Environmental reporting and religiosity: An empirical analysis within the European financial sector

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Abstract

Purpose: This study investigates whether country-level religiosity influences environmental reporting within the financial sector. In particular, the study examines religiosity's influence on environmental reporting among banks, credit institutions, and investment firms (BCIs) across 11 European countries during the 2006-2022 period.

Design/methodology/approach: The study used a dataset of 1,980 firm-year observations. Data from the World Value Survey was employed to assess religiosity at the country level. Responses to religiosity's affective, cognitive, and behavioural dimensions were analysed using principal component analysis (PCA) to derive a single score for each country. Religiosity's influence on environmental reporting was examined through an OLS regression model.

Findings: The findings suggest a positive influence of country-level religiosity on environmental reporting among European BCIs. The results demonstrate that religious norms and the overall religious context within a country can significantly influence corporate attitudes and practices regarding environmental reporting.

Originality/value: This study enhances the understanding of religious norms' influence on corporate sustainability practices and introduces a new perspective within the financial sector by linking religiosity to environmental reporting practices. The

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Doi: 10.3280/fr202516716

findings align with theoretical frameworks of institutional and social norms theories, opening avenues for further research that could examine religiosity's influence on corporate sustainability. Moreover, it addresses the topic within the European context, reflecting recent developments' effects on nonfinancial reporting regulation and a certain degree of religious diversity, which may lead to different interpretations and expectations concerning environmental issues and reporting

Keywords: environmental reporting, religiosity, financial sector, religious social norms, institutional theory, social norms theory

JEL: G20, M14, M41, Q56, Z12

First submission: October 27, 2023. Accepted: December 17, 2024.

1. Introduction

In recent decades, environmental protection has gained significant attention in public discourse, leading the European Commission to adopt various initiatives to promote environmentally sustainable behaviour across Europe, such as Directive 2014/95/EU and the most recent Corporate Sustainability Reporting Directive (2464/2022/EU). However, while regulatory frameworks evolve to ensure higher transparency levels, the influence of sociocultural factors, such as religiosity, on environmental reporting practices remains underexamined. Religiosity, intended as a set of social norms and ethical values rooted deeply in cultural and educational patterns, often shapes individual and collective behaviours by promoting ideals such as stewardship, accountability and ethics (McGuire et al., 2012). These values align closely with the principles of corporate sustainability, rendering religiosity a potentially influential factor in shaping environmental reporting. Understanding this influence is crucial, particularly for banks, credit institutions and investment firms (BCIs), whose capital allocation significantly impacts environmental sustainability. BCIs function as key providers of capital to businesses, and their decisions on whom to lend to can either support or hinder environmentally sustainable practices (Krasodomska, 2015). Their capital allocation choices are influenced by regulatory and market conditions, as well as ethical and religious values within the communities they serve. In highly religious contexts, religious social norms that emphasise transparency, stewardship and accountability in business practices may further guide BCIs' environmental reporting (Chantziaras et al., 2020). Depending on their funding choices, BCIs can promote responsible use of natural resources and

reductions in environmental degradation or, conversely, increase waste of natural resources, greenhouse gas emissions and environmental damage through capital allocation choices (Gallego-Álvarez & Pucheta-Martínez, 2020). Rooted in cultural and educational patterns, religiosity shapes corporate behaviour (Chantziaras et al., 2020), promoting environmental stewardship and fostering ethical responsibility (Terzani & Turzo, 2021). This, along with regulatory frameworks and market conditions, influences BCIs' capital decisions (McGuire et al., 2012; Parboteeah et al., 2008), likely to be reflected in BCIs' environmental reporting. BCIs' environmental reporting serves as a transparent record of how their finance activities align with sustainability goals and is used strategically as a tool to gain competitive advantage, improve financial performance and enhance market position (Carnevale & Mazzuca, 2014; Buallay, 2019a; 2019b; Gallego-Álvarez & Pucheta-Martínez, 2020).

The present study aims to fill this literature gap by investigating religiosity's influence on BCIs' environmental reporting at the country level across 11 European nations during the 2006-2022 period.

Extant research provides insights into how religiosity influences environmental reporting. Typically, religious doctrines discourage manipulative and opportunistic behaviours while promoting the adoption of ethical business practices (Dyreng et al., 2012; Callen & Fang, 2015), including environmental reporting (Chantziaras et al., 2020; Terzani & Turzo, 2021). Moreover, Gomes et al. (2024) found that religiosity significantly shapes corporate behaviour by fostering ethical practices and risk aversion, particularly in contexts that require high transparency and accountability.

Interestingly, religiosity's influence on BCIs' environmental reporting, particularly within Europe, has received limited attention in the literature. The present study aims to bridge this research gap by examining the European context. This investigation is particularly relevant because BCIs operate in highly regulated environments and are under constant stakeholder scrutiny. Understanding how religiosity shapes BCIs' environmental reporting practices can provide valuable insights into the broader dynamics of corporate sustainability.

Analysing religiosity's effect on BCIs' environmental reporting is important from many different perspectives and enriches the literature with different contributions.

First, religious social norms influence BCIs' behaviour, both internally – through managers' and employees' values that affect their behaviour (Chantziaras et al., 2020) – and externally – through stakeholders' expectations (Chircop et al., 2017). Furthermore, religiosity encourages firms' adop-

tion of ethical behaviours; thus, companies in highly religious countries can use environmental reports as an effective tool to demonstrate to stakeholders their commitment to environmental stewardship and a sustainability agenda. Moreover, analysing BCIs is important because they significantly impact the environment directly and indirectly, mainly through investment choices. To the best of our knowledge, even though environmental reporting in the financial sector has been addressed previously in the literature (de Andrés et al., 2023), this study is the first to investigate religiosity's influence on BCIs' environmental reporting in the European context over an extended period, providing new insight into such an underexamined area. Among the limited literature on the topic, Chantziaras et al. (2020) employed a sample of United States banks, while Terzani and Turzo (2021) utilised a worldwide sample, but did not include firms from the financial sector in their analysis. Europe presents an interesting context because of the diverse levels of religiosity across countries, which can exert a diverse influence on corporate culture and firms' sustainable practices (Terzani & Turzo, 2023). The existence of different religiosity levels in Europe offers the opportunity to examine how different religious contexts influence BCIs' environmental reporting practices, potentially leading to a range of environmental reporting behaviours over time (Gallego-Alvarez et al., 2020). Furthermore, religiosity, as a deeply established social norm (Stavrova et al., 2013), unavoidably shapes behaviours and decisions, often through cultural and educational influences, making it a critical factor in understanding environmental reporting practices.

Second, the present study investigates religiosity's influence on environmental reporting within European BCIs through the lens of institutional and social norms theories. To do so, we constructed a country-religiosity score for each country in our dataset. We employed a fixed-effect, ordinary least squares (OLS) model with an unbalanced panel sample of listed European BCIs from 2006 to 2022. The final sample comprised 1,980 firm-year observations. Using an innovative theoretical framework helps provide a clearer and more complete interpretation of corporate choices, such as determinants of environmental reporting (Chantziaras et al., 2020; Terzani & Turzo, 2021, 2023; Turzo et al., 2022). The potential also exists to extend these theories to clarify religiosity's influence on environmental reporting practices within European BCIs.

