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ORIGINAL ARTICLE

Corruption and religiosity: a cross-country analysis mediated by accounting quality*

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ABSTRACT

This article aimed to identify the association between religiosity and corruption, mediated by accounting quality. Studies have examined the relationships between religiosity and accounting quality, religiosity and corruption, and accounting quality and corruption. No evidence was identified of the combined role of religiosity and accounting quality in corruption. The study contributes to understanding the influence of religiosity, as a social norm, on managers' decisions, which consequently have an impact on accounting quality and corruption, thus broadening the knowledge about the mechanisms that can affect corruption. Grounded in Social Norms Theory and supported by studies on the relationship between religiosity and accounting quality, which have also been based on that theory, it was possible to discuss the influence of religiosity on managers' decisions, with impacts on accounting quality and corruption. The sample is formed of 36 countries. To process the data from the period from 2010 to 2014, partial least squares path modeling was used. The evidence indicated that greater religiosity is associated with lower accounting quality and that, together, they are associated with greater corruption. The result can be explained by collectivism, a characteristic of more religious environments. It favors the development of collusion, which has the potential to damage accounting quality and facilitate the occurrence of corruption. In addition, more religious environments are associated with less monitoring, which can encourage the manipulation of accounting information and corruption. The study shows that the combined effect of religiosity and accounting quality in combatting corruption did not present efficiency. The evidence also enables us to evaluate the influence of religiosity, as a social norm, on managers' decisions, with impacts on accounting quality and corruption.

Keywords: corruption, accounting quality, religiosity, Social Norms Theory, financial accounting.

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1. INTRODUCTION

Religion is an essential social mechanism for controlling beliefs and behaviors (Kennedy & Lawton, 1998), influencing individuals' decisions. It is possible to identify the strength of that influence through religiosity, which involves how much people are dedicated to and follow the teachings of a religion (Bjornsen et al., 2019). The greater the religiosity, the greater the likelihood of individuals' actions being shaped by religious meanings (Moniz, 2018). There will therefore be a greater impact of religious norms on the environment and, consequently, there will be a greater influence of those norms on managers' decisions, since, according to Social Norms Theory, individuals seek to shape their behavior according to the norms of the group they are associated with (Dyreng et al., 2012).

Greater religiosity is associated with greater accounting quality (Bjornsen et al., 2019; Grullon et al., 2009; Ma et al., 2020; McGuire et al., 2012; Riahi-Belkaoui, 2004). In contrast, greater religiosity is related with lower corruption (Armantier & Boly, 2011; Ko & Moon, 2014; Tunali & Weill, 2020). It is also possible to reduce corruption by improving accounting quality (Botinha, 2018; Houqe & Monem, 2016; Kimbro, 2002; Malagueño et al., 2010). The aforementioned studies have separately examined the relationships between religiosity and accounting quality, religiosity and corruption, and accounting quality and corruption. Yet, no evidence has been found of the combined role of religiosity and accounting quality in corruption, which suggests the need for more research.

The aim of this study consists of identifying the association between religiosity and corruption, mediated by accounting quality. The mediating role of accounting quality is due to the potential of religiosity to influence accounting quality (Bjornsen et al., 2019; Grullon et al., 2009; Ma et al., 2020; McGuire et al., 2012; Riahi-Belkaoui, 2004). Accounting quality, in turn, can have an impact on corruption (Botinha, 2018; Houqe & Monem, 2016; Kimbro, 2002; Malagueño et al., 2010). Thus, religiosity can influence corruption through accounting quality.

The literature does not indicate a simultaneous relationship between the religiosity, accounting quality, and corruption variables, which is the proposal of this study. The establishment of that relationship was based on the assumption that religions generally incentivize honest and true behaviors (Beets, 2007; Riahi-Belkaoui, 2004). These teachings lead to the expectation of a positive relationship with accounting quality and a negative one with corruption. Thus, the realization of a corrupt act can result in errors in the financial statements of the company giving and receiving the corruption (Jeppesen, 2019). Within this context, the religious teachings would influence the manager's decision with regard to not allowing errors in the elaboration of the accounting reports, as these would depart from truth and honesty, resulting in greater accounting quality and, consequently, less corruption. In addition, the manager may take a stance against corruption as he/she believes it to be a dishonest attitude. However, it should be noted that the religiosity considered in the study was that of the population and not that of the manager, and this extrapolation was possible based on Social Norms Theory, which defends the influence of group norms on individual behaviors.

Accounting performs an important role in the fight against corruption (Everett et al., 2007), as accounting information has the potential to limit corrupt movements (Rocha & Bezerra, 2021). Yet, studies that indicate that accounting can be a barrier to corruption are rare (Houqe & Monem, 2016) and they formed only 11.32% of the articles examined in the bibliometric analysis conducted by Vecchia et al. (2018), thus requiring more studies on the topic.

One of the most important behavioral determinants of corruption is religiosity (Borlea et al., 2019). Some studies argue that it may contribute to mitigating corruption (Armantier & Boly, 2011; Ko & Moon, 2014; Tunali & Weill, 2020), while others argue that religiosity favors the formation of an environment that is more conducive to corrupt acts (Borlea et al., 2019; Gokcekus & Ekici, 2020). These studies together highlight the relationship between religiosity and corruption. In this study, greater religiosity is expected to help in reducing corruption, as religious leaders preach against corruption (Beets, 2007) and all religions condemn corruption (Rose-Ackerman & Palifka, 2020).

This study is based on investigating the indirect effect of religiosity on corruption, that relationship being mediated by accounting quality. The indirect relationship is explained by religiosity having the potential to influence accounting quality and by the latter influencing corruption. The study contributes to the literature by examining the combined effect of religiosity and accounting quality on corruption.

The paper also contributes to understanding how religiosity influences managers' decisions, which consequently have an impact on accounting quality and corruption, collaborating with evidence from previous

studies (Armantier & Boly, 2011; Bjornsen et al., 2019; Du et al., 2015; Dyreng et al., 2012; Grullon et al., 2009; Ko & Moon, 2014; McGuire et al., 2012; Tunali & Weill, 2020).

