5 to 2.5 (where the higher values correspond to better institutional quality):

Voice and Accountability (*VOICE*), which measures the perception of the extent to which citizens are able to participate in the choice of government, as well as freedom of expression, freedom of association and freedom of the press.

Political Stability and Absence of Violence (*STAB*), measures the citizens' perception of the likelihood that the government is subject to acts of political instability, including terrorism.

Government Effectiveness (*GOV_EFF*), measures the quality of public services, the capacity of the public administration and its independence from political pressures, the quality of policy formulation and implementation and the credibility of the government's commitment to those policies.

Regulatory Quality (*REG_QUAL*), measures the perception of the government's ability to establish sound policies and regulations that enable and promote private sector development.

Rule of Law (*LAW*), measures the degree of confidence of agents in social rules and their level of compliance, including the quality of compliance with contracts and property rights, the quality of the police and courts, and the risk of crime.

Control of Corruption (*CORRUP*), measures the citizens' perception of the abuse of public power for private benefit, including corruption.

For the *economic dimension*, the following two variables are considered:

Economic development (*lnGNP*). It is measured through the natural logarithm of GNP per capita obtained from the 2018 World Bank report.

Economic freedom (*ECON_FREE*): Measured through the Heritage Foundation's Index of Economic Freedom (2018) which varies between 0 and 100 (higher values indicate a higher level of economic freedom).

Regarding the *cultural system*, the values of the five variables analyzed (masculinity (*MASC*), individualism (*INDIV*), power distance (*POW_DIST*), uncertainty avoidance (*UNC_AVOID*) and long-term orientation (*LT_ORIENT*) have been obtained from Hofstede's study (2001). The scale for each variable ranges from 0 to 100, so a score above 50 indicates that this feature of that country's culture is more dominant. Thus, for example, in the case of the variable "Individualism," cultures below 50 would be considered "collectivist" and those above 50 "individualist." The closer to 0, they would be more collectivist than the rest, and the closer to 100, they would be more individualist than the rest.

The following variables have been used for *the education and labor system*:

Public spending on education (*EDUC_SPEND*): Obtained from the United Nations Development Programme (2018) and measured as a percentage of the country's GDP.

Trade union density (*UNION_DENS*). Obtained from the International Labor Organization (ILO) and measured as the ratio of wage and salary earners that are trade union members to the total number of wage and salary earners in the economy.

Finally, with regard to the data on *innovation*, the variables have been taken from the Global Competitiveness Report published by the World Economic Forum and are as follows:

Company spending on R&D (*SPEND_R&D*)
University-business collaboration in R&D (*UNIV_BUS*)
Capacity for Innovation (*CAP_INNOV*)

The above three variables are obtained from the World Economic Forum's Executive Opinion Survey, expressed on a Likert scale from 1 to 7 (from non-existent to high performance).

Technological knowledge (*TECH_KNOW*): Refers to the number of patent applications filed under the Patent Cooperation Treaty per million inhabitants of the country.

4 | RESULTS

4.1 | Univariate analysis

First, we performed non-parametric tests of difference in means in order to test whether there are significant differences in the values of the SDG index depending on the value of the 19 institutional factors analyzed in this study. To do this, we created two groups of countries based on their SDG index values. On the one hand, those whose aggregate SDG index is in the first quartile of their distribution (in our case, this value is 78.46) and, on the other hand, the rest of the countries located in the remaining three quartiles. Given that our sample is made up of 64 countries, the first group would include the 16 countries with the best SDG index and the second group would include the remaining 48 countries with the worst SDG performance. Next, we apply the Mann–Whitney non-parametric test in order to test whether there are differences in the value of the 19 institutional variables between best and worst SDG performers. The results are shown in Table 1.

With regard to the *cultural dimension*, we can see how the variables that are statistically significant are those related to power distance, individualism and long-term orientation. As hypothesized, countries with the best SDG performance are those with a lower power distance (39.688 vs. 64.208), and a higher long-term orientation (60.188 vs. 45.044), being these differences statistically significant at the 1% level (p-value < 0.01). Contrary to our expectations, more individualistic cultures have higher SDG scores (65.750 vs. 39.167) (p-value < 0.01). Besides, those countries with the best SDG performance are less averse to change (61.438 vs. 70.458), although the difference is only statistically significant at 10% (p-value = 0.095). Finally, while countries with better SDG performance have a higher female orientation (44.125 vs. 50.146), this difference is not statistically significant.

Concerning the *legal and political system*, there are statistically significant differences in the six variables considered: voice and accountability (1.394 vs. 0.299; p-value < 0.01), government effectiveness (0.837 vs. 0.040; p-value < 0.01), political stability and absence of violence (1.569 vs. 0.431; p-value < 0.01), regulatory quality (1.569 vs. 0.412; p-value < 0.01), rule of law (1.639 vs. 0.256; p-value < 0.01), and control of corruption (1.706 vs. 0.152; p-value < 0.01). Thus, these results corroborate our hypothesis that the countries with the best performance in SDGs are those with a higher quality regulatory environment where there is greater freedom of expression, association and the press, and greater respect for the law and control of corruption.

As for the impact of the *economic dimension*, there are statistically significant differences in the two variables considered: level of

TABLE 1 Test of mean differences in the institutional variables for countries with highest and lowest SDG scores

Variable	*Countries with highest SDG scores*	*Countries with lowest SDG scores*	*Z statistic*	*p-value*
Masculinity (MASC)	44.125	50.146	0.597	0.275
Individualism (INDIV)	65.750	39.167	−3.816	0.000***
Power distance (POW_DIST)	39.688	64.208	3.846	0.000***
Uncertainty avoidance (UNC_AVOID)	61.438	70.458	1.319	0.094*
Long-term orientation (LT_ORIENT)	60.188	45.044	−2.533	0.006***
Voice and Accountability (VOICE)	1.394	0.299	−5.054	0.000***
Government effectiveness (GOV_EFF)	0.837	0.040	−3.535	0.000***
Political stability and absence of violance (STAB)	1.569	0.431	−4.837	0.000***
Regulatory quality (REG_QUAL)	1.569	0.412	−4.698	0.000***
Rule of law (LAW)	1.639	0.256	−5.163	0.000***
Control of corruption (CORRUP)	1.706	0.152	−5.023	0.000***
Log of GNP per capita (lnGNP)	10.684	9.347	−4.543	0.000***
Economic Freedom (ECON_FREE)	74.306	64.848	−3.590	0.000***
Public spending on education (EDUC_SPEND)	5.875	4.454	−3.770	0.000***
Trade unions density (UNION_DENS)	29.875	17.472	−2.005	0.023**
Company spending on R&D (SPEND_R&D)	5.019	3.679	−4.632	0.000***
University-industry collaboration (UNIV-BUS)	4.875	3.746	−4.285	0.000***
Capacity for innovation (CAP_INNOV)	5.425	4.358	−4.905	0.000***
Technological knowledge (TECH_KNOW)	169.656	32.015	−4.946	0.000***

***significant at the 1% level.
**significant at the 5% level.
*significant at the 10% level.

TABLE 2 Results of the logistic regression

Variable	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*
Intercept	−4.688***	−6.608***	−11.478***	−11.133***	−5.297***	−6.461
LEGAL_SYST	3.568***					5.478***
EDUC_SPEND		1.069***				1.089**
ECON_FREE			0.148***			−0.224
INNOV				2.214***		1.087**
CULTURE					0.018***	0.022*
Goodness-of-fit measures:						
Chi-square (p-value)	33.336 ($p < 0.001$)	15.916 ($p < 0.001$)	13.841 ($p < 0.001$)	25.719 ($p < 0.001$)	6.547 ($p = 0.011$)	45.407 ($p < 0.001$)
Hosmer-Lemeshow test (p-value)	3.012 ($p = 0.934$)	7.898 ($p = 0.443$)	6.366 ($p = 0.606$)	10.678 ($p = 0.221$)	9.708 ($p = 0.286$)	4.235 ($p = 0.835$)
% of correct predictions	75	75	75	75	75	90.6
R^2 *McFadden*	0.463	0.221	0.192	0.357	0.091	0.631
R^2 *Nagelkerke*	0.601	0.326	0.288	0.490	0.144	0.752
R^2 *Cox-Snell*	0.416	0.220	0.194	0.331	0.097	0.508

Note: The dependent variable takes the value 1 for countries with a global ODS index in the first quartile of their distribution and 0 otherwise.
***Significant at the 1% level.
**Significant at the 5% level.
*Significant at the 10% level.

economic development measured through the natural logarithm of GNP per capita (10.684 vs. 9.347; p-value < 0.01) and the degree of economic freedom in the country (74.306 vs. 64.848; p-value < 0.01). In the case of GNP per capita, the average for the best SDG performing countries (in current $) is 46,938.13 versus 17,950.98 for the worst performing countries. Thus, these results support our hypothesis that the countries that are making the most progress in achieving SDGs are those with the greatest economic development and freedom.