Third, the European context, with its religious diversity and regulatory setting, provides fertile ground for examining how religiosity affects the adoption of environmental reporting practices, particularly considering that Europe is at the forefront in terms of regulating environmental reporting practices.

By adopting this approach, we set our study apart from extant studies that have examined similar subjects and provided an original contribution to the

literature. For instance, Chantziaras et al. (2020) focussed on the US context, in which religiosity significantly influences sustainability practices in the banking sector, even moderating corruption's impact. However, the European context presents a unique scenario of religious diversity and stringent environmental reporting regulations. Notably, Chantziaras et al. (2020) emphasised Protestant congregants in the US, while our study examined observations primarily from Catholic-majority countries. Moreover, our research narrowed the focus to nonfinancial reports' environmental dimension, allowing us to assess whether religiosity influences BCIs differently compared with other industries.

The present study's empirical results demonstrate that country-level religiosity positively and statistically significantly influences BCIs' environmental reporting practices in Europe. These results' robustness has been confirmed through various cecks, including tests for endogeneity and exclusion of data from specific regions, e.g., the United Kingdom.

This study's policy implications are manifold. First, the findings indicate that regulators can leverage religious social norms to encourage more transparent and reliable environmental reporting in the financial sector. Recognising religiosity's influence could enable the development of more culturally sensitive regulatory frameworks that align with the ethical values of stakeholders in various regions. By doing so, policymakers can increase the likelihood of compliance and enhance environmental reporting regulations' overall effectiveness.

Second, for managers within BCIs, understanding religiosity's impact on stakeholder expectations can guide the development of reporting practices that meet regulatory requirements and strengthen the firm's market position. Environmental reporting aligned with key stakeholders' religious and cultural values can improve BCIs' reputation, attract ethically minded investors, foster the development of trust among clients and partners, and generate a competitive advantage through differentiation for compliant BCIs.

Third, investors can benefit from considering religiosity as a factor in their decision-making processes. Investors who value ethical and sustainable practices could view environmental reporting as an indicator of how well a BCI aligns with the community's broader ethical values, rendering it a key criterion in their investment choices.

This article proceeds as follows. Section 2 describes the study's theoretical framework. Section 3 reviews the extant literature on environmental reporting and religiosity and discusses the hypothesis to be tested. Section 4 describes the research design, including the sample, empirical model and variables used in the analysis. Sections 5 and 6 present the results from the

analysis and robustness checks, and Section 7 discusses these results. Section 8 concludes the paper.

2. Theoretical framework

This study employed a theoretical framework based on theories of institutional and social norms. Institutional theory is used widely in the environmental reporting literature (Ali et al., 2017; Baldini et al., 2018). Social norms theory is adopted commonly in studies investigating religiosity's impact on economic activities (Dyreng et al., 2012; McGuire et al., 2012; Chantziaras et al., 2020; Terzani & Turzo, 2021).

Institutional theory focuses on interactions between business and society and, in this context, provides insights into environmental reporting's role in fostering social connections (Baldini et al., 2018). The institutional context pressures financial institutions to adopt specific behaviours. To cope with these pressures, firms frequently seek a broad consensus (Meyer & Rowan, 1977) that guides their actions through various formal and informal rules, regulations, standards and understandings (Morgan et al., 2010). These institutional forces also affect relationships with stakeholders, such as unions, employees, community groups, investors and others (Campbell, 2007). Therefore, institutional theory posits that firms operate within a broader social context shaped by rules and norms that restrict and enable their behaviour.

Extant studies have demonstrated institutional theory's applicability in illuminating the factors impacting environmental reporting (DiMaggio & Powell, 1983; Rahaman et al., 2004; Ali et al., 2017), with country-level traits assuming a certain degree of importance in this regard (Muthuri & Gilbert, 2011; Oliver, 1991). Ali et al. (2017) emphasised the relevance of political, social and cultural factors in influencing corporate social responsibility (CSR) agendas while outlining differences between factors that contribute to developed and developing countries' determinants. Baldini et al. (2018) concurred, arguing that social structures and legitimacy pressures drive environmental, social and governance (ESG) reporting. The present study discovered connections between environmental reporting and nationwide aspects, such as corruption and unemployment rates. Furthermore, we emphasised cultural factors influencing reporting, such as social cohesion and equal opportunities.

According to social norms theory, individuals will likely conform to their community's values, behaviours and attitudes (Kohlberg, 1984). As per Bicchieri (2006), social norms are activated by the perceived applicability of a behavioural norm to a situation, the belief in widespread community con-

formity to the norm and expectations of community conformity. Since individuals usually follow their community's behavioural norms (Kohlberg, 1984), it is reasonable to assume that social norms influence a nation's citizenry, including religious social norms (Cui et al., 2015). Stavrova et al. (2013) clarified that a community's religiosity level represents a descriptive norm, while information about religiosity's social desirability represents an injunctive norm. Considering that the social psychological literature indicates that social norms incorporate sources of informational and normative social influence (Cialdini & Goldstein, 2004; Deutsch & Gerard, 1955), we can assume that religiosity can be viewed as a social norm.

The literature demonstrates that religious social norms affect corporate behaviours in two main ways. First, companies often prefer to hire from the local workforce (Hilary & Hui, 2009). In areas with strong religious social norms, these employees, including managers, are more likely to be influenced by high religiosity levels. Their religiosity is reflected in their contributions to the company and, in the case of managers, ends up shaping corporate policies and practices (Chantziaras et al., 2020; Hilary & Hui, 2009). Second, extant research indicates that managers tend to establish relationships with local communities (Dyreng et al., 2012).

3. Literature review and hypothesis development

A stream of extant studies has examined religiosity's potential impact on business practices. Alvarez et al. (2020) indicated that Christianity can exert a beneficial effect on ethical business practices. Christianity emphasises concepts such as human dignity and stewardship of natural resources, which align with some key principles of contemporary business ethics. Furthermore, religious individuals usually endorse higher ethical standards in business conduct. Catholic social teaching offers moral and normative guidance for corporate sustainability. It helps develop executive moral competencies that influence environmental strategies, motivates leaders to promote a long-term sustainable approach and emphasises the importance of values such as justice, solidarity, and care for the environment (Rousseau, 2017). Beyond Christianity, other religions practised in Europe, such as Islam and Judaism, also emphasise values that support corporate responsibility towards the environment. Islamic teachings highlight humans' role as 'stewards' of the Earth, with a duty to protect nature as part of a balanced approach to life (Zinkin, 2007). Similarly, Judaism promotes the concept of *tikkun olam* ('repairing the world'), which encourages actions that contribute to social and

environmental well-being (Terzani & Turzo, 2021). These values create an ethical foundation that can guide corporate strategies towards environmental care and transparent reporting, demonstrating how diverse religious beliefs across Europe may positively influence companies' approaches to sustainability and openness in environmental impact reporting practices.

