



Corporate Sustainability Performance in the Context of National Cultures and State Religions: Examinations on Direct and Moderating Impacts

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Doctoral Dissertation

Corporate Sustainability Performance in the Context
of National Cultures and State Religions:
Examinations on Direct and Moderating Impacts

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Abstract

This dissertation is going to explore the impacts of national culture and state religion on corporate sustainability performance (CSP). While the existing literature has witnessed a remarkable number of studies investigating how internal factors affect firms' sustainability practices, there is scant attention paid to understand the influences of social norms and beliefs on such activities. Both the direct impacts (Analysis 1) and the indirect impacts (Analysis 2.1 and 2.2) of national culture and state religion on CSP are examined. Multiple regression analysis was applied in Analysis 1, whilst Analysis 2.1 employed fixed effect model method and Analysis 2.2 utilized moderator regression analysis. The results revealed that high power distance and masculine cultures have significant and negative impacts on CSP, while individualist, high uncertainty avoidance, long-term oriented, and indulgence societies positively influence on corporate triple-bottom-line performance. The results also indicated a strong relationship between state religions (Christianity, Buddhism, and Islam) and corporate sustainability performance. Regarding the indirect impacts, long-term orientated cultures are shown to enhance the positive relationship between board average age and CSP. Conversely, the Muslim religion substantially mitigates the positive association between board gender diversity and triple-bottom-line performance, while the remaining hypothesis that masculine cultures affect the relationship between board gender diversity and CSP was not confirmed. The study's results help to understand the effects of culture and religion on corporate behaviors, particularly corporate sustainability practices. The dissertation also provides practical implications for business leaders and policymakers in how they can promote CSP in certain cultural and religious societies.

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List of Abbreviations

CSP : Corporate sustainability performance

CG : Corporate governance

PDI : Power distance index

IDV : Individualism index

MAS : Masculinity index

UAI : Uncertainty avoidance index

LTO : Long-term orientation index

IVR : Indulgence versus restraint index

Chapter 1

Introduction

The purpose of this dissertation is to explore the influences of national culture and state religion on corporate sustainability performance (CSP). Because culture and religion are fundamental aspects of life in every country around the globe, there is great value in understanding how culture and religion affect corporate behaviors, particularly corporate sustainability performance. From the business perspective, firms operating in diverse markets/areas face different expectations from their stakeholders (Carroll, 1979); then, it is going to impact on firms' decision making processes and affect firms' structures and behaviors (Su, 2006). Hence, understanding the impacts of cultures and religions on corporate sustainable development behaviors can provide insights for corporate managers on how to predict choices and how to influence corporate sustainability performance through suitable guidelines, better structure, further education, or effective communication. For instance, managers of a multinational enterprise when opening a new branch in a country, with the understanding of cultural and religious characteristics and how they impact on CSP, managers will know the expectations of various stakeholders in such country context and have effective strategies to meet those stakeholders' needs. Furthermore, put in the context that sustainability practices around the world are still primarily on the voluntary basis and forming stage, the association between culture, religion and sustainability performance can provide suggestions for government regulatory agencies and standards-setting bodies to impose appropriate principles for sustainable development. The study's findings can help policymakers know where they should focus to improve corporate sustainability practices or limit the damages corporates may have upon societies and environments by understanding the interactions of cultural-religious characteristics and corporate behaviors. By adopting new approaches, this dissertation does not merely investigate the direct impacts of national culture and state religion on CSP, but also the moderating effects of culture and religion on the relationship between corporate governance and corporate sustainability performance. While the existing literature has witnessed a remarkable number of studies investigating how institutional factors such as corporate governance, financial performance, or ownership structure affect firms' sustainability practices, there is scant attention paid to understand the influences of social norms and beliefs on such activities. Thus, the motivations for this dissertation are twofold – to improve understanding of how culture and religion affect corporate behaviors, particularly corporate sustainability practices, and to derive practical implications for encouraging corporate sustainable development.

Defining the research topic

Sustainability or sustainable development is defined as the development for the needs of the present without compromising the ability to meet the needs of the future (Brundtland, 1987). When incorporating in institutional practices, it refers to corporate sustainability with three aspects of the economy, society, and environment (Lourenço and Branco, 2013). The history of corporate sustainability practices can be traced back to 1950s (Carroll, 2009) with several shifts of focus from social issues in 1970s to environmental issues in 1980s, and then sustainability or triple-bottom-line practices which consider the social, environmental and financial indicators simultaneously in late 1990s (Hahn and Kühnen, 2013).

On the other hand, culture is comprised of certain values that form our behaviors and perception of the world (Newman and Nollen, 1996). People from different cultures and religions will have distinguishable characteristics based on their values, traditions, norms and belief system (Gallego-Álvarez and Ortas, 2017). According to Unesco, cultures play an important role in shaping the world's sustainable development practices. In the World Culture Report 1998, Unesco described that: *"Culture shapes the way we see the world. It therefore has the capacity to bring about the change of attitudes needed to ensure peace and sustainable."* Despite such importance of cultures in sustainability practices, there remains a paucity of evidence on the influences of cultures on corporate sustainability performance, especially for the impacts of religions, which considered an essential part of the cultural system.

This dissertation aims to complement the relevant literature by simultaneously studying the impacts of national cultural dimensions and state religions on corporate sustainability performance. The national culture here refers to the distinctive set of norms, behaviors, beliefs, values, and assumptions shared by members of a nation (Starr-Glass, 2017). In the current study, national cultures are expressed as values of Hofstede's cultural dimensions which consists of six different measurements. These dimensions can quantify and provide a cultural profile for each specific country. Besides, the thesis also employs GLOBE cultural dimensions from the work of Professor House and colleagues (House *et al.*, 2004) as the substitutes for Hofstede's cultural dimensions in the robustness test.

Concerning state religion, it is defined as the official religion adopted by a country. Depending on historical context, one country may or may not have a state religion. The classification of state religions in this study is based on the World Christian Encyclopedia (as cited from Barro and McCleary, 2005), an extensive survey of world religions and a stunning achievement which has been standard references for researchers on world religions for decades (Anderson, 2002). According to McCleary and Barro (2006), the existence of state religion improves religious

participation and beliefs; thus, the presence of state religion can be used as the proxy for the level of religiosity in a country.

Research gap, rationale, and contributions of the thesis

Along with the raising of social and environmental issues worldwide, corporate sustainability performance is becoming increasingly important (Minton, Kahle and Kim, 2015). There has been also a growing body of research seeking to investigate the factors which determine corporate sustainability practices. Nonetheless, prior studies mostly focus on the influences of internal factors such as corporate governance (e.g. Johnson and Greening, 1999; Walls, Berrone and Phan, 2012; Haque, 2017); ownership structure (e.g. Neubaum and Zahra, 2006; McGuinness, Vieito and Wang, 2017); or financial indicators (e.g. Artiacha *et al.*, 2010; Khalil and O'sullivan, 2017). Little attention has been paid to understand how the informal institutions¹ including national cultures and religions affect the degree to which firms engage in triple-bottom-line performance (Thanetsunthorn, 2015). Some studies on the relevant literature examine the relationship between national culture and environmental performance (Husted, 2005; Park, Russell and Lee, 2007), social and environmental performance (Ringov and Zollo, 2007; Vachon, 2010; Ho, Wang and Vitell, 2012), but not sustainability performance which refers to all three dimensions of society, environment, and economy. Additionally, those studies utilized only four original dimensions of Hofstede's cultural framework (i.e. power distance, individualism, masculinity, and uncertainty avoidance) as the proxy for national culture. Regarding the influences of religion on CSP, there have been even fewer studies targeting this topic, probably due to the difficulties in measuring the impact of religion. Moreover, these studies investigated only a small number of samples in the regional context (e.g. Sobhani *et al.*, 2011; Du *et al.*, 2014; Abeydeera, 2016).

This dissertation attempts to complement the relevant literature by simultaneously investigating the impacts of national culture and state religion on corporate sustainability performance. By adopting new measurements/variables and approaches, this dissertation contributes to the literature in multiple aspects. *First*, it contributes to the scant literature on the influences of cultures and religions on triple-bottom-line performance using a large number of samples and observations from nearly 50 countries. *Second*, newly revised six dimensions of Hofstede's cultural framework with updated values are employed as the proxy for national

¹ Informal institutions refer to traditions, values, beliefs, social norms, and practices that define a society's culture (Escandon-Barbosa, Urbano-Pulido and Hurtado-Ayala, 2019).

culture. Prior studies often adopt only four original dimensions (i.e. power distance, individualism, masculinity, and uncertainty avoidance) with outdated values from Hofstede's books (Hofstede, 1980, 2001). *Third*, this is the first time that state religion is introduced as the measure for the level of religiosity in examining the relationship between religion and corporate behaviors. It helps to overcome the difficulties in measuring the impacts of religion and allows to investigate sample from a broader context. *Fourth*, so far as the author is aware, this is also the first study to employ percentile RobecoSAM ranking as the measure for corporate sustainability performance. The use of percentile RobecoSAM rankings provides a reliable measure for CSP and helps to access a large number of samples worldwide. *Finally*, this dissertation comprises of several analyses which examine both direct and indirect impacts of culture and religion on corporate sustainability performance. Not only the direct connections between culture, religion and CSP are examined, but also the moderating effects culture and religion have upon the relationship between corporate governance and CSP are investigated. This approach provides a more comprehensive picture of the overall influences of culture and religion upon corporate triple-bottom-line performance.

Research questions and investigative questions (sub-questions)

The overarching aim of this thesis is to explore the overall impacts of national culture and state religion on corporate sustainability performance. To do so, this thesis is going to investigate both the direct influences of national culture and state religion on CSP and the indirect influences or moderating effects of national culture and state religion on the relationship between other factors and CSP. Correspondingly, this dissertation has research questions and investigative questions (sub-questions) as follows.

Research question 1: What are the direct impacts of national culture and state religion on corporate sustainability performance?

- *Investigative question 1:*
What cultural dimensions have direct impacts on CSP?
- *Investigative question 2:*
How these cultural dimensions impact on CSP, positively or negatively?
- *Investigative question 3:*
What religions have direct impacts on CSP?
- *Investigative question 4:*
How these religions impact on CSP, positively or negatively?

Research question 2: What are the moderating effects of national culture and state religion on the relationship between corporate governance (CG) and CSP?

- *Investigative questions 5:*
What corporate governance factors have significant relationships with CSP?
- *Investigative questions 6:*
What cultural dimensions have moderating effects on the relationship between those CG factors (found in Investigative question 5) and CSP?
- *Investigative questions 7:*
How these cultural dimensions moderate the relationship between CG factors (found in Investigative question 5) and CSP, positively or negatively?
- *Investigative questions 8:*
What religions have moderating effects on the relationship between CG factors (found in Investigative question 5) and CSP?
- *Investigative questions 9:*
How these religions moderate the relationship between CG factors (found in Investigative question 5) and CSP, positively or negatively?

To picture the overall impacts of culture and religion on corporate sustainability performance, this dissertation investigates not only the direct influences of cultural dimensions and religions on CSP but also the moderating effects of cultures and religions upon the relationship between other factors and triple-bottom-line performance. The moderating effects of national culture and state religion upon the specific relationship between corporate governance factors and CSP are chosen to examine in this dissertation for several reasons. *First of all*, there are reasonable arguments for the potential moderating effects of some cultural dimensions and religions upon this CG-CSP relationship. These arguments are presented in the *Hypotheses development* part in Chapter 6 (see 6.3.1). *Second*, the connection between corporate governance factors and sustainability practices is a profound relationship that has been extensively investigated in the literature (e.g. Williams, 2003; Walls, Berrone and Phan, 2012; Hussain, Rigoni and Orij, 2018). Examining the moderating effects of culture and religion on this association can provide a deeper understanding of the overall impacts of culture-religion on CSP. *Third*, the prior studies examining the relationship between CG factors and sustainability practices presented mixed findings (Chams and García-Blandón, 2019), and none of them considered the moderating effects of cultural and religious factors. Hence, this study can also contribute to a better understanding of the relationship between CG factors and CSP. *Finally*, within the limitation of one thesis, the author may not investigate all the possible moderating effects of culture and religion; however, this dissertation chose the most potential moderating effects of national culture and state religion which can contribute to existing literature to investigate.