In terms of the *education and labor system*, as expected, countries that spend more of their GDP on education are those that perform better in achieving SDGs, which corroborates our initial hypothesis. In fact, the two countries with the best SDG index (such as Denmark and Sweden) are the ones that spend the most on education of the entire sample with 7.6% of GDP. On average, the group of countries with the best SDG index values has 5.875% of education spending over GDP versus 4.454% of the rest of the countries with the worst ODS performance, this difference being statistically significant at the 1% level (p-value < 0.01). As for the importance of unions, in line with our hypothesis, the group of countries with the highest values in the SDG index has a higher percentage of workers who are union members (29.875 vs. 17.472), with this difference being statistically significant at the 5% level (p-value = 0.023).

Finally, as regards the variables related to *innovation*, there are statistically significant differences in the four indicators considered: company spending on R&D (5.019 vs. 3.679; p-value < 0.01), collaboration between universities and companies in R&D (4.875 vs. 3.746; p-value < 0.01), innovation capacity (5.425 vs. 4.358; p-value < 0.01) and technological knowledge measured by the number of patents per million inhabitants (169.656 vs. 32.015; p-value < 0.01). Thus, these results corroborate our hypothesis that the countries with the best performance in SDGs are those with the greatest culture of innovation.

4.2 | Multivariate analysis

The multivariate analysis is based on a logistic regression model where the dependent variable takes the value 1 for countries with a global ODS index in the first quartile of their distribution and 0 otherwise. The predictors are the indicators related to the different institutional factors. However, the high correlation between these indicators gives rise to multicollinearity problems, which must be corrected if the multivariate analysis is not to be distorted. Therefore, before performing such multivariate analysis, we have proceeded to group certain indicators within each dimension.

Regarding culture, a lower level of most dimensions (individualism, masculinity, power distance, uncertainty avoidance) represents a stronger cultural system, except in the case of Long-term orientation, so that the variable *CULTURE* is defined as follows: (100-*MASC*) + (100-*INDIV*) + (100 − *POW_DIST*) + (100 − *UNC_AVOID*) + *LT_ORIENT* (see García-Meca et al., 2018) for a similar approach). As far as the legal-political system is concerned, we take the arithmetic average of the six Worldwide Governance Indicators so that *LEGAL_SYST* = (*VOICE* + *GOV_EFF* + *STAB* + *REG_QUAL* + *LAW* + *CORRUP*)/6. As for the economic dimension, we have chosen the Heritage Foundation's Index of Economic Freedom (2018) (*ECON_FREE*). Regarding innovation, we have considered the arithmetic average of the variables taken from the Global

Competitiveness Report such as company spending on R&D, University-business collaboration in R&D and capacity for innovation so that *INNOV* = (*SPEND_R&D* + *UNIV_BUS* + *CAP_INNOV*)/3. Finally, we have chosen public spending on education (*EDUC_SPEND*) as a representative variable of the educational dimension obtained from the United Nations Development Programme (2018) and measured as a percentage of the country's GDP.

Table 2 shows the results of the estimation of the logit model. The usual statistics for this type of model are shown at the bottom of the table. All the variables, when considered individually, are statistically significant at the 1% level. When all the variables are jointly considered (model 6), the McFadden's R2 takes a value of 0.631, suggesting a good model fit. Overall, model 6 correctly classifies 90.6% of the countries. The Chi-square omnibus test suggests a significant relationship between the outcome variable and the predictors. The non-significance of the Hosmer–Lemeshow test is also an indicator of a good model fit.

These results suggest that the countries that are best placed to achieve the SDGs are those with higher levels of governance, education spending (as % of GDP), innovation knowledge and a stronger culture system. The economic freedom is not found to be a significant variable for explaining differences in SDGs achievement when all the dimensions are considered altogether.

5 | CONCLUSIONS

This study has analyzed, using as theoretical support the "quintuple helix" model (Carayannis & Campbell, 2010), whether the differences between countries in SDGs achievement can be explained by a series of institutional variables related to five dimensions such as culture, economic development, the education and labor system, the legal and political system, and innovation.

From a sample of 64 countries, we have shown that, by the end of 2019, there are significant differences between countries in the level of progress in achieving the SDGs. The Scandinavian countries (Denmark, Sweden, and Finland) have the highest SDG index values, which reflects their ingrained culture in sustainability and defense of the environment and social rights.

Our study shows that the countries that are best placed to achieve the SDGs are those with higher levels of governance where there is greater government effectiveness and political stability, greater freedom of expression and association, stronger rule of law and greater control of corruption. This corroborates the previous research, based on institutional theory, which shows that political and legal conditions are among the most important external factors explaining differences between countries in the level of disclosure of social and environmental information by companies (Coluccia et al., 2018; De Villiers & Marques, 2016; Ioannou & Serafeim, 2012; Jo et al., 2016; Keig et al., 2015; Knudsen, 2011; Orij, 2010).

With regard to the education and labor system, as expected, the countries that spend more of their GDP on education and those that have a greater trade union culture are those that have a better performance in the level of achievement of the SDGs because there is greater awareness among citizens of social, labor, and environmental problems. These results corroborate those obtained in the previous studies (Calabrese et al., 2016; Quazi, 2003) where it is documented that individuals with higher levels of education show a greater orientation and expectations towards sustainability. In the same vein, the study by Park et al. (2007) shows that there is a positive association between a country's higher education levels and its level of environmental sustainability.

Likewise, we have also shown that the countries that are making the most progress in achieving the SDGs are those with greater development in the economic sphere, where the citizenry is better informed and becomes more environmentally aware, so they can put pressure on organizations to adapt socially responsible practices (Ramasamy & Ting, 2004; Welford, 2005). In fact, countries with higher levels of economic development are characterized by more advanced social and institutional capacity for sustainability (Husted, 2005). As a result, organizations located in these countries may have more resources to devote to sustainability (Baughn et al., 2007) and may perceive greater public pressure to report on social and environmental issues (Ali et al., 2017).

With regard to innovation, our results reveal that there are statistically significant differences in the four indicators considered: company expenditure on R&D, university-industry collaboration on R&D, innovation capacity and technological knowledge (measured by the number of patents per million inhabitants). Thus, these results corroborate our hypothesis that the countries with the best performance in SDGs are those with the greatest culture of innovation. In this sense, the implementation of sustainable production systems requires investment in new clean and environmental-friendly technologies. Therefore, those countries with a greater culture of innovation will be better prepared to find the innovative solutions proposed in the SDGs in order to arrive at a model of global consumption that allows for the sustainable growth of society.

Finally, in terms of the cultural system, countries with greater promotion of individual freedom, less hierarchical distance, less aversion to change, and a more long-term orientation are those that are better prepared to achieve the SDGs in the future.

Our results have important implications for the development of public policies, showing that if the level of SDGs achievement is to be improved at the global level by the countries that are lagging behind to date, an improvement in institutional quality and governance systems as well as a promotion of spending on education and innovation is necessary. Thus, given the important role of innovation documented in this study, the introduction of public programmes to encourage innovation by companies, either through tax incentive programmes or support for R&D, would be highly desirable.

Likewise, in the light of the results obtained in the variables related to educational expenditure, public policies should boost spending on education by increasing its weight in GDP and encourage the introduction of subjects related to sustainability in the curricula so that awareness of social and environmental issues is gradually

generated from secondary education to the university level. The universities, through their broad competencies and research activities, have a critical role in consolidating and supporting the transformation of society and the economy, and also in how they interact with the planet, providing the knowledge, evidence base, solutions and innovations needed to do so. In this sense, governments should encourage the link between education and technology by promoting knowledge transfer programs between universities and businesses that allow the development of the so-called social innovation and the promotion of the circular economy. This important role of innovation in Agenda 2030 is based on the "quintuple helix" model (Carayannis et al., 2012), which requires the participation and exchange of ideas among the three main actors involved in innovation and knowledge, such as companies, universities and the State, in order to bring together the best human, business and social capital with a view to sustainable development and social ecology.

With regard to the cultural dimension, in addition to the development of culturally congruent programs, an understanding of the influence of culture will help policymakers to know whether practices and tools used in one country can be effectively transferred to another. Hofstede (2001, p. 437) notes that development tools will only work "to the extent that they can be integrated into local cognition." Because culture is relatively stable, policy makers interested in promoting sustainability must transfer programs and policies that are consistent with local culture. Each country will need to develop or adopt culturally appropriate solutions that take into account local institutional conditions as parameters shaping the penetration of sustainability issues and SDGs. This is particularly relevant for developing and transition economies where policy design for CSR cannot afford to overlook institutional parameters that influence business behavior and could hinder the establishment of an effective sustainable development agenda.

From a business perspective, this study seeks to help business leaders develop a better understanding of the key institutional factors that impact positively or negatively on SDG integration. Managers need to better understand the key institutional determinants of each country's environment that facilitate effective implementation of SDGs. This is particularly relevant for multinational companies operating in countries with different institutional conditions, as our results can be useful in their strategies to diversify into sustainability issues in the countries where their subsidiaries operate, as well as to re-examine the underlying risks of generating programs that may collide with the culture of the countries where these subsidiaries are located. In these cases, such multinationals may choose to develop strategies and actions related to SDGs that are tailored to each country in which they operate that compensate for those institutional conditions that are negatively related to the integration of SDGs (Peng et al., 2012). Thus, when designing and allocating resources for SDG training programs, companies should take into account the institutional conditions that characterize a given country.