In addition to the ethical values, the literature identifies specific mechanisms through which country-level religiosity translates into concrete corporate behaviours, particularly in environmental reporting (Guiso et al., 2003; Hilary & Hui, 2009). Religious social norms are informal social controls, including moral expectations within community standards that influence managerial decisions. For instance, communities with high religiosity levels emphasise transparency, stewardship and ethical accountability – values that align closely with environmental reporting goals (McGuire et al., 2012; Terzani & Turzo, 2021). This social context often exerts both explicit and implicit pressure on managers to adopt adequate reporting practices, as firms aim to fulfil stakeholders' ethical expectations and align with social values that prioritise sustainability (El Ghoul et al., 2012; McGuire et al., 2012; Terzani & Turzo, 2021).

The social expectations in highly religious settings also amplify this influence. Extant studies indicate that individuals in religious communities internalise values such as trust and risk aversion, which can raise sensitivity to corporate actions affecting public welfare, including environmental practices (El Ghoul et al., 2012; Guiso et al., 2003). Therefore, managers in these settings may perceive a moral duty to adhere to community expectations regarding environmental protection, with environmental reporting serving as a mechanism for demonstrating alignment with social norms (Terzani & Turzo, 2021). In this sense, religious social norms can function as a substitute for formal regulatory frameworks, with strong community expectations effectively guiding corporate practices even in the absence of regulations (Terzani & Turzo, 2024).

Moreover, corporate actions are often subject to moral scrutiny in countries with high religiosity levels, particularly regarding their environmental impact. This intense scrutiny creates strong incentives for managers to adopt transparent and reliable environmental reporting practices to meet regulatory requirements, build trust and maintain their companies' social legitimacy within the community (Hilary & Hui, 2009; McGuire et al., 2012). Thus, religiosity influences corporate decision-making, encouraging managers to incorporate religious values into specific actions, such as detailed environmental reporting, that reflect their communities' ethical and cultural priorities. Focusing on nonfinancial reporting, Griffin and Sun (2018) found that

managers make firm-value-increasing CSR disclosure decisions that cater to the local community's religious and social norms. In environments where religious norms are stricter and more influential, firms are more likely to conform to these norms, following the principles of institutional theory.

Compliance with such norms is necessary to ensure access to critical resources, such as capital and customer support (Terzani & Turzo, 2021, 2023), and this should be true particularly in the case of BCIs because their reliance on capital is profound, directly impacting their activities and their capacity to fund operations, manage risk and make investments. Investors and customers, increasingly demanding ethical conduct, are more likely to support institutions that demonstrate their commitment to sustainability and ethical practices (Dyreng et al., 2012; Callen & Fang, 2015), such as by releasing environmental reporting. Such compliance is particularly relevant for BCIs, as adherence to the religious social norms of the communities they belong to helps secure crucial support from both financial markets and customer bases, guaranteeing access to fundamental resources for their activities within the financial system. For BCIs, compliance with religious social norms is particularly crucial, as alignment with community values helps secure vital support from financial markets and customer bases, ensuring access to the resources necessary for their operations within the financial system. Unlike companies in nonfinancial sectors, which primarily engage in the exchange of goods and services, BCIs focus on managing and negotiating financial capital. Financial institutions operate in a trust-based industry – in which stability and credibility are key to attracting and retaining clients – so BCIs are particularly responsive to religious social norms (Chircop et al., 2017), which shape stakeholder expectations of accountability that are essential for BCIs to maintain legitimacy and stability in their operations.

Based on the theoretical framework grounded on institutional and social norms theories and extant literature, we expected BCIs located in highly religious environments to be engaged extensively in environmental reporting.

Consequently, based on the above discussion, the following hypothesis was proposed:

Country-level religiosity positively influences European BCIs' environmental reporting.

4. Data and methodology

4.1. Sample selection

We used an unbalanced panel sample of listed European firms in the banking and financial sector from 2006–2022 to test the hypothesis. The research period began in 2006 because earlier environmental data were not available.

We analysed the European context because it is relevant when studying nonfinancial reporting, which is characterised by strict environmental reporting regulations (Coppola et al., 2024) and religious diversity that may result in a different interpretation and interest in environmental issues.

The sample includes all banks and firms in European financial markets. We excluded firms from countries with no available data on religiosity and firms with missing financial data. Ultimately, the dataset comprised 1,980 firm-year observations[1].

Table 1 – Panel A: Sample distribution by year

Year	Frequency	Percentage
2006	66	3.33
2007	76	3.84
2008	83	4.19
2009	82	4.14
2010	85	4.29
2011	87	4.39
2012	87	4.39
2013	86	4.34
2014	89	4.49
2015	106	5.35
2016	118	5.96
2017	129	6.52
2018	152	7.68
2019	170	8.59
2020	183	9.24
2021	191	9.65
2022	190	9.60
Total	1,980	100.00

[1] 33.55% of the sample comprised banks; 27.71%, credit institutions and 38.74%, investment firms.

Table 1 – Panel B: Sample distribution by country

Country	Frequency	Percentage
Finland	39	1.97
France	144	7.27
Germany	168	8.48
Greece	82	4.14
Italy	237	11.97
Netherlands	65	3.28
Norway	66	3.33
Spain	117	5.91
Sweden	100	5.05
Switzerland	206	10.40
United Kingdom	756	38.18
Total	1,980	100.00

Table 1, Panel A, displays our sample's distribution from the research period. The data indicate a gradual increase in frequency, starting at 66 (3.33%) observations in 2006 and peaking at 191 (9.65%) in 2021.

Table 1, Panel B, summarises the distribution of observations from the sample companies. Most observations came from the UK, with 756 firm-year observations representing 38.18% of the sample. This suggests that the UK plays a predominant role in the sample, which is not surprising, given its financial sector's size and importance. After the UK, the countries with the most observations are Italy (11.97%), Switzerland (10.40%) and Germany (8.48%). The distribution of countries in the sample is not uniform, with countries such as Finland, the Netherlands and Norway registering a relatively low number of observations.

4.2. Regression model

Religiosity's influence on environmental reporting was estimated using the following OLS regression model:

$$ENV\_REP_{i,t} = \beta_0 + \beta_1 Rel_{i,t} + Control\ variables + Fixed\ effects + \varepsilon_{i,t}$$

We conducted the analysis multiple times. First, we considered only year-fixed effects (Table 7, Column 1). Second, we incorporated year and sector fixed effects (Column 2). Third, we included year and country fixed effects (Column 3). Finally, we simultaneously used year, sector and country fixed effects (Column 4). We then repeated the analysis, replacing the financial

control variables (*Size*, *ROA*, *Leverage* and *Growth*) with their respective lagged variables. This allowed us to address the issue of potential endogeneity, i.e., ensuring the results' stability over time.

Variables used in the models are defined in the following sections and the Appendix.

4.3. Dependent measure

To measure environmental reporting (*ENV_REP*), we used the natural logarithm of Thomson Reuters Refinitiv (formerly known as Asset4) Environmental Pillar Score (Refinitiv code: ENSCORE) because it is based on company-reported information. Also, extant studies have adopted this measure to address environmental reporting (Terzani & Turzo, 2021; Alkayed et al., 2023). The score is based on company-reported information on various themes, such as resource use, emissions, innovation, management, shareholders, CSR strategy, workforce, human rights, community and product responsibility.