Research position, methodology, and findings

In this dissertation, the researcher stays upon the positivism position and utilizes the quantitative method in conducting the research. From a positivism perspective, society comprises of ‘social facts’ which exert coercive control over individuals (Durkheim, 1982). The social facts here are defined by Durkheim as the cultural norms, values, belief system and social structure that can transcend individual and exercise social control. Positivists suppose that people’s behaviors can generally be explained by the social norms and belief system they have been exposed to through their living context, i.e. social class, ethnic background, gender, etc.

The quantitative method with various research models is employed in the current thesis for objective and generalizable results. The researcher first utilizes multiple regression analysis to investigate the direct impacts of national culture and state religion on CSP. Then, to examine the moderating effects of cultural dimensions and religions upon CG-CSP relationship, two sub-analyses are conducted: the panel data analysis with fixed effect model to retest the relationship between CG factors and CSP, and the moderator regression analysis to determine the moderating effects of culture and religion upon this CG-CSP association.

The empirical results showed a significant relationship between all six cultural dimensions and corporate sustainability performance with the impact directions (i.e. positively and negatively) vary depending on cultural dimensions. State religion also demonstrates a strong significant positive relationship with CSP; in which, Buddhism and Catholic revealed highest coefficients when examining separately, whilst Orthodox showed no significant impact. In terms of moderating effects, masculinity index and Muslim religion were found to be negatively impacting the relationship between board gender diversity and triple bottom line performance, while long-term orientation index showed a positive influence on the association between board average age and corporate sustainability performance.

Thesis structure

The remaining part of this dissertation proceeds as follows. *Chapter Two* first reviews the literature on the relationship between culture, religion and corporate sustainability practices. Then, *Chapter Three* will discuss the theoretical framework employed in this thesis. Details on research methods and research models will be provided in *Chapter Four*. The main analyses addressed in this dissertation and their results will be presented in *Chapter Five* and *Chapter Six*. Afterward, in *Chapter Seven*, the author will discuss empirical findings and practical implications discovered in the present thesis, then conclude on the research problems, the remaining limitations, and potential for future studies.

Chapter 2

Literature review on the impacts of national culture and religion on corporate sustainability practices

This chapter discusses the literature on the relationship between culture, religion and corporate sustainability-related practices to demonstrate the current state of existing literature and find the research gap.

2.1. Cultures and sustainability-related practices

The focus of this thesis is corporate sustainability performance which encompasses all three aspects of the economy, society, and environment. Nonetheless, due to the paucity of studies directly investigate the relationship between national culture and corporate sustainability performance, this review is drawn upon broader literature associated with corporate social responsibility (CSR) and sustainability-related practices in general.

2.1.1. Measuring national culture

Hofstede's cultural dimensions is a well-known framework to quantitatively measure the characteristics of different cultures around the world. Geert Hofstede developed his original model, which consists of four dimensions, as a result of the factor analysis based on the IBM employee worldwide survey from 1967 to 1973. The four dimensions in the original model are power distance index (PDI), individualism index (IDV), masculinity index (MAS), and uncertainty avoidance index (UAI). The fifth dimension, long-term orientation index (LTO), was added by Geert Hofstede in 2001 based on independent research in Hong Kong (Hofstede, 2001). In 2010, Geert Hofstede joined with his son, Gert Jan Hofstede, and Michael Minkov to publish the third edition of *Cultures and Organizations: Software of the Mind*, in which they introduced the sixth dimension of the model, indulgence versus restraint index (IVR) (Hofstede, Hofstede and Minkov, 2010).

The power distance index expresses the attitude of a member in society toward the fact that not all individuals are equal. Geert Hofstede calculated this index based on the answers to the group questions of how interviewees handle the fact that people are unequal (Hofstede, Hofstede and Minkov, 2010). In high PDI societies, less powerful members of institutions and organizations tend to accept that inequalities among people are acceptable. On the other hand, in low PDI cultures, power is decentralized, managers count on the experience of their employees, and hierarchy is often for a convenient purpose only (Hofstede Insights, 2017).

The individualism index describes the degree of interdependence among each member in a society. The root differences between different cultures in terms of this index is about: the role of individual versus the role of the group. In a collectivist culture, which scoring low in this index, people act in the interests of the group they belong to rather than their own interests. In such societies, people tend to maintain long-term relationships with their ‘close group’ such as family, extended family, or their company. Conversely, in individualist societies, which scores high in this index, the interests of individuals prevail over the interests of the group. In these cultures, the relationship between employer and employee is a contract based and supposed to be replied on merit only.

The masculinity index defines the masculine and feminine characteristics of a society. This dimension discusses the social behaviors, not biological distinction, and the terms ‘masculine’ and ‘feminine’ are relative: a woman can behave in a masculine way, and a man can possess feminine behaviors (Hofstede, Hofstede and Minkov, 2010). Masculine characteristics or masculine cultures are described as the cultures that are driven by competition, material achievements and successes, whilst feminine cultures care more about the quality of life, relationships, and surrounding environments.

The uncertainty avoidance index measures how willing people in societies deal with ambiguity in the future. In high UAI cultures, people prefer to avoid unknown coming situations by strict laws, regulations, and formality. On the other hand, low UAI cultures maintain a more relaxed attitude toward life. People believe there should be no more rules than are necessary and practice counts more than principles (Hofstede Insights, 2017).

The long-term orientation index describes how societies spend their efforts towards the future versus the present and the past. While low LTO cultures prefer to maintain traditions and norms, high LTO societies tend to take pragmatic approaches to prepare for the future (Gupta and McIver, 2016).

The indulgence versus restraint index, the newest dimension in Hofstede’s framework, demonstrates the extent people try to control their natural desires and impulses (Halkos and Skouloudis, 2017). In high IVR societies, i.e. indulgence culture, individuals tend to allow their gratification of natural human desires with enjoying life and having fun. Conversely, people in low IVR societies or restrain cultures tend to curb or restrict their own desires and obey rules and social norms (Hofstede, Hofstede and Minkov, 2010).

Besides Hofstede’s cultural framework, House’s cultural framework which commonly known as GLOBE (Global Leadership and Organizational Behavior Effectiveness) is also a well-cited measure for world cultural characteristics.

GLOBE is a project conceived in 1991 by Robert J. House which dedicates academic effort in exploring the differences of culture with the involvement of 170 co-investigators from 62 different countries. The results of this research are published in 2004-book *Culture, Leadership, and Organizations*. In this book, House and other associates demonstrated nine dimensions of cultures including Performance Orientation, Uncertainty Avoidance, In-group Collectivism, Power Distance, Gender Egalitarianism, Humane Orientation, Institutional Collectivism, Future Orientation, and Assertiveness (House *et al.*, 2004). Compare to Hofstede's framework, the GLOBE study added new dimensions of assertiveness, humane orientation, and performance orientation. In addition, GLOBE also considered the individualism aspect by two separate dimensions of in-group collectivism and institutional collectivism. The comparison and accuracy between those two studies have still gained various arguments among researchers (Javidan *et al.*, 2006; Brewer and Venaik, 2011; Venaik and Brewer, 2013).

2.1.2. Existing literature on culture and corporate sustainability practices

Prior studies on the relationship between culture and sustainability-related practices can be categorized into two main themes: the relationship between culture and non-financial reporting; and the relationship between culture and sustainability performance/engagement. The former topic has received more attention from scholars in the field.

a) Culture and non-financial reporting

The relationship between culture and non-financial reporting is the more common topic discussed in the existing literature. Gray (1988), when investigating the extent to which international differences in accounting can be explained by cultural factors, proposes four hypotheses on the relationship between cultural characteristics and international accounting systems. Among those hypotheses, the fourth one discusses secrecy versus transparency. Accordingly, Gray discussed and proposed that *"The higher a country ranks in terms of uncertainty avoidance and power distance and the lower it ranks in terms of individualism and masculinity then the more likely it is to rank highly in terms of secrecy"* (Gray, 1988). The secrecy here is considered as opposed to the level of accounting reports, i.e. the higher rank of secrecy, the lower level of accounting disclosure. This discussion and hypothesis have been well-cited later by other studies (e.g. Hope, 2003; van der Laan Smith, Adhikari and Tondkar, 2005; Orij, 2010).

Mathews and Reynolds (2001), based on Gray (1988), assess sustainability and environmental accounting from the timber industry in Finland, Norway, Sweden, and the United States. They found that respondents from the Nordic countries feel

more pressure from the public for environmental disclosures than their counterparts in the United States. Finland, Norway, and Sweden are classified into Nordic group thanks to their similar values of Hofstede's cultural dimensions, which are substantially different from those of the US.

The classification of countries into groups according to their cultural dimensions is presented more clearly in the book of Gannon (2001) "*Understanding Global Cultures: Metaphorical Journeys through 23 Nations*". In this book, Gannon developed a four-stage model of cross-cultural understanding to categorize nations based on their social versus economic emphases. Building upon Hofstede's power distance index and individualism index, the second stage of this model identified four generic types of business cultures namely community sharing, market pricing, equality matching, and authority ranking. The countries like Sweden or Norway are classified as equality matching, whilst the US is a market pricing nation.

Van der Laan Smith, Adhikari and Tondkar (2005) examine corporate social disclosure in relation to three Hofstede dimensions of masculinity, power distance, and individualism, in which, the latter two are based on the aforementioned Gannon's model. Accordingly, van der Laan Smith, Adhikari and Tondkar (2005) divided countries of origin into stakeholder orientation countries, i.e. Norway and Denmark, and shareholder orientation country, i.e. the US. The study found that stakeholder orientation countries have higher levels and quality of corporate social disclosure. Van der Laan Smith, Adhikari and Tondkar also added institutional factors of corporate governance and ownership structure to their research framework and demonstrated that ownership and corporate governance stronger the stakeholder orientation in Scandinavia countries.

Hope *et al.* (2008), also based on Gray (1988), constructed the Secrecy (SEC) variable which equals $(UAI + PDI - IND)$ to test the relationship between culture and auditor choice. Using a sample from 37 countries, the study revealed companies from more secretive countries are less likely to hire a Big4 auditor.

Orij (2010) applied both the measure for secrecy proposed by Hope *et al.* (2008) and the generic types of cultures in the study of Gannon (2001) to study the association between national culture and corporate social disclosure. Two other dimensions that are not included in Hope *et al.* (2008) and Gannon (2001), i.e. the masculinity index and the long-term orientation index, were investigated separately. The results showed that corporate social disclosure is influenced by national cultures. In particular, the study revealed social disclosure is negatively related to secrecy measure, power distance, and masculinity, whilst positively associated with individualism. No significant relationship for long-term orientation index.

Motivated by Orij (2010), Mohamed Adnan, Hay and van Staden (2018) using the sample from China, Malaysia, India, and United Kingdom to test the link between national culture, corporate governance, and corporate social responsibility disclosure. Four dimensions of Hofstede's cultural framework, i.e. power distance index, individualism, uncertainty avoidance, and masculinity, were employed as a proxy for national culture. However, Mohamed Adnan, Hay and van Staden did not use specific cultural dimension values but divided countries into the high and low groups according to the cultural dimension median. The study showed that corporate social responsibility reporting is more prevalent in individualistic and low power distance countries. This study also considers the impacts of corporate governance on social responsibility reporting and revealed that social responsibility board committees enhance social reporting whilst government ownership influences reporting quality.

