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Does religiosity influence corruption and sustainable development across countries?

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Abstract

Purpose – This paper empirically analyses the nexus between religiosity, corruption and sustainable development across 52 countries.

Design/methodology/approach – The data were retrieved from the World Value Survey (WVS) for religiosity and corruption, and the Sustainable Development Index (SDI) proposed by Hickel (2020) has been used for the analysis. Partial least squares – structural equation modelling (PLS-SEM) has been used to analyse the data and evaluate the research hypotheses.

Findings – The PLS-SEM analysis depicts a positive and significant impact of religiosity on corruption, implying that countries with high religiosity are likely to have high levels of corruption. However, religiosity has a significant and negative impact on the sustainable development index. Similarly, corruption also negatively and significantly impacts sustainable development across countries.

Practical implications – The study results provide insights on considering religiosity while devising a policy for anti-corruption and sustainable development that covers social, economic and ecological dimensions.

Originality/value – This study provides empirical knowledge by considering religiosity, corruption and sustainable development together.

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Keywords Religiosity, Corruption, HDI, SDI, Sustainable development

Paper type Research paper

1. Introduction

Corruption is increasingly becoming a global critical economic and social issue (Ahenkora *et al.*, 2019; Suhendi *et al.*, 2020). The literature provides two views on corruption for economic development, wherein one group argues that corruption provides grease on the wheels of development by enabling agility, efficiency, and reducing transaction costs (Huntington, 1968; Jiang and Nie, 2014; Saha and Sen, 2021), while another group considers corruption as sand in the wheels of development, creating hurdles and frictions (Tanzi and Davoodi, 1998; Aidt, 2011; Zergawu *et al.*, 2020). Several researchers have explored the definition of corruption as a deviant behaviour and an activity within the public sphere of manipulating public transactions involving public officials and other stakeholders (de Sousa *et al.*, 2023). Corruption is widely defined as using public office for private gains (Grabosky and Lamour, 2000; Khatri *et al.*, 2013). However, corruption may also have undue benefits for private-private and public-public agents. Several terms are used to depict corruption, such as

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bribery, enticement, extortion, fraud, misuse, misappropriation, cheating, and abuse of discretion (Malhotra *et al.*, 2010; Graycar and Monaghan, 2015).

The development of an economy is measured using numerous parameters. The gross domestic product (GDP) growth has been considered a basic indicator to understand the performance of an economy. However, many development economists have realised that national income or GDP growth does not necessarily explain welfare by capturing the social and human dimensions of inclusive development (Anand and Sen, 1994). Therefore, the Human Development Index (HDI) concept was introduced in 1990 to extend the development perspective from national income growth to social and human perspectives by including health and education indicators and per-capita income (UNDP, 1990). HDI has been a popular economic development tool widely recognised by the United Nations Development Programs (UPDP) and was a key component of the Millennium Development Goals. With emerging issues of climate change and ecological breakdown, HDI is being criticised for not capturing the elements of ecological sustainability (UNDP, 2011). Hickel (2020) proposed the Sustainable Development Index (SDI), which includes CO2 emissions and material footprint in HDI and aims to measure human development's ecological efficiency in the Anthropocene.

Several studies have argued that religion is one of the most important social institutions, which has a widespread influence on human life in touching and shaping social, economic, and environmental dimensions (Holdcroft, 2006; Sedikides, 2010; Ives and Kidwell, 2019). Religion reflects a set of beliefs, values, or principles among an individual, a group, or a section in the society following similar norms, while religiosity is the magnitude of participating in religious practices of the denominations (Sherkat and Ellison, 2007). To be precise, religiosity reflects an individual's level of importance, intensity, commitment, and belief towards worshipping, praying, or adhering to religious principles (Mueller, 1980; Cornwall *et al.*, 1986). The level of religiosity can be measured in terms of an individual's behaviour towards attending religious services, the frequency of religious prayers performed by them, and the power of religion in an individual's life (Koenig *et al.*, 2015). Allport and Ross (1967) identified the functional dimension of religiosity as intrinsic, where people view religion as an end itself, and extrinsic, where people consider religion as a means to achieve their goals in life. Religiosity is also analysed as the deviation in the belief system, such as atheism, monotheism, henotheism, polytheism, and pantheism, which helps categorise the levels of belief among people towards God (Parhizgar and Parhizgar, 2014; Hubert, 2015; Bilimoria, 2024). Several studies have evaluated the relationship of religiosity with corruption (Atoi *et al.*, 2020; Gokcekus and Ekici, 2020), economic development (Nageri *et al.*, 2013; Karaçuka, 2018), and sustainability (Altmann *et al.*, 2012; Narayanan, 2013; Eom and Ng, 2023) separately.