The Refinitiv database covers 70% of the global market cap, resulting in more than 9,000 companies included in the leading equity indices. ESG scores rely on screening 450 ESG data points across different categories, such as resource use, emissions, innovation, workforce, human rights, community, product responsibility, management, shareholders and CSR strategy. Each ESG data point's value is converted into a percentile score depending on other companies within the industry, so the best and worst companies have scores of 1 and 0, respectively. Next, the scores of the 10 subthemes are obtained by adding the pertinent percentile scores for the category. This score is converted into a percentile score using the same approach adopted for the data points. Finally, the category scores are organised into three pillars (environment, social and governance) and aggregated by a weighted average using industry-dependent weights (e.g., if a category is more important for a given industry, it is assigned a higher weight). The final ESG score, ranging from 0 to 100, represents the relative average of the category scores. Furthermore, Refinitiv provides ESG ratings based on ESG scores, with each grade assigned based on a range of scores (Ginglinger & Raskopf, 2023).

Table 2 – Panel A: Descriptive statistics for the dependent variable ENV_REP by year

Year	N	Mean	SD	Min	Max
2006	66	3.820	0.496	2.120	4.586
2007	76	3.857	0.632	1.810	4.589
2008	83	3.830	0.818	-0.073	4.591
2009	82	3.928	0.702	1.233	4.595
2010	85	3.965	0.711	0.815	4.592
2011	87	3.961	0.722	0.932	4.592
2012	87	3.983	0.674	0.920	4.593
2013	86	3.986	0.699	0.815	4.591
2014	89	4.017	0.568	2.251	4.585
2015	106	3.910	0.687	1.967	4.587
2016	118	3.875	0.816	-0.186	4.586
2017	129	3.876	0.774	-0.446	4.594
2018	152	3.485	1.026	-0.693	4.595
2019	170	3.560	0.947	-0.051	4.587
2020	183	3.610	0.868	0.385	4.589
2021	191	3.651	0.833	0.732	4.590
2022	190	3.763	0.759	0.588	4.589
	1,980	3.785	0.805	-0.693	4.595

Table 2 – Panel B: Descriptive statistics for the dependent variable ENV_REP by country

Country	N	Mean	SD	Min	Max
Finland	39	4.131	0.356	3.073	4.475
France	144	4.109	0.625	1.374	4.589
Germany	168	3.890	0.847	0.000	4.588
Greece	82	4.010	0.565	2.309	4.528
Italy	237	3.853	0.672	1.535	4.595
Netherlands	65	4.274	0.320	2.947	4.548
Norway	66	4.129	0.417	2.780	4.590
Spain	117	4.107	0.638	1.690	4.570
Sweden	100	3.452	1.209	-0.073	4.534
Switzerland	206	3.876	0.755	-0.051	4.595
United Kingdom	756	3.533	0.831	-0.693	4.588
	1,980	3.785	0.805	-0.693	4.595

On average, the variable *ENV_REP* registers a mean of 3.785, with a standard deviation of 0.805. Considering how we built our dependent variable, this average value indicated a medium-low level of reporting for the average firm in our sample.

4.4. Measuring religiosity

Based on extant literature, we defined *religiosity* as a combination of three different dimensions, precisely the cognitive dimension (knowing), affective dimension (feeling) and behavioural dimension (doing) (Cornwall et al., 1986; Parboteeah et al., 2008; McGuire et al., 2012). The cognitive dimension pertains to religiosity's knowledge aspect, specifically an individual's identification as a religious person; the affective dimension concerns feelings towards religion; and the behavioural dimension encompasses personal prayer, attending church and regularly giving to religious practices (Parboteeah et al., 2008).

To measure religiosity, several extant studies (Barro & McCleary, 2003; Roth & Kroll, 2007; Kanagaretnam et al., 2015; Terzani & Turzo, 2021) used the World Values Survey (WVS), an international research programme used to assess how social, political, economic, religious and cultural values impact countries and societies.

We then developed a comprehensive religiosity score based on three specific questions asked in the WVS. The question 'Would you say you are a religious person?' assesses the cognitive dimension, 'How important is religion in your life?' measures the affective dimension and 'How often do you attend religious services?' evaluates the behavioural dimension.

Table 3 – Panel A: Means, standard deviations, and correlations of the three dimensions of religiosity[2]

Variables	Mean	Std. Dev.	(1)	(2)	(3)
(1) Affective	0.438	0.166	1.000		
(2) Behavioural	0.393	0.196	0.981***	1.000	
(3) Cognitive	0.517	0.186	0.960***	0.972***	1.000

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

[2] This information on subcomponents of the target variable was used in a specific analysis presented in the section on robustness checks.

Table 3 – Panel B: Means of the three dimensions of religiosity by year

Year	N	affective	behavioural	cognitive
2006	66	0.459	0.415	0.541
2007	76	0.454	0.409	0.537
2008	83	0.461	0.418	0.545
2009	82	0.457	0.414	0.542
2010	85	0.456	0.413	0.542
2011	87	0.453	0.410	0.539
2012	87	0.454	0.411	0.539
2013	86	0.453	0.408	0.536
2014	89	0.460	0.417	0.541
2015	106	0.434	0.389	0.511
2016	118	0.432	0.386	0.508
2017	129	0.425	0.377	0.499
2018	152	0.434	0.389	0.511
2019	170	0.428	0.382	0.503
2020	183	0.424	0.378	0.499
2021	191	0.423	0.377	0.498
2022	190	0.423	0.377	0.499

Table 3 – Panel C: Means of the three dimensions of religiosity by country

Country	N	affective	behavioural	cognitive
Finland	39	0.457	0.346	0.590
France	144	0.413	0.275	0.471
Germany	168	0.355	0.365	0.496
Greece	82	0.826	0.801	0.839
Italy	237	0.774	0.802	0.883
Netherlands	65	0.267	0.259	0.455
Norway	66	0.357	0.285	0.442
Spain	117	0.469	0.434	0.588
Sweden	100	0.285	0.185	0.335
Switzerland	206	0.507	0.491	0.667
United Kingdom	756	0.331	0.267	0.361

Table 3, Panel A, presents the descriptive statistics and correlation coefficients for the three religiosity variables: affective, behavioural and cognitive. In our sample, the affective dimension registered a mean of 0.438, with the behavioural dimension 0.393 and the cognitive dimension 0.517.

Table 3, Panel B, presents data on the averages of the three religiosity dimensions. The affective dimension indicated a slight decline in average value over time. Starting from 0.459 in 2006, it gradually dropped to 0.423 in 2022. The behavioural dimension followed a trend similar to the affective

dimension, decreasing from 0.415 in 2006 to 0.377 in 2022. The cognitive dimension started at 0.541 in 2006 and declined slightly to 0.499 in 2022. However, the WVS surveys were not conducted annually for all countries at the time, so we referred only to the most recent edition available to calculate the scores. Therefore, the variations in the averages are due to the sample's composition: The decrease in the three dimensions' average scores occurred because as the number of observations increases, the incidence of countries with lower scores increases.