2. THEORETICAL FRAMEWORK

2.1 Religiosity, Accounting Quality, and Corruption

It is highly difficult to conceptualize religion (Moniz, 2018). However, basic properties of religion include belief in the existence of higher powers and communion through practical actions that aim to please the divinity (Moniz, 2018). Derived from religion, an individual's religiosity can be understood as a personal and unique experience (Pinto, 2009), and so it can be defined as the extent to which an individual or community is dedicated to religion (Bjornsen et al. 2019). In other words, religiosity can be understood as the level of devotion to religion (Gokcekus & Ekici, 2020). This study seeks to relate religiosity with accounting quality and corruption, without seeking to identify behaviors based on specific religions.

Specific religions were not the object of the study, since declaring that one belongs to a particular religion does not necessarily means accepting the religious teachings, as individuals may state they belong to a religion and not follow its principles. To exemplify, two Catholics may accept the teachings of that religion to different extents (Gokcekus & Ekici, 2020). Thus, analyzing types of religion based on individuals' declarations leads to weakened results. In addition, the relationship between specific religions and corruption is questionable (Rose-Ackerman & Palifka, 2020).

Religious norms present in a geographical area are able to influence managers' actions (Dyreng et al., 2012) and that influence is based on Social Norms Theory. This theory sustains that the level of mutual trust in the society of a particular geographical area in which a company is located is capable of affecting behavior within that company (Chircop et al., 2018). Based on that theory, which also underpinned the relationship investigated, studies have documented the relationship between religiosity and accounting quality (Bjornsen et al., 2019; Du et al., 2015; Dyreng et al., 2012; Grullon et al., 2009; McGuire et al., 2012).

According to Social Norms Theory, the manager does not necessarily need to be an active participant in any religion for his/her actions to be influenced by religious teachings, with interaction with religious individuals being enough to affect his/her behavior (Dyreng et al., 2012). It is the religious environment in which the manager is located, and not the personal religious beliefs held by a chief executive officer (CEO), that influences the elaboration of the accounting statements (Ma et al., 2020), highlighting the relevance of religiosity in organizations by acting as a social norm with the ability to affect managers' decisions.

Blay et al. (2018) suggest that the difficulty of using Social Norms Theory lies in measuring the social norms to test the hypotheses. Dyreng et al. (2012) indicate as a limitation the incapacity to directly measure religious social norms. The alternative adopted to overcome that limitation in the present study was to measure religiosity using the five dimensions of religiosity established by Glock (1962), more comprehensively capturing the effect of religious teachings, according to Table 1.

Table 1
Dimensions of religiosity

Dimension	Concept
Ideological	Social expectation that religious individuals have beliefs about the existence and essence of a transcendent reality, as well as about the relationship between transcendence and the human being.
Experiential	Social expectation that religious individuals have some type of direct contact with an ultimate reality that affects them emotionally.
Intellectual	Social expectation that religious people have some knowledge of religion and can explain their viewpoints about transcendence, religion, and religiosity.
Devotional	Social expectation that religious individuals are dedicated to the transcendence in individualized activities and rituals in the private space.
Ritualistic	Social expectation that religious individuals belong to religious communities, which is manifested in public participation in religious rituals and in community activities.

Source: *Glock (1962) and Huber and Huber (2012).*

Cultural aspects are associated with questions linked to religiosity and, therefore, under the assumptions of this study, also with the economic aspects that permeate accounting and corruption. Yet, the use of culture as a determinant of economic phenomena generates divergent opinions (Guiso et al., 2006). This occurs because the notion of culture is so broad and the channels through which it can enter into the economic discourse are so vague that it becomes difficult to formulate testable hypotheses (Guiso et al., 2006). In light of that, Guiso et al. (2006) propose that culture is defined as habitual beliefs and values that ethnic, religious, and social groups convey, practically unaltered, from generation to generation. Based on that definition, it is possible to operationalize variables capable of measuring culture to be able to relate them with economic phenomena. Thus, this study investigated whether beliefs and values reflected in religiosity affect individuals' behavior, causing impacts on accounting quality and on corruption.

Religiosity can influence managers' decisions, so it may affect accounting quality, since the latter is influenced by managers' decisions (Callen et al., 2011). Accounting quality can be verified with the faithful representation of the company's activities (Ahmed et al., 2013), that is, without manipulations of the information disclosed.

The operationalization of the accounting quality variable was used to verify if the religious environment could affect the faithfulness of the information disclosed and, consequently, if that is reflected in the level of corruption. That is, by evaluating whether the religious setting could have effects on accounting quality, the focus was placed on one of the possible determinants of that quality, working as a means for evaluating the relationship between religiosity and corruption. The study aligns with the broad concepts presented by Dechow et al. (2010), referring to earnings quality, according to which the quality can be evaluated with respect to any decision that depends on an informative representation regarding financial performance, without restricting quality to useful decisions in the context of evaluating assets. Thus, the study was limited in its scope by not advancing in consequent factors of that quality, such as the impact on users' decision making.

The likely motivation for managers manipulating accounting reports is the existence of poor accounting standards or weak application of them (Riahi-Belkaoui, 2004); that is, the determinant of accounting quality is the quality of the accounting standards (Soderstrom & Sun 2007).

The adoption of quality accounting standards, such as the international accounting standards, may not be enough to guarantee accounting quality, since it is necessary to ensure that those standards are applied (Landsman et al., 2012). Another factor with the potential to improve accounting quality is auditing quality, which can be evaluated through the presence of the Big Four. These audit firms are highly respected as the ones that best audit accounting statements, resulting in more precise and predictable information (Malagueño et al., 2010).

In summary, it is possible to find better accounting quality in countries with high accounting standards, which have high legal enforcement to ensure the accounting standards are applied and with firms that better audit accounting statements, since it is difficult to manipulate those statements, leading to the faithful representation of the company's transactions. Even if it is not an objective of accounting to prevent corrupt practices, accounting mechanisms used for other purposes can contribute, in parallel, both to inhibiting corrupt acts and to hiding those acts. The true representation of an entity's transactions can work as a barrier to corruption, by making it hard to hide trails of corruption (Wu, 2005), which is a position adopted in this study.