This paper aims at analysing the nexus between religiosity, corruption, and sustainable development taken together. The paper provides several unique contributions. Firstly, religiosity, corruption and sustainable development have been chosen holistically. Religiosity has been taken as an individual's attitude towards religion and the cognitive, affirmative, and behavioural dimensions, irrespective of the religious affiliation. Similarly, corruption is captured with three measurable indicators: perception of corruption, officials' involvement, and gender aspect of corruption. Finally, the SDI, which comprises human and ecological development indices, has been utilised in the study. Further, causal relationships across religiosity, corruption and sustainable development index have been estimated using the PLS-SEM technique. Most empirical evidences indicate a direct relationship between religiosity and corruption (Ko and Moon, 2014; Gokcekus and Ekici, 2020). However, there is a mixed empirical response on the implications of religiosity on development (Johnston, 2014; Herzer and Strulik, 2017; Kulzhanova *et al.*, 2021), with varying relationships between religiosity and economic and sustainable development. Finally, most studies indicate negative implications of corruption on economic and sustainable development (Nageri *et al.*, 2013; Song *et al.*, 2021).

The paper is comprised of 5 sections. After providing the background of the study in Section 1, a concise literature review, research framework, and research hypotheses are given

in Section 2. Section 3 depicts data sources, followed by descriptions of variables and data analysis tools used. Section 4 provides the empirical findings. Finally, the last section presents the conclusion, implications, and limitations of the study.

2. Literature review and research framework

The scientific investigations on religiosity, corruption and sustainable development have been comprehensively reviewed to assess the existing knowledge, theoretical arguments, and research gaps. The empirical analysis reflects that populations at large are affiliated with religion globally (Dobrin, 2004), which provides primary guidelines for the way of life, beliefs, values, and ethics (Keller *et al*., 2007; Liyanapathirana and Akroyd, 2023). Cornwall *et al*. (1986) found religiosity as a complex phenomenon representing three dimensions, i.e. (1) cognitive, indicating belief in God; (2) affective, indicating degree of commitment to their religion; and (3) behavioural, indicating manifestation of being religious. Further, Social Identity Theory (SIT) explains the importance of people's psychology in maintaining a sense of attachment to a social group, and religion helps create a strong social identity among people (Tajfel and Turner, 1979; Tajfel, 1981). The SIT states that people's behaviour is influenced by their perceptions of what they consider normal and right based on given societal directions (Perkins and Berkowitz, 1986), which is highly derived from religious doctrines (dos Santos and Lemes, 2022). Considering the coexistence of multiple religions, people live happily in their society if they follow the religious guidelines and norms prescribed for a desirable way of life. This study explores the empirical relationship between two emerging global issues, i.e. corruption and sustainable development.

2.1 Religiosity and corruption

Empirical evidence shows a positive relationship between religiosity and corruption, implying that religiosity enhances corruption (Labolo *et al*., 2018; Zelekha and Avnimelech, 2023), while Xu *et al*. (2017) depicted an inverse relationship between bureaucratic corruption and local religious heritage. Few studies have also depicted a non-conclusive impact of religiosity on corruption (Pavarala and Malik, 2012; Ko and Moon, 2014; Liyanapathirana and Akroyd, 2023). Persson *et al*. (2010) discussed corruption as a principal-agency problem whereby an agent betrays principal interests by misusing systemic power for personal gains. Evrensel and Sened (2019) examined the impact of religiosity on building institutional quality as measured in corruption control and found that higher religiosity leads to lower justification of corruption in terms of tax cheating and taking bribes. Similarly, Paldam (2001) argued that religiosity and corruption have a strong and stable positive correlation, implying that countries with high religiosity are comparatively more corrupt. Zelekha and Avnimelech (2023) also analysed the influence of religion on corruption and found a significant and positive association with hierarchical religions, while non-hierarchical religions indicate an inverse association with corruption. It is discussed that religiosity helps in creating a group-based social identity and a tendency of favouritism within the social group, leading to corruption. Based on the empirical literature, it is assumed as follows that religiosity has a significant impact on corruption.

H1. Religiosity has a significant impact on corruption.