Table 3, Panel C, presents the average values of the three dimensions for the various countries in the sample. The table confirms the impression about incidence in countries such as the UK, which is an important part of the sample size and registered rather low scores for the three dimensions. Generally, countries such as Italy and Greece have the highest scores in all dimensions. At the same time, Sweden, the Netherlands and the UK registered the lowest scores, particularly in the affective and behavioural dimensions. Generally, the cognitive dimension tended to be higher than the other dimensions in many countries considered.

The correlation coefficients among the variables were all above 0.9, indicating a significant and strong correlation. This suggests that the variables may not be independent of each other, which could lead to multicollinearity if analysed jointly. To eliminate bias, we reduced the dimensions to one using principal component analysis (PCA) to create an overall religiosity score for each country.

The PCA revealed that only one component registered an eigenvalue above one (2.08275), i.e., only one component is employed in this study to measure religiosity (*Rel*). We then conducted a Kaiser-Meyer-Olkin (KMO) test to measure sampling adequacy, the degree of intercorrelations among the variables and the appropriateness of PCA. To be implemented, the values must exceed 0.50 for the overall test and each variable (Hair et al., 2014). The results indicated a global measure of sample adequacy equal to 0.6938 and item loadings exceeding the lower limit of 0.50. The cognitive score was 0.7117, the affective score was 0.6603, and the behavioural score was 0.7181. These results proved sampling adequacy and confirmed that the PCA was conducted adequately.

Table 4, Panel A, presents the descriptive statistics for the *Rel* target variable for each year: The average value gradually decreased from -1.591 in 2006 to -1.898 in 2022.

Table 4 - Panel A: Descriptive statistics for the target variable Rel by year

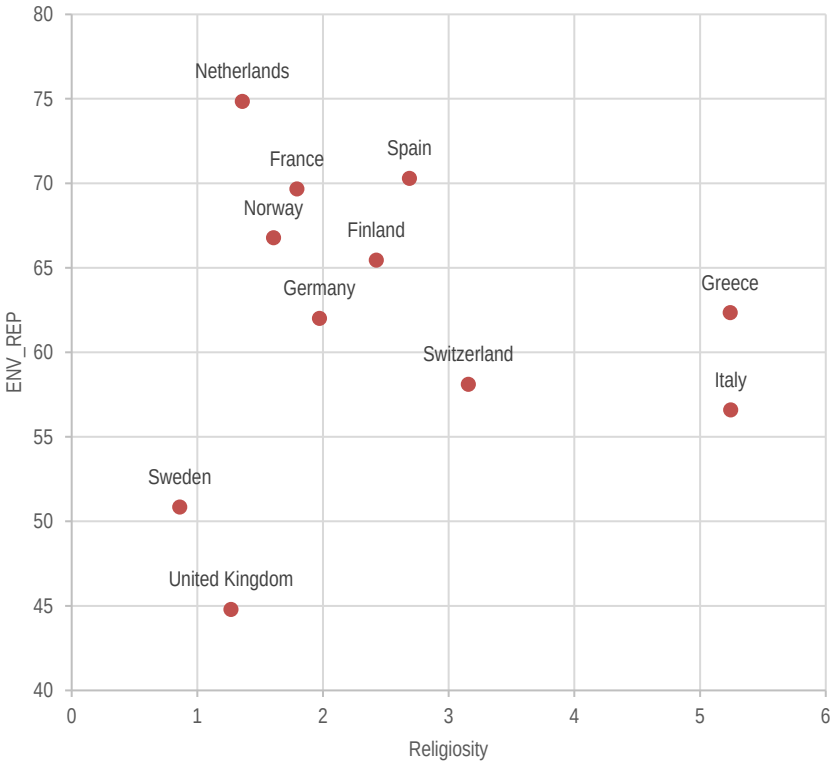
Year	N	Mean	SD	Min	Max
2006	66	-1.591	1.499	-3.139	1.245
2007	76	-1.584	1.440	-3.139	1.245
2008	83	-1.518	1.493	-3.139	1.245
2009	82	-1.551	1.471	-3.139	1.245
2010	85	-1.535	1.458	-3.139	1.245
2011	87	-1.571	1.447	-3.139	1.245
2012	87	-1.571	1.447	-3.139	1.245
2013	86	-1.574	1.460	-3.139	1.245
2014	89	-1.538	1.497	-3.139	1.245
2015	106	-1.827	1.381	-3.139	1.245
2016	118	-1.802	1.404	-3.139	1.245
2017	129	-1.862	1.364	-3.139	1.245
2018	152	-1.762	1.416	-3.139	1.245
2019	170	-1.801	1.391	-3.139	1.245
2020	183	-1.848	1.380	-3.139	1.245
2021	191	-1.867	1.377	-3.139	1.245
2022	190	-1.898	1.355	-3.139	1.245
	1,980	-1.697	1.438	-3.139	1.245

Table 4 – Panel B: Descriptive statistics for the target variable Rel by country

Country	N	Mean	SD	Min	Max
Finland	39	-1.576	0.000	-1.576	-1.576
France	144	-2.207	0.000	-2.207	-2.207
Germany	168	-2.028	0.000	-2.028	-2.028
Greece	82	1.241	0.000	1.241	1.241
Italy	237	1.245	0.000	1.245	1.245
Netherlands	65	-2.641	0.000	-2.641	-2.641
Norway	66	-2.393	0.000	-2.393	-2.393
Spain	117	-1.312	0.000	-1.312	-1.312
Sweden	100	-3.139	0.000	-3.139	-3.139
Switzerland	206	-0.843	0.000	-0.843	-0.843
United Kingdom	756	-2.732	0.000	-2.732	-2.732
	1,980	-1.697	1.438	-3.139	1.245

Table 4, Panel B, provides an overview of the descriptive statistics of the *Rel* target variable broken down by country. Mean values varied significantly among countries, with the highest values found in countries such as Greece (1.241) and Italy (1.245), while Sweden (-3.139), the Netherlands (-2.641) and the UK (-2.732) registered the lowest values for religiosity, indicating a lower incidence of religious social norms.

Figure 1 – ENV_REP and Religiosity by country



In Figure 1, we compared the average level of *ENV_REP* for the countries in our sample with their Rel levels, which we adjusted by adding 4. By doing this, we ensured that all values would be positive without altering the countries' relative rankings, thereby enhancing the graph's readability. As for *ENV_REP*, we used the Refinitiv score without applying a logarithmic transformation, prioritising clarity in the graph.

The figure indicates strong variability in the relationship between religiosity and environmental reporting. Specifically, firms based in highly religious countries, such as Greece and Italy, exhibit above-average levels of *ENV_REP*. Conversely, firms from low-religious countries, such as the UK, tend to register lower *ENV_REP* scores. Given the UK's substantial weight in the sample, we also conducted robustness checks by excluding UK firms to ensure that the UK did not drive the observed relationship disproportionately.