Some other studies published in recent years investigated the association between more dimensions of Hofstede's framework and non-financial reporting. Gallego-Álvarez and Ortas (2017) and Gallén and Peraíta (2018) both investigated all six Hofstede dimensions in relation to environmental reporting and social responsibility reporting respectively. The results of these studies, nonetheless, are slightly different. Both studies showed negative impacts of power distance (PDI), masculinity (MAS) and the positive influence of long-term orientation (LTO) on the corporate reporting level; however, the former study revealed negative impact of the sixth dimension, indulgence versus restraint (IVR), and positive effect of uncertainty avoidance (UAI); whilst the latter showed positive relationship between IVR and CSR disclosure, and no significant association for UAI.

b) National culture and sustainability performance/engagement

There has been a paucity of studies directly investigate the relationship between national cultures and corporate triple-bottom-line performance which refers to all three dimensions of economy, society, and environment. Prior studies often targeted only one or two aspects of sustainability performance such as social performance or environmental performance.

Husted (2005) and Park, Russell and Lee (2007) both examined the relationship between four original dimensions of Hofstede's cultural framework, i.e. power distance, individualism, masculinity, uncertainty avoidance, and environmental performance. They presented different results, nonetheless. While Husted (2005) found negative relationships between PDI, MAS and environment index, and positive relationship for IDV, Park, Russell and Lee (2007) only identified negative influences from PDI and MAS.

Ringov and Zollo (2007), Vachon (2010), and Ho, Wang and Vitell (2012) studied the influences of four abovementioned cultural dimensions on corporate social and environmental performance. Ringov and Zollo (2007) demonstrated negative impacts of all four dimensions on social and environmental indexes, whilst Ho, Wang and Vitell (2012) found positive effects from PDI, MAS, UAI, and negative effect for IDV. The results from Vachon (2010) only significant for IDV and UAI with positive and negative influences respectively. Ringov and Zollo (2007) further employed GLOBE cultural dimensions from House et al. (2004) for the robustness test. Their main findings are confirmed with GLOBE measures.

Prior to Ringov and Zollo (2007), Waldman et al. (2006) also utilized three GLOBE dimensions of institutional collectivism, in-group collectivism, and power distance as the cultural predictors of top CSR management in 15 countries. Their results revealed that institutional collectivism is positively related to CSR, whilst power distance has negatively influence and no significant relationship for in-group collectivism.

Another study analyzed the impacts of cultures on CSR engagement is Peng, Dashdeleg and Chih (2012). In this study, CSR engagement is measured by if the firms belong to Dow Jones Sustainability Indices or not. Their sample collected from 25 countries with 1,189 companies. They reported negative relationships between the dependent variable and PDI, MAS, and positive association with IDV, UAI. On the other hand, Thanetsunthorn (2015) focused on three categories of CSR activities namely employee, community, and environment. Based on 3,055 samples from 28 countries, they found companies from high PDI, IDV, and MAS cultures exhibit less concern about social issues, whilst companies from high UAI cultures caring more about community and environment.

Only two recent studies, Halkos and Skouloudis (2017) and Thanetsunthorn and Wuthisatian (2018) assessed the association between all six dimensions in Hofstede's framework and corporate social responsibility practices. Two newly added dimensions are long-term orientation (LTO) and indulgence versus restraint (IVR). In 2017-study, Halkos and Skouloudis constructed a national CSR index based on the number of companies subscribed to 16 international CSR initiatives, corrected for GDP PPP. The results demonstrated positive and significant impacts of LTO, IVR on national CSR index, whilst UAI has a negative influence, and no significant results for PDI, IDV, and MAS. In the 2018-study, Thanetsunthorn and Wuthisatian investigated the relationship between six dimensions and CSR practice toward employees with three aspects of compensation and benefits; diversity and labor rights; and training, safety, and health. Based on findings, they offered the cultural configuration models which support CSR activities fit with three abovementioned aspects.

2.2. Religions and corporate sustainability-related practices

To date, the relationship between religions and corporate sustainability-related practices has received scant attention in the research literature. The reason for this is probably due to the difficulty in measuring religious impacts.

2.2.1. Measuring religiosity

Unlike culture, there is no generally accepted measure for religiosity. Prior studies adopted various self-developed measures to assess religious impacts. Du *et al.* (2014) did a quite interesting study while they calculate the level of religiosity by measuring the distance and number of monasteries in the area with the argument that geographic dissemination has special information content. The number of adherents in an area is also a measure for religiosity employed by several scholars (Cui, Jo and Velasquez, 2019; Zolotoy, O'Sullivan and Chen, 2019).

Some other researchers concern only on the religious belief of the firms' executives or firms' owners. The religious viewpoints of the corporate executives and owners can be collected by direct interviews (van der Duijn Schouten, Graafland and Kaptein, 2014; Abeydeera, 2016; Khalil and O'sullivan, 2017), or questionnaires and surveys (Agle and Van Buren, 1999; Longenecker, McKinney and Moore, 2004; Thoradeniya *et al.*, 2015).

Content analysis is also a method utilized by researchers when studying the influences of religion on sustainability-related practices. By analyzing annual reports and other published documents, researchers aimed to find evidence of religious principles, teaching, etc. which impacts on the firms' sustainability practice engagement. This method was often seen in the studies examining the relationship between religions and non-financial disclosure (Mohammed *et al.*, 2009; Sobhani, Amran and Zainuddin, 2012; Kamla and Rammal, 2013; Abeydeera, Tregidga and Kearins, 2016)

2.2.2. The existing literature on religion and corporate sustainability practice

The profound relationship between world religions and ecology has been pointed out by some researchers (Kinsley, 1995; Barnhill and Gottlieb, 2001). Nonetheless, the association between religions and corporate sustainability-related practices has received scant attention in the research literature.

a) Buddhism and corporate sustainability practices

Du *et al.* (2014) did a quite interesting study to answer the question of whether and how Buddhism, China's most influential religion, affects corporate environmental responsibility. The sample of the study all Chinese A-share listed firms in polluting industries, and to measure the independent variable effect of Buddhism on corporate environmental responsibility, Du *et al.* calculated the number and

distance of Buddhist monastery in the area of sample companies based on rationale from previous studies that geographic dissemination has special information content. The results of this study show strong and robust evidence that Buddhism is significantly positively associated with corporate environmental reporting. Buddhism in the context of Sri Lanka also show some degree of influence on managers' beliefs to engage in sustainability reporting practice (Thoradeniya *et al.*, 2015). Nonetheless, Abeydeera, Tregidga and Kearins (2016) revealed surprisingly little evidence of Buddhist principles and values in the corporate sustainability reports among award-winning corporations in Sri Lanka.

b) Islam and corporate sustainability practices

Kamla and G. Rammal (2013) using content analysis examined annual reports and websites of 19 Islamic banks across Asian countries and found one of the driver motive social disclosure is that Islamic banks claim to build on Sharia (Islamic law) teachings, of which the main purpose is the attainment of social justice. Similarly, Sobhani *et al.* (2011) posited that Islamic principles have a significant influence on the CSD practices of Islamic banks in Bangladesh. In another study, Sobhani, Amran and Zainuddin (2012) showed that Islamic banks disclose more sustainability information in comparison to conventional banks in both annual reports and websites. Mohammed *et al.* (2009) when examines the practice of disclosing sustainability information among the Malaysian Shari'ah-Compliant listed companies, which represented 87% of the total listed companies on Bursa Malaysia website; nonetheless, found that those companies did not clearly disclose the items under Shari'ah compliance index and called for mandatory rules and regulation to disclose sustainability-related information. Khalil and O'sullivan (2017) also found no clear relationship between the Muslim religion of the main owners and the level of internet social and environmental reporting at Lebanese banks.

c) Christianity and corporate sustainability practices

There is a great diversity of Christian denominations. However, it is generally accepted by most Christians that there are three main denominations including Catholic, Orthodox ², and Protestant (Rhodes, 2005). These Christian denominations (branches) are identified by traits such as leadership, origination, doctrine, and liturgy. Regarding the literature on Christianity and sustainability practices, few studies examined Christianity as a whole; Protestant; Catholic in

² Orthodox comprises of Eastern Orthodox and Oriental Orthodox. Protestant encompasses many smaller categories.

relationship with corporate sustainability practices, but no studies on Orthodox and CSP are witnessed.

Agle and Van Buren (1999) claimed to be the first study employed empirical data to quantify the relationship between religion and business ethics. The results showed that religious practice and Christian beliefs have weak impacts on the attitudes towards corporate social responsibility. The study's sample, nonetheless, is only students from a specific Midwestern business school in the US.

Longenecker, McKinney and Moore (2004) later conducted a questionnaire survey of business managers and professionals in the United States and found that respondents who have a higher level of religious interests or who are Evangelical Christians showed a higher level of ethical judgment in business decisions.

Also utilizing questionnaire surveys and in-depth interviews, but with Dutch executives, van der Duijn Schouten, Graafland and Kaptein (2014) found that CSR attitudes mediate the influence of Christian religiosity on CSR behavior. Particularly, intrinsic religiosity has a positive influence on the ethical CSR attitude and negative impacts on the financial CSR attitude, whilst extrinsic religiosity stimulates the philanthropic CSR manner.

Utilizing data from American Religion Data Archive (ARDA), Cui, Jo and Velasquez (2019) measure Christian religiosity by dividing the number of adherents residing in a particular county by the total number of residents in that county in the United States. They focused on three Christian denominational groups namely Catholics, mainline Protestants, and evangelical Protestants. The results of this study showed that Catholic and mainline Protestant religiosity have a positive impacts on corporate community involvement, whilst evangelical Protestant religiosity does not. On another study, Sabbaghi and Cavanagh (2015) also found that Catholicism has a positive link with sustainability practices by examining a Catholic Jesuit university.

d) Other study topics

Zolotoy, O'Sullivan and Chen (2019) have a similar approach to Cui, Jo and Velasquez (2019) in measuring religiosity, i.e. the rates of religious adherents in a county; however, this study aims to explore the influences of religions on the relationship between CSR and firm value. In other words, Zolotoy, O'Sullivan and Chen (2019) studied the moderating effects of religious norms on the association between CSR and firm value. The study results showed that strong local religious norms diminish the positive impacts of CSR on firm value.

Studies on the attitude of individuals toward sustainability-related practices in relation to religiosity presented mix findings. Using the survey with over 17,000 individuals from 20 countries, Brammer, Williams and Zinkin (2007) found no

prioritization from religious individuals for corporate social responsibility. Minton, Kahle and Kim (2015), nonetheless, based on South Korean and US samples showed that more religious consumers tend to participate more in sustainable behaviors such as buying eco-friendly products, organic products, or waste recycling.

2.3. Research gap

Current literature on the determinants of corporate sustainability practices primarily focuses more on internal factors such as corporate governance; ownership structure; or financial indicators (Thanetsunthorn, 2015; Trinh, 2019). Little attention has been paid to understanding how informal institutions such as cultures and religions affect the degree to which firms engage in triple-bottom-line performance.

Among those studies examine the relationship between national culture and corporate sustainability practice, more attention has been paid to the link between cultural dimensions and non-financial disclosure. There are also some studies investigating the relationship between national culture and environmental performance (Husted, 2005; Park, Russell and Lee, 2007), social and environmental performance (Ringov and Zollo, 2007; Vachon, 2010; Ho, Wang and Vitell, 2012), but not sustainability performance which refers to all three dimensions of society, environment, and economy. Additionally, those studies often utilize only two, three, or four original dimensions of Hofstede's cultural framework (i.e. power distance, individualism, masculinity, and uncertainty avoidance) with the values taken from somehow outdated sources of Hofstede's published books (Hofstede, 1980, 2001). Regarding the influences of religion on sustainability-related practices, there have been even fewer studies targeting this topic, probably due to the difficulties in measuring the impact of religion. No prior studies in the field targeted the relationship between religions and corporate sustainability performance, there are only studies addressing the association between religiosity and non-financial disclosure or the decisions to engage in CSR practices from corporate managers. Moreover, these studies investigated only a small number of samples in regional contexts (e.g. Sobhani *et al.*, 2011; Du *et al.*, 2014; Abeydeera, 2016).

Chapter 3

Theoretical Framework

This dissertation attempts to fill in the gap in the literature by simultaneously investigating the impact of national culture and state religion on corporate sustainability performance. It employs institutional theory and stakeholder theory as the theoretical framework to explain the influences of cultural dimensions and state religions on triple-bottom-line performance. While the institutional theory is utilized to explore the process of how cultures and religions impact on corporate sustainability practice, the stakeholder theory is useful to predict what relationship each cultural dimensions has with CSP.