2.2 Religiosity and sustainable development

Earlier studies have provided a mixed response on the relationships between religiosity and economic and sustainable development (Eom and Ng, 2023). Kodila-Tedika and Agbor (2014) analysed the effects of religious diversity on economic development and found that religion does not influence social and institutional dimensions of development. Herzer and Strulik (2017) examined the effect of religiosity on income and found a negative long-term relationship. El Jurdi *et al*. (2017) analysed that religion has excellent potential as an effective vehicle of cultural transformation for achieving sustainability goals. An analysis of the nexus

between religiosity, income and well-being by Awaworyi Churchill *et al*. (2019) found that religiosity and income positively impact individual well-being. Meanwhile, Du *et al*. (2024) considered the negative and significant effects of religiosity on carbon emissions in their study. Ohene Kwatia *et al*. (2024) investigated religiosity as having a negative association with the usage of financial services. A study by Kaplan and Iyer (2021) indicates that religiosity significantly influences sustainable behaviour, while another study by Sharma *et al*. (2021) concludes that countries with higher religiosity may not be willing to adopt climate change policies. Several studies have argued that religiosity shapes the ethical perception of human beings towards everything created by God, facilitating human behaviour in caring for and exploiting environmental resources with sustainability (White, 1967; Koehrsen and Burchardt, 2024). This study analyses the impact of religiosity on SDI, as propounded by Hickel (2020), with the help of the following hypothesis:

H2. Religiosity has a significant impact on sustainable development.

2.3 Corruption and sustainable development

The metaphor about grease or sand on the wheels of development provides interesting food for thought in analysing the relationship between corruption and economic development (Cooray and Schneider, 2018; Heo *et al*., 2021; Ha *et al*., 2024; Majeed *et al.*, 2024). Most earlier studies indicate a negative relationship between corruption and economic and sustainable development (Dzhumashev, 2014; Saha and Ben Ali, 2017; Barra *et al*., 2024), which implies that corruption becomes sand in the wheels of development. Blackburn *et al*. (2006) investigated the impact of corruption on economic development and found an inverse relationship. Similarly, Nageri *et al*. (2013) also analysed the relationship between corruption and economic development in Nigeria and indicated a significant and negative influence of corruption on economic growth and development. Further, Saha and Gounder (2013) added new dimensions to the negative income–corruption association by arguing that low-to-medium-income countries may experience higher corruption, which eventually lowers in high-income economies. Triatmanto and Bawono (2023) assessed the nexus between corruption, unemployment and human capital in Indonesia and found that corruption negatively and significantly impacts unemployment and human capital. Fhima *et al*. (2023) contributed to the ongoing discussion on corruption being grease or sand on the wheels of sustainable development. They concluded that corruption always hinders sustainable development in developed countries while it depends on the governance system in developing countries. Khan and Hassan (2024) evaluated the influence of natural resources, high-tech exports, and corruption on CO2 emissions in developing economies and found that renewable energy and control of corruption can effectively reduce CO2 emissions. However, Khurshid *et al*. (2024) concluded from their research that corruption significantly and negatively influences environmental sustainability. Similarly, Hope (2024) also assessed the linkage between corruption and sustainable development and found that corruption damages sustainable development across nations and regions. Thus, based on the literature, this paper has formulated the following research hypothesis to assess the relationship between corruption and sustainable development.

H3. Corruption has a significant impact on sustainable development.

Table A2 provides a concise literature review on the nexus between religiosity, corruption and development, and signs of the relationship. A conceptual research framework depicting the relationship between religiosity, corruption and sustainable development is given in Figure 1.

3. Data and methods

3.1 Data sources

The study is primarily based on two sources of data, i.e. (1) the World Value Survey (WVS) and (2) the Sustainable Development Index (SDI) prepared by Hickel (2020). The WVS is a global

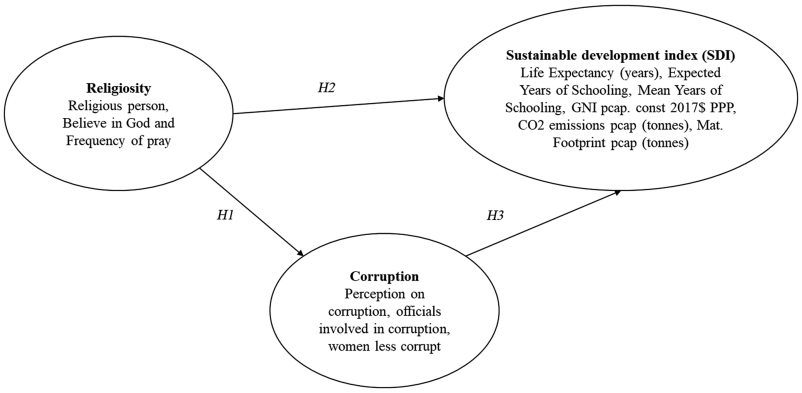

Figure 1. Conceptual framework and research hypotheses. Source: Developed by author

research initiative focusing on various social, economic, religious, political, and cultural values across populations worldwide. The 7th wave of the WVS data conducted during 2017–21 covered 66 countries/territories (Haerpfer *et al*., 2022). A random probability sampling technique was utilised on the adult population across countries, and most of the survey was conducted using personal interviews. The WVS data has been used to measure religiosity and corruption to maintain uniformity in the data sources. Transparency International also provides data on the corruption perception index (CPI). However, the WVS data on corruption has been used in this study to capture multiple dimensions of corruption. 5 years average SDI between 2017–21 has been considered for this study to align it with the WVS data. The Sustainable Development Index (SDI) comprises human development with ecological efficiency, emphasising that development must be achieved within the ecological/sustainable boundaries. The SDI is calculated using the human development index (HDI), comprised of life expectancy, education, and income. It is divided by the ecological score, comprising consumption-based CO2 emissions and material footprint (Hickel, 2020). Table A1 provides the list of 52 countries covered in the study, across all the regions of the world.