In short, our work has important political implications by presenting evidence of the profound impact that both formal and informal institutions have on the level of progress in achieving SDGs, with our results being particularly relevant for emerging and less developed countries in which political-legal, educational-labor, and economic-financial systems are being built and/or their roles are being redefined (Ioannou & Serafeim, 2012). Policymakers must redesign institutions in full awareness of the power that such institutions have to determine the social and environmental performance of enterprises and thus to define their net contribution to solving our planet's most pressing problems.

Finally, this research has certain limitations, which can be extended as directions of future work. First, the sample is based on the 2019 SDG Index for 64 countries, which could potentially affect the robustness of the regression results. Future studies could be extended to include data from 2020 onward in order to see whether the results are different in the pre- and post-COVID periods. Second, the level of SDG accomplishment has been measured through an overall score. In this regard, SDG indexes have been criticized in literature as they rely on a composite measure covering all 17 goals, and weighting them equally. A poor performance on one goal might thus be concealed by a high performance on another goal. Diaz-Sarachaga et al. (2018) note that the existing global aggregate indices do not consider major factors of all sustainability pillars, being biased towards some of them. Furthermore, regional sustainable development plans focus on their specific geographic areas without envisaging numerous indicators included in the SDGs. Thus, none of them can be deemed as global sustainable development composite indices nor as an accurate measure to appraise the fulfillment of the SDGs. As the future line of research, it could be interesting to analyze what happens with each of the 17 SDGs considered individually in order to see whether the institutional factors analyzed have a different impact on them depending on their environmental, economic, or social focus.

ACKNOWLEDGEMENTS

We thank to the Ministry of Science and Innovation, project GELESMAT (ref. PID2021-122419OB-I00) for financial support.

REFERENCES

Adams, C. A. (2002). Internal organisational factors influencing corporate social and ethical reporting: Beyond current theorising. *Accounting, Auditing & Accountability Journal*, *15*(2), 223–250. https://doi.org/10.1108/09513570210418905

Ali, W., Frynas, J. G., & Mahmood, Z. (2017). Determinants of corporate social responsibility (CSR) disclosure in developed and developing countries: A literature review. *Corporate Social Responsibility and Environmental Management*, *24*(4), 273–294. https://doi.org/10.1002/csr.1410

Bansal, P. (2005). Evolving sustainably: A longitudinal study of corporate sustainable development. *Strategic Management Journal*, *26*(3), 197–218. https://doi.org/10.1002/smj.441

Baughn, C. C., Bodie, N. L., & McIntosh, J. C. (2007). Corporate social and environmental responsibility in Asian countries and other geographical regions. *Corporate Social Responsibility and Environmental Management*, *14*(4), 189–205. https://doi.org/10.1002/csr.160

Bernauer, T., & Koubi, V. (2009). Effects of political institutions on air quality. *Ecological Economics*, *68*(5), 1355–1365. https://doi.org/10.1016/j.ecolecon.2008.09.003

Biermann, F., Kanie, N., & Kim, R. E. (2017). Global governance by goal-setting: The novel approach of the UN sustainable development goals. *Current Opinion in Environmental Sustainability*, *26–27*, 26–31. https://doi.org/10.1016/j.cosust.2017.01.010

Bose, S., & Khan, H. Z. (2022). Sustainable development goals (SDGs) reporting and the role of country-level institutional factors: An international evidence. *Journal of Cleaner Production*, *335*, 130290. https://doi.org/10.1016/J.JCLEPRO.2021.130290

Buhr, N., & Freedman, M. (2001). Culture, institutional factors and differences in environmental disclosure between Canada and the United States. *Critical Perspectives on Accounting*, *12*(3), 293–322. https://doi.org/10.1006/cpac.2000.0435

Cahan, S. F., De Villiers, C., Jeter, D. C., Naiker, V., & Van Staden, C. J. (2016). Are CSR Disclosures Value Relevant? *Cross-Country Evidence. European Accounting Review*, *25*(3), 579–611. https://doi.org/10.1080/09638180.2015.1064009

Calabrese, A., Costa, R., & Rosati, F. (2016). Gender differences in customer expectations and perceptions of corporate social responsibility. *Journal of Cleaner Production*, *116*, 1306–1319. https://doi.org/10.1016/j.jclepro.2015.12.100

Campbell, J. L. (2007). Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Review*, *32*(3), 946–967. https://doi.org/10.5465/AMR.2007.25275684

Caprar, D. V., & Neville, B. A. (2012). "Norming" and "conforming": Integrating cultural and institutional explanations for sustainability adoption in business. *Journal of Business Ethics*, *110*(2), 231–245. https://doi.org/10.1007/s10551-012-1424-1

Carayannis, E. G., Barth, T. D., & Campbell, D. F. (2012). The quintuple helix innovation model: Global warming as a challenge and driver for innovation. *Journal of Innovation and Entrepreneurship*, *1*, 1–12. https://doi.org/10.1186/2192-5372-1-2

Carayannis, E. G., & Campbell, D. F. J. (2009). "Mode 3" and "quadruple helix": Toward a 21st century fractal innovation ecosystem. *International Journal of Technology Management*, *46*(3–4), 201–234. https://doi.org/10.1504/ijtm.2009.023374

Carayannis, E. G., & Campbell, D. F. J. (2010). Triple helix, quadruple helix and quintuple helix and how do knowledge, innovation and the environment relate to each other? A proposed framework for a trans-disciplinary analysis of sustainable development and social ecology. *International Journal of Social Ecology and Sustainable Development*, *1*(1), 41–69. https://doi.org/10.4018/jsesd.2010010105

Chen, S., & Bouvain, P. (2009). Is corporate responsibility converging? A comparison of corporate responsibility reporting in the USA, UK, Australia, and Germany. *Journal of Business Ethics*, *87*(Suppl. 1), 299–317. https://doi.org/10.1007/s10551-008-9794-0

Ciocirlan, C., & Pettersson, C. (2012). Does workforce diversity matter in the fight against climate change? An analysis of fortune 500 companies. *Corporate Social Responsibility and Environmental Management*, *19*(1), 47–62. https://doi.org/10.1002/csr.279

Claessens, S., & Fan, J. P. H. (2002). Corporate governance in Asia: A survey. *International Review of Finance*, *3*(2), 71–103. https://doi.org/10.1111/1468-2443.00034

Coluccia, D., Fontana, S., & Solimene, S. (2018). Does institutional context affect CSR disclosure? A study on Eurostoxx 50. *Sustainability (Switzerland)*, *10*. https://doi.org/10.3390/su10082823

Cubilla-Montilla, M., Nieto-Librero, A. B., Galindo-Villardón, M. P., Vicente Galindo, M. P., & Garcia-Sanchez, I. M. (2019). Are cultural values sufficient to improve stakeholder engagement human and labour rights issues? *Corporate Social Responsibility and Environmental Management*, *26*(4), 938–955. https://doi.org/10.1002/CSR.1733

de Geer, H., Borglund, T., & Frostenson, M. (2009). Reconciling CSR with the role of the corporation in welfare states: The problematic Swedish example. *Journal of Business Ethics*, *89*(Suppl. 3), 269–283. https://doi.org/10.1007/s10551-010-0393-5

de Mooij, M., & Hofstede, G. (2010). The hofstede model: Applications to global branding and advertising strategy and research. *International Journal of Advertising*, *29*(1), 85–110. https://doi.org/10.2501/s026504870920104x

De Villiers, C., & Marques, A. (2016). Corporate social responsibility, country-level predispositions, and the consequences of choosing a level of disclosure. *Accounting and Business Research*, *46*(2), 167–195. https://doi.org/10.1080/00014788.2015.1039476

Dellaportas, S. (2006). Making a difference with a discrete course on accounting ethics. *In Journal of Business Ethics*, *65*(4), 391–404. https://doi.org/10.1007/s10551-006-0020-7

Delmas, M. A., & Toffel, M. W. (2008). Organizational responses to environmental demands: Opening the black box. *Strategic Management Journal*, *29*(10), 1027–1055. https://doi.org/10.1002/smj.701

Diaz-Sarachaga, J. M., Jato-Espino, D., & Castro-Fresno, D. (2018). Is the sustainable development goals (SDG) index an adequate framework to measure the progress of the 2030 agenda? *Sustainable Development*, *26*(6), 663–671. https://doi.org/10.1002/SD.1735

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, *48*(2), 147–160. https://doi.org/10.2307/2095101

Dobson, J. (1990). The role of ethics in global corporate culture. *Journal of Business Ethics*, *9*(6), 441–448. https://doi.org/10.1007/BF00382841

Durach, C. F., & Wiengarten, F. (2017). Exploring the impact of geographical traits on the occurrence of supply chain failures. *Supply Chain Management*, *22*(2), 160–171. https://doi.org/10.1108/SCM-11-2016-0380

Elias, R. Z. (2004). An examination of business Students' perception of corporate social responsibilities before and after bankruptcies. *Journal of Business Ethics*, *52*(3), 267–281. https://doi.org/10.1023/b:busi.0000037558.74693.d5

Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: From National Systems and "mode 2" to a triple helix of university-industry-government relations. *Research Policy*, *29*(2), 109–123. https://doi.org/10.1016/S0048-7333(99)00055-4

Fasan, M., Marcon, C., & Mio, C. (2016). Institutional determinants of IR disclosure quality. In Mio, C. (Ed.), *Integrated reporting: A new accounting disclosure*, 181–203. London: Palgrave Macmillan. https://doi.org/10.1057/978-1-137-55149-8_10

Fernandez-Feijoo, B., Romera, S., & Ruiz, S. (2012). Does board gender composition affect corporate social responsibility reporting ? *International Journal of Business and Social Science*, *3*(1), 31–39.