3.1. Institutional theory

The institutional theory stands on neo-institutional theory to explain the process of how national cultures and religions impact on corporate sustainability practices. According to neo-institutionalism, one entity in a population tend to resemble other entities which are under the same environments. The main cause of this organizational practice change is the legitimate rationale.

It is well accepted that neo-institutional theory was born in 1977 (Alvesson and Spicer, 2019) with two publications of Meyer and Rowan (1977): *Institutionalized Organizations: Formal Structure as Myth and Ceremony* and Zucker (1977): *The Role of Institutionalization in Cultural Persistence*. These two papers were later joined by DiMaggio and Powell (1983): *The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields*, forming the heart of the neo-institutional theory. The fundamental argument under neo-institutional theory is that corporations adopted new structures and practices not because they were essentially effective or efficient but on the grounds of legitimacy. Accordingly, organizations will change their structures or operations to conform to external expectations about what forms or structures are acceptable. The differences between institutional theory and legitimacy theory, wherein managers are supposed to have abilities to alter perceptions of legitimacy (perhaps through disclosures), is that managers under institutional theory are expected to conform with “norms” that are largely imposed upon them.

DiMaggio and Powell (1983) analyzed isomorphisms to describe the institutional process. Accordingly, this process is made through three mechanisms: coercive isomorphism, mimetic processes, and normative pressures. *Coercive isomorphism*

stems from political influence and the problem of legitimacy. It results from both formal and informal pressures exerted on corporations by other entities upon which they are dependent and by cultural norms and belief systems in the society within which corporations operate. Particularly, coercive isomorphism can be considered as the results of the: (1) government mandate such as environmental regulations, tax law requirements, etc.; (2) the centralization: standard performance criteria are not necessarily imposed on subsidiaries, but it is common for subsidiaries to adopt accounting practices, performance evaluations, and budgetary plans that are compatible with the policies of the parent corporation; and (3) the dependence: a variety of service infrastructures, often provided by monopolistic firms, for example, telecommunications and transportation – exert common pressures over the organizations that use them, or it can be the charity organizations altered and homogenized the structures, method, and philosophies of the social service agencies that depended upon them for support. In terms of sustainability practices, corporations receive formal pressures from governments and other regulatory schemes such as accounting standard boards. The informal pressures come from cultural and religious expectations of the society upon which corporations operate. The informal pressures, sometimes, may become stronger in societies that have strict cultures and religions. *Mimetic processes* appear in the presence of uncertainty. When new coming technologies are poorly understood, when goals are ambiguous, or when there are uncertainty symbols in the environment, corporations tend to model themselves on other entities that are considered more legitimate or successful. Models may be diffused unintentionally, indirectly through employee transfer or turnover, or explicitly by organizations such as consulting firms or industry trade associations. Innovation can also be accounted for organizational modeling. In ambiguous times, cultural norms and religious beliefs, which normally considered stable for a long time, are reliable references for institutional changes in such periods. *Normative pressures* stem mainly from professionalization with education and occupational network. The forming of cultural norms and religious beliefs come to people from the early stages of their life and reside with them for a durable time. The mechanisms of personnel turnover and filtering make human resources become an important source to express the impacts of cultures and religions on institutional practice, and corporate sustainable development engagement is not outside of this.

3.2. Stakeholder theory

Stakeholder theory, which initially developed by Freeman (1984), defined stakeholders as “*any group or individual who can affect or is affected by the achievement of the organization’s objectives*”. Its concept is to extend the visions

of management on its roles and responsibilities. Accordingly, stakeholder theory claims that management duties should not merely focus on the benefits of shareholders, but to include the interests of all appropriate stakeholders.

Stakeholder theory is one of the societal systems-based theories (Orij, 2010). After the landmark book of Freeman: *Strategic Management: A Stakeholder Approach* (1984), many other authors further discussed and emphasized on stakeholder theory. One of them is Donaldson and Preston (1995). In this paper, Donaldson and Preston classified stakeholder theory into three aspects: descriptive, instrumental, and normative. In the descriptive aspect, stakeholder theory is used to describe and explain specific corporate characteristics and behaviors such as the nature of the businesses, the way board members think about the interest of organization constituencies, or the way firms are actually managed. The instrumental aspect of stakeholder theory is utilized to detect the links, or lack of links, between the corporate stakeholder management and traditional objectives, i.e. financial growth and profitability. In the third aspect, normative, stakeholder theory is used to explain the purposes of the corporation, including the moral function.

In this dissertation, the descriptive and instrumental aspects of stakeholder theory are applied. From the descriptive perspective, because of different norms, values, and system beliefs, which based on diverse cultural and religious systems, stakeholders from different countries/areas have dissimilar expectations about corporate behaviors (Carroll, 1979). As Tsakumis (2007) describes national cultural dimensions explain similarities and differences of the human mind programming, which differentiate societies worldwide. This rationale suggests an existing relationship between cultural dimensions, stakeholder preferences, and corporate behaviors and performance (Gallego-Álvarez and Ortas, 2017). The *instrumental viewpoint*, on the other hand, can explain the link between stakeholder management practices and the achievement of corporate common goals. As Gao and Bansal (2013) indicate, the ground of the instrumental aspect of stakeholder theory is that corporations will be effective and successful, as shown in their profitability and growth when they implement stakeholder management. On the other words, stakeholder theory implies that the benefits to all stakeholders with sustainable development activities are intrinsic values that help the firm keep on with its leverage and growth (Nega, 2017)

In addition to descriptive and instrumental perspectives discussed above, this dissertation is also based on the argument that the long-term success and survival of a company rely on the support from its stakeholders, and the dialogue between management and stakeholders is very important for gaining this support (van der Laan Smith, Adhikari and Tondkar, 2005). Thus, under conditions which support the open dialogue between corporate management and its stakeholders, concern and

pressure for corporate sustainability practices from stakeholder are expected higher, then the better firms' sustainability performance. Conversely, in societies which there are multiple hierarchies and the conversations between management and stakeholder are limited, less concerns and pressure exert upon corporate managers for sustainable development; hence, the corporate sustainability performance is expected of poorer quality. The open or close dialogues between management and stakeholders are directly related to specific cultural characteristics.

The application of stakeholder theory and institutional theory are further discussed in *Hypotheses Development* parts of analysis one and analysis two.

Chapter 4

Research Methodology

4.1. Research framework

To fulfill the research aim of exploring the overall impacts of national culture and state religion on corporate sustainability performance, and answering to two central research questions, several analyses are conducted correspondingly.

First, *Analysis 1* employed a multiple regression model to answer the question of what cultural dimensions and religions have direct impacts on corporate sustainability practice. For the first time, cultural factors and religious features are combined in assessing the influences of culture and religion at the national level on the practices of corporate sustainability. Prior studies usually investigate those issues separately. However, as culture and religion are closely interrelated, examining one aspect without the other would be not completely accurate.

The second question concerning the moderating effects of national culture and state religion on the CG-CSP relationship is answered by analysis two with two sub-analyses. *Analysis 2.1* is going to identify which CG factors have a significant relationship with CSP. To provide more accurate results and control for time-invariant factors including culture and religion, panel data analysis with the fixed effect model is employed in this analysis. Then, in the *Analysis 2.2*, moderator regression analysis is utilized to examine the moderating effects of national culture dimensions and state religion on the association between CG factors identified in the above analysis and corporate triple bottom line performance.

The stakeholder theory and institutional theory are utilized as the theoretical framework for the current study. All the analyses are based on a quantitative approach using samples in the global context. Quantitative analyses in this dissertation are conducted with the help of SPSS Statistics software version 25.0 and the integrated software package STATA version 14.1. This quantitative method with the global context samples matches with positivism position of the author in this dissertation and can help to provide objective, representative, and generalizable results.

Figure 1 below demonstrated the research framework in the present dissertation.

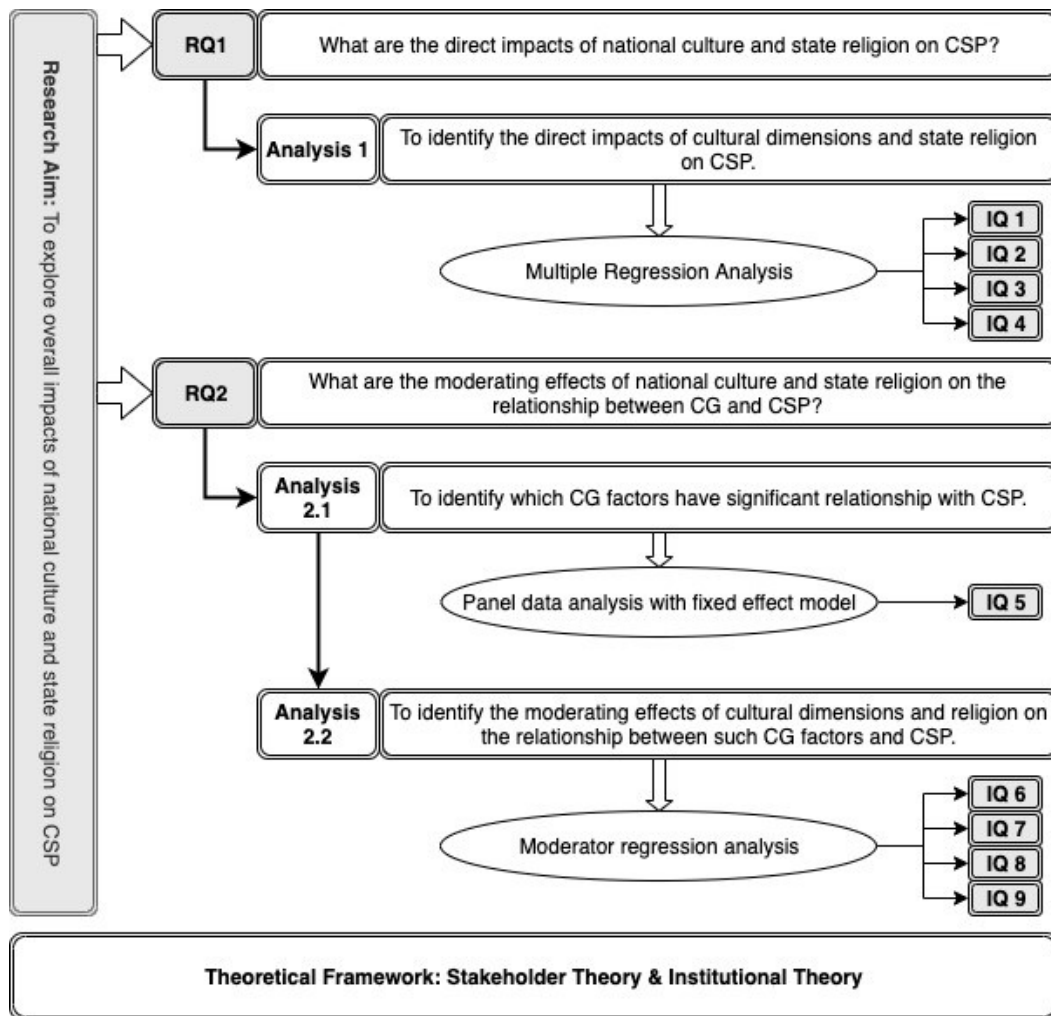


Figure 1: Research Framework

Notes: RQ – Research question; IQ – Investigative question (sub-question)

4.2. Variables measurement and data collection

4.2.1. Corporate sustainability performance

RobecoSAM has been conducting annual Corporate Sustainability Assessment since 1999 using industry-specific questionnaires for companies from 60 different industries. Each year, the largest 2,500 publicly traded companies around the world are invited to participate in the Assessment. Top 10% of the companies in each industry are then selected for inclusion in the well-known Dow Jones Sustainability Indices (DJSI) (RobecoSAM, 2018). Additional companies are also invited to participate in RobecoSAM's Assessment to possibly include in the regional and country-specific sustainability indices such as DJSI North America; DJSI Europe; DJSI Asia Pacific; and DJSI Emerging Market.