Regarding the relatively restricted role attributed to accounting in its performance regarding social matters and the growing need for more discussions, Walker (2016) highlights that social control represents only one sociological topic that deserves greater attention in the incessant venture of identifying the roles of accounting in society, and that the changes in the level of transnational corporations and the new forms of society and sociability reinforce the convenience of continuously probing opportunities to explore those roles. Within that same line, Carnegie et al. (2020) argues that the object of accounting needs to be extended beyond business: it needs to perform a key role in answering major questions and resolving perverse problems in the community, economy, and society and be applied to new causes. These discussions can also enable advances in defining the role of accounting and auditing in corrupt corporate practices.

Corruption consists of the abuse or improper use of power or trust for self-benefit instead of the objective for which that power or trust was granted (Nichols & Dowden 2018). That definition is broad enough to include both political corruption, in which one of the parties is a public authority and uses its position to obtain private gains, and economic corruption, in which one of the parties

uses the economic power derived from their company for self-benefit (Malagueño et al., 2010).

The literature indicates the difficulty of measuring corruption, as it is a clandestine activity, with no official statistics about cases of corruption (Chabova, 2017). Faced with the impossibility of obtaining data about the real level of corruption, researchers use proxies for corruption, such as the corruption perceptions index (CPI) and the control of corruption index (COR) (Chabova, 2017).

A determining element for the existence of corruption is the discretionary power exerted by individuals (Jain, 2001). When given discretionary power, a manager's decisions are likely to be influenced by a social norm (Dyreng et al., 2012; Köbis et al., 2018). Thus, religiosity can influence the manager's decision with regard to enabling or participating in a corrupt act.

In sum, this study uses Social Norms Theory as a basis to verify the influence of religious norms of the population around the company on the managers' decisions, where those decisions have the potential to affect accounting quality and corruption. Among the possible methodological paths for studying religiosity from the accounting perspective – a relatively recent topic in the accounting literature that is complex due to its very close relationship with areas such as sociology, philosophy, and psychology, among others – we chose to study the macro relationship between religiosity and corruption, which led the research to testing the relationship of the variables at a country level.

The accounting quality topic is not consolidated in the accounting literature due to the number of metrics and the recognized synergetic effect between them. The study also did not intend to establish a deterministic role of religiosity in corruption and in accounting quality, due to the very influence of human factors on the three variables, regarding decisions such as abiding by religious teachings, practicing corrupt acts, and disclosing information that is free from bias due to moral and ethical incentives or characteristics. It was considered, however, that the topic already features in relevant international studies (Beets, 2007; Bjornsen et al., 2019; Ma et al., 2020; McGuire et al., 2012) and that it warranted discussions on its potential for investigation and its limitations being brought to the national accounting context.

2.2 Study Hypotheses

Quality accounting standards seek to make an entity's economic transactions transparent, attenuating the risk of people with economic power acting unethically, illegally, or inappropriately (Malagueño et al., 2010). In the presence of adequately adopted accounting standards, managers tend not to carry out corrupt practices due to the difficulty of hiding irregular transactions, besides the greater risks of corrupt acts being detected (Wu, 2005), since a greater level of disclosure is expected.

The relationship between accounting quality and corruption has been documented by Botinha (2018), Kimbro (2002), and Malagueño et al. (2010). The studies identified that the greater the accounting quality, the lower the corruption, and they highlighted the importance of accounting quality as a mechanism capable of inhibiting corruption. It was indicated that accounting is an information system that communicates essential financial and economic data for controlling and preventing corrupt activities (Kimbro, 2002). Within that context, the first research hypothesis emerges:

> H_1: accounting quality is directly and negatively associated with corruption.

In general, religions direct their followers to distance themselves from corruption, preaching against corrupt behavior (Beets, 2007; Shabbir & Anwar, 2007). Thus, from a religious perspective, corruption is wrong, as it involves a combination of steeling, dishonesty, abusing others, and illegality (Beets, 2007).

Ko and Moon (2014) highlighted that people who attend religious services more often are less tolerant of fraud and bribery. Armantier and Boly (2011) identified that someone who attends religious services every day has a 58% less chance of accepting a bribe than someone who never attends such services. Tunali and Weill (2020) verified that religiosity is negatively associated with tolerance of corruption, supporting the view than religiosity favors honest behaviors. Thus, more religious environments are expected to be associated with less corruption. This, however, does not mean that more religious countries are expected to be free of corruption.

In opposition to the studies that argue that religiosity contributes to reducing corruption, some have identified that the more religious a society is, the greater the corruption (Borlea et al., 2019; Gokcekus & Ekici, 2020). When explaining the evidence from their study, Gokcekus and Ekici (2020) suggest that the positive relationship between religiosity and corruption may occur due to the religious norm of punishment of misbehavior. This norm has the potential to reduce the level of monitoring, since religious people may believe they do not need to monitor the actions of other individuals because bad attitudes will

be punished by higher powers (Gokcekus & Ekici, 2020). In environments with low monitoring, managers may feel encouraged to commit corrupt acts, since the likelihood of detection is lower.

Besides the norm of punishment of misbehavior, the positive relationship between religiosity and corruption can be explained by collectivism, a characteristic associated with more religious countries (Joshanloo & Gebauer, 2019). In countries with a higher level of collectivism, individuals are integrated in strong social groups (Hofstede et al., 2010), which can lead to greater trust in others. There may thus be less monitoring in that environment, enabling the occurrence of corruption. In addition, collectivism can contribute to the formation of collusion, which also favors the occurrence of corruption (Paldam, 2001).

In sum, the reduction in the level of monitoring of the population, derived from the norm of punishment of misbehavior and from collectivism, may give the manager greater freedom to accept or commit corrupt acts, since there will be fewer demands or judgments from the population. In that situation, the monitoring of the population would work as an alternative mechanism of inspection of managers' actions, reducing the occurrence of corruption.

