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### Exploring the cultural forces behind green bond issuance

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#### Abstract

Green bonds, a rapidly emerging financial instrument designed to bolster environmentally sustainable initiatives, are subject to the influence of the national culture on economic decisions. This study examines how cultural dimensions affect varying levels of green bond issuance based on Hofstede's theory. Fixed-effects regression was employed to analyze a sample of 67 countries from 2008 to 2021. The results suggest that cultural dimensions such as individualism and long-term orientation promote green bond issuance, while masculinity restrains it. Additionally, this study examines the moderating effects of institutional quality and economic conditions. The findings show that the relationship between national culture and green bonds is more significant in countries with higher institutional quality and lower income levels. This paper contributes to the literature by providing further insights into the interplay between cultural values, economic development, and institutional quality, thus enhancing our understanding of the multifaceted factors influencing green bond issuance. While this study offers valuable implications for policymakers, investors, and issuers seeking to promote sustainable finance in different cultural contexts, it could be enhanced by conducting more focused analyses within specific groups of countries and distinct organizations issuing green bonds, as well as by exploring the potential mechanisms underlying the observed relationships between cultural values and green bond issuance.

**Keywords:** Green bond, National culture, Sustainable finance, Hofstede's cultural dimensions theory

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## 1. Introduction

Global warming and environmental issues have become increasingly pressing concerns in recent years, as the world faces dire consequences of climate change, such as rising sea levels, frequent and severe weather events, and loss of biodiversity. These consequences are predicted to become more frequent and economically devastating, significantly hindering global economic development. Addressing these challenges requires significant investment in environmentally sustainable projects such as renewable energy, energy efficiency, and sustainable agriculture. However, traditional financing sources, such as government grants and development banks, may not be sufficient to meet the growing demand for sustainable projects (Barua and Chiesa, 2019). In this context, green bonds provide a crucial way to tap into private capital markets, offering a new funding source for sustainable development projects.

Green bonds were introduced by the World Bank in 2008 to fund environmentally sustainable projects while providing investors with a chance to support sustainability and earn a financial return. Since then, the global green bond market has grown exponentially, with a record issuance of 522.7 billion USD in 2021, an increase of 75% from the previous year's volume (Harrison *et al.*, 2022). This growth has been bolstered by developing principles and standards for green bonds, such as the Green Bond Principles and Climate Bonds Standards, which offer guidance on fund usage and promote transparency and accountability. Previous studies have shown that green bonds can benefit issuers by providing them with a broader investor base, improving their reputation, ensuring compliance with environmental regulations, and offering a dedicated funding source for green projects (Dan and Tiron-Tudor, 2021; Tang and Zhang, 2020).

While previous research has predominantly focused on observable determinants of green bond issuance, such as the issuer's features (Shao *et al.*, 2010), market characteristics (Tolliver *et al.*, 2020), and regulatory impact (Yamen *et al.*, 2022), our research highlights the latent yet pivotal factor - national culture. Understanding the relationship between national culture and green bonds is vital due to cultural factors' profound impact on financial choices and environmental initiatives. This insight into cultural dynamics has substantial implications for sustainable finance and global environmental efforts.

Previous research has investigated the impact of national culture on financial choices and demonstrated that culture plays a vital role in shaping investment behavior, risk-taking tendencies (Li *et al.*, 2013; Frijns *et al.*, 2022), and financial decisions (Yamen *et al.*, 2022). The cultural norms, values, and attitudes towards the environmental sustainability of a country could significantly impact the adoption and issuance of green bonds. These factors can influence the demand for green bonds and the availability of green projects in each country. Moreover, cultural norms could impact each country's regulatory environment and policy frameworks, affecting the feasibility of issuing green bonds and the level of governmental support for sustainable development.

In essence, exploring the interplay between national culture and green bonds is not only academically relevant but also crucial for policymakers and investors. It provides insights that can inform the design of sustainable finance regulations, facilitate cross-cultural cooperation in the environmental field, and contribute to the global pursuit of a more sustainable future.

This paper explores how national culture, as developed by Hofstede's cultural dimensions theory, affects the issuance of green bonds. Hofstede's theory identifies six cultural dimensions that reflect the distinct cultural values of a country: power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence. These dimensions provide a valuable framework for understanding how various cultural traits can impact a firm's financial decisions, especially those related to environmental initiatives. This study comprehensively analyzes 67 countries from 2008 to 2021, using the fixed-effects regression method to investigate the relationship between national culture and green bond issuance. By examining the effects of six cultural dimensions on sustainable development and green bond issuance, our findings reveal that cultural values play an essential role in shaping the landscape of green bond market development.

Furthermore, to gain a deeper insight into the relationship between national culture and sustainable initiatives, we provide an additional analysis of the influence of different levels of institutional quality and income level on the connection between national culture and green bond issuance. The rationale behind this additional analysis stems from recognizing that these factors shape the context in which national culture translates into organizational behavior. By conducting these further analyses, we aim to contribute to the ongoing literature on sustainable development and offer a comprehensive perspective on the drivers of green bond issuance across different economic and cultural contexts.

This study makes significant contributions to both academic knowledge and practical implementation. Academically, this paper adds to the literature by exploring a previously overlooked yet influential factor in global green bond issuance - the national culture. It offers insights into the interplay between cultural values, economic development, and institutional quality, and enhances our understanding of the multifaceted factors influencing sustainable initiatives. In practical terms, our findings offer insights into regulatory and policy frameworks designed to support global green bond market development. This includes formulating measures tailored to stimulate green project development and green bond issuance within the context of specific cultural values. Furthermore, the results of this study can help investors and issuers make informed investment decisions and design financial products that align with the cultural values of investors in different countries.

The remainder of this study is organized as follows. Section 2 discusses the literature and presents our hypotheses. Section 3 describes the research methodology, including the data collection and analysis techniques. Section 4 presents the study results and discusses their implications. Finally, the paper is concluded in section 5.

## **2. Theoretical framework and literature review**

### ***2.1 Hofstede's cultural dimensions theory***

Hofstede's cultural dimensions theory is a well-established framework for comprehending cultural differences between countries and organizations. Developed by Dutch social psychologist Geert Hofstede in the 1970s, this theory is based on extensive research on the cultural values and attitudes of IBM employees from different countries. Since then, Hofstede's cultural dimensions theory has been widely utilized by researchers, educators, and business leaders to navigate the complexities of cross-cultural interactions. The theory is based on Hofstede's six cultural dimensions: power distance, individualism-collectivism, masculinity-femininity, uncertainty avoidance, long-term orientation, and indulgence-restraint. In this study, we examine how these six dimensions of cultural values affect green bond issuance at a global level.