Fortanier, F., Kolk, A., & Pinkse, J. (2011). Harmonization in CSR reporting: MNEs and global CSR standards. *Management International Review*, *51*(5), 665–696. https://doi.org/10.1007/s11575-011-0089-9

Fredriksson, P. G., Neumayer, E., & Ujhelyi, G. (2007). Kyoto protocol cooperation: Does government corruption facilitate environmental lobbying? *Public Choice*, *133*(1–2), 231–251. https://doi.org/10.1007/s11127-007-9187-4

Frías-Aceituno, J. V., Rodríguez-Ariza, L., & García-Sánchez, I. M. (2013). Is integrated reporting determined by a country's legal system? An exploratory study. *Journal of Cleaner Production*, *44*, 45–55. https://doi.org/10.1016/J.JCLEPRO.2012.12.006

García-Meca, E., Uribe-Bohórquez, M. V., & Cuadrado-Ballesteros, B. (2018). Culture, board composition and corporate social reporting in the banking sector. *Administrative Sciences*, *8*. https://doi.org/10.3390/ADMSCI8030041

García-Sánchez, I. M., Aibar-Guzmán, B., Aibar-Guzmán, C., & Rodríguez-Ariza, L. (2020). "Sell" recommendations by analysts in response to business communication strategies concerning the sustainable development goals and the SDG compass. *Journal of Cleaner Production*, *255*, 120194. https://doi.org/10.1016/J.JCLEPRO.2020.120194

García-Sánchez, I. M., Aibar-Guzmán, B., Aibar-Guzmán, C., & Somohano-Rodríguez, F. M. (2021). The drivers of the integration of the sustainable development goals into the non-financial information system: Individual and joint analysis of their influence. *Sustainable Development*. https://doi.org/10.1002/SD.2246

García-Sánchez, I.-M., Aibar-Guzmán, C., Núñez-Torrado, M., & Aibar-Guzmán, B. (2022). Are institutional investors "in love" with the sustainable development goals? Understanding the idyll in the case of governments and pension funds. *Sustainable Development*. https://doi.org/10.1002/SD.2305

Garcia-Sanchez, I. M., Cuadrado-Ballesteros, B., & Frias-Aceituno, J. V. (2016). Impact of the institutional macro context on the voluntary disclosure of CSR information. *Long Range Planning*, *49*(1), 15–35. https://doi.org/10.1016/j.lrp.2015.02.004

García-Sánchez, I. M., Rodríguez-Ariza, L., Aibar-Guzmán, B., & Aibar-Guzmán, C. (2020). Do institutional investors drive corporate transparency regarding business contribution to the sustainable development goals? *Business Strategy and the Environment*, *29*(5), 2019–2036. https://doi.org/10.1002/BSE.2485

García-Sánchez, I. M., Rodríguez-Ariza, L., & Frías-Aceituno, J. V. (2013). The cultural system and integrated reporting. *International Business Review*, *22*(5), 828–838. https://doi.org/10.1016/j.ibusrev.2013.01.007

Graafland, J., & Noorderhaven, N. (2020). Culture and institutions: How economic freedom and long-term orientation interactively influence corporate social responsibility. *Journal of International Business Studies*, *51*(6), 1034–1043. https://doi.org/10.1057/s41267-019-00301-0

Hahn, R., & Kühnen, M. (2013). Determinants of sustainability reporting: A review of results, trends, theory, and opportunities in an expanding field of research. *Journal of Cleaner Production*, *59*, 5–21. https://doi.org/10.1016/j.jclepro.2013.07.005

Halkos, G., & Skouloudis, A. (2016). National CSR and institutional conditions: An exploratory study. *Journal of Cleaner Production*, *139*, 1150–1156. https://doi.org/10.1016/j.jclepro.2016.07.047

Halkos, G., & Skouloudis, A. (2017). Revisiting the relationship between corporate social responsibility and national culture: A quantitative assessment. *Management Decision*, *55*(3), 595–613. https://doi.org/10.1108/MD-12-2016-0868

Halkos, G., & Skouloudis, A. (2018). Corporate social responsibility and innovative capacity: Intersection in a macro-level perspective. *Journal of Cleaner Production*, *182*, 291–300. https://doi.org/10.1016/j.jclepro.2018.02.022

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors. Institutions and Organizations across Nations*. SAGE Publications.

Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: Software of the mind* (3rd ed.). In *McGraw-Hill Education*.

Husted, B. W. (2005). Culture and ecology: A cross-national study of the determinants of environmental sustainability. *Management International Review*, *45*(3), 349–371.

Ioannou, I., & Serafeim, G. (2012). What drives corporate social performance the role of nation-level institutions. *Journal of International Business Studies*, *43*(9), 834–864. https://doi.org/10.1057/jibs.2012.26

Jackson, G., & Apostolakou, A. (2010). Corporate social responsibility in Western Europe: An institutional mirror or substitute? *Journal of Business Ethics*, *94*(3), 371–394. https://doi.org/10.1007/s10551-009-0269-8

Jensen, J. C., & Berg, N. (2012). Determinants of traditional sustainability reporting versus integrated reporting. An institutionalist approach. *Business Strategy and the Environment*, *21*(5), 299–316. https://doi.org/10.1002/bse.740

Jo, H., Song, M. H., & Tsang, A. (2016). Corporate social responsibility and stakeholder governance around the world. *Global Finance Journal*, *29*, 42–69. https://doi.org/10.1016/j.gfj.2015.04.003

Katz, J. P., Swanson, D. L., & Nelson, L. K. (2001). Culture-based expectations of corporate CITIZENSHIP: A propositional framework and comparison of four cultures. *The International Journal of Organizational Analysis*, *9*(2), 149–171. https://doi.org/10.1108/eb028931

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2011). The worldwide governance indicators: Methodology and analytical issues. *Hague Journal on the Rule of Law*, *3*(2), 220–246. https://doi.org/10.1017/S1876404511200046

Keig, D. L., Brouthers, L. E., & Marshall, V. B. (2015). Formal and informal corruption environments and multinational Enterprise social irresponsibility. *Journal of Management Studies*, *52*(1), 89–116. https://doi.org/10.1111/joms.12102

Khlif, H., Hussainey, K., & Achek, I. (2015). The effect of national culture on the association between proftability and corporate social and environmental disclosure: A meta-analysis. *Meditari Accountancy Research*, *23*(3), 296–321. https://doi.org/10.1108/MEDAR-12-2014-0064/FULL/XML

Kim, Y., & Kim, S. Y. (2010). The influence of cultural values on perceptions of corporate social responsibility: Application of hofstede's dimensions to Korean public relations practitioners. *Journal of Business Ethics*, *91*(4), 485–500. https://doi.org/10.1007/s10551-009-0095-z

Knudsen, J. S. (2011). Company Delistings from the UN global compact: Limited business demand or domestic governance failure? *Journal of Business Ethics*, *103*(3), 331–349. https://doi.org/10.1007/s10551-011-0875-0

Kumar, S., Giridhar, V., & Sadarangani, P. (2019). A cross-national study of environmental performance and culture: Implications of the findings and strategies. *Global Business Review*, *20*(4), 1051–1068.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1998). Law and finance. *Journal of Political Economy*, *106*(6), 11131–11155. https://doi.org/10.1086/250042

Lundvall, B.-Å. (1992). *National systems of innovationtowards a theory of innovation and interactive learning. Towards a theory of innovation and interactive learning*. Pinter.