3.2 Variables description

The data on religiosity and corruption has been extracted from the 7th wave of the WVS administered during 2017–2021. Religiosity as a construct consists of three measurable variables, i.e. frequency of attending religious services, being religious, and believing in God. The percentage of individuals agreeing on these three religiosity variables across the countries has been recorded. Further, corruption as a construct is also considered to be made up of three measurable variables: mean value of perception of the population on corruption, percentage of officials involved in corruption and percentage reporting females being less corrupt than males. The sustainable development index (SDI) as a construct is comprised of four measurable variables of the HDI, i.e. life expectancy in years, expected years of schooling, mean years of schooling, and per capita income, and two indicators of ecological sustainability, i.e. per capita CO2 emissions in tonnes and per capita material footprint in tonnes. The average of 2017–2021 has been taken for all the parameters of SDI to align the data with the 7th wave of the WVS.

The definitions of variables used in the study and their descriptive statistics are given in Table 1. The descriptive statistics provide the minimum, maximum, mean, and standard deviation values of each variable used in the study to reflect the basic nature of the data. China has reported the lowest religiosity of 16.4%, while Myanmar has reported the highest

Table 1. Definition and descriptive statistics of variables

Variables	Definitions	Min	Max	Mean	Standard deviation
FRP	How often do you attend religious services? (Percentage of respondents reporting attending religious services by excluding respondents reporting Never or practically never)	21.4	99.3	77.0	18.5
RP	A religious person (Percentage of respondents reporting "Yes")	15.5	95.1	69.1	20.1
BIG	Percentage of respondents reporting believe in God as "Yes"	17.8	100.0	83.7	24.9
POC	Mean value of the perception on corruption (Perception of corruption in a country as reported in 10 points scale, where 1 = no corruption and 10 = abundant corruption)	3.5	9.5	7.6	1.2
WLC	Percentage of respondents agreeing on women as less corrupt	17.9	62.7	39.4	12.8
OIC	Officials involved in corruption (Percentage reporting most of the State authorities, Local authorities and Civil service providers are involved in corruption)	7.0	54.4	32.4	13.8
SDI	Sustainable Development Index -ecological efficiency of nations in delivering human development	0.1	0.8	0.6	0.2
LE	Life expectancy (years)	52.8	85.1	74.9	6.0
EYS	Expected Years of Schooling	7.6	21.1	14.7	2.6
MYS	Mean Years of Schooling	4.6	14.2	10.2	2.3
PcGDP	GNI per capita at constant 2017$ PPP	2104.0	86748.0	22639.2	18726.6
CO2	CO2 emissions per capita (tonnes)	0.6	23.9	5.7	5.1
MFP	Material Footprint per capita (tonnes)	3.1	49.9	14.6	11.1

Source(s): Author's own work

religiosity. The lowest mean value of the perception of corruption is recorded in Singapore (3.5), while the highest mean value is recorded in Brazil, Colombia, and Peru (9.5), which is the reflection of the governance system of the respective countries. The SDI is lowest in Hong Kong (0.11) and highest in Uruguay (0.83) due to the influence of ecological footprint.

3.3 Data analysis

The PLS-SEM technique is utilised to test the research hypotheses empirically. Considering the cross-sectional data of 52 countries, the PLS-SEM is the most appropriate analytical method for analysing the complex relationships across the constructs and variables (Yahya *et al*., 2015; Cepeda-Carrion *et al*., 2019; dos Santos and Lemes, 2022; Ali, 2023). The PLS-SEM was first developed by Wold (1982), and the PLS-SEM algorithm in the form of a sequence of regressions was suggested by Lohmöller (1989). Besides, the Covariance-based SEM (CB-SEM) was one of the preferred modelling techniques earlier (Hair *et al*., 2012; Hair and Alamer, 2022). However, PLS-SEM has become even more popular in social science and management research in recent times due to its predicting power, user-friendliness in doing the analysis, ease in interpreting the results and providing convincing results for decision-making (Saha and Gounder, 2013; Seles *et al*., 2019; Farrukh *et al*., 2020). The data has been analysed using SmartPLS 4 software.