The results of the previous studies highlight that there is a positive (Borlea et al., 2019; Gokcekus & Ekici, 2020) or negative (Armantier & Boly, 2011; Ko & Moon, 2014; Tunali & Weill, 2020) relationship between religiosity and corruption. This study expects a negative relationship between religiosity and corruption, based on the assumption that, in general, there are religious teachings against corruption. In light of that, the second hypothesis of the study emerges:

H_2: religiosity is directly and negatively associated with corruption.

Accounting quality can be influenced by religious norms (McGuire et al., 2012; Riahi-Belkaoui, 2004), where the anti-manipulative ethos preached by religions can influence managers' decisions to practice and/or allow accounting statement manipulation (Callen et al., 2011). Religious people generally endeavor to be truthful (Riahi-Belkaoui, 2004). As they deviate from the truth, accounting manipulations can, from a religious viewpoint, be understood as something distant from ethics (Riahi-Belkaoui, 2004). Thus, religious individuals tend to be more ethical and risk-averse (Bjornsen et al., 2019).

Companies based in areas with greater religiosity are associated with less accruals-based earnings management (Grullon et al., 2009; McGuire et al., 2012), greater conservatism (Bjornsen et al., 2019; Ma et al., 2020), and less accounting information opacity, which are all factors related with greater accounting information quality. Accounting quality and accounting information quality, in this study, are understood as similar terms, which is an analogous procedure to the one adopted by Riahi-Belkaoui (2004) and Ahmed et al. (2013). These authors measure accounting quality through measures of accounting information quality. Thus, the findings indicate a positive relationship between religiosity and accounting quality.

In opposition to the evidence of a positive relationship between religiosity and accounting quality, greater religiosity is also associated with lower accounting quality. Low monitoring, which may be a result of the religious norm of punishment of misbehavior (Gokcekus & Ekici, 2020) and greater collectivism in religious countries (Joshanloo & Gebauer, 2019), can result in greater opportunities for managers to manipulate earnings. In addition, greater collectivism can favor the joint action of managers to enable and/or carry out accounting manipulations. From this perspective, more religious environments, with less monitoring and stronger social bonds, can contribute to reducing accounting quality.

In summary, a positive or negative relationship can occur between religiosity and accounting quality; however, in this study, a positive relationship is expected, since religions preach against manipulation and accounting quality occurs with the faithful representation of the company's transactions. Thus, the third research hypothesis of the study is postulated:

H_3: religiosity is directly and positively associated with accounting quality.

Some studies indicate that, in more religious environments, it is possible to find greater accounting quality (Bjornsen et al., 2019; Grullon et al., 2009; Riahi-Belkaoui, 2004; Ma et al., 2020; McGuire et al., 2012); others reveal that greater accounting quality is associated with less corruption (Botinha, 2018; Kimbro, 2002; Malagueño et al., 2010). Taken together, the findings may indicate an indirect relationship between the variables, since religiosity is associated with accounting quality, which in turn is associated with corruption. Thus, religiosity has the potential to improve accounting quality, and that effort to improve accounting quality also works as an inhibitor of corrupt practices.

Based on the literature that indicates that religiosity affects accounting quality and accounting quality influences corruption, this study presents accounting quality as a mediating variable in the relationship between religiosity and corruption. That mediation occurs because the resource used for corrupt acts at some point passes

through accounting reports (Wu, 2005), where decisions regarding the information disclosed in the accounting statements can be influenced by religiosity.

As religions preach against the manipulation of information and corruption, the existence of higher levels of religiosity is expected to create greater accounting quality, which may be capable of mitigating corrupt practices. Thus, the fourth research hypothesis is formulated:

H_4: religiosity, mediated by accounting quality, is negatively associated with corruption.

Based on testing hypotheses H_1, H_2, and H_3, a direct relationship is expected to be established between corruption, accounting quality, and religiosity. Through testing hypothesis H_4, an indirect relationship is expected between religiosity and corruption, mediated by accounting quality.

3. METHODOLOGICAL PROCEDURES

3.1 Definition of the Variables

The corruption construct is measured through the CPI from the Transparency International website (2019). Up to 2012, the CPI was disclosed on a scale ranging from 0 to 10, but since then the scale has ranged from 0 to 100. A score of 0 means that the country is highly corrupt, and 10 or 100, depending on the year, indicates that the country is considered free of corruption. To standardize the treatment, the CPI from 2010 and 2011 was multiplied by 10. The CPI follows the opposite pattern from the other variables in the study in terms of sign, so an adjustment was needed, multiplying by -1, a procedure adopted by Botinha (2018). Thus, in this study, the higher the CPI, the greater the corruption in the country.

The information needed to calculate the religiosity construct was obtained from the World Values Survey (WVS). The WVS has conducted surveys on human beliefs and values by country since the start of the 1980s (Inglehart et al., 2014). The WVS uses questionnaires and the answers are made available in a database. Based on that database, the necessary information was consolidated to calculate religiosity. Religiosity refers to that of the country's population and its influence on managers' decisions is based on Social Norms Theory.

For the universal operationalization of the five dimensions, two principles should be observed (Huber & Huber, 2012). The first is that the items chosen to measure each dimension should be strongly related to the typical expressions of the respective dimensions. Regarding the second, the religious content measured should be as general as possible, as well as being relevant and significant in the context of different religious traditions (Huber & Huber, 2012). When both principles are observed, it is possible to analyze the different religions through the five dimensions, that is, this methodology is suitable for inter-religious studies.

The WVS guides those applying the questionnaire to substitute terms, if necessary, in order to cover various traditions. In this case, in relation to the questions that feature the term "the Church," whose meaning applies to the context of Catholic countries, for example, the guidance is to change it to "religious organizations" so that the question can be understood in non-Christian countries (Inglehart et al., 2014). This reveals that the religious content measured is suitable for the context of various religious beliefs.

To choose the questions that composed each dimension of religiosity in this study, Huber and Huber (2012) and Moniz (2018) were mirrored. Table 2 indicates the questions chosen with the respective dimension of religiosity, which were defined in Table 1.