Invited companies are examined based on a range of financially relevant sustainable criteria covering the social, environmental and economic dimensions. They then receive a Total Sustainability Score ranging from 0 to 100 and are ranked against other firms in their industry. All 60 industries derived from Global Industry Classification System are included in the annual Corporate Sustainability Assessment of RobecoSAM. According to the Rate the Raters, a multi-phase research program launched by SustainAbility since 2010, RobecoSAM has been by far the most frequently mentioned as the highest quality and usefulness ratings by 300 sustainability professionals among other ESG ratings available in the market (Wong *et al.*, 2019). More detailed calculation methodology of the RobecoSAM percentile ranking is provided in Appendix 1.

Undeniably, the RobecoSAM ranking is one of the most reliable measures for corporate sustainability performance. RobecoSAM assessment results have also been employed in the literature to assess firms' sustainability practices (*see* Chams and García-Blandón, 2019). However, prior studies when employed results from the RobecoSAM Corporate Sustainability Assessment only using a dichotomous variable of whether the company belongs to Dow Jones Sustainability Indices or not (e.g. Baskin, 2006; Artiacha *et al.*, 2010; Chams and García-Blandón, 2019). The reason for this limitation is probably laid on the restriction of result publicity. Each year, RobecoSAM assessed thousands of companies around the world on their sustainability practices; nonetheless, only DJSI component lists, which include the name of the top 10% companies in each industry, are published widely. Only since 2016, percentile rankings of all assessed companies by RobecoSAM are available on the Bloomberg database platform for its subscribers. These are the percentile rankings range from 0 to 100 of all companies participated in the RobecoSAM Corporate Sustainability Assessment program annually. These data are updated to Bloomberg Terminal periodically since September 2016.

This dissertation employs RobecoSAM percentile rankings as the proxy for firms' sustainability performance. As far as the author is aware, this is the first study to utilize the detailed RobecoSAM percentile ranking ranging from 0 to 100 as the measure for firms' triple bottom line performance. This allows assessing the sustainability performance of a wide range of companies around the world with highly reliable and detailed scores. Data for percentile RobecoSAM ranking are collected from Bloomberg Database.

4.2.2. National culture

Geert Hofstede defined culture as "*the collective programming of the mind*" (Hofstede, 1980, p. 13). He started his work on national culture in the late 1960s.

His original model consists of four dimensions, i.e. power distance index (PDI), individualism index (IDV), masculinity index (MAS), and uncertainty avoidance index (UAI), developed based on factor analysis results of the IBM employee worldwide survey from 1967 to 1973. This work was later published in 1980-book *Culture's Consequences*. The fifth dimension, long-term orientation index (LTO), was added by Geert Hofstede in 2001 based on independent research in Hong Kong (Hofstede, 2001). In 2010, Geert Hofstede joined with his son, Gert Jan Hofstede, and Michael Minkov to publish the third edition of *Cultures and Organizations: Software of the Mind*, in which they introduced the sixth dimension of the model, indulgence versus restraint index (IVR) (Hofstede, Hofstede and Minkov, 2010).

Previous studies apply Hofstede's cultural framework mainly adopted dimension values from Hofstede's books (Hofstede, 1980, 2001; Hofstede, Hofstede and Minkov, 2010), which somehow outdated. Orij (2010) claimed that, over time, developing countries might experience national culture changing. In addition, the number of countries evaluated in Hofstede's books is limited. Hofstede (1980) provides national cultural dimensions for around 40 countries. Hofstede (2001) assesses 53 countries for the first four dimensions and only 23 countries for the fifth index. The updated version of *Cultures and Organizations: Software of the Mind* in 2010 expand the evaluation to 76 countries for the first four dimensions and 93 for the newly updated sixth dimension of indulgence; however, the number of countries which are assessed for the fifth dimension is still only 23.

For this dissertation, data for Hofstede's national culture dimensions are collected from Hofstede Insights at <https://hofstede-insights.com>. Hofstede Insights was created in 2017 and serves as a preferred partner with Professor Hofstede to enable the use of culture in academic research for the business world. Compare to national cultural dimension values provided in Hofstede (1980), Hofstede (2001), and Hofstede, Hofstede and Minkov (2010), data from Hofstede Insights have been updated, especially for the fifth dimension LTO, which largely different from Hofstede books' values. Furthermore, data in Hofstede Insights is available for more than one hundred countries, which is adequate for the global context targeted in this thesis.

4.2.3. State religion

The state religion is defined as the official religion adopted by a country. Depending on the historical context and other factors, one country may or may not have a state religion. In this dissertation, the presence or not of state religion in a country relies on the classification of Barro and McCleary (2005) for the year 2000. Barro and McCleary (2005) categorize the official state religion of 188 countries as an all-or-

nothing choice at three dates: 1900, 1970, and 2000. This classification comes primarily from the World Christian Encyclopedia, an extensive survey of world religions (Barrett, 1982; Barrett, Kurian and Johnson, 2001). Though there are still controversies surrounding state religions in some cases such as Italy, Portugal, or Spain (Barro and McCleary, 2005), World Christian Encyclopedia was still a stunning achievement and has been standard references for researchers on world religions for decades (Anderson, 2002). Barro and McCleary (2005) by itself is also influential research which has been cited 379 times as statistics from Google Scholar (until October 2019). Hence, those studies can be considered as reliable sources for the classification of state religion in the investigating countries.

4.2.4. Other variables

Other variables including corporate governance factors and control variables are collected from the related database. Particularly, at the corporate level, variables are collected from the Bloomberg database on the maximum of data available basis. At the country level, the control variable of GDP per capita is collected from the World Bank database. Data for corporate governance factors and control variables are lagged by one year compared to the data of the dependent variable (CSP).

Details of the sample, research models, and results of *Analysis 1* and *Analysis 2* are presented in Chapter 5 and Chapter 6 respectively. Chapter 5 presents Analysis 1 with the Hypotheses development, Research design, Results, and Robustness tests; whilst Chapter 6 presents Analysis 2.1 and Analysis 2.2 separately in Part 6.3 and Part 6.4 respectively.

Chapter 5

The direct impacts of national cultures and state religions on corporate sustainability performance (Analysis 1)

This analysis aims to examine the direct impacts of national cultures and state religions on corporate sustainability performance. For the first time, newly revised six dimensions of Hofstede's cultural framework and state religions are combined in assessing the impacts of cultures at the national level on the practices of corporate sustainability. The hypotheses for these relationships are formed based on the theoretical framework consists of institutional theory and stakeholder theory. Multiple regression analysis is applied to the sample from 49 countries. The findings make contributions to a deeper understanding of corporate sustainability behaviors in the context of different cultures and religions. The study also offers implications for practitioners regarding sustainability practices in the global setting.

5.1. Hypotheses development

Hofstede's cultural framework which consists of six different dimensions is employed to measure the impacts of national culture; whilst the presence or not of state religion is used as the proxy for the level of religiosity.

5.1.1. Hofstede's cultural dimensions and sustainability performance

The original Hofstede's cultural framework consists of four dimensions of power distance, individualism, masculinity, and uncertainty avoidance which are presented in 1980 (Hofstede, 1980). The fifth and sixth dimensions, i.e. long-term orientation and indulgence, are added in 2001 and 2010 respectively (Hofstede, 2001; Hofstede, Hofstede and Minkov, 2010).

a) Power distance index - PDI

This index expresses the attitude of people in society toward the fact that not all individuals are equal. In high PDI culture, people tend to accept the hierarchy and inequality without complications. In such societies, communication between owners and managers, employers and employees, sellers and customers are all decreased. Accordingly, pressures for sustainable development from society decline and dialogues for sustainability initiatives are narrowed down. Thus, a negative relationship between PDI and sustainability performance is expected.

H1: Corporates based in countries with higher power distance index exhibit a lower level of sustainability performance.

b) Individualism index - IDV

The root of this index is about the role of the individual versus the role of the group. Individualism is defined as a society in which each individual is supposed to look after and take responsibility primarily for his or her own interest or his/her immediate family. On the other hand, in collectivist cultures, people from birth onward are integrated into strong, cohesive 'in-groups' which take care of them in exchange for loyalty. Ringov and Zollo (2007) argued that high individualistic societies focus more on self-interest; thus, firms in such societies illustrate less concern about the broader impacts of their business on society. Thanetsunthorn and Wuthisatian (2018) share this opinion when argued that companies in high IDV cultures are less sensitive to employee welfares and their primary objective is all about profit maximization. Indeed, Hampden-Turner and Trompenaars (1997) showed evidence that firms in individualistic countries often place shareholders' interests ahead of other stakeholders', and recognize that the interest of shareholders and investors is a primary responsibility of a firm. Thus, based on previous literature, a negative relationship between IDV and CSP is expected.

H2: Corporates based in countries with higher individualism index exhibit a lower level of sustainability performance.

c) Masculinity index - MAS

This index is not about the gender of men and women in the physical term. Instead, it discusses masculine and feminine characteristics. In masculine societies, individuals prioritize competition, achievement, and success; whilst, feminine societies value other qualities of life such as relationship, corporation, and caring. People in feminine societies, which mean low in masculinity index, stay in harmony with their existing environments and societies in which they are surrounded. Thus, a negative relationship between MAS and CSP is expected.

H3: Corporates based in countries with lower masculinity index exhibit a higher level of sustainability performance.

d) Uncertainty avoidance index – UAI

Uncertainty avoidance index measures how willing people in societies deal with ambiguity in the future. In high UAI cultures, people prefer to avoid unknown coming situations by strict laws, regulations, code of conduct, and formality. A major uncertainty for modern life is the possible damages caused to society and the natural environment by corporations operating within it. Therefore, people in high UAI countries are supposed to require more sustainability practices and will exert pressures on organizations for such practices. On the contrary, low UAI cultures favor informality, flexible and risk-taking actions. Those behaviors may highly

correlated to unethical actions (Rallapalli *et al.*, 1994). Thus, a positive relationship between UAI and CSP is expected.

H4: Corporates based in countries with higher uncertainty avoidance index exhibit a higher level of sustainability performance.

e) Long-term orientation index – LTO

The fifth dimension in Hofstede's framework describes how societies spend their efforts towards the future versus the present and the past. While low LTO cultures prefer to maintain traditions and norms, high LTO societies tend to take pragmatic approaches to prepare for the future (Gupta and McIver, 2016). Gallego-Álvarez and Ortas (2017) argue that pragmatic cultures are more connected with a stakeholder or social approach; thus, a positive relationship between LTO and corporate sustainability performance is expected.

H5: Corporates based in countries with higher long-term orientation index exhibit a higher level of sustainability performance.

f) Indulgence versus restraint index – IVR

The newest dimension in Hofstede's framework demonstrates the extent people try to control their natural desires and impulses (Halkos and Skouloudis, 2017). In high IVR societies, i.e. indulgence culture, individuals tend to allow their gratification of natural human desires with enjoying life and having fun. Conversely, people in low IVR societies or restrain cultures have a tendency to curb or restrict their own desires and obey rules and social norms (Hofstede, Hofstede and Minkov, 2010). This dimension, at first, seems to have no relationship with corporate sustainable development practice. However, the study of Hofstede, Hofstede and Minkov (2010) shows that there is a strong correlation between indulgence and freedom of speech, which means indulgence society has a strong priority for open communication. This helps to unlock the communication between stakeholders and corporate management on sustainability practices. Also, in such society, stakeholders can exert their pressure on corporations for sustainable development via various media channels. Thus, a positive relationship between IVR and corporate sustainability performance is expected.

H6: Corporates based in countries with higher indulgence index exhibit a higher level of sustainability performance.

5.1.2. State religions and sustainability performance

To date, several studies have shown initial evidence on a positive relationship between religions and sustainability practices (e.g. Kamla and Rammal, 2013; Du

et al., 2014; Cui, Jo and Velasquez, 2019). In fact, teaching across three major religions, i.e. Christianity, Muslim, and Buddhism, are highly related to sustainable development practice.