4. Results and discussion

The PLS-SEM results are discussed in 2 stages, i.e. assessment of the measurement model and assessment of the structural model. The measurement model is examined at stage 1 to

understand the reliability and validity of the analysis. If stage 1 meets the recommended threshold, stage 2 assesses the structural model to evaluate the relationship among the latent variables, which provides empirical insights for hypothesis testing. The process of assessing the results of PLS-SEM and acceptable thumb rules has been presented by several researchers (Mehmood and Najmi, 2017; Hair and Alamer, 2022).

4.1 Assessment of measurement model

The reliability and validity of the PLS-SEM model are checked in several ways, i.e. factor loading, Cronbach's alpha, Composite reliability, Average Variance Extracted (AVE), Fornell and Larcker's Criterion test, and Heterotrait-Monotrait Ratio (HTMT) as given in Table 2. Further, the convergent validity is examined based on the values of factor loadings, Cronbach's alpha, Composite reliability, and Average Variance Extracted (AVE). Hair *et al*. (2014) suggested that factor loadings of each measurable variable should meet the acceptable requirement of 0.5 and the desirable requirement of 0.7 and above. Since factors loading under this study is higher than 0.7, all the measurable items have desirable requirements, confirming the model's reliability. Further, the calculated Cronbach's alpha and composite reliability values are >0.7 for all three constructs, except for corruption, which is nearing 0.7. As per the rule of thumb, the AVE values should be above 0.5 to satisfy convergent validity, and the study fulfils the criteria. The discriminant validity is checked by adopting two approaches, indicating that a construct differs from other constructs in the model (Table 3). Firstly, the Fornell and Larcker (1981) criteria have been applied to which the correlations among the constructs normally should not exceed the square root of the average variance extracted. Finally, the newly proposed criterion by Henseler *et al.* (2015), the Heterotrait-Monotrait Ratio (HTMT), is also used to assess the discriminant validity, which should not exceed 0.9 as the threshold value. Therefore, the measurement model concludes that the PLS-SEM analysis meets the reliability and validity criterion.

4.2 Assessment of structural model and path coefficient

The results of the structural model are presented in Table 4, and the power of the structural model is evaluated using the coefficient of determination, effect size and the value of variance

Table 2. Results of the measurement model

Construct/indicators	Outer loading (>0.7)	Cronbach's alpha (α > 0.7)	Composite reliability (>0.7)	AVE (>0.5)
Religiosity		0.849	0.909	0.770
RP ← REL	0.945			
BIG ← REL	0.867			
FRP ← REL	0.816			
Corruption		0.674	0.820	0.605
WLC ← CR	0.710			
POC ← CR	0.851			
OIC ← CR	0.764			
Sustainable Development Index (SDI)		0.937	0.950	0.763
CO2 ← SDI	0.912			
EYS ← SDI	0.813			
LE ← SDI	0.844			
MFP ← SDI	0.930			
MYS ← SDI	0.780			
PcGDP ← SDI	0.948			

Source(s): Author's own work based on the PLS-SEM analysis

Table 3. Results of discriminant validity

Discriminant validity tests	CR	REL	SDI
Fornell and Larcker's Criterion Test			
CR	0.778		
REL	0.650	0.878	
SDI	−0.750	−0.621	0.873
Heterotrait-Monotrait Ratio (HTMT) test			
CR			
REL	0.848		
SDI	0.899	0.695	

Source(s): Author's own work based on the PLS-SEM analysis

Table 4. Structural model with path coefficients

Variables	Hypotheses	Path coefficient (β)	*t*-value	*p*-values	Effect size (f2)	VIF	Decision
REL → CR	H1	0.650^{***}	9.071	0.000	0.732	1.000	Accepted
REL → SDI	H2	-0.231^{*}	1.676	0.094	0.076	1.732	Accepted
CR → SDI	H3	-0.600^{***}	4.804	0.000	0.511	1.732	Accepted

Note(s): ***Significant at the 0.01 level, *Significant at the 0.10 level
Source(s): Author's own work based on the PLS-SEM analysis

inflation factor (VIF). The R^2 and adjusted R^2 values for corruption are 0.423 and 0.411, while for the sustainable development index, these are 0.593 and 0.577, respectively. The effect size (f2) ranges between 0.076 and 0.732, which is the recommended limit (Hair *et al*., 2017). The VIF is used to analyse the collinearity among the constructs, indicating no collinearity issue.

The path coefficients on the relationships among the constructs provide insights into the research hypotheses under the study (Figure 2). The analysis indicates that religiosity has a positive and significant impact on corruption ($\beta = 0.650$, $p > 0.01$), implying that countries with higher religiosity are more likely to have a higher incidence of corruption. This result aligns with the empirical evidence on religiosity and corruption (Labolo *et al*., 2018; dos Santos and Lemes, 2022; Liyanapathirana and Akroyd, 2023; Paldam, 2001). Therefore, research H1, which assumes that religiosity significantly impacts corruption, is accepted. It is argued that religiosity increases social hierarchy, enhances concerns for a particular religious denomination and forms a collectivist society, leading to favouritism and corruption (Zelekha and Avnimelech, 2023).