Power distance refers to the level of acceptance of unequal power distribution among people in a culture (Hofstede, 1997). On the other hand, uncertainty avoidance reflects the degree to which members of society feel uncomfortable with ambiguity and uncertainty. Individualism-collectivism reflects the values and beliefs of a culture concerning the importance of individual achievement and independence compared to group harmony and cooperation. Masculinity-femininity refers to the degree to which a culture values traditional masculine traits, such as ambition, assertiveness, and competitiveness, versus traditional feminine traits, such as nurturing, empathy, and collaboration. Long-term orientation emphasizes the preparation for future challenges and prospects. At the same time, indulgence measures the degree to which society permits the gratification of natural human desires related to pleasure and enjoyment.

### ***2.2 The impact of culture on firm behavior***

The impact of national cultural traits on firm behavior is a multifaceted topic that has recently gained attention in the literature. Research demonstrates that national culture significantly shapes a firm's behavior, ultimately influencing its operations, decision-making processes, and performance in the market (Disli *et al.*, 2016; Frijns *et al.*, 2020; Luu *et al.*, 2023). The literature suggests that national culture can influence financial decision-making and management practices. For instance, national culture may affect a firm's financing decisions (Shao *et al.*, 2010), approach to mergers and acquisitions (Weber *et al.*, 2011), and dividend policy (Bae *et al.*, 2012).

As proposed by Hofstede (1997), various cultural dimensions have been explored for their influence on how firms operate, make decisions, and interact with stakeholders. First, firms often establish hierarchical structures in cultures characterized by a high-power distance. Decision-making authority is centralized at the top, and employees may be less inclined to challenge authority, resulting in strict adherence to formal legal institutions (Hofstede, 1997; Bae *et al.*, 2012). Second, cultures with high uncertainty avoidance tend to be less tolerant of risk and experimentation (Hofstede, 1997; Yamen *et al.*, 2022). Firms with this trait may prefer investing in safe, low-risk projects, while firms in cultures with higher risk tolerance may pursue higher-risk, higher-reward projects (Bae *et al.*, 2012; Changa and

Noorbakhshb, 2019). Third, in cultures that value individualism, firms typically prioritize individual achievements and enhance overconfidence, which might increase firm members' risk-taking behavior (Frijns *et al.*, 2022). Fourth, within masculine cultures, firms often emphasize competitiveness, achievement, and assertiveness. These cultures frequently foster performance-driven incentive structures and a pronounced focus on success (Farooq *et al.*, 2020; Bae *et al.*, 2012). Fifth, firms tend to prioritize long-range planning, sustainability, and perseverance in cultures characterized by a long-term orientation. Decision-making is often guided by a forward-looking perspective, as reflected in future-oriented strategies (Fernando and Lawrence, 2014). Lastly, indulgent cultures frequently highlight the enjoyment of life and the pursuit of enjoyment. Firms operating in such cultural contexts may demonstrate greater openness to creative and unconventional approaches (Bae *et al.*, 2012).

To conclude, firms need to acknowledge and embrace the influence of national culture on their behavior and decision-making processes. Understanding and adapting to the cultural nuances of different societies are essential for firms to navigate the challenges of cross-cultural interactions and to thrive in diverse global markets. This approach enables firms to formulate sustainable financial strategies and cultivate long-lasting relationships with stakeholders in different cultural contexts.

### ***2.3 The relationship between national culture and corporate social responsibility behavior***

The World Bank Council for Sustainable Development defines corporate social responsibility (CSR) as a company's voluntary actions and initiatives beyond its legal obligations to address social, environmental, and ethical concerns in its business operations and interactions with stakeholders. CSR has become increasingly important as companies are now judged on their financial, environmental, and social performance (Pradhan and Nibedita, 2021). Due to concerns from corporate stakeholders and recent debates on its contribution to sustainable development and mitigation of current cross-border issues (Halkos and Skouloudis, 2017), CSR has become a relevant research topic.

Research has shown that national culture impacts a firm's financial decisions and significantly affects its CSR behavior, with cultural factors influencing a firm's approach to environmental sustainability, social responsibility, and ethical conduct (Halkos and Skouloudis, 2017). Culture can be defined as a set of norms and values that distinguishes members of a country, region, or ethnic group from others (Hofstede, 1997). Therefore, the meaning and interpretation of CSR may vary from country to country for cultural reasons. The findings of Svensson *et al.* (2009) reveal a variety of ethical corporate behaviors among corporations in different countries, implying that the way corporations outline their approach to business ethics depends on the national cultural values on which they operate.

Similarly, Ringov and Zollo (2007) postulate that countries with intense masculinity and uncertainty avoidance exhibit lower levels of CSR performance. In addition, Peng *et al.* (2012) show that individualism and uncertainty avoidance positively influence a firm's CSR commitment, while power distance and masculinity negatively affect that behavior.



In conclusion, it is evident that national culture plays a significant role in a firm's CSR behavior, and companies must consider cultural factors when operating in different countries and regions. Understanding society's cultural values, attitudes, and preferences can help firms adapt their CSR strategies and operations to better align with local expectations and build stronger relationships with stakeholders in different cultural contexts.

## **2.4 Hypothesis development**

### *2.4.1 The impact of national culture on green bond issuance*

Power distance refers to the degree of power inequality within a society and the extent to which its members tolerate such an unequal distribution. Previous studies have shown that countries with high-power distance cultures are more likely to engage in corporate social responsibility (CSR) activities (Peng *et al.*, 2012). This connection could be due to a greater focus on the collective good, a willingness to invest in projects that benefit the community, and greater trust in the government and other institutions, making investors more willing to invest in green bonds. Therefore, the following hypothesis is suggested:

*H1.1: A higher level of power distance in a country is associated with higher green bond issuance.*

Nations with high uncertainty avoidance cultures tend to prioritize stability and risk management, leading to a preference for conservative investments and a reluctance to invest in innovative and risky green initiatives despite their potential environmental benefits. These cultures often seek to decrease uncertainty through regulations and controls, which may hinder the success of green bond issuance. Therefore, the following hypothesis is proposed:

*H1.2: A higher level of uncertainty avoidance in a country is associated with lower green bond issuance.*

Individualism culture, which emphasizes personal responsibility and individual action, has been positively associated with environmental concern and pro-environmental behavior (Cho *et al.*, 2013). Research has also shown that companies in individualistic cultures are more likely to engage in CSR practices, including issuing green bonds to appeal to environmentally conscious consumers and investors (Ringov and Zollo, 2007). Therefore, the following hypothesis is developed:

*H1.3: A higher level of individualism in a country is associated with higher green bond issuance.*

The fourth cultural dimension, from femininity to masculinity, refers to the level of assertiveness in a culture. Traditional masculinity cultures often prioritize domination, competition, power, and status. Studies have shown that firms in high-power-masculinity cultures are less concerned with social issues such as employee welfare, community development, and environmental protection (Thanetsunthorn, 2015). Additionally, research has shown a negative association between masculinity and CSR disclosure (Gallen and Peraita, 2017). Williams (1999) also found that firms operating in countries with higher levels

of masculinity provided less environmental and social information. Therefore, the following hypothesis is proposed:

*H1.4: A higher level of masculinity in a country is associated with lower green bond issuance.*

Long-term orientation is a cultural trait that emphasizes sustainability, perseverance, and thrift (Hofstede, 1997). This cultural orientation may encourage investors to prioritize long-term gains and consider their investments' potential environmental, social, and governance (ESG) impacts. Previous research (Gallen and Peraita, 2017) has shown that the level of long-term orientation in a country is positively related to CSR disclosure. As green bonds are typically issued to fund environmentally friendly projects with a long-term perspective, they may be an attractive financing option for investors who embrace a long-term orientation culture. Therefore, the following hypothesis is suggested:

*H1.5: A higher level of long-term orientation in a country is associated with higher green bond issuance.*

An indulgence culture, characterized by focusing on material wealth and instant gratification, may lead to a lower prioritization of environmental concerns and a lack of interest in long-term investments that require patience and sacrifice (Hofstede, 1997). As a result, countries with high levels of indulgence may allocate fewer resources towards environmentally sustainable projects, which would be reflected in a lower level of green bond issuance. Halkos and Skouloudis (2017) predict a negative relationship between indulgence and CSR practices. Disli *et al.* (2016) argue that indulgent societies are characterized by a more wasteful and extravagant lifestyle, increasing environmental pollution. Therefore, the following hypothesis is developed:

*H1.6: A higher level of indulgence in a country is associated with lower green bond issuance.*

#### *2.4.2 Heterogeneous impact of institutional quality*

This study delves deeper into analyzing the heterogeneous impact of institutional quality and economic conditions on integrating national culture into an organization's participation in the green bond market. Institutional quality refers to the standards of legal, constitutional, and traditional frameworks that control the interactions among various stakeholders. Prior literature has set an empirical foundation for the influence of national culture on institutions, emphasizing the role of culture in shaping a country's institutional environment, beliefs, and practices, which in turn impacts the long-term evolution and effectiveness of institutions (Allam *et al.*, 2023; Gray, 1988). Moreover, strong institutions provide an enabling environment for establishing and enforcing regulations (Fernando and Lawrence, 2014; Zucker, 1987). When national culture places a high emphasis on environmental sustainability, strong institutions are better positioned to enact policies and practices that align with these cultural values, including the facilitation of green bond issuance. Therefore, the following hypothesis is suggested:

*H2: Institutional quality influences the relationship between national culture and green bond issuance.*

### 2.4.3 Heterogeneous impact of economic condition

This study anticipates a further heterogeneous impact of a country's economic conditions on the relationship between national culture and green bond market development. Prior literature has provided ample evidence indicating that more advanced economies would have greater financial resources available for investment (Song *et al.*, 2021). National cultures that emphasize environmental sustainability may find it easier to channel these resources into green bond issuance as they have a larger economic base to draw from. Moreover, more developed countries would have a larger pool of investors, including institutional investors and individuals, and a more developed financial market (Klapper and Lusardi, 2020). A developed financial market can facilitate the issuance of green bonds, supporting countries with a culture of sustainability to bring those bonds to market. Therefore, the following hypothesis is proposed:

*H3: Economic conditions influence the relationship between national culture and green bond issuance.*

## 3. Methodology

### 3.1 Data and sample

We construct our sample from the intersection of several databases from 2008 to 2021. We obtain information on green bond issuance from the Thomson Reuters Refinitiv database, which provides a comprehensive database of the green bonds' characteristics. National cultural value measures are developed using Hofstede's (1997) framework and based on the data provided on his website. The macroeconomic data and institutional quality are retrieved from the World Bank and World Development Indicator databases. Our sample consists of 304 observations from 67 countries from 2008 to 2021. Appendix 1 shows the list of countries selected for this study. While there was a total of 82 countries that had issued green bonds, and Hofstede's survey covered 118 countries, the final sample size of 67 countries was based on the overlap of data between these two sources. We selected the period starting from 2008 because it signifies the initiation of green bonds with the issuance by the World Bank, marking the substantial global development of this market (Anh Tu and Rasoulinezhad, 2022). The limited number of observations is due to the unbalanced nature of the data on green bond issuances across countries during the 14 years.

### 3.2 Model specification

To evaluate the extent to which a country's cultural values determine green bond issuance, we specify the following regression model:

$$\begin{aligned} \text{Green Bond}_{it} = & \beta_0 + \beta_1 \text{Power Distance}_{it} + \beta_2 \text{Uncertainty Avoidance}_{it} + \beta_3 \text{Individualism}_{it} \\ & + \beta_4 \text{Masculinity}_{it} + \beta_5 \text{Long-term Orientation}_{it} + \beta_6 \text{Indulgence}_{it} \\ & + \beta_7 \text{Population}_{it-1} + \beta_8 \text{Open trade}_{it-1} + \beta_9 \text{Urban}_{it-1} + \beta_{10} \text{Labor}_{it-1} + \varepsilon_{it-1}. \end{aligned} \quad (1)$$



The dependent variable, Green Bond, is the natural logarithm of each country's green bond issuance value. This study examines how national cultural values affect green bond issuance in each country. To proxy for a country's cultural values, we rely on Hofstede's (1997) six theoretically motivated cultural value measures: power distance (Power Distance), uncertainty avoidance (Uncertainty Avoidance), individualism (Individualism), masculinity (Masculinity), long-term orientation (Long-term Orientation), indulgence (Indulgence).