Table 2
Structure of the questions in the World Values Survey (WVS)

Question originating from the variable	Answer options (weight attributed)	Variables
Intellectual dimension		
1: Is religious faith an important quality that children should learn at home?	Important / Not important	V1 = importance of religious faith for children
Ideological dimension		
2: Do you believe in God?	Yes / No	V2 = belief in God
3: Do you believe in Hell?	Yes / No	V3 = belief in Hell

Table 2
Cont.

Question originating from the variable	Answer options (weight attributed)	Variables
Ritual dimension		
4: Do you belong to any religious denomination?	Yes	V4 = affiliation with religion
	No	
5: Besides weddings and funerals, how often do you currently attend religious services?	More than once a week (5)	V5 = attendance of religious services
	Once a week (5)	
	Once a month (4)	
	Only on special holy days (3)	
	Once a year (3)	
	Less than once a year (2)	
	Never, practically never (1)	
Devotional dimension		
6: Besides weddings and funerals, how often do you pray?	Various times a day (5)	V6 = praying frequency
	Once a day (5)	
	Various times a week (4)	
	Only when I attend religious services (3)	
	Only on special holy days (3)	
	Once a year (2)	
	Less than once a year (2)	
	Never, practically never (1)	
7: Independently of attending religious services or not, would you say you are a religious person?	A religious person	V7 = religiosity perception
	Not a religious person	
	An atheist	
Experiential dimension		
8: Importance of religion in life?	Very important (5)	V8 = importance of religion
	Quite important (4)	
	Not very important (2)	
	Not important at all (1)	

Source: *Huber and Huber (2012), Inglehart et al. (2014), and Moniz (2018).*

To capture the greatest religious involvement through a single variable for each question in Table 2, for questions 1, 2, 3, 4, and 7, in accordance with to Moniz (2018), the percentage of people who answered important (question 1), yes (question 2), and a religious person (question 7) was considered for the corresponding variables (V1, V2, V3, V4, and V7).

For questions 5, 6, and 8, the attribution of weights proposed by Huber and Huber (2012) was adopted. The weights attributed are presented in Table 2, in parentheses before the answer options. That weight was multiplied by the percentage of respondents for each option. Lastly, the results of the multiplication of each one of the options were added up to find an overall value, giving rise to variables V5, V6, and V8. Based on the eight variables calculated for the five dimensions of religiosity, the religiosity construct was formed with the highest values, which indicate greater religiosity.

The accounting quality construct is represented by the perceived accounting quality (PAQ) indicator, by the regulatory quality index (RQ), and by the frequency of Big Four auditing (AUDT). The PAQ indicator was taken from the World Economic Forum. It is captured based on a survey of opinions with corporate leaders, with the following question: "*In your country, how would you assess financial auditing and reporting standards regarding company financial performance?*" The PAQ indicator is disclosed on a scale ranging from 1 to 7, where 1 indicates that the accounting and auditing standards are extremely weak and 7 indicates that they are extremely strong (World Economic Forum, 2020).

The RQ was obtained from the World Bank and is related with legal enforcement. In environments with greater regulatory quality, greater accounting quality is expected, since greater compliance with legal requirements

is assumed. The RQ varies from -2.5 to 2.5 and the lowest scores indicate lower regulatory quality.

Another factor with the potential to affect accounting quality is auditing quality (Khalil & Ozkan, 2016). Using the percentage of companies audited by the Big Four (AUDT), it is possible to measure the auditing quality practiced in a country (Botinha, 2018; Malagueño et al., 2010). The data for calculating auditing quality were obtained from Capital IQ.

The economic, political, and cultural scenarios were controlled. The economic scenario was represented by gross domestic product GDP) per capita, a proxy for the level of economic development (Malagueño et al., 2010). Countries with a high GDP per capita have more resources to provide the population with better education, health, infrastructure, and communication services, and these services may be used as mechanisms for preventing and controlling corruption (Kimbro, 2002). GDP per capita was collected from the World Bank.

The political scenario is represented by the voice and accountability index (VA), obtained from the World Bank, which measures the capacity of the citizens of a country to participate in choosing their government and freedom of expression, of association, and of means of communication (World Bank, 2019). In countries where there is media freedom, governments are more transparent and, thus, cases of corruption are more easily exposed (Botinha, 2018). Houqe and Monem (2016) identified that corruption is greater in countries with greater voice and accountability.

The cultural scenario is represented by the individualism indicator (IND), covering one of Hofsdede's dimensions. The IND can affect the behavior of accountants and auditors for reporting corrupt acts (Kimbro, 2002). In other words, if there are weak social bonds, there is less loyalty to the social group and, thus, accountants and auditors would be more willing to make complaints, contributing to reducing corruption. This indicator was collected from Hofstede (2019). The three variables that form the control construct (GDP per capita, RV, and IND) present an inverse relationship with corruption.

3.2 Sample Selection and Data Processing

The sample was chosen according to the availability of data for all of the study variables. The final research sample is composed of 36 countries. Table 3 presents the selection stages and the countries in the sample.

Table 3
Composition of the research sample covering the period from 2010 to 2014

Sample selection	Number	Countries in the sample
(=) Countries with simultaneous data for corruption and religiosity	53	Argentina, Australia, Brazil, Chile, China, Colombia, Estonia, Germany, Ghana, Hong Kong, India, Japan, Jordan, Lebanon, Malaysia, Mexico, Nigeria, New Zealand, Netherlands, Pakistan, Peru, Philippines, Poland, Romania, Russia, Singapore, Slovenia, South Africa, South Korea, Spain, Sweden, Thailand, Trinidad and Tobago, Turkey, Ukraine, United States
(-) Countries not listed in the PAQ indicator or that did not have information available for all years	6	
(-) Countries that did not have information available for the AUDT calculation	7	
(-) Countries that did not have information available on GDP per capita	1	
(-) Countries that did not have information available on the IND	3	
(=) Final sample	36	

AUDT = frequency of Big Four auditing; IND = individualism indicator; GDP = gross domestic product; PAQ = perceived accounting quality.
Source: *Elaborated by the authors.*

The data collected correspond to the period from 2010 to 2014, the most recent period with available information on religiosity. The data used for the religiosity calculation are disclosed in cycles, so the religiosity calculated in this study is the same for the five years (from 2010 to 2014). We chose to use only one period to maintain coherence with the information on religiosity, as the variables used in its calculation were not always present in more than one cycle.