Luthar, H. K., DiBattista, R. A., & Gautschi, T. (1997). Perception of what the ethical climate is and what it should be: The role of gender, academic status, and ethical education. *Journal of Business Ethics*, *16*(2), 205–217. https://doi.org/10.1023/A:1017980520924

Maignan, I. (2001). Consumers' perceptions of corporate social responsibilities: A cross-cultural comparison. *Journal of Business Ethics*, *30*(1), 57–72. https://doi.org/10.1023/A:1006433928640

Martínez-Ferrero, J., & García-Meca, E. (2020). Internal corporate governance strength as a mechanism for achieving sustainable development goals. *Sustainable Development*, *28*(5), 1189–1198. https://doi.org/10.1002/SD.2068

Mathur, K., & Berwa, A. (2017). Sustainable competitiveness: Redefining the future with technology and innovation. *Journal of Sustainable Finance and Investment*, *7*(3), 290–306. https://doi.org/10.1080/20430795.2017.1300855

Matten, D., & Moon, J. (2008). "Implicit" and "explicit" CSR: A conceptual framework for a comparative understanding of corporate social responsibility. *Academy of Management Review*, *33*(2), 404–424. https://doi.org/10.5465/AMR.2008.31193458

McWilliams, A., & Siegel, D. (2001). Corporate social responsibility: A theory of the firm perspective. *Academy of Management Review*, *26*(1), 117–127. https://doi.org/10.5465/AMR.2001.4011987

Miska, C., Szőcs, I., & Schiffinger, M. (2018). Culture's effects on corporate sustainability practices: A multi-domain and multi-level view. *Journal of World Business*, *53*(2), 263–279. https://doi.org/10.1016/j.jwb.2017.12.001

Mitchell Williams, S. (1999). Voluntary environmental and social accounting disclosure practices in the Asia-Pacific region: An international empirical test of political economy theory. *International Journal of Accounting*, *34*(2), 14–16. https://doi.org/10.2469/dig.v30.n2.655

North, D. C. (1990). *Institutions*. In *Institutions, Institutional Change and Economic Performance*. https://doi.org/10.1017/cbo9780511808678

Nwabuzor, A. (2005). Corruption and development: New initiatives in economic openness and strengthened rule of law. *Journal of Business Ethics*, *59*(1), 121–138. https://doi.org/10.1007/s10551-005-3402-3

Orij, R. (2010). Corporate social disclosures in the context of national cultures and stakeholder theory. *Accounting, Auditing and Accountability*

Journal, *23*(7), 868–889. https://doi.org/10.1108/09513571011080162

Pahl-Wostl, C., Tàbara, D., Bouwen, R., Craps, M., Dewulf, A., Mostert, E., Ridder, D., & Taillieu, T. (2008). The importance of social learning and culture for sustainable water management. *Ecological Economics*, *64*(3), 484–495. https://doi.org/10.1016/j.ecolecon.2007.08.007

Parboteeah, K. P., Addae, H. M., & Cullen, J. B. (2012). Propensity to support sustainability initiatives: A cross-National Model. *Journal of Business Ethics*, *105*(3), 403–413. https://doi.org/10.1007/s10551-011-0979-6

Park, H., Russell, C., & Lee, J. (2007). National culture and environmental sustainability: A cross-national analysis. *Journal of Economics and Finance*, *31*(1), 104–121. https://doi.org/10.1007/BF02751516

Peng, Y. S., Dashdeleg, A. U. & Chih, H. L. (2012). Does national culture influence firm's CSR engagement: A cross country study. *International Proceedings of Economics Development and Research*, *58*(9), 40–44.

Pizzi, S., Del Baldo, M., Caputo, F., & Venturelli, A. (2022). Voluntary disclosure of sustainable development goals in mandatory non-financial reports: The moderating role of cultural dimension. *Journal of International Financial Management & Accounting*, *33*(1), 83–106. https://doi.org/10.1111/JIFM.12139

Pizzi, S., Rosati, F., & Venturelli, A. (2021). The determinants of business contribution to the 2030 agenda: Introducing the SDG reporting score. *Business Strategy and the Environment*, *30*(1), 404–421. https://doi.org/10.1002/BSE.2628

Prado Lorenzo, J. M., García Sánchez, I. M., & Blázquez Zaballos, A. (2013). El impacto del sistema cultural en la transparencia corporativa. *Revista Europea de Dirección y Economía de La Empresa*, *22*(3), 143–154. https://doi.org/10.1016/j.redee.2013.04.001

Prado-Lorenzo, J. M., Rodríguez-Domínguez, L., Gallego-Álvarez, I., & García-Sánchez, I. M. (2009). Factors influencing the disclosure of greenhouse gas emissions in companies world-wide. *Management Decision*, *47*(7), 1133–1157. https://doi.org/10.1108/00251740910978340

Quazi, A. M. (2003). Identifying the determinants of corporate managers' perceived social obligations. *Management Decision*, *41*(9), 822–831. https://doi.org/10.1108/00251740310488999

Ramasamy, B., & Ting, H. W. (2004). A comparative analysis of corporate social responsibility awareness. Malaysian and Singaporean Firms*. *The Journal of Corporate Citizenship*, *13*, 109–123.

Ringov, D., & Zollo, M. (2007). Corporate responsibility from a socio-institutional perspective: The impact of national culture on corporate social performance. *Corporate Governance*, *7*(4), 476–485. https://doi.org/10.1108/14720700710820551

Rosati, F., Costa, R., Calabrese, A., & Pedersen, E. R. G. (2018). Employee attitudes towards corporate social responsibility: A study on gender, age and educational level differences. *Corporate Social Responsibility and Environmental Management*, *25*(6), 1306–1319. https://doi.org/10.1002/csr.1640

Rosati, F., & Faria, L. G. D. (2019a). Addressing the SDGs in sustainability reports: The relationship with institutional factors. *Journal of Cleaner Production*, *215*, 1312–1326. https://doi.org/10.1016/j.jclepro.2018.12.107

Rosati, F., & Faria, L. G. D. (2019b). Business contribution to the sustainable development agenda: Organizational factors related to early adoption of SDG reporting. *Corporate Social Responsibility and Environmental Management*, *26*(3), 588–597. https://doi.org/10.1002/CSR.1705

Roy, A., & Goll, I. (2014). Predictors of various facets of sustainability of nations: The role of cultural and economic factors. *International Business Review*, *23*(5), 849–861. https://doi.org/10.1016/j.ibusrev.2014.01.003

Sachs, J., Schmidt-Traub G., Kroll, C., Lafortune, G., & Fuller, G. (2019). *Sustainable Development Report 2019*. New York: Bertelsmann Stiftung and Sustainable Development Solutions Network (SDSN).

Schramade, W. (2017). Investing in the UN sustainable development goals: Opportunities for companies and investors. *Journal of Applied Corporate Finance*, *29*(2), 87–99. https://doi.org/10.1111/JACF.12236

Szőcs, I., Schlegelmilch, B. B., Rusch, T., & Shamma, H. M. (2016). Linking cause assessment, corporate philanthropy, and corporate reputation. *Journal of the Academy of Marketing Science*, *44*(3), 376–396. https://doi.org/10.1007/s11747-014-0417-2

The Heritage Foundation. (2018). Index of Economic Freedom, https://www.heritage.org/index/pdf/2018/book/index_2018.pdf

Tsalis, T. A., Malamateniou, K. E., Koulouriotis, D., & Nikolaou, I. E. (2020). New challenges for corporate sustainability reporting: United Nations' 2030 agenda for sustainable development and the sustainable development goals. *Corporate Social Responsibility and Environmental Management*, *27*(4), 1617–1629. https://doi.org/10.1002/CSR.1910

United Nations Development Programme (2018): Human Development Report 2018. New York, NY.

Vachon, S. (2010). International operations and sustainable development: Should national culture matter? *Sustainable Development*, *18*(6), 350–361. https://doi.org/10.1002/sd.398

van der Waal, J. W. H., & Thijssens, T. (2020). Corporate involvement in sustainable development goals: Exploring the territory. *Journal of Cleaner Production*, *252*, 119625. https://doi.org/10.1016/J.JCLEPRO.2019.119625

van Zanten, J. A., & van Tulder, R. (2018). Multinational enterprises and the sustainable development goals: An institutional approach to corporate engagement. *Journal of International Business Policy*, *1*(3), 208–233. https://doi.org/10.1057/S42214-018-0008-X

Vormedal, I. H., & Ruud, A. (2009). Sustainability reporting in Norway - an assessment of performance in the context of legal demands and socio-political drivers. *Business Strategy and the Environment*, *18*(4), 207–222. https://doi.org/10.1002/bse.560

Vu, T. V. (2020). Individualism and climate change policies: International evidence. *SSRN Electronic Journal*. https://mpra.ub.uni-muenchen.de/98888/1/MPRA_paper_98888.pdf

Wang, H., Guo, T., & Tang, Q. (2021). The effect of national culture on corporate green proactivity. *Journal of Business Research*, *131*, 140–150. https://doi.org/10.1016/J.JBUSRES.2021.03.023

Welford, R. (2005). Corporate social responsibility in Europe, North America and Asia: 2004 survey results. *The Journal of Corporate Citizenship*, *17*, 33–52.

Williams, G., & Zinkin, J. (2008). The effect of culture on consumers' willingness to punish irresponsible corporate behaviour: Applying Hofstede's typology to the punishment aspect of corporate social responsibility. *Business Ethics*, *17*(2), 210–226. https://doi.org/10.1111/j.1467-8608.2008.00532.x

World Economic Forum. (2017). The Global Competitiveness Report. World Economic Forum.