Christianity is a religion based on the idea that God created the heavens and the earth, and the respect for the world shows respect to God. Humans are also considered as God's stewards of the Earth. The teaching related to sustainable practices is also appeared in the Bible, sacred texts of Christianity: "*You shall not pollute the land in which you live... You shall not defile the land in which you live, in the midst of which I dwell, for I the Lord dwell in the midst of the people*" (Bible, number 35:33-34 as cited from Newman, 2016). There are three main denominations of Christianity namely Protestant, Catholic, and Orthodox. These Christian denominations are identified by traits such as leadership, origination, doctrine, and liturgy, but all share the fundamental characteristics of Christianity.

Similarly, Islam is also originated from Abrahamic tradition, which based on the belief that the world was created by God (Allah). In fact, both Christianity and Islam claim that their main teaching and message aims to advance social justice in societies (Kamla and Rammal, 2013). In Quran, the central religious text of Islam, two words are utilized for social justice. '*Qist*' refers to right relations between humans and humans, and humans and the other creations, whilst '*Adl*' informs "*the action of Allah to place everything in its rightful place*" (Mirakhor and Askari, 2010, p. 64 as cited from Kamla and Rammal, 2013).

Buddhism, which differs from the two abovementioned religions, is based on the teaching of Buddha, a historical man who reached perfect enlightenment. There are plenty of texts describing the relationship between Buddhism and sustainability (e.g. Kovács Gábor, 2011; Sraman, 2014; Grogan, 2016). Indeed, the Buddhist teaching is highly related to sustainable development. Buddhist followers are asked to practice four immeasurable states of universal love, compassion, sympathetic joy, and equanimity. In which, universal love is the exercise of suffusing one's own love to everyone and everything in the universe (Sraman, 2014). By extension, Buddhist followers apparently do well to engage in sustainable practices such as preventing pollution, cleaning up rubbish, protecting the environment, and using natural resources while sustaining them for future generations (Sraman, 2014).

In this study, the connection between state religion and corporate sustainability performance is proposed based on two main arguments. On the one hand, the teachings in three main religions (Christianity, Islam, Buddhism) as discussed above suggest a positive relationship between religions and sustainability practices. On the other hand, prior studies in religious literature showed that the presence of state religion improves religiosity or religious participation and beliefs (McCleary and Barro, 2006). Thus, taken together the author hypothesizes that:

H7: There is a positive relationship between the presence of state religions (Christianity, Islam, Buddhism) and corporate sustainability performance.

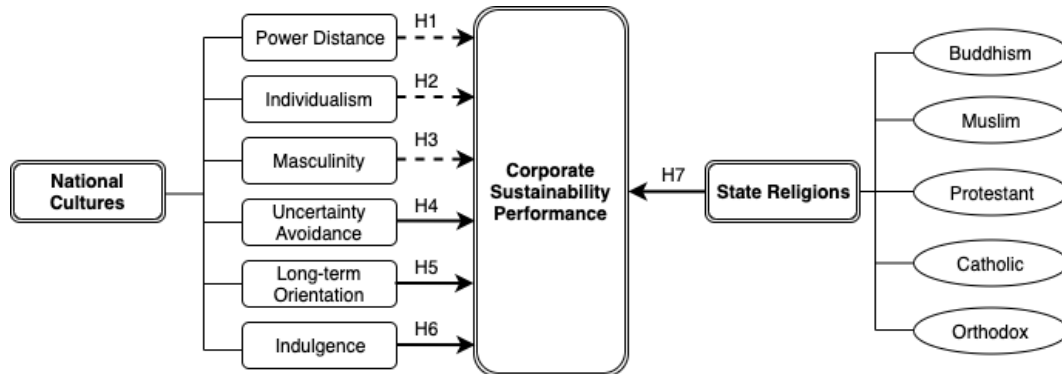


Figure 2: Hypotheses on the direct impacts of national culture and state religion on corporate sustainability performance

Notes: $\longrightarrow$ Positive relationship; $- - \rightarrow$ Negative relationship

Based on the sample, this study only considers the state religion of Buddhism, Muslim, Protestant, Catholic, and Orthodox; in which, Protestant, Catholic, and Orthodox are considered as three traditions of Christianity.

5.2. Research design

This section describes the sample selection, variables measurement, and statistical model applied in the analysis one.

5.2.1. Sample selection

The sample is collected from Bloomberg Terminal on the basis of maximum data availability. Particularly, data of all companies which meet those two criteria are obtained:

- i. have RobecoSAM percentile sustainability score updated to Bloomberg database in 2018
 - ii. from countries which have data of Hofstede's national cultural dimensions
- In total, the sample consists of 4,382 companies from 49 countries. Those companies spread across 60 RobecoSAM industries, which derived from the global industry classification system (GICS).

5.2.2. Variable description

a) Dependent variable

RobecoSAM Total Sustainability Score is used as the proxy for corporate sustainability performance. RobecoSAM has been consistently at the top of the

most credible sustainability raters for many years (Wong *et al.*, 2019). Each company receives a score between 0 – 100 which calculated based on a range of criteria covering the environmental, social, and economic aspects.

b) Independent variables

Independent variables consist of Hofstede's cultural dimension variables and dummy variables for state religions. Values for six Hofstede's cultural dimensions are collected from Hofstede Insights, which vary between 0 and 100. The dummy variable for state religion equals 1 if the country has an official state religion, and 0 otherwise. The classification for the presence of state religion is extracted from Barro and McCleary (2005). Accordingly, among 49 studied countries, 30 countries do not have national religions, one country has religion is Buddhism, four countries have religion is Muslim, and 14 countries have Christianity (Orthodox, Protestant, and Catholic) as the state religion. Table 2 tabulates the number of the sample from each country with related Hofstede's national cultural dimensions and state religion status.

c) Control variables

Several control variables are included in the research model as suggested from prior studies (Husted, 2005; Ringov and Zollo, 2007). At the corporate level, firm size, profitability, and leverage, which measured by the natural logarithm of market capitalization, return on assets, and total debt to total assets respectively, are included. At the country level, national economic development measured by the natural logarithm of GDP per capita is controlled. Data for control variables are lagged by one year and are taken from Bloomberg database for corporate-level variables and World Bank for the country-level variable.

5.2.3. Statistical tests

Multiple regression analysis with the following model is employed:

$$CSP = \beta_0 + \beta_1 PDI + \beta_2 IDV + \beta_3 MAS + \beta_4 UAI + \beta_5 LTO + \beta_6 IVR + \beta_7 Religion + \beta_8 SIZE + \beta_9 ROA + \beta_{10} LEV + \beta_{11} GDPPC + \varepsilon \quad (1)$$

where: *CSP* is corporate sustainability performance, represented by RobecoSAM Total Sustainability Score updated to Bloomberg Terminal in either June or September 2018; *PDI*, *IDV*, *MAS*, *UAI*, *LTO*, *IVR* are six Hofstede's national cultural dimensions collected from Hofstede Insights; *Religion* is the dummy variable for state religion; *SIZE*, *ROA*, *LEV* is control variables for firm size, profitability, and leverage respectively. *GDPPC* is the control variable for economic development represented by the natural logarithm of GDP per capita.

Table 1: Variables description

<i>Variables</i>	<i>Description</i>
CSP	Corporate sustainability performance. Measured by RobecoSAM percentile rankings in 2018 (for the assessment of 2017). Collected from the Bloomberg database.
PDI	Power distance index, collected from Hofstede Insights.
IDV	Individualism index, collected from Hofstede Insights.
MAS	Masculinity index, collected from Hofstede Insights.
UAI	Uncertainty avoidance index, collected from Hofstede Insights.
LTO	Long-term orientation index, collected from Hofstede Insights.
IVR	Indulgence versus restraint index, collected from Hofstede Insights.
Religion	Dummy variable equals 1 if the sample company based on a country that have a state religion, and 0 otherwise.
SIZE	Firm size. Measured by the natural logarithm of market capitalization, i.e. the monetary value of all outstanding shares stated in the pricing currency, for the year of 2017 (average of outstanding shares in the year). Collected from the Bloomberg database.
ROA	Profitability. Measured by return on assets for 2017, which calculated as (Trailing 12 months Net Income/ Average Total Assets)*100. Collected from the Bloomberg database.
LEV	Leverage. Measured by (average) total debt to (average) total asset for 2017. Collected from the Bloomberg database.
GDPPC	Natural logarithm of GDP per capita. Collected from the World Bank database for the year 2017.

Table 2: National culture dimensions, state religion and sample distribution

	Countries	<i>n</i>	Hofstede's cultural dimensions						State Religion
			PDI	IDV	MAS	UAI	LTO	IVR	
1	Argentina	5	49	46	56	86	20	62	Catholic
2	Australia	186	36	90	61	51	21	71	none
3	Austria	22	11	55	79	70	60	63	none
4	Belgium	22	65	75	54	94	82	57	none
5	Brazil	74	69	38	49	76	44	59	none
6	Canada	126	39	80	52	48	36	68	none
7	Chile	82	63	23	28	86	31	68	none
8	China	230	80	20	66	30	87	24	none
9	Colombia	16	67	13	64	80	13	83	Catholic
10	Czech Republic	4	57	58	57	74	70	29	none
11	Denmark	25	18	74	16	23	35	70	Protestant
12	Egypt	17	70	25	45	80	7	4	Muslim
13	Finland	25	33	63	26	59	38	57	Protestant
14	France	96	68	71	43	86	63	48	none
15	Germany	106	35	67	66	65	83	40	none
16	Greece	17	60	35	57	100	45	50	Orthodox
17	Hong Kong	107	68	25	57	29	61	17	none
18	Hungary	3	46	80	88	82	58	31	none
19	India	142	77	48	56	40	51	26	none
20	Indonesia	41	78	14	46	48	62	38	none
21	Ireland	25	28	70	68	35	24	65	none
22	Italy	39	50	76	70	75	61	30	Catholic
23	Japan	625	54	46	95	92	88	42	none
24	Jordan	1	70	30	45	65	16	43	Muslim
25	Luxembourg	8	40	60	50	70	64	56	Catholic
26	Malaysia	71	100	26	50	36	41	57	Muslim
27	Malta	2	56	59	47	96	47	66	Catholic
28	Mexico	76	81	30	69	82	24	97	none
29	Netherlands	42	38	80	14	53	67	68	none
30	New Zealand	25	22	79	58	49	33	75	none
31	Norway	33	31	69	8	50	35	55	Protestant
32	Pakistan	32	55	14	50	70	50	0	Muslim
33	Peru	11	64	16	42	87	25	46	Catholic
34	Philippines	31	94	32	64	44	27	42	none
35	Poland	30	68	60	64	93	38	29	none
36	Portugal	8	63	27	31	99	28	33	Catholic
37	Russia	36	93	39	36	95	81	20	none
38	Singapore	43	74	20	48	8	72	46	none
39	South Africa	124	49	65	63	49	34	63	none
40	South Korea	183	60	18	39	85	100	29	none
41	Spain	35	57	51	42	86	48	44	Catholic
42	Sweden	53	31	71	5	29	53	78	none
43	Switzerland	67	34	68	70	58	74	66	none
44	Taiwan	200	58	17	45	69	93	49	none
45	Thailand	76	64	20	34	64	32	45	Buddhist
46	Turkey	28	66	37	45	85	46	49	none
47	Ukraine	1	92	25	27	95	55	18	Orthodox
48	United Kingdom	168	35	89	66	35	51	69	Protestant
49	United States	963	40	91	62	46	26	68	none
	Total	4,382							

Note: n - number of the sample; PDI – power distance; IDV – individualism; MAS – masculinity; UAI – uncertainty avoidance; LTO – long-term orientation; IVR - indulgence versus restraint

5.3. Results

5.3.1. Descriptive statistics and correlation matrix

Table 3 presents the descriptive statistics of all dependent, independent, and control variables. As can be seen from the table, CSP has a relatively low mean value at 31.72 with a standard deviation of 28.719 while its range is from 0 to 100. Six Hofstede's cultural dimensions also have wide ranges with mean values vary from 53 to 60. Among the six cultural dimensions, PDI has the lowest standard deviation of 17.05 and the highest is IDV at 28.13. Two control variables, ROA and LEV have small mean values and variation compared to their min and max values, which implies the existence of outliers.