**Table 1.** Description of the variables included in the regression models

Variable	Description	Sources
<b>Dependent variables</b>		
<i>Green Bond</i>	The natural logarithm of green bond issuance in each country.	Author's calculation using data retrieved from Statista
<b>Culture measures</b>		
<i>Power Distance</i>	The extent to which the less powerful members of organizations and institutions accept and expect that power is distributed unequally (relative measure scored 0-100).	Geert Hofstede's website
<i>Uncertainty Avoidance</i>	The level of social acceptance with ambiguity (relative measure 0-100 scored).	Geert Hofstede's website
<i>Individualism</i>	The degree to which people in a society are integrated into groups (measure 0-100 scored).	Geert Hofstede's website
<i>Masculinity</i>	The gap between men's and women's values in society (measure 0-100 scored).	Geert Hofstede's website
<i>Long-term Orientation</i>	The connection with its past while dealing with the present and future challenges (measure 0-100 scored).	Geert Hofstede's website
<i>Indulgence</i>	Society allows relatively free gratification of primary and natural human drives related to enjoying life and having fun (measured 0-100 scored).	Geert Hofstede's website
<b>Control variables</b>		
<i>Population</i>	The natural logarithm of a country's Population.	World Bank
<i>Open trade</i>	The total value of exports plus imports over a country's level of GDP.	World Bank
<i>Urban</i>	The natural logarithm of the Population living in urban areas.	World Bank
<i>Labor</i>	The proportion of the population ages 15 and older that is economically active.	World Bank

**Source:** Authors' compilation

We control for country-specific characteristics, including Population, the natural logarithm of a country's Population, Open trade, the total value of exports plus imports over a country's level of GDP, Urban, the natural logarithm of the people living in urban

areas, and Labor, the proportion of the population aged 15 and older that is economically active. First, a country's population (Population) can correlate with heightened demand for investment projects, indicating a substantial pool of financial resources (Nguyen *et al.*, 2023; Dan and Tiron-Tudor, 2021). Second, trade openness (Open trade), as an indicator of a nation's interconnectedness with the global economy, has been identified as a significant factor influencing the development of the green bond market (Tolliver *et al.*, 2020). Third, the urbanization factor (Urban) often exhibits high population densities, making them hubs for large-scale green financial projects (Anh Tu and Rasoulinezhad, 2020). Lastly, the number of workers in the labor force (Labor) has been identified as a significant factor in the issuance of green bonds, as indicated by the findings of Anh Tu and Rasoulinezhad (2022) using the analytic hierarchy process. Table 1 provides detailed descriptions and sources of all variables in our baseline regression model.

## 4. Results and discussions

### 4.1 Descriptive statistics

Table 2 reports the descriptive statistics of green bond issuance and a summary of Hofstede's six cultural dimensions, including power distance ranging between 11 and 100, uncertainty avoidance ranging between 8 and 100, individualism ranging between 11 and 91, masculinity-femininity from 5 to 100, and long-term orientation and indulgence both ranging from 0 to 100. The average of the six dimensions is between 48 and 61. Uncertainty avoidance has the highest mean, meaning that it appears in most countries compared to the other dimensions. It has a strong influence on the issuance of green bonds.

**Table 2.** Descriptive statistics

	<b>N</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>P25</b>	<b>Median</b>	<b>P75</b>	<b>Max</b>
Green Bond	304	20.81	1.91	15.17	19.75	20.91	22.23	24.94
Power Distance	304	52.92	22.11	11	35	50	68	100
Uncertainty Avoidance	304	61.10	21.77	8	46	59	85	100
Individualism	304	54.20	24.17	11	31	60	74	91
Masculinity	304	48.62	21.15	5	39	50	64	100
Long-term Orientation	304	49.63	23.26	0	32	48	64	100
Indulgence	304	50.35	20.91	0	34	55	68	100
Population	304	17.00	1.67	12.81	15.58	17.26	18.13	21.06
Open trade	304	26.65	1.29	23.05	25.67	26.93	27.68	29.18
Urban	304	4.33	0.21	3.54	4.24	4.40	4.46	4.61
Labor	304	4.13	0.01	3.73	4.08	4.13	4.18	4.39

**Source:** Authors' calculation

Table 3 presents the correlation matrix used in this analysis. Individualism, Masculinity, Long-term Orientation, and Indulgence are positively correlated with Green Bond. These variables also display negative correlation coefficients with Power Distance and Uncertainty Avoidance. The correlation coefficients between other variables were relatively low. The highest value is -0.653 between Individualism and Power Distance. We also test for the possible multicollinearity issue using the variance inflation factor (VIF). The reported VIF of all variables is less than 5, illustrating that the multicollinearity problem does not seriously threaten our empirical model.

**Table 3.** Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	VIF
Green Bond	1.000											
Power Distance	-0.163	1.000										2.964
Uncertainty Avoidance	-0.068	0.150	1.000									1.529
Individualism	0.257	-0.653	-0.180	1.000								2.631
Masculinity	0.027	0.194	0.063	0.035	1.000							1.289
Long-term Orientation	0.255	-0.044	0.051	0.173	0.052	1.000						1.572
Indulgence	0.090	-0.290	-0.137	0.339	0.133	-0.126	1.000					1.929
Population	0.150	0.356	0.038	-0.186	0.331	0.137	0.093	1.000				3.05
Open trade	0.395	-0.092	-0.077	0.237	0.279	0.352	0.270	0.518	1.000			2.78
Urban	0.188	-0.397	0.132	0.374	-0.115	0.050	0.422	-0.332	0.249	1.000		1.85
Labor	-0.092	-0.181	-0.353	-0.031	-0.230	-0.092	0.314	-0.118	-0.027	0.200	1.000	1.506

**Source:** Authors' calculation

#### **4.2 Baseline regression results**

Table 4 reports the results of the baseline Model (1). Columns (1) - (6) show the results of the regression model of each national culture with Green Bond; Column (7) shows the results of the entire model using year-fixed effects.

The first cultural trait, Individualism, is positively and significantly correlated with Green Bond. This result validates our hypothesis that a higher level of individualism in a culture correlates with an increased issuance of green bonds in the market. This finding aligns with prior research on human traits and their environmental impacts. For instance, Vachon (2010) suggests that individuals in countries with high levels of individualism are more likely to promote environmental and social awareness. Hence, the results of this study suggest a positive association between a firm's sustainability initiatives and the level of individualism in each culture.