Yamane, T., & Kaneko, S. (2021). Impact of raising awareness of sustainable development goals: A survey experiment eliciting stakeholder preferences for corporate behavior. *Journal of Cleaner Production*, *285*, 125291. https://doi.org/10.1016/J.JCLEPRO.2020.125291

Yaveroglu, I. S., & Donthu, N. (2002). Cultural influences on the diffusion of new products. *Journal of International Consumer Marketing*, *14*(4), 49–63. https://doi.org/10.1300/J046v14n04_04

How to cite this article: Reverte, C. (2022). The importance of institutional differences among countries in SDGs achievement: A cross-country empirical study. *Sustainable Development*, *30*(6), 1882–1899. https://doi.org/10.1002/sd.2354

APPENDIX A

TABLE A1 Value of the institutional variables for the 64 countries and descriptive statistics

	VOICE	GOVEFF	STAB	REGQUAL	LAW	CORRUP	lnGNP	ECONFREE	MASC	INDIV	POWDIS	UNCAVOID	LTORIENT	SPENDEDUC	UNIONDENS	SPENDR&D	UNIVBUS	CAPINNOV	TECHKNOW
Argentina	0.57	0.02	0.03	−0.24	−0.24	−0.08	9.42	52.3	56.0	46.0	49.0	86.0	20.0	5.6	27.7	3.1	3.3	4.1	1.2
Australia	1.43	0.98	1.60	1.93	1.72	1.81	10.88	80.9	61.0	90.0	36.0	51.0	21.0	5.3	13.7	4.4	4.3	5.1	77.7
Austria	1.38	0.92	1.45	1.54	1.88	1.60	10.80	71.8	79.0	55.0	11.0	70.0	60.0	5.5	26.3	4.9	4.8	5.6	174.7
Bangladesh	−0.73	-1.03	-0.75	−0.83	−0.64	−0.91	7.47	55.1	55.0	20.0	80.0	60.0	47.0	1.5	4.0	2.8	2.5	3.8	0.0
Belgium	1.40	0.41	1.17	1.23	1.37	1.51	10.72	67.5	54.0	75.0	65.0	94.0	82.0	6.6	50.3	5.2	5.3	5.5	110.4
Brasil	0.39	−0.36	−0.45	−0.31	−0.28	−0.42	9.12	51.4	49.0	38.0	69.0	76.0	44.0	6.2	18.9	3.4	3.4	4.1	3.4
Bulgaria	0.32	0.42	0.27	0.58	−0.03	−0.15	9.09	68.3	40.0	30.0	70.0	85.0	69.0	4.1	13.7	3.6	3.4	4.2	7.4
Canada	1.52	0.99	1.72	1.67	1.77	1.87	10.71	77.7	52.0	80.0	39.0	48.0	36.0	5.3	25.9	4.3	4.6	5.1	88.8
Chile	1.05	0.43	1.08	1.34	1.12	1.01	9.59	75.2	28.0	23.0	63.0	86.0	31.0	5.4	17.7	3.0	3.5	4.0	8.8
China	−1.45	−0.26	0.48	−0.14	−0.20	−0.27	9.16	57.8	66.0	20.0	80.0	30.0	87.0	1.8	44.9	4.6	4.4	4.5	17.7
Colombia	0.19	−0.81	−0.09	0.33	−0.41	−0.30	8.73	68.9	64.0	13.0	67.0	80.0	13.0	4.4	9.5	3.1	3.6	3.8	2.1
Costa Rica	1.14	0.49	0.38	0.48	0.48	0.55	9.35	65.6	21.0	15.0	35.0	86.0		7.4	19.4	3.5	3.6	4.5	2.8
Croatia	0.50	0.77	0.46	0.45	0.32	0.13	9.53	61.0	40.0	33.0	73.0	80.0	58.0	4.6	25.8	3.0	2.7	3.4	9.5
Czech Republic	0.93	1.04	0.92	1.26	1.05	0.50	9.92	74.2	57.0	58.0	57.0	74.0	70.0	5.8	11.5	4.2	3.9	4.9	24.4
Denmark	1.61	0.96	1.87	1.68	1.83	2.15	11.01	76.6	16.0	74.0	18.0	23.0	35.0	7.6	66.5	5.0	4.8	5.3	214.1
Ecuador	0.03	−0.07	−0.26	−0.89	−0.63	−0.56	8.72	48.5	63.0	8.0	78.0	67.0		5.0	13.5	2.8	3.0	3.7	0.3
El Salvador	0.04	−0.33	−0.45	−0.04	−0.82	−0.59	8.25	61.8	40	19	66	94	20	3.8	19.0	2.8	2.7	3.8	0.3
Estonia	1.21	0.60	1.19	1.56	1.24	1.51	9.95	78.8	30.0	60.0	40.0	60.0	82.0	5.2	4.3	3.8	3.9	4.9	27.2
Finland	1.61	0.92	1.98	1.79	2.05	2.21	10.77	74.1	26.0	63.0	33.0	59.0	38.0	7.1	60.3	5.3	5.6	5.6	265.1
France	1.18	0.11	1.48	1.17	1.44	1.32	10.62	63.9	43.0	71.0	68.0	86.0	63.0	5.5	8.8	5.2	4.2	5.5	126.6
Germany	1.42	0.60	1.62	1.75	1.63	1.95	10.76	74.2	66.0	67.0	35.0	65.0	83.0	4.8	16.5	5.6	5.4	5.8	218.9
Greece	0.86	0.09	0.34	0.30	0.15	−0.07	9.88	57.3	57.0	35.0	60.0	112.0	45.0	4.0	20.2	3.1	2.5	3.9	11.1
Hungary	0.32	0.76	0.49	0.60	0.56	0.05	9.59	66.7	88.0	80.0	46.0	82.0	58.0	4.6	7.9	3.1	3.4	3.8	24.7
India	0.38	−0.96	0.28	−0.18	0.03	−0.19	7.61	54.5	56.0	48.0	77.0	40.0	51.0	3.8	12.8	4.5	4.4	4.5	1.7
Indonesia	0.18	−0.53	0.18	−0.07	−0.31	−0.25	8.25	64.2	46.0	14.0	78.0	48.0	62.0	3.6	7.0	4.4	4.3	4.8	0.1
Iran	−1.32	−1.31	−0.43	−1.30	−0.69	−0.96	8.61	51.1	43	41	58	59	14	3.8		3.3	3.3	3.9	0.3
Ireland	1.32	1.03	1.42	1.60	1.46	1.55	11.00	80.4	68.0	70.0	28.0	35.0	24.0	3.8	24.1	4.8	5.0	5.2	89.9
Israel	0.65	−0.93	1.21	1.25	0.99	0.79	10.62	72.2	47.0	54.0	13.0	81.0	38.0	5.9	25.0	5.8	5.7	5.9	247.1
Italy	1.05	0.31	0.41	0.67	0.25	0.24	10.42	62.5	70.0	76.0	50.0	75.0	61.0	4.1	34.4	3.9	3.8	4.9	57.5
Japan	1.02	1.06	1.68	1.33	1.53	1.42	10.63	72.3	95.0	46.0	54.0	92.0	88.0	3.5	17.0	5.6	4.7	5.1	332.4
Latvia	0.81	0.42	1.04	1.19	0.96	0.33	9.73	70.4	9	70	44	63	69	5.3	11.9	3.2	3.1	4.3	11.8
Lithuania	0.92	0.75	1.07	1.11	0.96	0.50	9.76	74.2	19	60	42	65	82	4.2	7.1	3.9	4.1	4.8	15.9
Luxembourg	1.57	1.37	1.78	1.76	1.81	2.09	11.15	76.4	50.0	60.0	40.0	70.0	64.0	3.9	31.8	5.2	4.8	5.6	129.3
Malaysia	−0.08	0.24	1.08	0.68	0.62	0.31	9.26	74.5	50.0	26.0	104.0	36.0	41.0	4.7	8.8	5.1	5.2	5.4	10.6

TABLE A1 (Continued)