Further, religiosity has a negative and significant impact on SDI ($\beta = -0.231$, $p > 0.10$), which implies that countries with higher levels of religiosity are less likely to have sustainable development. Prior research also indicates a negative relationship between religiosity and development (Sharma *et al*., 2021; Du *et al*., 2024; Ohene Kwatia *et al*., 2024). Therefore, research H2, which assumes a significant impact of religiosity on sustainable development, is accepted at 10% level of significance. Several studies have analysed the opposing effect of religious fundamentalism on environmental attitudes and concluded that people with strong religiosity show weak environmental concerns (Arbuckle and Konisky, 2015; Preston and Shin, 2022). Finally, the path analysis indicates a negative and significant impact of corruption on sustainable development ($\beta = -0.600$, $p > 0.01$), implying that the countries with a higher incidence of corruption are less likely to have sustainable development. This result supports the school of thought that corruption works as sand in the wheels of development (Majeed *et al*., 2024). Therefore, research H3, which assumes that corruption significantly impacts

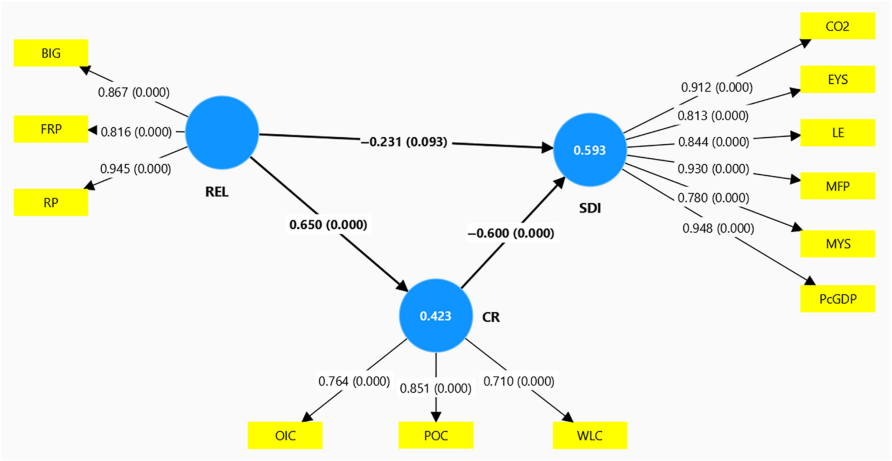

Figure 2. Relationship between religiosity, corruption and SDI. Source: Author's own work based on the PLS-SEM analysis

sustainable development, is accepted. This result corroborates with prior empirical studies that have argued that corruption adversely affects economic and sustainable development (Saha and Gounder, 2013; Gründler and Potrafke, 2019; Mbaku, 2019; Song *et al*., 2021; Uberti, 2022; Triatmanto and Bawono, 2023).

5. Conclusion, implications, and limitations

It is important to understand the nexus between religiosity, corruption, and sustainable development. The three constructs, i.e. religiosity, corruption, and sustainable development, have been strategically chosen based on the literature review. There has been a steady growth in the academic investigation to understand the intricacies of these constructs and their interactions with various other constructs. A brief literature review with directions of relationships across these constructs is given in Table A2. This paper uses the PLS-SEM technique based on the common data from 52 countries to analyse the relationship between religiosity, corruption, and sustainable development. Empirical analysis indicates a positive and significant influence of religiosity on corruption and a negative and significant implication on sustainable development. This implies that countries with higher levels of religiosity are more likely to be corrupt or less developed – both economically and ecologically. Further, the result of the study implies that countries with higher incidences of corruption are less likely to have sustainable development – socially, economically, and ecologically.

This study makes several contributions to the existing body of knowledge on religiosity, corruption and sustainable development. Firstly, the main contribution is developing a research framework for understanding religiosity as a determining factor for corruption and sustainable development, focusing on human and ecological dimensions. The study also explores the implications of corruption on sustainable development. This composite research framework provides key insights to conceptualise future research. Earlier research on analysing the relationship between religiosity and corruption argued that religiosity does influence an individual's life towards values and beliefs at the micro-level, but could not make much difference in people's attitude towards corruption at the macro-level (Pavarala and Malik, 2012; Gokcekus and Ekici, 2020; dos Santos and Lemes, 2022; Paldam, 2001). Moreover, the impact of religiosity on development (economic and ecological) gets a mixed response from some of the researchers (Sharma *et al*., 2021; Du *et al*., 2024; Ohene Kwatia

et al., 2024), the impact of religiosity on sustainable development has been found to be positive (Barro and McCleary, 2003; Awaworyi Churchill *et al.*, 2019; Qayyum *et al*., 2020; Kaplan and Iyer, 2021).