To process the data, partial least squares path modeling (PLS-PM) was used. To measure the constructs, the reflexive model was chosen. To evaluate the measurement and structural models, we followed Sanchez's (2013) proposal, which indicates evaluating the models using the following steps: measurement model, through unidimensionality, loadings and communalities, and cross loadings; and the structural model, through the coefficient of determination (R^2), redundancy index, average variance extracted (AVE), and goodness of fit. The validation of the proposed model was carried out using the bootstrapping technique with 100 subsamples (Sanchez, 2013).

4. PRESENTATION AND ANALYSIS OF THE RESULTS

4.1 Evaluation of the Measurement and Structural Models from the PLS-PM

The evaluation of the measurement and structural models followed what was proposed by Sanchez (2013). The evaluation of the measurement model, when the formation of the constructs follows the reflexive mode, is carried out via three stages: (i) unidimensionality; (ii) convergent validity; and (iii) discriminant validity (Sanchez, 2013). Unidimensionality can be evaluated via three indices: the Cronbach's alpha, the Dillon-Goldstein's rho, and by the first and second eigenvalues of the correlation matrix (Sanchez, 2013). The results of the indices are presented in Table 4.

Table 4
Unidimensionality of the measurement model for the research sample covering the period from 2010 to 2014

Constructs	Cronbach's alpha	Dillon-Goldstein's rho	First eigenvalue	Second eigenvalue
Corruption	1.0000	1.0000	1.0000	0.0000
Accounting quality	0.6800	0.8280	1.8900	0.8830
Religiosity	0.9730	0.9770	6.7300	0.4210
Control	0.8500	0.9090	2.3100	0.3650

Source: *Elaborated by the authors.*

So that the construct is considered as unidimensional, it is recommended that the Cronbach's alpha and Dillon-Goldstein's rho values are above 0.7 (Sanchez, 2013). The first eigenvalue should be much higher than 1, while the second one should be much lower (Sanchez, 2013). The results presented in Table 4 indicate that the indices, except the Cronbach's alpha for the accounting quality construct, fulfill the recommendations, signaling that they can be considered unidimensional. The Cronbach's alpha of the accounting quality construct (0.68) is very close to the recommended value (0.70). In addition, both the Dillon-Goldstein's rho and the first and second eigenvalues are between the values indicated as acceptable for the accounting quality construct. Thus, that construct was also considered to be unidimensional.

The second stage, convergent validity, occurred through the loadings and communality. Loadings higher than 0.7 are acceptable, resulting in communality close to 0.5 (Sanchez, 2013).

The values obtained for the loadings and communalities are presented in Table 5.

Table 5
Loadings and communality of the measurement model for the research sample covering the period from 2010 to 2014

Variables	Loadings	Communality	Variables	Loadings	Communality
CPI	1.0000	1.0000	V5	0.9320	0.8700
PAQ	0.8860	0.7850	V6	0.9660	0.9340
RQ	0.9480	0.8990	V7	0.9030	0.8160
AUDT	0.4510	0.2030	V8	0.9750	0.9510
V1	0.9180	0.8420	VR	0.8840	0.7810
V2	0.8920	0.7950	GDP per capita	0.9020	0.8130
V3	0.8610	0.7410	IND	0.8400	0.7050
V4	0.8850	0.7840			

AUDT = frequency of Big Four auditing; CPI = corruption perceptions index; GDP = gross domestic product; IND = individualism indicator; PAQ = perceived accounting quality indicator; RQ = regulatory quality index; V1 = importance of religious faith for children; V2 = belief in God; V3 = belief in Hell; V4 = religious affiliation; V5 = attendance of religious services; V6 = praying frequency; V7 = religiosity perception; V8 = importance of religion; VR = voice and accountability index.
Source: *Elaborated by the authors.*

Note that the values are above those recommended, except for AUDT, which indicates that the constructs manage to capture more than 50% of the variation that occurs in the observable variables. The loading of AUDT is lower than the value indicated. In this situation, the variable could be excluded, as it contributed little

to the formation of the accounting quality construct. However, previous studies have used this variable in their analyses (Botinha, 2018; Du et al., 2015; Malagueño et al., 2010; McGuire et al., 2012). In addition, one of the factors capable of restricting earnings management is the presence of big auditors (Becker et al., 1998); that is, AUDT contributes to identifying accounting quality. In light of this, we chose to maintain that variable in the accounting quality construct.

The third stage, discriminant validity, was carried out through the cross loadings, whose results are presented in Table 6. The cross loadings analysis enables us to evaluate whether the loading of an observable variable is higher in the construct that it composes in relation to other constructs, as no observable variable should have a higher loading in another construct (Sanchez, 2013). It is possible to observe that the loadings of the observable variables are higher in the construct that they compose.