4.5. Control variables

Two groups of control variables were employed: firm-specific variables and country-specific variables. Firm-specific variables included *ROA*, i.e., the return-on-asset ratio, calculated as the ratio between a firm's EBIT (Refinitiv code: WC18191) and total assets (Refinitiv code: WC02999); *Size*, given by the natural logarithm of the firm's total assets; *Leverage*, which is the ratio between a firm's total debt (Refinitiv code: WC03255) and total assets; *Growth*, which is the annual growth rate of a firm's sales (Refinitiv code: WC01001); and *FirmAge*, which is the difference between the year considered and the firm's listing date (Refinitiv code: BDATE).

Country-specific variables included *EthPol*, *RelFrag*, and *MandatoryRep*. *EthPol* and *RelFrag* represented a country's ethnic polarisation and religious fractionalisation, as defined by Montalvo and Reynal-Querol (2005). These variables refer to the level of ethnic and religious homogeneity within a country: *EthPol* measures the level of ethnic division in a population, which indicates how distinct and cohesive ethnic groups are within the population (Montalvo & Reynal-Querol, 2005). A higher measure of polarisation suggests less heterogeneity, while a lower measure implies greater diversity. *RelFrag* measures a country's religious fractionalisation by calculating the probability of two randomly selected individuals from different religious groups (Montalvo & Reynal-Querol, 2005). It also evaluates a country's religious diversity. The greater the value, the more extensive and numerous the religious minorities in the country.

MandatoryRep is a dummy variable that indicates whether environmental reporting is voluntary or mandatory for a country's BCIs in a given year. It is assigned a value of 0 if environmental reporting is voluntary and 1 if mandatory. We adopted it as a control variable to assess informal social norms' influence on environmental reporting compared with the country's formal institutions.

Table 5 provides descriptive statistics for variables that we employed in the study. These statistics provide valuable insights into the central tendencies and dispersion of the studied variables, contributing to a comprehensive understanding of the relationships between religiosity, environmental reporting and other firm-specific characteristics. Variables are winsorised at the first and 99th percentiles to reduce outliers' impact.

Table 5 – Descriptive statistics for the control variables

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	1,980	4.648	9.013	-49.527	71.377
Size	1,980	17.464	2.630	10.955	22.616
Leverage	1,980	0.176	0.173	0.000	1.672
Growth	1,980	0.381	7.126	-9.348	290.230
FirmAge	1,980	2.959	0.894	0.000	4.060
EthPol	1,980	43.391	20.806	9.000	72.400
RelFrag	1,980	4.518	3.250	0.100	10.00
MandatoryRep	1,980	0.770	0.421	0.000	1.000

On average, the *ENV_REP* variable registered a mean of 3.756, with a standard deviation of 0.893. Considering how we built our dependent variable, this average value indicates a medium-low level of reporting for the average firm in our sample.

Rel is a continuous variable with values in a range [-3.139; 1.245]. Such values result from the PCA conducted, as explained in Section 3.3. The average level was -1.659, with a standard deviation of 1.468, indicating that the average entity in our sample was based in a country with a low religiosity level.

Regarding firm-specific control variables, the average firm in our sample registered a *ROA* of 4.648%, with a substantial standard deviation of 9.013, indicating a wide dispersion in profitability values. The average *Size* level was 17.464 (log-transformed), with a low standard deviation of 2.630, indicating that the firms in our sample were similar in size. *Leverage* registered an average of 17.6%, with a narrow standard deviation of 0.173. Finally, average sales growth was 38.1%, with a higher standard deviation of 7.126, reflecting varying growth rates among firms. The average *FirmAge* was 2.959 (log-transformed), with a standard deviation of 0.894, indicating some variability in the age of firms in the sample.

Regarding country-level control variables, *EthPol* registered an average value of 43.391, with a standard deviation of 20.806, indicating significant diversity in ethnic structures across firms in the sample. *RelFrag* registered an average of 4.518, with a standard deviation of 3.250. *MandatoryRep* registered an average of 0.770, with a standard deviation of 0.421, indicating the proportion of firms subject to mandatory reporting requirements.

Table 6 presents the correlation coefficients among the examined variables. A correlation analysis revealed several notable patterns. In particular, *ENV_REP* indicated a positive correlation with *FirmAge* (0.163), with $p < 0.01$, suggesting that older firms are more likely to engage in environmental

reporting practices. Furthermore, a strong correlation was observed with *Size* (0.592), with $p < 0.01$.

Rel indicated a statistically significant positive correlation with *ENV_REP* (0.132), with $p < 0.01$, providing preliminary evidence of religiosity's positive influence on environmental reporting. Among the control variables, *Rel* was negatively and statistically correlated significantly with *Size*, *ROA*, *Leverage* and country-specific variables *EthPol*, *RelFrag*, and *MandatoryRep*. Specifically, *Rel* was correlated negatively with *EthPol* (-0.397), *RelFrag* (-0.614) and *MandatoryRep* (-0.279), all with $p < 0.01$, suggesting that higher religiosity is associated with lower levels of ethnic diversity, religious fragmentation and the likelihood of mandatory reporting.

Table 6 – Pearson's correlation coefficients

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) *ENV_REP*	1.000									
(2) *Rel*	0.132***	1.000								
(3) *ROA*	-0.243***	-0.169***	1.000							
(4) *Size*	0.592***	0.101***	-0.504***	1.000						
(5) *Leverage*	0.108***	0.229***	-0.171***	0.228***	1.000					
(6) Growth	-0.012	-0.017	0.070***	-0.045***	0.004	1.000				
(7) *FirmAge*	0.163***	0.019	-0.232***	0.262***	0.005	-0.032	1.000			
(8) *EthPol*	-0.132***	-0.397***	0.169***	-0.241***	-0.267***	-0.005	0.013	1.000		
(9) *RelFrag*	-0.106***	-0.614***	0.159***	-0.299***	-0.236***	0.047**	-0.007	0.184***	1.000	
(10) *MandatoryRep*	-0.155***	-0.279***	0.094***	-0.161***	-0.036	0.025	-0.036	-0.249***	0.388***	1.000

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

5. Empirical results

Table 7 presents the results from the regression analysis. As mentioned in Section 3.2, the table provides four separate specifications: Column 1 includes only year-fixed effects; Column 2 adds industry-fixed effects; Column 3 includes country-fixed effects; and Column 4 includes industry and country-fixed effects.

Rel indicated a significant positive influence on *ENV_REP* in all specifications. The coefficient estimates were consistently positive (0.129 in Column 1, 0.110 in Column 2, 0.658 in Column 3 and 0.566 in Column 4) and statistically significant, at least at the 0.05 level, suggesting that religiosity positively influences environmental reporting. The consistency of the coef-

ficients among the different models presented in this study demonstrates our results' robustness.