**Table 4.** Baseline regression results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Power Distance	Uncertainty Avoidance	Individualism	Masculinity	Long-term Orientation	Indulgence	Full model
Power Distance	-0.018*** (0.005)						0.001 (0.008)
Uncertainty Avoidance		-0.012** (0.005)					-0.006 (0.005)
<b>Individualism</b>			<b>0.021***</b> <b>(0.005)</b>				<b>0.020***</b> <b>(0.006)</b>
<b>Masculinity</b>				<b>-0.009***</b> <b>(0.001)</b>			<b>-0.009***</b> <b>(0.001)</b>
<b>Long-term Orientation</b>					<b>-0.000</b> <b>(0.002)</b>		<b>0.007**</b> <b>(0.002)</b>
Indulgence						0.012*** (0.003)	0.005 (0.005)
Population	-0.006 (0.069)	-0.102 (0.081)	-0.069 (0.075)	-0.119 (0.089)	-0.139 (0.089)	-0.157* (0.080)	-0.029 (0.065)
Open trade	0.562*** (0.028)	0.622*** (0.034)	0.563*** (0.039)	0.704*** (0.056)	0.672*** (0.055)	0.666*** (0.048)	0.527*** (0.036)
Urban	1.092** (0.436)	1.641*** (0.402)	0.830* (0.443)	1.248** (0.445)	1.358** (0.455)	0.921* (0.450)	0.704* (0.373)
Labor	-1.764* (0.819)	-2.668** (0.880)	-1.024 (0.746)	-1.733** (0.793)	-1.446 (0.813)	-1.966** (0.737)	-1.835** (0.832)
Constant	9.459* (5.042)	10.663* (4.914)	6.521 (4.630)	6.299 (4.634)	5.377 (4.493)	9.290** (3.988)	10.878** (4.807)
Year FEs	YES	YES	YES	YES	YES	YES	YES
Observations	304	304	304	304	304	304	304
R-squared	0.414	0.399	0.438	0.392	0.384	0.398	0.454

**Notes:** This table reports the baseline regression results on the impact of national culture on green bond issuance. The dependent variable is the Green Bond. The main independent variables are Power Distance, Uncertainty Avoidance, Individualism, Masculinity, Long-term Orientation, and Indulgence. The definitions of all variables are provided in Table 1. Columns (1) - (6) show the regression model of each cultural dimension. Column (7) is the regression model of the full model using year-fixed effects. Robust standard errors are in parentheses. \*, \*\*, and \*\*\* denote statistical significance at 10%, 5%, and 1%, respectively.

**Source:** Authors' calculation

The results show that Masculinity exhibits a negative and significant coefficient, confirming our fourth hypothesis. This implies that countries with a higher degree of masculinity are less inclined to engage in issuing green bonds. This result aligns with earlier studies on the relationship between masculinity and environmental attitudes. For example, Gallen and Peraita (2017) uncovered a negative association between masculinity and sustainability disclosure. Ringov and Zollo (2007) showed that high-power masculinity in the workplace is associated with reduced concern for social issues. Therefore, these results suggest that a country with a masculine culture may exhibit lower environmental and social responsibility awareness, leading to a lower likelihood of issuing green bonds to finance sustainable projects.

Long-term Orientation is another cultural trait that is positively and significantly correlated with Green Bond. This indicates that countries with higher long-term orientation have a stronger propensity to issue green bonds. This finding is consistent with previous research examining the interplay between culture and environmental behavior. Long-term-oriented cultures prioritize future benefits over immediate gains and are willing to sacrifice for sustainable outcomes (Disli *et al.*, 2016). Empirical evidence from Disli *et al.* (2016), Halkos and Skouloudis (2017) support the positive association between the environmental actions of firms and long-term orientation traits.

Furthermore, the results of our model show that the control variables also significantly affect green bond issuance. Specifically, Open Trade has a significant positive relationship with green bond issuance in all columns. This indicates that countries prioritizing foreign trade are more likely to support green bond issuance towards a green economy. Additionally, Urban and Labor variables positively and significantly affect green bond issuance, suggesting that countries with larger urban populations and more employees are more likely to issue green bonds to promote environmental action.

### **4.3 Robustness tests**

Several additional sensitivity analyses were conducted to validate the reliability of the baseline results. The results are presented in Table 5. In Column (1), we adopt an alternative model specification by incorporating country income level and year-fixed effects. This approach allows us to consider unobserved variations across different income groups and time-related factors. Moving on to Column (2), we address the potential autocorrelation in the data by clustering the standard errors at the country and year levels. In Column (4), we deliberately exclude the global financial crisis period from 2008 to 2009 to reduce the concern that economic shocks could influence our results. Another potential concern arises from the unprecedented disruption caused by the COVID-19 pandemic. To address this concern, we excluded observations in 2020 and 2021 from our sample and estimated the baseline regression model. Notably, the results of these sensitive analyses exhibit high consistency and align closely with our baseline findings.



**Table 5.** Robustness tests

	(1) Incomelevel_Year FE	(2) Two-way alternative clustering	(3) Exclude the financial crisis period	(4) Exclude Covid period
Power Distance	0.004 (0.007)	0.001 (0.007)	-0.000 (0.007)	0.007 (0.012)
Uncertainty Avoidance	0.001 (0.005)	-0.006 (0.004)	-0.006 (0.005)	-0.005 (0.008)
<b>Individualism</b>	<b>0.014*</b> <b>(0.008)</b>	<b>0.020***</b> <b>(0.007)</b>	<b>0.020**</b> <b>(0.006)</b>	<b>0.018*</b> <b>(0.010)</b>
<b>Masculinity</b>	<b>-0.012***</b> <b>(0.002)</b>	<b>-0.009**</b> <b>(0.003)</b>	<b>-0.009***</b> <b>(0.001)</b>	<b>-0.008***</b> <b>(0.001)</b>
<b>Long-term Orientation</b>	<b>0.007***</b> <b>(0.002)</b>	<b>0.007*</b> <b>(0.004)</b>	<b>0.007**</b> <b>(0.002)</b>	<b>0.008*</b> <b>(0.004)</b>
<b>Indulgence</b>	<b>0.011*</b> <b>(0.006)</b>	<b>0.005</b> <b>(0.006)</b>	<b>0.004</b> <b>(0.005)</b>	<b>0.011</b> <b>(0.006)</b>
Population	0.069 (0.105)	-0.029 (0.102)	-0.012 (0.066)	-0.040 (0.083)
Open trade	0.423*** (0.085)	0.526*** (0.086)	0.538*** (0.034)	0.527*** (0.056)
Urban	0.927* (0.499)	0.705 (0.488)	0.807** (0.353)	0.421 (0.346)
Labor	-1.531* (0.707)	-1.835* (1.046)	-1.737* (0.847)	-1.700 (1.186)
Constant	9.331** (3.802)	10.880*** (3.684)	9.607* (4.837)	10.663 (7.742)
Year FEs	NO	YES	YES	YES
Incomelevel_Year FEs	YES	NO	NO	NO
Observations	298	303	296	208
R-squared	0.535	0.451	0.460	0.409

**Notes:** This table reports the robustness tests of the impact of national culture on green bond issuance. The dependent variable is the Green Bond. The main independent variables are Power Distance, Uncertainty Avoidance, Individualism, Masculinity, Long-term Orientation, and Indulgence. The definitions of all variables are provided in Table 1. Column (1) is the

use of IncomeLevel\_Year fixed effects. Column (2) uses two-way alternative clustering for the baseline regression model. Column (3) excludes the financial crisis period. Column (4) excludes the COVID-19 period for analysis. Robust standard errors are in parentheses. \*, \*\*, and \*\*\* denote statistical significance at 10%, 5%, and 1%, respectively.