Table 6
Cross loadings of the measurement model for the research sample covering the period from 2010 to 2014

Constructs / Variables	Corruption	Accounting quality	Religiosity	Control
CPI	**1.0000**	-0.9000	0.5920	-0.8560
PAQ	-0.7430	**0.8860**	-0.3450	0.6220
RQ	-0.9300	**0.9480**	-0.5350	0.7960
AUDT	-0.3080	**0.4510**	-0.2410	0.3190
V1	0.5500	-0.4600	**0.9180**	-0.5320
V2	0.4960	-0.4100	**0.8920**	-0.3870
V3	0.4700	-0.4090	**0.8610**	-0.5290
V4	0.5290	-0.4760	**0.8850**	-0.4630
V5	0.5630	-0.4290	**0.9320**	-0.5120
V6	0.5620	-0.4460	**0.9660**	-0.5220
V7	0.5710	-0.5360	**0.9030**	-0.4240
V8	0.5880	-0.4560	**0.9750**	-0.5860
VR	-0.7410	0.7060	-0.3810	**0.8840**
GDP per capita	-0.8790	0.7710	-0.6040	**0.9020**
IND	-0.5760	0.5150	-0.3950	**0.8400**

Note: *Values in bold refer to the variables that compose the construct.*
AUDT = frequency of Big Four auditing; CPI = corruption perceptions index; GDP = gross domestic product; IND = individualism indicator; PAQ = perceived accounting quality; RQ = regulatory quality index; V1 = importance of religious faith for children; V2 = belief in God; V3 = belief in Hell; V4 = religious affiliation; V5 = attendance of religious services; V6 = praying frequency; V7 = religiosity perception; V8 = importance of religion; VR = voice and accountability index.
Source: *Elaborated by the authors.*

The quality of the structural model was evaluated by examining four indices: the R^2, the redundancy index, the AVE, and the goodness of fit. The results for those indices are presented in Table 7.

Table 7
Coefficient of determination, mean redundancy, average variance extracted (AVE), and goodness of fit (GoF) for the research sample covering the period from 2010 to 2014

Constructs	R^2	Mean redundancy	AVE	Goodness of fit
Corruption	0.883	0.883	1.000	GoF = 0.6635
Accounting quality	0.246	0.154	0.629	
Religiosity	-	-	0.842	
Control	-	-	0.766	

Source: *Elaborated by the authors.*

The R^2 of the proposed model is 0.883 and, according to Sanchez (2013), for that type of modeling, the result can be considered as excellent. The mean redundancy of the model is 0.883, where high redundancy means high predictive capacity. AVE values higher than 0.50 are recommended, which means that 50% or more of the variance of the indicators is captured (Sanchez, 2013). The AVE values identified in this study are above

those recommended. The goodness of fit (GoF) index of the proposed model is 0.6635, which is classified as acceptable, indicating that the model presents good quality.

4.2 Model Validation

Table 8 presents the results after the model validation, using the bootstrapping technique.

Table 8
Results for the path coefficient and research hypotheses for the research sample covering the period from 2010 to 2014

Path	Coefficient	Condition	Hypothesis
Accounting quality → Corruption	-0.567**	II	H_1
Religiosity → Corruption	0.120**		H_2
Religiosity → Accounting quality	-0.500**	I	H_3
Control → Corruption	-0.354**		-

****, **, * = significant at 1, 5, and 10%, respectively.*
Source: *Elaborated by the authors.*

Hypothesis H_1, which foresaw a direct and negative relationship between accounting quality and corruption, could not be rejected. It was revealed that greater accounting quality is associated with less corruption, which confirms the findings of Botinha (2018), Kimbro (2002), and Malagueño et al. (2010). This result is based on the assumption that greater accounting quality impedes the concealment of acts and/or consequences of corruption, as there is greater transparency (Malagueño et al., 2010; Wu, 2005).

Hypothesis H_2, which presumed a direct and negative relationship between religiosity and corruption, could not be rejected, since a positive relationship was verified, indicating that greater religiosity is associated with a higher level of corruption, contradicting the previous findings (Armantier & Boly, 2011; Ko & Moon, 2014; Tunali & Weill, 2020). These authors identified that religiosity is negatively associated with tolerance of corruption. That negative relationship can be explained because religious leaders preach to and guide their followers to avoid corrupt (Beets, 2007; Shabbir & Anwar, 2007).

Despite the positive relationship between religiosity and corruption, the findings of the study ratify the results of previous research (Borlea et al., 2019; Gokcekus & Ekici, 2020). These results can be explained through the religious norm of punishment of misbehavior (Gokcekus & Ekici, 2020). Religious individuals may believe that evil deeds committed in this life will be punished by a higher divine power in this same life or the next one (Gokcekus & Ekici, 2020). Thus, religious people would tend not to get involved in corruption, but they may believe that they do not need to monitor other individuals' behavior, as these will be punished by the divine power (Gokcekus & Ekici, 2020). From that perspective, the low monitoring of the population has the potential to lead to greater corruption in religious countries, since managers would have greater freedom to commit such acts.

Low monitoring, which has the ability to create an environment that is more conducive to corrupt acts being carried out, may also emerge due to the collectivism present in more religious countries (Joshanloo & Gebauer, 2019). Within this setting, there would be greater trust in others, resulting in a reduction in the level of monitoring. In addition, collectivism may favor the formation of collusion, contributing to the occurrence of corruption (Paldam, 2001).

The positive relationship between religiosity and corruption may influence investors' decisions. Thus, more corrupt environments present a high cost of investments and greater uncertainties regarding the success of a venture, which deters the interest of investors (Silva et al., 2009). Hence, environments that are considered to be less corrupt incentivize national and foreign investments (Malagueño et al., 2010). Based on the information that religious countries tend to have greater corruption, investors may direct their investments toward less religious countries. In other words, countries with lower religiosity present greater economic development (Grabiński & Wójtowicz, 2019; Joshanloo & Gebauer, 2019), and countries with greater development have more resources for combatting corruption (Botinha & Lemes, 2019; Malagueño et al., 2010), in turn attracting more investors.

Hypothesis H_3, which assumed a direct and positive relationship between religiosity and accounting quality, could not be accepted, since a negative relationship was identified, signaling that greater religiosity is associated with lower accounting quality. Low monitoring of the population may enable more opportunities for managers to manipulate earnings and collectivism may favor the joint action of managers to allow and/or carry out accounting manipulations.

The results revealed a negative relationship between the control construct and corruption, indicating that countries with better economic development have more resources to combat corruption (Kimbro, 2002), that in countries where the media has freedom, governments are more transparent, consequently reducing corruption (Houqe & Monem, 2016), and that in countries with weak social bonds, accountants and auditors are more willing to report corrupt acts.