The empirical evidence primarily indicates a negative influence of corruption on sustainable development (Mbaku, 2019; Song *et al*., 2021; Uberti, 2022; Triatmanto and Bawono, 2023; Majeed *et al.*, 2024). This study provides a unique contribution, in alignment with earlier literature, by combining these three constructs, which may be extended through future research. The second key contribution is for the practitioners to use the empirical learnings in developing solutions for eradicating corruption and managing the issues of sustainable development in society, which is highly influenced by religious denominations. Despite religion being a social and cultural issue of human beings, its implications for corruption and human, social, economic and ecological development are quite critical. This study provides valuable insights for religious organisations to build an inclusive, corruption-free, and sustainable society.

Despite the above contributions, the study also possesses a few limitations. The study is based on cross-sectional data from fifty-two countries, and the limited availability of data on common variables on religiosity, corruption and sustainable development has been a critical challenge. The analysis is heavily derived from data on religiosity and corruption from the WVS data of Wave 7 executed during 2017–2021, while 5 years average SDI data of 2017–2021 has been taken from the index developed by Hickel (2020). It is also important to note that the study is limited to three constructs and limited measurable items from the available datasets. Therefore, future researchers can be developed based on panel data with additional constructs to enhance the robustness of the results.

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Further reading

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Appendix

Table A1. List of countries

Countries	Regions	Religiosity (%)	Corruption perceptions (mean)	Sustainable development index (SDI)
Argentina	Europe and Central Asia	81.30	8.60	0.77
Armenia	Europe and Central Asia	71.70	7.50	0.81
Australia	East Asia and Pacific	58.20	6.50	0.20
Bangladesh	South Asia	96.50	7.80	0.70
Bolivia	Latin America and Caribbean	93.50	8.60	0.74
Brazil	Latin America and Caribbean	88.90	9.50	0.75
Canada	North America	58.80	6.90	0.17
Chile	Latin America and Caribbean	80.50	7.00	0.74
China	East Asia and Pacific	16.40	6.50	0.44
Colombia	Latin America and Caribbean	91.10	9.50	0.81
Cyprus	Europe and Central Asia	86.60	8.50	0.42
Czech Republic	Europe and Central Asia	42.50	7.10	0.67
Ecuador	Latin America and Caribbean	89.80	8.90	0.80
Egypt	Middle East and North Africa	92.20	8.50	0.77
Germany	Europe and Central Asia	56.60	5.60	0.38
Greece	Europe and Central Asia	91.70	8.40	0.73
Hong Kong	East Asia and Pacific	43.40	5.40	0.11
India	South Asia	92.50	7.80	0.69
Indonesia	East Asia and Pacific	96.00	8.40	0.76
Iran	Middle East and North Africa	92.00	6.80	0.76
Iraq	Middle East and North Africa	81.40	8.80	0.69
Japan	East Asia and Pacific	55.20	6.90	0.44
Jordan	Middle East and North Africa	88.10	8.20	0.78
Kazakhstan	Europe and Central Asia	78.50	7.00	0.33
Kyrgyz Republic	Europe and Central Asia	82.80	8.80	0.75
Lebanon	Middle East and North Africa	84.10	7.80	0.73
Malaysia	East Asia and Pacific	91.50	8.00	0.59
Morocco	Middle East and North Africa	91.70	7.70	0.74
Myanmar	East Asia and Pacific	97.60	7.40	0.65
Netherlands	Europe and Central Asia	46.60	6.20	0.29
New Zealand	East Asia and Pacific	55.10	5.50	0.32
Nicaragua	Latin America and Caribbean	84.90	7.90	0.71
Nigeria	Sub-Saharan Africa	97.40	8.70	0.58
Pakistan	South Asia	97.30	8.70	0.58
Peru	Latin America and Caribbean	88.60	9.50	0.81
Philippines	East Asia and Pacific	93.50	6.70	0.75
Romania	Europe and Central Asia	90.50	8.80	0.71
Russian Federation	Europe and Central Asia	55.50	7.70	0.61
Serbia	Europe and Central Asia	75.90	8.40	0.66
Singapore	East Asia and Pacific	78.10	3.50	0.15
Slovak Republic	Europe and Central Asia	78.60	7.80	0.62
Tajikistan	Europe and Central Asia	73.60	5.60	0.72
Thailand	East Asia and Pacific	66.90	7.00	0.80
Tunisia	Middle East and North Africa	77.10	8.20	0.78
Turkey	Europe and Central Asia	83.20	6.60	0.71
Ukraine	Europe and Central Asia	67.20	8.40	0.77
United Kingdom	Europe and Central Asia	51.00	6.90	0.59
United States	North America	79.20	7.90	0.18