**Source:** Authors' calculation

#### 4.4 Additional analyses

##### 4.4.1 Heterogeneous impact of institutional quality

Table 6 presents the results of the sub-samples of the baseline regression, dividing into countries with lower institutional quality (Column (1)) and those with higher institutional quality (Column (2)). The quality of a nation's institutions is constructed using six leading indicators, including the rule of law, control of corruption, government effectiveness, political stability, regulatory quality, and voice and accountability (Kaufmann *et al.*, 2009). Due to the multidimensional nature of institutions, we use principal component analysis (PCA) to construct a single index that captures the overall quality of the institutional environment.

**Table 6.** Effect of institutional quality on the impact of national culture on green bond issuance

	(1) Lower institutional quality	(2) Higher institutional quality
Power Distance	0.007 (0.011)	0.012 (0.012)
Uncertainty Avoidance	0.010 (0.010)	-0.008 (0.008)
<b>Individualism</b>	<b>0.012</b> <b>(0.010)</b>	<b>0.048***</b> <b>(0.012)</b>
<b>Masculinity</b>	<b>-0.008</b> <b>(0.010)</b>	<b>-0.018***</b> <b>(0.005)</b>
<b>Long-term Orientation</b>	<b>-0.009</b> <b>(0.007)</b>	<b>0.029***</b> <b>(0.009)</b>
<b>Indulgence</b>	<b>-0.010</b> <b>(0.009)</b>	<b>-0.031**</b> <b>(0.015)</b>
Population	0.135 (0.151)	0.024 (0.166)
Open trade	0.879*** (0.194)	0.005 (0.225)
Urban	-0.364 (0.950)	-1.397 (1.460)

**Table 6.** Effect of institutional quality on the impact of national culture on green bond issuance (*continued*)

	(1) Lower institutional quality	(2) Higher institutional quality
Labor	-1.289 (1.577)	-3.769** (1.797)
Constant	0.862 (7.533)	40.676*** (12.440)
Year FEs	YES	YES
Observations	142	142
R-squared	0.409	0.687

**Notes:** This table reports the additional analysis of the effect of institutional quality on the impact of national culture on green bond issuance. The dependent variable is the Green Bond. The main independent variables are Power Distance, Uncertainty Avoidance, Individualism, Masculinity, Long-term Orientation, and Indulgence. The definitions of all variables are provided in Table 1. Column (1) is the relationship between green bond issuance and national culture in lower institution quality, while Column (2) is in higher institution quality. Robust standard errors are in parentheses. \*, \*\*, and \*\*\* denote statistical significance at 10%, 5%, and 1% , respectively.

**Source:** Authors' calculation

The results show that the four cultural dimensions, including Individualism, Masculinity, Long-term Orientation, and Indulgence are significant in countries with a higher institutional quality. In contrast, no significant results were found in the lower institutional-quality countries, suggesting that countries with weaker institutional quality do not impact the issuance of green bonds. These results imply that bond issuers are more likely to respond to social and environmental responsibilities when governments and regulatory bodies function effectively and strictly regulate corporate actions. This indicates that in countries with high institutional quality, the government enacts various policies related to the environment, which has a positive impact on CSR. Since CSR is closely related to green bond issuance and national culture, the relationship between national culture and green bond issuance will be supported in countries with high levels of institutional quality. The findings align with previous literature, indicating that institutional quality plays a supportive role in facilitating the implementation of sustainable development initiatives (Nguyen *et al.*, 2023).

#### 4.4.2 Heterogeneous impact of economic condition

Table 7 shows the level of GDP effect on the relationship between green bond issuance and national culture. Column (1) corresponds to countries with low GDP, and Column (2) corresponds to countries with high GDP. The results show that many cultural dimensions strongly influence green bond issuance in countries with low GDP levels.

**Table 7.** Effect of GDP on the impact of national culture on green bond issuance

	(1) Lower GDP level	(2) Higher GDP level
Power Distance	0.011 (0.009)	0.003 (0.018)
Uncertainty Avoidance	-0.013** (0.006)	0.006 (0.018)
<b>Individualism</b>	<b>-0.005</b> <b>(0.010)</b>	<b>0.030***</b> <b>(0.011)</b>
<b>Masculinity</b>	<b>-0.014**</b> <b>(0.006)</b>	<b>-0.018**</b> <b>(0.008)</b>
<b>Long-term Orientation</b>	<b>-0.009</b> <b>(0.006)</b>	<b>0.002</b> <b>(0.011)</b>
<b>Indulgence</b>	<b>0.032***</b> <b>(0.008)</b>	<b>-0.008</b> <b>(0.016)</b>
Population	-0.759*** (0.155)	0.040 (0.269)
Open trade	0.542*** (0.142)	0.913*** (0.272)
Urban	-1.200 (0.770)	-0.410 (1.552)
Labor	-5.307*** (1.289)	3.334 (2.144)
Constant	45.363*** (7.523)	-17.366* (10.330)
Year FEs	YES	YES
Observations	143	141
R-squared	0.496	0.594

**Notes:** This table reports the additional analysis of the effect of GDP on the impact of national culture on green bond issuance. The dependent variable is the Green Bond. The main independent variables are Power Distance, Uncertainty Avoidance, Individualism, Masculinity, Long-term Orientation, and Indulgence. The definitions of all variables are provided in Table 1. Column (1) is the relationship between green bond issuance and national culture in countries with low GDP, while Column (2) is in countries with higher GDP. Robust standard errors are in parentheses. \*, \*\*, and \*\*\* denote statistical significance at 10%, 5%, and 1%, respectively.

**Sources:** Authors' calculation

The relationship between a country's culture and the issuance of green bonds is more apparent in countries with high GDP levels. This indicates that countries with a higher level of economic development provide a favorable environment for green bond market development that aligns with their national cultural values. The results closely follow prior literature, emphasizing the significance of a country's economic development of its green finance market (Huang *et al.*, 2022; Tolliver *et al.*, 2020).