	VOICE	GOVEFF	STAB	REGQUAL	LAW	CORRUP	lnGNP	ECONFREE	MASC	INDIV	POWDIS	UNCAVOID	LTORIENT	SPENDEDUC	UNIONDENS	SPENDR&D	UNIVBUS	CAPINNOV	TECHKNOW
Malta	1.12	1.29	0.97	1.34	1.05	0.58	10.17	68.6	47	59	56	96	47	5.3	51.4	3.8	4.0	4.7	26.5
Mexico	−0.01	−0.57	−0.15	0.15	−0.67	−0.86	9.12	64.8	69.0	30.0	81.0	82.0	24.0	5.2	12.0	3.2	3.6	4.1	2.4
Morocco	−0.66	−0.33	−0.21	−0.24	−0.14	−0.22	8.04	61.9	53.0	46.0	70.0	68.0	14.0	4.7	15.1	3.0	3.0	3.9	1.7
New Zealand	1.62	1.54	1.67	1.98	1.88	2.17	10.62	84.2	58.0	79.0	22.0	49.0	33.0	6.3	18.8	4.4	4.8	5.3	80.5
Norway	1.73	1.15	1.89	1.76	1.97	2.09	11.30	74.3	8.0	69.0	31.0	50.0	35.0	7.6	49.2	4.9	4.8	5.3	139.3
Pakistan	−0.80	−2.27	−0.63	-0.64	−0.67	−0.79	7.37	54.4	50.0	14.0	55.0	70.0	50.0	2.8	5.6	3.5	3.5	4.0	0.0
Panama	0.58	0.28	−0.02	0.40	−0.06	−0.57	9.57	67.0	44.0	11.0	95.0	86.0		3.2	11.9	3.4	3.3	4.3	1.4
Peru	0.23	−0.26	−0.25	0.52	−0.52	−0.54	8.78	68.7	42.0	16.0	64.0	87.0	25.0	3.9	5.7	2.7	2.9	3.6	0.6
Philippines	0.04	−1.12	0.05	0.05	−0.48	−0.54	8.25	65.0	64.0	32.0	94.0	44.0	27.0	2.4	8.7	3.5	3.5	4.5	0.4
Poland	0.72	0.55	0.66	0.88	0.43	0.64	9.56	68.5	64.0	60.0	68.0	93.0	38.0	4.8	12.7	3.4	3.2	4.1	10.5
Portugal	1.20	1.14	1.21	0.89	1.14	0.85	9.98	63.4	31.0	27.0	63.0	104.0	28.0	4.9	15.3	3.8	4.2	4.6	15.4
Romania	0.46	0.06	−0.25	0.45	0.33	−0.12	9.33	69.4	42.0	30.0	90.0	90.0	52.0	3.1	25.2	2.8	3.1	3.7	3.9
Russia	−1.06	−0.50	−0.06	−0.54	−0.82	−0.85	9.23	58.2	36.0	39.0	93.0	95.0	81.0	3.8	30.5	3.5	3.9	4.2	7.8
Serbia	0.00	0.08	0.11	0.01	−0.15	−0.37	8.76	62.5	43.0	25.0	86.0	92.0	52.0	3.9	27.9	2.9	3.2	3.5	4.1
Singapur	−0.06	1.51	2.23	2.13	1.84	2.17	10.98	88.8	48.0	20.0	74.0	8.0	72.0	2.9	21.2	5.0	5.3	5.1	144.9
Slovakia	0.88	0.75	0.71	0.81	0.53	0.36	9.82	65.0	100	52	100	51	77	4.7	11.2	3.4	3.3	4.4	11.3
Slovenia	0.99	0.91	1.13	0.69	1.06	0.87	10.12	64.8	19.0	27.0	71.0	88.0	49.0	4.9	22.0	4.2	3.8	4.8	71.9
South Africa	0.66	−0.28	0.34	0.17	−0.10	−0.02	8.66	63.0	63.0	65.0	49.0	49.0	34.0	6.1	28.1	4.3	4.4	4.9	5.8
South Korea	0.80	0.54	1.18	1.09	1.24	0.60	10.33	73.8	39.0	18.0	60.0	85.0	100.0	5.3	10.1	4.4	4.4	4.7	249.5
Spain	1.06	0.25	1.00	0.95	0.97	0.61	10.29	65.1	42.0	51.0	57.0	86.0	48.0	4.3	17.0	3.5	3.5	4.3	39.0
Sweden	1.61	0.91	1.83	1.80	1.90	2.14	10.92	76.3	5.0	71.0	31.0	29.0	53.0	7.6	67.4	5.6	5.2	5.8	317.9
Switzerland	1.62	1.34	2.04	1.78	1.93	2.01	11.33	81.7	70.0	68.0	26.0	56.0	74.0	5.1	16.6	6.1	5.8	6.2	300.1
Thailand	−1.01	−0.73	0.35	0.11	0.02	−0.40	8.80	67.1	34.0	20.0	64.0	64.0	32.0	4.1	3.5	3.6	3.9	4.1	1.5
The Netherlands	1.60	0.87	1.85	2.02	1.82	2.01	10.84	76.2	14.0	80.0	38.0	53.0	67.0	5.4	16.4	5.2	5.6	5.7	211.9
Turkey	−0.83	−1.33	0.01	−0.05	−0.32	−0.34	9.25	65.4	45.0	37.0	66.0	85.0	46.0	4.3	8.2	3.3	3.5	4.1	10.9
United Kingdom	1.38	0.05	1.34	1.76	1.64	1.83	10.63	78.0	66.0	89.0	35.0	35.0	51.0	5.5	26.1	5.1	5.4	5.5	99.1
Uruguay	1.21	1.05	0.56	0.50	0.60	1.27	9.66	69.2	38.0	36.0	61.0	100.0	26.0	4.4	30.1	2.9	3.3	3.7	2.2
United States	1.04	0.48	1.58	1.58	1.45	1.32	11.05	75.7	62.0	91.0	40.0	46.0	26.0	5.0	10.3	5.9	5.7	6.0	176.5
Venezuela	−1.41	−1.34	−1.58	−2.33	−2.34	−1.47	7.97	25.2	73.0	12.0	81.0	76.0	16.0	6.9	0.2	2.5	3.0	3.6	0.2
Vietnam	−1.45	0.2	0	−0.39	0	−0.49	7.78	53.1	40.0	20.0	70.0	30.0	57.0	5.7	14.6	3.6	3.5	4.0	0.2
Average	0.57	0.24	0.72	0.70	0.60	0.54	9.68	67.21	48.64	45.81	58.08	68.20	48.99	4.81	20.62	4.01	4.03	4.62	66.43
Median	0.81	0.42	0.69	0.69	0.58	0.43	9.69	67.90	48.50	46.00	60.50	70.00	48.00	4.80	16.60	3.80	3.90	4.50	11.55
Percentile 75	1.21	0.91	1.43	1.55	1.46	1.51	10.63	74.23	63.00	67.25	71.50	86.00	64.00	5.50	26.00	4.90	4.80	5.23	101.93
Percentile 25	0.04	−0.29	0.02	0.04	−0.16	−0.31	9.02	62.50	39.75	24.50	40.00	50.75	32.00	3.90	10.75	3.23	3.30	4.00	2.18

TABLE A2 Values of the 2019 SDG index and those relative to the 17 SDGs by countries

	SDG Index	SDG1	SDG2	SDG3	SDG4	SDG5	SDG6	SDG7	SDG8	SDG9	SDG10	SDG11	SDG12	SDG13	SDG14	SDG15	SDG16	SDG17
Argentina	72.4	97.0	60.8	80.2	94.3	77.4	80.2	91.4	72.2	40.5	39.7	83.5	79.1	92.1	39.9	53.0	63.0	85.5
Australia	73.9	99.0	52.4	96.5	92.8	78.9	97.0	91.0	81.1	84.2	77.0	80.6	40.9	33.9	56.3	47.8	85.7	61.1
Austria	81.1	99.2	71.6	94.9	96.6	79.1	94.9	93.8	82.0	80.2	87.4	85.8	45.5	84.3	–	71.4	92.0	68.0
Bangladesh	60.9	58.2	51.1	59.6	79.7	48.2	65.5	56.0	77.1	15.4	76.4	51.9	96.5	97.1	51.9	60.9	50.5	38.8
Belgium	78.9	99.5	70.2	94.1	94.7	83.9	79.3	91.9	81.4	75.9	93.4	82.3	46.7	82.9	30.6	85.0	86.9	62.3
Brasil	70.6	86.2	62.1	76.9	84.6	67.5	79.4	94.0	72.6	48.8	25.6	78.3	78.7	91.7	63.2	60.9	55.4	74.7
Bulgaria	74.5	97.0	58.2	80.2	71.0	69.2	78.0	90.8	80.4	41.2	61.8	81.3	66.6	87.7	65.3	93.3	68.8	75.9
Canada	77.9	99.2	60.2	94.8	99.9	80.4	84.2	95.3	84.0	74.4	78.8	80.4	50.1	68.5	59.5	60.7	88.1	65.4
Chile	75.6	98.9	63.3	86.6	92.8	70.5	96.6	91.0	80.7	49.2	27.3	80.7	72.5	94.7	66.2	59.3	75.9	79.4
China	73.2	97.4	71.9	81.1	99.7	76.3	71.8	76.9	87.4	61.9	59.5	75.1	82.0	92.0	36.2	62.7	63.4	49.5
Colombia	69.6	85.8	56.0	79.3	83.3	70.5	76.9	91.0	71.9	31.8	21.7	81.6	84.8	90.7	74.9	56.4	58.3	68.0
Costa Rica	75.0	97.6	52.4	85.8	79.4	82.3	75.4	94.1	77.9	41.5	34.7	90.2	82.7	93.4	66.2	67.2	74.5	79.2
Croatia	77.8	98.4	64.6	87.1	87.4	63.7	82.5	89.5	78.1	48.6	69.8	76.2	73.5	93.6	74.8	79.2	70.6	84.7
Czech Republic	80.7	99.4	63.1	92.4	96.3	71.1	88.0	91.8	85.1	63.2	92.3	89.4	70.8	89.1	–	91.0	82.7	55.5
Denmark	85.2	99.6	68.3	96.1	98.3	84.8	90.7	93.6	83.9	88.1	96.5	90.2	49.8	90.2	48.9	87.2	92.8	89.8
Ecuador	72.3	88.2	47.8	77.0	93.2	76.8	73.4	90.2	75.4	27.0	35.5	90.4	84.8	93.9	70.2	60.1	64.4	80.8
El Salvador	66.7	91.6	48.7	77.3	75.9	68.4	72.0	88.5	70.2	17.9	38.9	89.0	86.4	90.6	27.8	65.9	56.5	69.0
Estonia	80.2	99.7	58.3	88.8	95.3	75.3	89.7	88.9	84.8	61.5	72.2	90.3	58.7	85.0	81.3	90.5	87.8	55.5
Finland	82.8	99.8	58.2	96.2	98.9	89.2	92.6	96.4	82.5	83.7	97.9	88.3	48.7	71.0	55.5	82.1	92.9	74.0
France	81.5	99.5	66.0	94.3	97.4	86.5	87.9	97.0	78.1	73.6	85.6	87.0	53.4	86.4	64.2	76.7	76.6	75.1
Germany	81.1	99.6	68.7	94.8	89.0	77.0	89.4	93.2	84.4	80.4	83.4	90.9	47.4	90.2	40.5	82.6	83.4	83.1
Greece	71.4	96.7	61.2	90.2	90.1	62.6	90.6	90.7	63.0	49.9	50.9	82.1	39.4	82.2	59.4	78.7	72.8	53.6
Hungary	76.9	98.9	64.2	85.9	90.4	64.1	89.0	91.6	82.1	49.6	75.6	86.1	71.0	94.9	–	87.3	73.4	51.5
India	61.1	71.4	42.6	58.8	80.2	33.2	56.6	65.4	83.2	28.7	49.0	51.1	94.5	94.5	51.2	51.1	61.3	65.7
Indonesia	64.2	74.0	53.7	62.9	90.1	61.2	68.7	73.4	76.0	33.8	34.8	67.4	91.0	94.8	50.4	41.9	70.6	46.9
Iran	70.5	96.8	58.2	77.3	95.5	42.6	49.9	87.7	68.3	39.8	64.7	76.1	80.6	89.0	73.2	68.0	64.7	65.6
Ireland	78.2	99.7	70.2	95.2	95.2	73.1	82.0	92.5	87.7	67.2	84.8	84.5	46.3	91.7	53.4	82.4	90.4	33.4
Israel	71.5	99.2	58.6	95.8	96.8	75.2	74.3	94.0	85.0	77.5	50.2	80.1	41.5	91.2	17.4	50.6	73.6	54.9
Italy	75.8	97.3	64.3	95.1	97.6	71.2	84.8	93.1	78.7	63.8	69.9	74.0	51.7	84.7	41.1	82.9	75.2	63.1
Japan	78.9	99.0	68.0	94.9	98.1	58.5	84.5	93.4	88.5	79.9	76.8	75.4	55.6	90.4	53.6	70.0	90.3	64.9
Latvia	77.1	98.7	60.4	84.5	95.7	70.2	89.0	91.2	83.3	49.3	76.5	86.3	67.9	87.8	50.9	92.2	77.0	50.4
Lithuania	75.1	98.4	58.5	84.6	98.7	72.1	85.7	83.5	80.5	45.4	49.6	83.1	67.4	84.1	62.5	90.4	80.5	51.6
Luxembourg	74.8	99.9	62.4	96.4	94.4	74.6	90.0	66.7	69.9	69.4	88.3	94.5	23.9	78.7	–	62.3	90.2	58.4
Malaysia	69.6	100.0	45.2	79.0	91.4	55.6	76.3	90.0	80.4	56.8	42.5	82.6	77.1	87.8	49.2	43.0	68.5	57.1