Table 7 – Regression results

	(1)	(2)	(3)	(4)
	ENV_REP	*ENV_REP*	*ENV_REP*	*ENV_REP*
Rel	0.129***	0.110**	0.658***	0.566**
	(0.0491)	(0.0487)	(0.230)	(0.226)
ROA	0.00680***	0.00673***	0.00686***	0.00675***
	(0.00197)	(0.00192)	(0.00199)	(0.00195)
Size	0.201***	0.166***	0.199***	0.173***
	(0.0248)	(0.0294)	(0.0264)	(0.0313)
Leverage	-0.0411	-0.0608	-0.0499	-0.0657
	(0.193)	(0.189)	(0.194)	(0.192)
Growth	1.14e-05	8.19e-05	-6.22e-06	8.32e-05
	(0.000446)	(0.000436)	(0.000447)	(0.000438)
FirmAge	-0.0660	-0.0420	-0.0598	-0.0314
	(0.0439)	(0.0496)	(0.0437)	(0.0495)
EthPol	-0.000729	0.000442	-0.0234**	-0.0211**
	(0.00248)	(0.00250)	(0.0108)	(0.00986)
RelFrag	0.0514**	0.0604***	0.181***	0.199***
	(0.0230)	(0.0209)	(0.0624)	(0.0618)
MandatoryRep	-0.0934	-0.0843	-0.0907	-0.0963
	(0.0762)	(0.0778)	(0.0800)	(0.0808)
Intercept	0.129	0.709	1.962**	2.115**
	(0.484)	(0.588)	(0.926)	(0.865)
Year FE	YES	YES	YES	YES
Sector FE	NO	YES	NO	YES
Country FE	NO	NO	YES	YES
R-squared	0.390	0.418	0.416	0.447
Observations	1,980	1,980	1,980	1,980

*** p < 0.01, ** p < 0.05, * p < 0.1; standard errors in parentheses

Table 8 presents the regression analysis results using lagged variables for the financial control variables *ROA*, *Size*, *Leverage* and *Growth*. *Rel* indicated a significant positive influence on *ENV_REP* in all specifications. The coefficient estimates were consistently positive, from 0.116 in Column 2 to 0.605 in Column 3, and were statistically significant, with p-values indicating significance at the 0.01 or 0.05 levels. This robustly suggests that religiosity is positive for the industry and country and strongly suggests that religiosity positively influences environmental reporting. The coefficients are consistent across the different models presented, reflecting our results' robustness.

Table 8 – Regression results (with lagged variables)

	(1)	(2)	(3)	(4)
	ENV_REP	*ENV_REP*	*ENV_REP*	*ENV_REP*
RelI	0.132***	0.116**	0.605***	0.516**
	(0.0462)	(0.0459)	(0.226)	(0.224)
ROA	0.00384**	0.00373**	0.00397**	0.00382**
	(0.00181)	(0.00175)	(0.00183)	(0.00178)
Size	0.194***	0.158***	0.192***	0.166***
	(0.0232)	(0.0289)	(0.0248)	(0.0306)
Leverage	0.0493	0.0373	0.0396	0.0350
	(0.150)	(0.148)	(0.152)	(0.151)
Growth	-0.000157	-0.000108	-0.000168	-7.80e-05
	(0.000485)	(0.000455)	(0.000478)	(0.000454)
FirmAge	-0.0670	-0.0389	-0.0567	-0.0229
	(0.0516)	(0.0588)	(0.0511)	(0.0584)
EthPol	-0.000950	-0.000139	-0.0217**	-0.0196**
	(0.00243)	(0.00248)	(0.0106)	(0.00967)
RelFrag	0.0519**	0.0591***	0.172***	0.186***
	(0.0222)	(0.0202)	(0.0615)	(0.0615)
MandatoryRep	-0.0950	-0.0868	-0.0925	-0.0987
	(0.0809)	(0.0824)	(0.0853)	(0.0861)
Intercept	0.422	1.019*	2.051**	2.197***
	(0.455)	(0.575)	(0.899)	(0.846)
Year FE	YES	YES	YES	YES
Sector FE	NO	YES	NO	YES
Country FE	NO	NO	YES	YES
R-squared	0.389	0.416	0.418	0.447
Observations	1,780	1,780	1,780	1,780

*** p < 0.01, ** p < 0.05, * p < 0.1; standard errors in parentheses

6. Robustness checks

We conducted some robustness checks to test the sensitivity of our primary results. In this section, we explain the various robustness tests conducted for our analysis to ensure that our conclusions concerning religiosity and environmental reporting in the European financial sector are well-founded.

First, we verified that our sample's characteristics did not influence the results by conducting a robustness test on a subsample that excluded observations from the UK, which accounts for about one-third of the total sample.

These tests aimed to evaluate the results' stability and generalizability outside a particular geographical context. In particular, the UK's distinct religious and market conditions compared with other countries may affect outcomes. Therefore, we aimed to verify our previous findings' consistency by testing for any significant influence from a particular country that may have influenced our sample heavily. Our objective was to demonstrate that the relationships between the variables were not based solely on a particular country's conditions but could be generalised internationally.

Table 9 – Regression results (sample without UK)

	(1)	(2)	(3)	(4)
	ENV_REP	*ENV_REP*	*ENV_REP*	*ENV_REP*
RelI	0.175***	0.167***	0.624**	0.540**
	(0.0553)	(0.0523)	(0.247)	(0.250)
ROA	0.0147***	0.0152***	0.0150***	0.0154***
	(0.00330)	(0.00320)	(0.00333)	(0.00329)
Size	0.276***	0.251***	0.272***	0.260***
	(0.0365)	(0.0408)	(0.0351)	(0.0420)
Leverage	-0.296	-0.205	-0.308	-0.234
	(0.233)	(0.239)	(0.237)	(0.244)
Growth	6.57e-05	0.000142	6.26e-05	0.000108
	(0.000165)	(0.000154)	(0.000157)	(0.000150)
FirmAge	-0.0601	-0.0643	-0.0435	-0.0504
	(0.0597)	(0.0589)	(0.0573)	(0.0584)
EthPol	-0.00165	-0.00253	-0.0178	-0.0162
	(0.00269)	(0.00265)	(0.0113)	(0.0107)
RelFrag	0.0672***	0.0638***	0.0728**	0.0720**
	(0.0221)	(0.0206)	(0.0308)	(0.0291)
MandatoryRep	-0.203**	-0.195**	-0.203**	-0.201**
	(0.0907)	(0.0906)	(0.0938)	(0.0939)
Intercept	-1.166*	-0.694	0.337	0.262
	(0.599)	(0.719)	(1.102)	(1.112)
Year FE	YES	YES	YES	YES
Sector FE	NO	YES	NO	YES
Country FE	NO	NO	YES	YES
R-squared	0.425	0.460	0.478	0.499
Observations	1,224	1,224	1,224	1,224

*** p < 0.01, ** p < 0.05, * p < 0.1; standard errors in parentheses

Table 10 – Regression results (sample without UK and lagged variables)