## 5. Conclusion

This study explores national culture's latent yet influential factor and its impact on sustainability behavior. The analysis reveals a significant relationship between three national cultural traits, namely Individualism, Masculinity, and Long-term orientation, on a country's propensity to issue green bonds to support sustainability initiatives. First, nations with higher levels of Individualism and Long-term Orientation tend to exhibit a greater propensity for green bond issuance. This result suggests that countries emphasizing individual-focused approaches and long-term perspectives in their financial and environmental strategies are more likely to support and participate in the green bond market. Conversely, the results reveal that countries with higher levels of masculinity tend to issue fewer green bonds. This trend could be attributed to their concentration on traditional industries and resource exploitation, often associated with adverse environmental impacts and lower sustainability awareness.

Furthermore, additional analysis reveals the role of the country's level of institutional quality and economic conditions in facilitating the integration of cultural traits into sustainable behavior. Specifically, the findings demonstrate that highly institutional-quality countries support translating national culture into sustainable practices, primarily through green bond issuance. This relationship is also upheld in countries with lower income levels. These findings emphasize the importance of cultural, institutional, and economic conditions factors when examining sustainability practices in financial markets.

The findings of this study provide valuable implications for various stakeholders, including policymakers and green bond market investors. Policymakers can leverage the insights gained from this study to inform the development and refinement of sustainable financial regulations and incentives. Understanding how national culture interacts with institutional quality and economic conditions to influence green bond issuance can help policymakers design more effective policies that encourage sustainable finance practices. For investors, understanding the relationship between national culture and green bond issuance across different countries becomes crucial when making investment decisions in green bond markets. Recognizing the impact of cultural, institutional, and economic factors can aid investors in making more informed choices regarding sustainable investments.

In conclusion, this study yields meaningful insights into the intricate relationship between national cultural factors, institutional quality, economic development, and green bond issuance. However, there are still ample possibilities for future research in this direction. It is important to note that this study thus far has predominantly focused on a macro and global scale. Future



research has the potential to analyze more profoundly the micro-level impact of organizational culture on the propensity of distinct organizations to issue green bonds. Moreover, further studies could enhance our understanding of the interplay between culture, geography, and economic factors by conducting more focused analyses within specific groups of countries. Grouping countries based on geographical location or stages of economic development could yield valuable insights into the factors influencing green bond issuance practices. Such insights would offer valuable information for policymakers, investors, and managers in shaping future sustainable financial strategies while fostering sustainable development.

## References

- Allam, A., Moussa, T., Abdelhady, M. and Yamen, A. (2023), "National culture and tax evasion: the role of the institutional environment quality", *Journal of International Accounting, Auditing and Taxation*, Vol. 52, 100559.
- Anh Tu, C. and Rasoulinezhad, E. (2022), "Energy efficiency financing and the role of green bond: policies for post-Covid period", *China Finance Review International*, Vol. 12 No. 2, pp. 203 - 218.
- Bae, S.C., Chang, K. and Kang, E. (2012), "Culture, corporate governance, and dividend policy: international evidence", *Journal of Financial Research*, Vol. 35 No. 2, pp. 289 - 316.
- Barua, S. and Chiesa, M. (2019), "Sustainable financing practices through green bonds: what affects the funding size?", *Business Strategy and the Environment*, Vol. 28 No. 6, pp. 1131 - 1147.
- Changa, K. and Noorbakhshb, A. (2009), "Does national culture affect international corporate cash holdings?", *Journal of Multinational Financial Management*, Vol. 19 No. 5, pp. 323 - 342.
- Cho, Y.N., Thyroff, A., Rapert, M.I., Park, S.Y. and Lee, H.J. (2013), "To be or not to be green: exploring individualism and collectivism as antecedents of environmental behavior", *Journal of Business Research*, Vol. 66 No. 8, pp. 1052 - 1059.
- Dan, A. and Tiron-Tudor, A. (2021), "The determinants of green bond issuance in the European Union", *Journal of Risk and Financial Management*, Vol. 14 No. 9, 446.
- Disli, M., Ng, A. and Askari, H. (2016), "Culture, income, and CO2 emission", *Renewable and Sustainable Energy Reviews*, Vol. 62, pp. 418 - 428.
- Farooq, U., Ahmed, J., Ashfaq, K., Hassan Khan, G.U. and Khan, S. (2020), "National culture and firm financial performance: a mediating role of firm financing decision", *Cogent Business & Management*, Vol. 7 No. 1, 1858640.
- Fatica, S. and Panzica, R. (2021), "Green bonds as a tool against climate change?", *Business Strategy and the Environment*, Vol. 30 No. 5, pp. 2688 - 2701.
- Fernando, S. and Lawrence, S. (2014), "A theoretical framework for CSR practices: integrating legitimacy theory, stakeholder theory and institutional theory", *Journal of Theoretical Accounting Research*, Vol. 10 No. 1, pp. 149 - 178.
- Frijns, B., Hubers, F., Kim, D., Roh, T.Y. and Xu, Y. (2022), "National culture and corporate risk-taking around the world", *Global Finance Journal*, Vol. 52, 100710.
- Gallen, M.L. and Peraita, C. (2017), "The effects of national culture on corporate social responsibility disclosure: a cross-country comparison", *Applied Economics*, Vol. 49 No. 28, pp. 2765 - 2777.
- Gray, S.J. (1988), "Towards a theory of cultural influence on the development of accounting systems internationally", *Abacus*, Vol. 24 No. 1, pp. 1 - 15.