The correlation matrix displays a relatively high degree of correlation between PDI and IDV (-0.757). Indeed, Hofstede acknowledged this phenomenon and describes that this relationship disappears when economic development is kept constant (Husted, 2005). As economic development is included in the research model; thus, this correlation should not be a problem. In addition, to assess the extent of multicollinearity, the variance inflation factor (VIF) is calculated. VIF values of all independent and control variables in the research model are lower than 5.3, which indicates an acceptable level of multiple correlations at 0.9 (Hair et al., 2014).

5.3.2. Regression results

The results of the regression analysis are presented in Table 5. As shown in the table, the primary model (Model 1) shows significant results for all independent and control variables. Particularly, PDI ($p \leq 0.001; \beta = -0.146$) and MAS ($p \leq 0.001; \beta = -0.176$) have negative effects on dependent variables, whilst all other dimensions in Hofstede's framework show positive effects on CSP. UAI ($p \leq 0.001; \beta = 0.196$) and IVR ($p \leq 0.001; \beta = 0.273$) have stronger impacts compared to IDV ($p \leq 0.01; \beta = 0.087$) and LTO ($p \leq 0.001; \beta = 0.119$). Hypothesis 1, Hypothesis 3, Hypothesis 4, Hypothesis 5, and Hypothesis 6 are supported, whilst, the results demonstrate the opposite finding to the prediction in Hypothesis 2. Notably, the regression result shows positive and strong influences from state religions ($p \leq 0.001; \beta = 11.870$) on corporate sustainable development practices. This relationship is significant at the 0.001 level with the highest coefficient among testing variables. Hypothesis 7 is supported.

Table 3: Descriptive Statistics

	N	Range	Min	Max	Mean	Std. Deviation
CSP	4382	100	0	100	31.72	28.719
PDI	4382	89	11	100	53.02	17.048
IDV	4382	78	13	91	57.07	28.127
MAS	4382	90	5	95	60.16	19.254
UAI	4382	92	8	100	59.62	22.242
LTO	4382	93	7	100	54.35	27.303
IVR	4382	97	0	97	52.47	18.529
Religion	4382	1	0	1	0.13	0.341
SIZE	4382	10.54	3.04	13.58	8.49	1.410
ROA	4382	4.47	-1.95	2.52	0.05	0.095
LEV	4382	3.77	0.00	3.77	0.25	0.190
GDPPC	4382	4.23	7.34	11.57	10.23	0.944
Valid N	4382					

Notes: CSP – Corporate Sustainability Performance; PDI – Power distance; IDV – Individualism; MAS – Masculinity; UAI – Uncertainty avoidance; LTO – Long-term orientation; IVR – Indulgence versus restraint. Religion – dummy variable for state religions (Christianity, Muslim, Buddhism). GDPPC – GPD per capital; SIZE – Firm size; Legal – National legal system; Industry – dummy variable for the environmental sensitive industry.

Table 4: Correlation matrix

	CSP	PDI	IDV	MAS	UAI	LTO	IVR	Religion	SIZE	ROA	LEV	GDPPC
CSP	1	-.141**	.167**	-.102**	-0.01	-.108**	.159**	.133**	.465**	0.008	.057**	.102**
PDI		1	-.757**	-.047**	.136**	.324**	-.560**	-0.004	-.075**	.032*	-0.008	-.716**
IDV			1	.098**	-.319**	-.611**	.650**	-.046**	.209**	-.042**	.087**	.598**
MAS				1	.283**	.256**	-.100**	-.238**	-0.002	-.047**	-.068**	.142**
UAI					1	.433**	-.201**	-.077**	-.186**	-.031*	-.074**	-0.011
LTO						1	-.654**	-.175**	-.082**	0.016	-.133**	-.075**
IVR							1	-0.008	.046**	-.038*	.089**	.455**
Religion								1	-.035*	.037*	0.013	-.160**
SIZE									1	.119**	.042**	.147**
ROA										1	-.120**	-.068**
LEV											1	.039*
GDPPC												1

Notes: CSP – Corporate Sustainability Performance; PDI – Power distance; IDV – Individualism; MAS – Masculinity; UAI – Uncertainty avoidance; LTO – Long-term orientation; IVR – Indulgence versus restraint. Religion – dummy variable for state religions (Christianity, Muslim, Buddhism). GDPPC – GPD per capital; SIZE – Firm size; Legal – National legal system; Industry – dummy variable for the environmental sensitive industry.

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Table 5: Regression results

	Model 1			Model 1 (robust)			Model 2			Model 3		
	Coef.	Std. Err.	p-value	Coef.	Std. Err.	p-value	Coef.	Std. Err.	p-value	Coef.	Std. Err.	p-value
Constant	-37.947	7.575	0.000***	-37.947	7.185	0.000***	-38.247	7.599	0.000***	-63.911	8.238	0.000***
PDI	-0.146	0.040	0.000***	-0.146	0.037	0.000***	-0.148	0.040	0.000***	-0.063	0.040	0.120
IDV	0.087	0.029	0.003**	0.087	0.031	0.005**	0.085	0.029	0.004**	0.170	0.030	0.000***
MAS	-0.176	0.022	0.000***	-0.176	0.024	0.000***	-0.176	0.022	0.000***	-0.132	0.032	0.000***
UAI	0.196	0.019	0.000***	0.196	0.019	0.000***	0.200	0.020	0.000***	0.165	0.022	0.000***
LTO	0.119	0.025	0.000***	0.119	0.025	0.000***	0.118	0.025	0.000***	-0.045	0.028	0.106
IVR	0.273	0.032	0.000***	0.273	0.030	0.000***	0.275	0.032	0.000***	0.186	0.032	0.000***
Religion Buddhism Muslim Protestant Catholic Orthodox	11.870	1.147	0.000***	11.870	1.137	0.000***	12.329	1.164	0.000***	6.529	1.194	0.000***
SIZE	10.139	0.276	0.000***	10.139	0.269	0.000***	10.161	0.276	0.000***	9.975	0.349	0.000***
ROA	-0.155	0.039	0.000***	-0.155	0.043	0.000***	-0.160	3.954	0.000***	-0.150	0.050	0.002**
LEV	0.042	0.020	0.034*	0.042	0.022	0.055	0.042	0.020	0.032*	0.056	0.027	0.039*
GDPPC	-3.651	0.645	0.000***	-3.651	0.646	0.000***	-3.641	0.648	0.000***	-0.153	0.685	0.823
Legal Industry												
R Square	0.292			0.292			0.294			0.326		
Adj. R Square	0.290						0.292			0.323		
F-statistic	163.94		0.000***	176.38		0.000***	164.35		0.000***	122.26		0.000***
n	4,382			4,382			4,350			2,794		

Table 5: Regression results (cont.)

	Model 4			Model 5			Model 6		
	Coef.	Std. Err.	p-value	Coef.	Std. Err.	p-value	Coef.	Std. Err.	p-value
Constant	-47.098	7.847	0.000***	-37.648	7.665	0.000***	164.196	22.224	0.000***
PDI	-0.141	0.040	0.000***	-0.127	0.041	0.002**	-8.091	1.806	0.000***
IDV	0.068	0.030	0.020*	0.092	0.030	0.003**	-9.991	1.501	0.000***
MAS	-0.203	0.023	0.000***	-0.172	0.022	0.000***	-15.206	1.812	0.000***
UAI	0.256	0.024	0.000***	0.185	0.021	0.000***	-7.338	1.130	0.000***
LTO	0.183	0.029	0.000***	0.121	0.028	0.000***	13.294	1.655	0.000***
IVR	0.31	0.033	0.000***	0.276	0.033	0.000***	-19.712	1.397	0.000***
Religion	11.802	1.145	0.000***				12.506	12.506	0.000***
Buddhism				14.418	3.087	0.000***			
Muslim				6.472	2.504	0.010**			
Protestant				11.630	1.746	0.000***			
Catholic				17.054	2.350	0.000***			
Orthodox				5.521	5.820	0.343			
SIZE	10.283	0.278	0.000***	10.010	0.278	0.000***	9.572	0.277	0.000***
ROA	-0.156	0.039	0.000***	-0.150	3.945	0.000***	-0.139	4.008	0.001***
LEV	0.04	0.020	0.044*	0.038	1.972	0.057	0.049	1.996	0.014*
GDPPC	-3.802	0.645	0.000***	-3.669	0.651	0.000***	-0.876	0.525	0.095
Legal	5.983	1.387	0.000***						
Industry	0.643	0.878	0.464						
R Square	0.295			0.294			0.289		
Adj. R Square	0.293			0.292			0.287		
F-statistic	140.74		0.000***	121.32		0.000***	154.28		0.000***
n	4,382			4,382			4,190		

Notes: * Coefficient is significant at the 0.05 level. ** Coefficient is significant at the 0.01 level. *** Coefficient is significant at the 0.001 level. *PDI* – Power distance; *IDV* – Individualism; *MAS* – Masculinity; *UAI* – Uncertainty avoidance; *LTO* – Long-term orientation; *IVR* – Indulgence versus restraint. *Religion* – dummy variable for state religions (Christianity, Muslim, Buddhism); *Buddhism*, *Muslim*, *Protestant*, *Catholic*, *Orthodox*: dummy variables for each type of the state religions. *GDPPC* – GPD per capital; *SIZE* – Firm size; *Legal* – National legal system; *Industry* – dummy variable for the environmental sensitive industry.

Turning to control variables, while firm size ($p \leq 0.001$; $\beta = 10.139$) shows significant and positive relationship with CSP as expected, firms' financial performance ($p \leq 0.001$; $\beta = -0.155$) and economic development ($p \leq 0.001$; $\beta = -3.651$) demonstrate unexpected results with negative association with CSP. This result is counter-intuitive with prior studies (Husted, 2005; Vachon, 2010). The remaining control variable, LEV, show a positive significant relationship with CSP at 0.05 level; however, the impact level is small ($\beta = -0.042$).

The negative relationship between firms' financial performance and CSP can be explained by the argument that firms focus more on financial success spend less attention and resource on sustainability practices; thus, probably having worse sustainability performance. On the other hand, the negative relationship between economic development and CSP needs further consideration and be interpreted with care. This relationship, nonetheless, is not the focus of the current study.

5.4. Robustness tests

The results of the primary model (Model 1) show significant evidence for the relationship between all independent variables and the dependent variable. Hypothesis 1, Hypothesis 3, Hypothesis 4, Hypothesis 5, Hypothesis 6, and Hypothesis 7 are supported, whilst the results demonstrate the opposite finding to Hypothesis 2. Further additional regression models are constructed for the robustness test.

Model 1 (robust) – Robust standard errors

Model 1 (robust) considers the problem of heteroskedasticity. Heteroskedasticity is the circumstance in which the variability is unequal across the range of values of the predicted dependent variable. Multiple regression analysis is based on the assumption of homoscedasticity, i.e. the variance is equal for all values of a variable. If heteroskedasticity occurs, the prediction of the regression model will be biased. Thus, to control for the problem of heteroskedasticity, the author applied robust standard errors or White-Huber standard errors in *Model 1 (robust)* to see if the results are different from the conventional model. The results for robust standard errors released by STATA package software showed that there are slightly different in the significance level (p-value) of IDV and LEV; however, the overall results are the same with the conventional model. Hence, the results in Model 1 are confirmed.