	(1)	(2)	(3)	(4)
	ENV_REP	*ENV_REP*	*ENV_REP*	*ENV_REP*
Rel	0.181***	0.173***	0.568**	0.479**
	(0.0512)	(0.0482)	(0.241)	(0.242)
ROA	0.00956***	0.0103***	0.0100***	0.0106***
	(0.00363)	(0.00362)	(0.00361)	(0.00364)
Size	0.271***	0.244***	0.264***	0.254***
	(0.0339)	(0.0373)	(0.0329)	(0.0378)
Leverage	-0.125	-0.0270	-0.135	-0.0510
	(0.212)	(0.208)	(0.219)	(0.215)
Growth	0.000359*	0.000465**	0.000355*	0.000439**
	(0.000206)	(0.000217)	(0.000211)	(0.000219)
FirmAge	-0.105	-0.111	-0.0827	-0.0935
	(0.0711)	(0.0692)	(0.0683)	(0.0687)
EthPol	-0.00186	-0.00273	-0.0160	-0.0141
	(0.00269)	(0.00264)	(0.0110)	(0.0104)
RelFrag	0.0656***	0.0614***	0.0701**	0.0685**
	(0.0210)	(0.0194)	(0.0301)	(0.0282)
MandatoryRep	-0.210**	-0.202**	-0.208**	-0.206**
	(0.0968)	(0.0963)	(0.101)	(0.100)
Intercept	-0.785	-0.295	0.519	0.411
	(0.553)	(0.656)	(1.067)	(1.060)
Year FE	YES	YES	YES	YES
Sector FE	NO	YES	NO	YES
Country FE	NO	NO	YES	YES
R-squared	0.417	0.458	0.474	0.502
Observations	1,115	1,115	1,115	1,115

*** p < 0.01, ** p < 0.05, * p < 0.1; standard errors are in parentheses

We repeated the primary analysis on the subsample, revealing a positive and statistically significant correlation between *ENV_REP* and *Rel*. Notably, the model's other components (R-squared) closely resembled those obtained in the primary model. Thus, our findings suggested that the model's outcomes remained reliable and unperturbed by any unique sample characteristics.

Second, we tested a subsample that excluded banks, which comprised about a third of the sample. These tests aimed to evaluate the results' stability and generalizability outside a particular sectorial context. In particular, we aimed to assess whether peculiar characteristics of the banking sector may influence our previous findings' consistency. Our objective was to demonstrate that the relationships between the variables are not based solely on a particular sector's conditions but can be generalised.

The subsample results indicated a positive and statistically significant correlation between *ENV_REP* and *Rel* in all the model's configurations, and the other components (R-squared) closely resembled those obtained in the primary model. Thus, our findings suggest that the model's outcomes remained reliable and unperturbed by any sectorial characteristic.

We then conducted a robustness test by repeating the main analysis using the three religiosity dimensions (affective, behavioural and cognitive). We aimed to investigate each dimension thoroughly to determine whether they exert significant influence and identify any variations. Furthermore, this test enhanced the results' validity overall, illustrating that the conclusions from the analysis remain reliable, even when the various dimensions are examined separately. It also suggests that the influence of *Rel* on *ENV_REP* is not merely the outcome of a combination of these dimensions but is supported independently by each of them.

In this case, the model's findings demonstrate a positive and significant influence from all three components of our religiosity score. Furthermore, the coefficients and other statistics in the model indicated remarkable similarity to each other and the main model. These results indicate that the relationship between *ENV_REP* and *Rel* is both robust and not due to any statistical artefacts related to principal component analysis.

The results indicated a positive and statistically significant correlation between *ENV_REP* and *Rel* in all the model's configurations, and the other components (R-squared) closely resembled those obtained in the primary model. Thus, our findings suggest that the model's outcomes remain reliable and unperturbed by exogenous shocks[3].

7. Discussion

To sum up, the results suggest that religiosity exerts a positive and significant influence on environmental reporting, even when controlling for various other variables. This evidence reveals a positive influence of the strength of religious social norms on the degree of environmental reporting in BCIs operating in Europe. Thus, the analyses' results confirm our hypothesis, demonstrating that country-level religiosity positively affects environmental reporting scores. In particular, firms' environmental reporting scores are higher when religious social norms are stronger in the countries where the firms are based.

[3] The robustness tests' results, except for the one with the sample without UK, were not tabulated for reasons of space. Those interested can request them, and we will be happy to share them.

8. Conclusions

Environmental reporting varies across firms and countries, and cultural factors foster this difference (Ioannou & Serafeim, 2012). This study integrated the debate on informal country-level determinants of environmental reporting by employing institutional and social norms theories.

Our analysis indicated that religiosity exerts a positive and statistically significant influence on environmental reporting: The higher the country's religiosity score, the stricter the religious social norms are and the higher the level of environmental information provided by BCIs.

This evidence confirms our research hypothesis that religious social norms influence environmental reporting provided by BCIs consistently with both the literature and our theoretical framework. Indeed, religious social norms influence business behaviour, promoting ethical business practices (Gallego-Alvarez et al., 2020) and leading companies to a greater commitment towards environmental reporting (Dyreng et al., 2012; Callen & Fang, 2015; Griffin & Sun, 2018; Gomes et al., 2024). Our results demonstrate that wherever religious social norms are influential, firms tend to conform to these norms and align with their stakeholders' social expectations.

This study's implications are practical and far-reaching. Companies can adapt their environmental reports to better meet stakeholder needs by recognising the influence of religious social norms. Furthermore, regulators can use these informal norms to set effective and culturally sensitive standards.

The analysis has at least two limitations. First, for reasons of data availability, religiosity's influence on small and medium-sized firms was not considered. Second, this study comprised a preliminary analysis that would allow for religiosity's influence to be assessed in greater depth. Indeed, the hypothesis was constructed assuming that country-level religiosity influences environmental information reporting.

Although the literature outlined that a geographically defined community's religiosity level positively correlates with the community's moral attitudes and behaviour (Cui et al., 2015), a more in-depth analysis could take a closer look at religiosity by considering different levels besides country-level religiosity. For example, individual managers or a local community's religiosity and their influence on environmental reporting decisions are suitable subjects for more profound studies in the future.

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Appendix: Variables employed

Variable	Description	Source
Dependent variable		
ENV_REP	Natural logarithm of Environmental score (var: ENSCORE)	Thomson Reuters Refinitiv
Target variable		
Rel	Country-level score obtained through a principal component analysis of the three dimensions of religiosity:	World Values Survey
	(a) affective dimension: % of respondents for whom religion is 'Important' or 'Very important'	
	(b) cognitive dimension: % of respondents who claim to be religious	
	(c) behavioural dimension: % of respondents who attend services at least once a year	
Control variables		
Size	Natural logarithm of firm's total assets (var: WC02999)	Thomson Reuters Refinitiv
ROA	Return-on-assets ratio, calculated as firm's EBIT over total assets (var: WC18191 / WC02999)	Thomson Reuters Refinitiv
Leverage	Ratio between company's total debt and total assets (var: WC03255; WC03501)	Thomson Reuters Refinitiv
Growth	Growth rate of firm's sales over previous year (var: WC01001)	Thomson Reuters Refinitiv
FirmAge	Natural logarithm of firm's age, calculated as the difference between year of observation minus the firm's listing date (var: BDATE)	Thomson Reuters Refinitiv
EthPol	Score representing the country's ethnic polarisation	Montalvo and Reynal-Querol (2005)
RelFrag	Score representing the country's religious fractionalisation	Montalvo and Reynal-Querol (2005)
MandatoryRep	Dummy variable: 0 if environmental reporting is voluntary, 1 if mandatory.	Dhaliwal et al. (2014); Directive 2014/95/EU
Industry	ICB Industry Name (var: ICBIN)	Thomson Reuters Refinitiv