TABLE A2 (Continued)

	SDG Index	SDG1	SDG2	SDG3	SDG4	SDG5	SDG6	SDG7	SDG8	SDG9	SDG10	SDG11	SDG12	SDG13	SDG14	SDG15	SDG16	SDG17
Malta	76.1	99.7	58.2	92.7	97.5	59.1	86.4	92.4	87.4	43.3	94.6	83.1	48.4	91.1	50.2	70.6	76.8	62.2
Mexico	68.5	87.5	54.7	81.9	92.6	77.4	79.1	86.5	73.0	36.3	14.6	81.2	78.8	90.6	69.5	47.6	53.1	60.2
Morocco	69.1	94.9	53.8	73.7	78.0	42.9	66.1	87.7	67.4	32.4	61.5	72.2	82.5	92.4	48.2	75.6	69.0	75.9
New Zealand	79.5	100.0	63.1	94.6	98.1	84.7	90.7	95.9	88.1	73.9	–	83.0	51.5	91.5	57.0	47.1	92.6	64.9
Norway	80.7	99.5	57.0	97.9	99.9	87.7	87.5	98.6	78.5	80.0	100.0	86.1	30.5	54.4	66.2	63.2	84.9	99.6
Pakistan	55.6	77.9	34.4	50.2	47.5	28.9	46.3	72.4	65.7	15.0	58.0	50.6	92.1	98.7	47.6	67.0	49.1	43.3
Panama	66.3	93.5	49.6	78.9	78.8	65.3	71.8	87.8	77.4	29.3	25.4	88.7	80.2	90.2	55.4	57.2	64.7	32.9
Peru	71.2	89.9	61.3	78.0	91.6	68.1	76.9	83.7	75.6	32.9	41.8	73.1	78.8	93.1	78.8	71.3	58.2	57.1
Philippines	64.9	74.4	53.1	58.9	89.4	64.1	67.6	69.9	72.5	33.7	35.3	72.6	94.2	94.4	62.2	55.4	57.9	48.5
Poland	75.9	99.9	61.2	87.6	94.4	71.1	82.0	89.7	84.4	54.9	53.7	78.5	73.7	89.2	43.7	92.0	81.4	53.4
Portugal	76.4	98.7	56.0	92.1	95.5	80.7	87.0	94.6	82.3	56.1	57.3	84.4	54.8	91.5	51.8	73.4	84.1	58.7
Romania	72.7	98.8	58.0	80.6	84.2	64.5	78.0	89.0	80.4	41.3	30.0	81.3	71.9	95.2	53.3	84.3	76.1	69.5
Russia	70.9	100.0	45.6	78.1	97.2	67.2	89.0	91.2	75.5	50.1	54.0	82.3	69.1	82.2	42.5	66.2	50.6	65.4
Serbia	72.5	99.4	63.5	84.2	94.3	57.8	75.7	84.9	71.5	42.4	72.4	71.8	83.7	85.0	–	49.5	73.4	82.1
Singapur	69.6	98.4	71.8	95.0	99.6	68.5	89.0	94.7	71.9	85.6	–	94.7	35.0	50.5	15.2	27.4	88.5	35.6
Slovakia	76.2	98.2	68.8	88.0	83.8	68.9	84.4	92.2	80.7	49.7	83.5	82.0	65.0	77.2	–	86.9	79.9	55.1
Slovenia	79.4	99.7	64.6	92.7	96.6	75.3	82.4	93.6	84.7	61.0	100.0	85.9	60.8	91.2	33.3	82.5	88.1	57.6
South Africa	61.5	49.9	52.5	48.7	78.1	80.1	67.0	79.0	61.2	45.0	0.0	77.9	68.8	87.0	56.5	59.1	54.9	79.5
South Korea	78.3	99.0	77.9	92.4	95.8	63.9	81.5	92.5	86.2	83.7	86.5	80.3	63.5	87.7	54.8	57.2	75.4	53.4
Spain	77.8	98.1	56.2	95.4	95.4	82.7	88.1	94.7	75.2	68.1	69.2	89.1	53.4	93.3	59.4	65.4	80.6	59.1
Sweden	85.0	99.0	63.3	97.8	99.3	88.9	93.5	98.7	83.5	91.7	100.0	90.3	52.2	87.2	42.3	75.2	83.8	98.2
Switzerland	78.8	99.9	62.6	97.8	91.9	82.2	95.5	96.7	79.8	93.3	80.0	98.3	27.9	88.9		57.7	83.0	53.3
Thailand	73.0	100.0	60.2	76.7	88.7	64.7	78.3	82.9	80.2	42.8	58.9	83.0	79.5	93.9	54.7	67.0	70.9	58.8
The Netherlands	80.4	99.6	65.4	96.4	94.2	81.5	92.7	91.6	83.1	82.3	94.6	91.1	44.0	88.3	41.2	83.2	83.5	53.7
Turkey	68.5	99.5	55.8	83.6	93.7	45.3	82.1	89.2	73.8	46.5	41.2	70.4	73.8	89.9	27.4	53.3	68.1	70.8
United Kingdom	79.4	99.7	66.4	94.5	99.4	81.3	95.1	93.0	82.9	81.4	71.4	90.8	42.9	84.6	57.5	73.7	85.7	48.9
Uruguay	72.6	99.9	58.7	82.6	87.4	73.8	78.8	96.5	77.6	38.3	50.1	85.3	72.4	86.9	42.2	51.4	69.3	82.2
United States	74.5	98.9	66.0	89.5	89.3	73.4	85.0	93.2	85.2	83.3	47.7	82.5	36.5	66.1	60.9	76.9	76.1	56.2
Venezuela	63.1	35.0	47.5	66.2	76.3	69.0	79.9	91.9	78.6	24.7	25.9	62.7	78.5	89.0	51.4	78.9	36.8	79.7
Vietnam	71.1	95.3	62.6	74.8	91.7	72.0	70.8	82.4	74.2	26.4	78.3	77.6	87.1	94.5	45.2	48.6	61.8	65.3
Average 64 countries	73.8	93.8	59.6	84.6	90.9	70.0	81.2	88.8	78.7	55.1	62.2	81.2	64.7	86.7	52.7	68.1	73.7	63.6
Average OECD	77.7	98.8	63.1	92.4	95.1	75.5	87.6	92.0	81.4	68.8	71.8	84.7	53.1	83.8	43.0	73.3	82.0	62.7
Average EU	78.2	99.0	63.2	91.4	93.6	74.9	87.2	91.3	81.1	63.7	77.4	85.5	55.4	87.2	43.0	81.6	82.0	63.1