- Halkos, G. and Skouloudis, A. (2017), "Revisiting the relationship between corporate social responsibility and national culture: a quantitative assessment", *Management Decision*, Vol. 55 No. 3, pp. 595 - 613.
- Harrison, C., MacGeoch, M. and Michetti, C. (2022), *Sustainable debt global state of the market 2021*, Climate Bonds Initiative, United Kingdom.
- Hofstede, G. (1997), *Cultures and organisations. Software of the mind*, McGraw-Hill, New York.
- Huang, L., Cao, Y. and Zhu, Y. (2022), "Is there any recovery power for economic growth from green finance? Evidence from OECD member countries", *Economic Change and Restructuring*, Vol. 56, pp. 3909 - 3926.
- Kaufmann, D., Kraay, A. and Mastruzzi, M. (2009), "Governance matters VIII: aggregate and individual governance indicators, 1996-2008", World Bank Policy Research Working Paper 4978, World Bank, Washington D.C.
- Klapper, L. and Lusardi, A. (2020), "Financial literacy and financial resilience: evidence from around the world", *Financial Management*, Vol. 49 No. 3, pp. 589 - 614.
- Li, K., Griffin, D., Yue, H. and Zhao, L. (2013), "How does culture influence corporate risk-taking?", *Journal of Corporate Finance*, Vol. 23, pp. 1 - 22.
- Luu, H.N., Do, D.D., Pham, T., Ho, V.X. and Dinh, Q.A. (2023), "Cultural values and the adoption of central bank digital currency", *Applied Economics Letters*, Vol. 30 No. 15, pp. 2024 - 2029.
- Nguyen, N.M., Luu, N.H., Hoang, A. and Nguyen, M.T.N. (2023), "Environmental impacts of green bonds in cross-countries analysis: a moderating effect of institutional quality", *Journal of Financial Economic Policy*, Vol. 15 No. 4/5, pp. 313 - 336.
- Peng, Y.S., Dashdeleg, A.U. and Chih, H.L. (2012), "Does national culture influence firm's CSR engagement: a cross country study", *International Proceedings of Economics Development and Research*, Vol. 58, pp. 40 - 44.
- Pradhan, A.K. and Nibedita, B. (2021), "The determinants of corporate social responsibility: evidence from Indian firms", *Global Business Review*, Vol. 22 No. 3, pp. 753 - 766.
- Ringov, D. and Zollo, M. (2007), "Corporate responsibility from a socio-institutional perspective: the impact of national culture on corporate social performance", *Corporate Governance*, Vol. 7 No. 4, pp. 476 - 485.
- Semykina, A. and Wooldridge, J.M. (2010), "Estimating panel data models in the presence of endogeneity and selection", *Journal of Econometrics*, Vol. 157 No. 2, pp. 375 - 380.
- Shao, L., Kwok, C.C. and Guedhami, O. (2010), "National culture and dividend policy", *Journal of International Business Studies*, Vol. 41, pp. 1391 - 1414.
- Song, C.Q., Chang, C.P. and Gong, Q. (2021), "Economic growth, corruption, and financial development: global evidence", *Economic Modelling*, Vol. 94, pp. 822 - 830.
- Stock, J.H. and Watson, M.W. (2008), "Heteroskedasticity-robust standard errors for fixed effects panel data regression", *Econometrica*, Vol. 76 No. 1, pp. 155 - 174.
- Svensson, G., Wood, G., Singh, J., Carasco, E. and Callaghan, M. (2009), "Ethical structures and processes of corporations operating in Australia, Canada, and Sweden: a longitudinal and cross-cultural study", *Journal of Business Ethics*, Vol. 86, pp. 485 - 506.
- Tang, D.Y. and Zhang, Y. (2020), "Do shareholders benefit from green bonds?", *Journal of Corporate Finance*, Vol. 61, 101427.

- Thanetsunthorn, N. (2015), “The impact of national culture on corporate social responsibility: evidence from cross-regional comparison”, *Asian Journal of Business Ethics*, Vol. 4, pp. 35 - 56.
- Tolliver, C., Keeley, A.R. and Managi, S. (2020), “Drivers of green bond market growth: the importance of nationally determined contributions to the Paris Agreement and implications for sustainability”, *Journal of Cleaner Production*, Vol. 244, 118643.
- Vachon, S. (2010), “International operations and sustainable development: should national culture matter?”, *Sustainable Development*, Vol. 18 No. 6, pp. 350 - 361.
- Weber, Y., Tarba, S.Y. and Reichel, A. (2011), “A model of the influence of culture on integration approaches and international mergers and acquisitions performance”, *International Studies of Management and Organization*, Vol. 41 No. 3, pp. 9 - 24.
- Williams, S.M. (1999), “Voluntary environmental and social accounting disclosure practices in the Asia-Pacific region: an international empirical test of political economy theory”, *The International Journal of Accounting*, Vol. 34 No. 2, pp. 209 - 238.
- Yamen, A., Kuzey, C. and Dinc, M.S. (2022), “Culture, institutional quality and earnings management: an international evidence”, *EuroMed Journal of Business*, Vol. 17 No. 1, pp. 72 - 87.
- Zucker, L.G. (1987), “Institutional theories of organization”, *Annual Review of Sociology*, Vol. 13 No. 1, pp. 443 - 464.

### Appendix 1. List of countries

No.	Country	Country classification	No.	Country	Country classification
1	Argentina	Upper middle income	34	Luxembourg	High income
2	Australia	High income	35	Malaysia	Upper middle income
3	Austria	High income	36	Mexico	Upper middle income
4	Bangladesh	Lower middle income	37	Morocco	Lower middle income
5	Belgium	High income	38	Namibia	Upper middle income
6	Brazil	Upper middle income	39	Netherlands	High income
7	Canada	High income	40	New Zealand	High income
8	Chile	High income	41	Nigeria	Lower middle income
9	China	Upper middle income	42	Norway	High income
10	Colombia	Upper middle income	43	Pakistan	Lower middle income
11	Costa Rica	Upper middle income	44	Panama	Upper middle income
12	Czech Republic	High income	45	Peru	Upper middle income
13	Denmark	High income	46	Philippines	Lower middle income
14	Egypt	Lower middle income	47	Poland	High income
15	Estonia	High income	48	Portugal	High income
16	Fiji	Upper middle income	49	Romania	Upper middle income
17	Finland	High income	50	Russian Federation	Upper middle income

**Appendix 1.** List of countries (*continued*)

No.	Country	Country classification	No.	Country	Country classification
18	France	High income	51	Saudi Arabia	High income
19	Georgia	Upper middle income	52	Serbia	Upper middle income
20	Germany	High income	53	Singapore	High income
21	Greece	High income	54	Slovakia	High income
22	Honduras	Lower middle income	55	South Africa	Upper middle income
23	Hong Kong	High income	56	South Korea	High income
24	Hungary	High income	57	Spain	High income
25	Iceland	High income	58	Sweden	High income
26	India	Lower middle income	59	Switzerland	High income
27	Indonesia	Lower middle income	60	Thailand	Upper middle income
28	Ireland	High income	61	Turkey	Upper middle income
29	Israel	High income	62	Ukraine	Lower middle income
30	Italy	High income	63	United Arab Emirates	High income
31	Japan	High income	64	United Kingdom	High income
32	Latvia	High income	65	United States	High income
33	Lithuania	High income	66	Venezuela	
			67	Vietnam	Lower middle income

**Note:** Venezuela is not classified based on the World Bank Atlas method using GNI per capita data in U.S. dollars.

**Source:** Authors' compilation based on the World Bank classification