(*continued*)

Table A1. Continued

Countries	Regions	Religiosity (%)	Corruption perceptions (mean)	Sustainable development index (SDI)
Uruguay	Latin America and Caribbean	64.00	7.70	0.83
Uzbekistan	Europe and Central Asia	64.30	6.70	0.77
Venezuela	Latin America and Caribbean	88.10	8.70	0.71
Zimbabwe	Sub-Saharan Africa	76.70	8.60	0.60

Source(s): The World Value Survey (WVS), and Sustainable Development Index (SDI) developed by Hickel (2020)

Table A2. A literature review on the nexus between religiosity, corruption and sustainable development

Review of literature	Sign	Sources
Religiosity and corruption		
Bureaucratic corruption is negatively associated with local religious heritage	–	Xu *et al*. (2017)
The religion-corruption relationship is not empirically supported		Ko and Moon (2014)
Religions have significant positive associations with corruption levels	+	Zelekha and Avnimelech (2023)
The influence of religion is important in reducing the level of corruption	+	Labolo *et al*. (2018)
Religiosity does not always influence the ethical decision-making of accountants because of pervasive corruption		Liyanapathirana and Akroyd (2023)
Religious countries are more corrupt, and when the relationship is controlled for income, the positive relationship becomes much weaker	+	Paldam (2001)
Greater religiosity is associated with lower accounting quality and, together, greater corruption	+	dos Santos and Lemes (2022)
The positive effect of religiosity in decreasing corruption emerges in poor countries, but as national income increases, the benefit of religiosity decreases	+	Ahenkora *et al*. (2019)
Religiosity, rather than religious affiliation, impacts corruption levels. The more religious a society is, the higher the corruption, regardless of religious affiliation	+	Gokcekus and Ekici (2020)
The religiosity of a state's population is not related to instances of government corruption		Flavin and Ledet (2013)
Religiosity and development		
Religiosity, proxied by the percentage of the religious population within a country, is significantly negatively associated with carbon emissions	–	Du *et al*. (2024)
Religiosity is negatively associated with the use of financial services	–	Ohene Kwatia *et al*. (2024)
In Asia and Europe, the impact of religion is positive and highly significant; Africa shows somewhat positive but insignificant results, and in the case of the American region, the linkage of religion and economic development is not robust	+	Qayyum *et al*. (2020)
Religious beliefs influence individual traits that enhance economic performance	+	Barro and McCleary (2003)
Religiosity has a significant influence on sustainable behaviour	+	Kaplan and Iyer (2021)
Long-run causality runs in both directions, higher income leads to declining religiosity, and declining religiosity leads to higher income		Herzer and Strulik (2017)
Religiosity and income positively affect well-being, the effect of income on well-being is relatively stronger (quantitatively larger in size) than the effects of religiosity	+	Awaworyi Churchill *et al*. (2019)

(*continued*)

Table A2. Continued

Review of literature	Sign	Sources
Countries with populations exhibiting greater religious fervour tend to adopt less stringent climate change policies	–	Sharma *et al*. (2021)
Intrinsic religiosity is positively related to economic growth	+	Galbraith and Galbraith (2007)
Church participation and formal education are negatively related	–	Photiadis and Biggar (1962)
There is a negative relationship between education and religion across denominations	–	Glaeser and Sacerdote (2008)
Corruption and development		
Corruption negatively affects income per capita, productivity, and innovation	–	Mbaku (2019)
Corruption has a significant negative effect on economic growth and development	–	Nageri *et al*. (2013)
Rich countries tend to be less corrupt than poor countries	–	Ahenkora *et al.* (2019)
There is clear evidence of the negative impact of corruption on unemployment and human capital	–	Triatmanto and Bawono (2023)
Empirical observations of a high incidence of corruption among low-income countries, a low incidence of corruption among high-income countries and a diverse incidence of corruption among middle-income countries	–	Blackburn *et al*. (2010)
A negative effect of corruption on steady-state growth	–	Uberti (2022)
The relationship between corruption and development is predicted to be negative	–	Blackburn *et al*. (2006)
The linear results show a strong negative nexus between income and corruption across countries. However, the non-linear results show that corruption increases at a low economic development stage and decreases as nations achieve higher levels of economic development	–	Saha and Gounder (2013)
Corruption is negatively associated with economic growth	–	Gründler and Potrafke (2019)
Corruption has a negative effect on economic growth	–	Song *et al*. (2021)

Source(s): Compiled by author

About the author
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