The evaluation of the mediation based on hypothesis H_4 occurred through the step-by-step analysis of the path coefficients, as proposed by Baron and Kenny (1986). For mediation to occur, three conditions should be observed. The first is that the variations in the levels of the independent variable should significantly affect the variations of the mediator. The second is that the variations of the mediator should significantly affect the alterations of the dependent variable. The third is that the independent variable should significantly affect the dependent variable in the absence of the mediating variable (Baron & Kenny, 1986; Vieira, 2009). The first and second conditions were met, according to the result presented in Table 8. To test the third condition, it was necessary to estimate the model without the mediating effect and then establish a comparison between models. When the inclusion of the mediating variable reduces the path between the independent variable and the dependent variable, partial mediation occurs, but if that reduction reaches 0, complete mediation is involved (Baron & Kenny, 1986). The results of the path coefficients are presented in Table 9.

Table 9
Results for the path coefficients and for the mediation evaluation

Path	Model without mediation[a]	Model with mediation				
	Effect	Direct effect		Indirect effect		Total effect
	Coef.	Coef.	%	Coef.	%	Coef.
Religiosity → Accounting Quality → Corruption	0.183**	0.120**	29.777	0.283	70.223	0.403**

a = The model was evaluated and no problems were identified in the measurement and structural models.
****, **, and* = significant at 1, 5, and 10%, respectively.*
Source: *Elaborated by the authors.*

It is possible to observe (Table 9) that the third condition for mediation to occur was met, that is, mediation classified as partial occurs; in other words, the inclusion of the mediating variable reduces the path between the independent variable and the dependent variable (Baron & Kenny, 1986). Thus, hypothesis H_4, which established that religiosity mediated by accounting quality negatively affects corruption, could not be accepted, since a positive relationship was identified. This means that greater religiosity is associated with lower accounting quality, which together are associated with greater corruption.

The results provide evidence to suggest that, by acting as a social norm, religiosity is incapable of improving accounting quality and of mitigating corruption, but that religiosity provides the creation of an environment that is more favorable to the occurrence of corruption. The results of the study lead to the perception that the channel through which religiosity affects accounting quality and corruption may not be the religious teachings against corruption and manipulation in the business world. This suggests that there may be other more intense religious teachings capable of influencing the proposed relationship.

Independently of the religious teaching used to explain the relationship identified, the findings prove the influence of religiosity through the population around the manager on accounting quality and on corruption. That is, religiosity is positively associated with corruption, as some studies indicate (Borlea et al., 2019; Gokcekus & Ekici, 2020), and negatively associated with accounting quality, an opposite result to the one identified in other studies (Bjornsen et al., 2019; Grullon et al., 2009; Ma et al., 2020; McGuire et al., 2012; Riahi-Belkaoui, 2004). This confirms the influence of religiosity acting as a social norm on an individual's decisions, as proposed in Social Norms Theory. However, these results should be evaluated with caution, since religious social norms are hard to measure. In addition, according to Rose-Ackerman and Palifka (2020, p. 307), "neither gender, nor religion, taken as isolated independent variables, can provide many clues about the root causes of corruption."

In order to add robustness to the results, corruption was estimated through the COR collected from the World Bank. The behavior identified was similar to the model with the CPI, ratifying the findings of the study.

5. CONCLUDING REMARKS

Considering that religiosity influences accounting quality and that this can contribute to mitigating corruption, the mediating effect of accounting quality on the relationship between religiosity and corruption was tested. The results were verified with a sample of 36 countries relating to the period from 2010 to 2014 through PLS-PM.

Based on the literature, the hypothesis that religiosity would be able to improve accounting quality and reduce corruption was tested. The results showed that the combined effect of religiosity with accounting quality on combatting corruption did not present effectiveness, indicating that greater religiosity is not associated with greater accounting quality, a scenario less conducive to the practicing of corrupt acts. The results of the research suggest that merely the fact of the social environment condemning corrupt behaviors was not enough to reduce corruption. This result would be aligned with the studies that indicate that greater religiosity is associated with greater accounting quality and greater accounting quality is associated with less corruption, as indicated in the theoretical framework.

The results of the study suggest that the existence of religious teachings can cause the opposite effect on corruption, but they do not suggest that religious people are more corrupt or that religiosity favors corruption. On one hand, there are religious teachings in favor of honesty and ethics and against irregularities that could influence individuals into acting against corruption, favoring the formation of a society that punishes corrupt acts. On the other hand, religious teachings about punishment of misbehavior and trusting others more can create a lack of monitoring in the society, enabling corruption. Trust in others may also favor the formation of collusion and facilitate the occurrence of corruption. The results of the study suggest that the lack of monitoring of society and collusion, as collateral effects of greater religiosity, present stronger effects on the social environment than religious teachings against corruption.

The results broaden the understanding of the factors that may be associated with corruption and the role of accounting as a mitigator or enabler of corruptive mechanisms. In addition, consistently with Social Norms Theory, it was revealed that the religiosity of the population around the manager impacts accounting quality and corruption. Despite Social Norms Theory supporting the studies that relate accounting with religiosity, one of the main limitations of the theory is the difficulty of measuring social norms, a limitation that is also present in the study. To try to reduce the effects of that limitation, religiosity was measured through the five dimensions of religiosity, totaling eight variables, which enabled us to more comprehensively capture the religiosity variable.

The evidence from the study should be evaluated with caution, given the complexity of the topics. Religiosity and corruption are multifaceted subjects which, besides the actual limitation of identifying and measuring them, are characterized by the difficulty of objectively identifying their causes and, consequently, their effects on other variables. In addition, the two variables refer to perceptions about the topics and, therefore, they do not represent the answers of the managers directly involved with the elaboration of the accounting statements. Conversely, the accounting quality metrics do not indicate a consensus in the literature and tend to be better outlined by a synergetic study between them.

Given the literature that discusses the topic, indicating the relationship between the corruption, religiosity, and accounting quality variables, taken two by two, this study brings to the discussion the relationship between the three variables at a macro level, encouraging new research that discusses the relationship of accounting information based on the manager's religiosity and the role of accounting in the face of corruption, as well as studying the relationship of those variables in light of other social norms, such as those of reciprocity, cooperation, honesty, and accountability.

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