Model 2 & Model 3

Model 2 and Model 3 are constructed the same as the primary model; however, the sample is different. In the Model 2, countries which have a small number of the

sample (less than ten) are eliminated, whilst sample from US and Japan, two countries which have a much higher number of companies in the initial sample, are excluded in the Model 3. The final sample includes 4350 companies from 41 countries for Model 2, and 2794 companies from 47 countries for Model 3. Those models aim to test the effects of countries with a small or large number of samples.

$$CSP = \beta_0 + \beta_1 PDI + \beta_2 IDV + \beta_3 MAS + \beta_4 UAI + \beta_5 LTO + \beta_6 IVR + \beta_7 Religion + \beta_8 SIZE + \beta_9 ROA + \beta_{10} LEV + \beta_{11} GDPPC + \varepsilon \quad (2)(3)$$

The result for Model 2 is similar to Model 1. All independent variables show a significant relationship with CSP. Coefficients for six cultural dimensions are slightly changed at an unremarkable level. The coefficient for Religion increases from 11.870 to 12.329. The effects of control variables are similar to the initial model. The explanation power of Model 2 is slightly higher than Model 1.

Model 3, conversely, reveals somewhat different results from the primary model. There are no longer significant results for the relationship between PDI, LTO and dependent variable. The effects from other independent variables remain significant; however, coefficients have changed remarkably, especially for Religion. The negative correlation between GDPPC and CSP also disappears. The explanation power of Model 3 is higher than the Model 1 and Model 2.

Model 4

Previous studies propose that the national legal system may affect corporate sustainability practices. In particular, Hope (2003) suggested that CSP in code law countries is lower than in common law countries due to agency problems. Thus, a dummy variable (Legal) for the legal system is included in Model 4 to test the effects of the legal system on CSP. ‘Legal’ equals 1 if companies come from common law countries and 0 for companies from code law countries. The classification for common law countries and code law countries follows La Porta et al. (1997).

The literature on corporate sustainability reporting also suggests that companies from environmental sensitive industries tend to report more on sustainability practice (Roy and Ghosh, 2011; Choi et al., 2013). As the relationship between sustainability reporting and sustainability performance is still an ambiguity (Patten, 2002), a dummy variable is included in the fourth model for the environmental sensitive industry. ‘Industry’ equals 1 if companies belong to environmental sensitive industries, and 0 otherwise. Environmental sensitive industries are classified follows Choi et al. (2013)

$$\begin{aligned}
& \beta_0 + \beta_1 PDI + \beta_2 IDV + \beta_3 MAS + \beta_4 UAI + \beta_5 LTO + \beta_6 IVR \\
CSP = & + \beta_7 Religion + \beta_8 SIZE + \beta_9 ROA + \beta_{10} LEV + \beta_{11} GDPPC \quad (4) \\
& + \beta_{12} Legal + \beta_{13} Industry + \varepsilon
\end{aligned}$$

As shown in Table 5, results for Model 4 show a significant and positive relationship between Legal and CSP ($p \leq 0.001$; $\beta = 5.983$), which indicates companies from common law countries exhibit a higher score of sustainable development compare to companies form code law countries. There is no significant relationship between Industry and CSP. Results for other independent and control variables are similar to Model 1. The explanation power of Model 4 is slightly higher than Model 1.

Model 5

To test the effects of each religion separately, dummy variables for each religion are included in Model 5. In total, five dummy variables are added in Model 5.

$$\begin{aligned}
& \beta_0 + \beta_1 PDI + \beta_2 IDV + \beta_3 MAS + \beta_4 UAI + \beta_5 LTO + \beta_6 IVR \\
CSP = & + \beta_7 Buddhism + \beta_8 Muslim + \beta_9 Protestant + \beta_{10} Catholic \quad (5) \\
& + \beta_{11} Orthodox + \beta_{12} SIZE + \beta_{13} ROA + \beta_{14} LEV + \beta_{15} GDPPC + \varepsilon
\end{aligned}$$

As can be seen from Table 5, Buddhism, Muslim, Protestant, Catholic are positively related to CSP, whilst there is no significant result for Orthodox. Buddhism and Catholics demonstrate high impacts with the coefficient of 14.418 and 17.054 respectively. The explanation power of Model 5 is slightly higher than the primary model. Results for other variables are similar to Model 1, except for leverage with no significant relationship with the dependent variable.

Model 6

In Model 6, substitutes for Hofstede's cultural dimensions from GLOBE are employed. GLOBE is a project conceived in 1991 by Robert J. House which dedicates academic effort in exploring the differences of culture with the involvement of 170 country co-investigators. The results of this research are published in 2004-book Culture, Leadership, and Organizations. In this book, House and colleagues illustrate nine dimensions of cultures including Performance Orientation, Uncertainty Avoidance, In-group Collectivism, Power Distance, Gender Egalitarianism, Humane Orientation, Institutional Collectivism, Future Orientation, and Assertiveness. Besides those dimensions which closely related to

Hofstede's dimensions (power distance, uncertainty avoidance, future orientation), the author argues that institutional collectivism, assertiveness, and humane orientation can be used as substitutes for Hofstede's individualism, masculinity, and indulgence index respectively. First, institutional collectivism is an opposite calculation of the individualistic level of societies; thus, in this test, GLOBE institutional collectivism is considered as an opposite dimension of IDV. Second, high assertiveness societies as described in GLOBE have similar characteristics of masculine cultures defined in Hofstede's framework such as valuing competition, success, and progress, whilst low assertiveness societies are similar to feminine cultures in being harmony with the surrounding environment; hence, GLOBE assertiveness dimension is considered as an equal substitute of Hofstede's MAS. Finally, high humane orientation societies in GLOBE's framework pay more attention to others' interests and be sensitive to social norms, whilst low humane orientation societies focus more on one's own self-interest. Therefore, GLOBE's humane orientation index is considered an opposite substitute for Hofstede's indulgence dimension.

Based on this consideration, this study adopted practice values of GLOBE's power distance, institutional collectivism, assertiveness, uncertainty avoidance, future orientation, and humane orientation dimension as the substitutes for Hofstede's cultural dimensions in the Model 6:

$$\begin{aligned}
 CSP = & \beta_0 + \beta_1 \text{Power distance} + \beta_2 \text{Institutional Collectivism} \\
 & + \beta_3 \text{Assertiveness} + \beta_4 \text{Uncertainty Avoidance} \\
 & + \beta_5 \text{Future Orientation} + \beta_6 \text{Humane Orientation} \\
 & + \beta_7 \text{Religion} + \beta_8 \text{SIZE} + \beta_9 \text{ROA} + \beta_{10} \text{LEV} + \beta_{11} \text{GDPPC} + \varepsilon
 \end{aligned} \tag{6}$$

Regression analysis reveals significant results for all six cultural dimension substitutes. As illustrated in Table 5, only Future Orientation has a positive relationship with CSP, which is consistent with the result of the LTO dimension in the primary model. Power Distance, Institutional Collectivism, Assertiveness, and Humane Orientation shows a negative relationship with CSP, which are also consistent with the results in the primary model as Institutional Collectivism and Humane Orientation are opposite substitutes of IDV and IVR, whilst Power Distance and Assertiveness are similar substitutes of PDI and MAS. The dimension of Uncertainty Avoidance, nonetheless, demonstrate the opposite result with the primary model when it shows a negative relationship with the independent variable. Results for other variables are similar to the primary model, except for GDPPC which shows no significant relationship with CSP. The explanation power of Model 6 is slightly lower than the primary model.

Chapter 6

The moderating effects of national cultures and state religions on the relationship between corporate governance and sustainability performance

6.1. Introduction

In the previous chapter, the author examined the direct impacts of national cultures and religions on corporate sustainability performance. The results showed that, among six Hofstede's cultural dimensions, power distance index and masculinity index have a negative relationship with CSP, whilst the other four dimensions, i.e. individualism, uncertainty avoidance, long-term orientation, and indulgence, positively associated with firms' triple-bottom-line performance. The presence of state religions also demonstrates a strong positive relationship with corporate sustainability practice.

To better understand the comprehensive impacts of cultures and religions on CSP, this dissertation further investigates the moderating effects cultures and religions may have on the relationship between other factors and CSP. Particularly, in this study, the moderating effects of national cultures and religions on the relationship between corporate governance (CG) and triple bottom line performance are examined. This study chooses to study the moderating effects of cultures and religions on this relationship for several reasons. First, there are reasonable arguments for how some particular cultural dimensions and religions can affect the association between corporate governance and CSP. These arguments are discussed in detail in Part 6.4.1. Second, the relationship between CG and sustainability practices have been extensively studied in the literature and CG is considered as an important factor in exploring corporate triple bottom line practices (Haniffa and Cooke, 2005; Said, Zainuddin and Haron, 2009). Thus, studying the moderating effects of national cultures and state religions on the CG and CSP relationship is essential in understanding the overall impacts of cultures and religions on corporate sustainability performance. Third, prior studies on the relationship between corporate governance and firms' sustainability practices presented mixed findings, and no previous studies have examined the moderating effects of cultures and religions on the relationship between corporate governance and sustainability performance. Hence, this study can provide a better understanding of how the impacts of corporate governance on CSP change in different cultural and religious circumstances.

Before studying the moderating effects of national cultures and state religions on the association between corporate governance and CSP, the author first retest the impacts of various corporate governance factors and sustainability performance. This test is necessary because previous studies presented mixed findings on the relationship between CG and sustainability practices, and they focus on various aspects of corporate sustainability such as social reporting, environmental reporting, sustainability reporting, social performance, environmental performance, etc. This dissertation focuses on corporate sustainability performance which refers to all three dimensions of society, environment, and finance. Therefore, it is important to understand which corporate governance factors have a direct impact on CSP before examining the moderating effects of cultures and religions on this relationship. There are several methods to investigate these direct impacts of CG factors; however, to separate the moderating impacts of cultures, religions, and other time-invariant variables, the author employs panel data analysis with the fixed-effect model. This method allows to control for time-invariant factors and investigate the relationship between CG and CSP independently.

The remaining part of this chapter is structured as follows. First is the literature review on the relationship between corporate governance and corporate sustainability performance. Second is *Analysis 2.1*, which aims to identify which corporate governance factors have significant relationships with CSP. Then, the next *Analysis 2.2* is going to investigate the moderating effects of national culture and state religion on the relationship between corporate governance factors and sustainability performance.

6.2. The literature on the relationship between corporate governance and corporate sustainability performance

The focus of this study is the relationship between board structure and corporate sustainability performance. Therefore, this review is going to discuss the studies on the connection between board structure characteristics and triple bottom line performance; environmental performance; and corporate social responsibility performance, but it will not cover the studies on the relationship between board structure characteristics and sustainability disclosure or CSR disclosure. This review also highlights the measures of CSP in prior studies.

In the early stage, corporate social activities or social contribution are often simply viewed as the charitable activities which corporations engage in. Thus, corporate non-financial performance is measured by *the percentage of pretax earnings given to charities* (Wang and Coffey, 1992); or *firms' total charitable contribution* (Williams, 2003). Wang and Coffey (1992) investigated the board composition of

78 Fortune500 firms and corporate philanthropy. They revealed that the ratio of insiders to outsiders, the percentage of insider ownership, and the percentage of minority and female directors are positively related to firms' charitable donation. Williams (2003) also suggested the positive link between the proportion of women on board and corporate philanthropy in the field of community service and the arts.

Later, researchers focus on the relationship between board characteristics and corporate social performance, with the common measures taken from *Kinder Lydenberg Domini (KLD) corporate social performance database*. Johnson and Greening (1999) investigated the effects of institutional investors and governance devices on two dimensions of corporate social performance taken from the KLD database namely people relations dimension and product quality dimensions. The results revealed that outside directors positively related to both people and product quality dimension, whilst top management equity only positively associated with product quality dimension and had no relationship with people dimension. Deckop, Merriman and Shurti (2006), on the other hand, evaluated the relationship between CEO pay structure and six social performance dimensions taken from the KLD database. They found that long-term focus pay had a positive association with corporate social performance and vice versa for short-term focus pay. Also employing KLD measures, Neubaum and Zahra (2006) further investigate the impacts of institutional ownership on corporate social performance with the moderating effect of investment horizon, activism, and coordination. They reported a positive relationship between long-term institutional ownership and corporate social performance with positively moderating effects from institutional owners' coordinated activism.

KLD database was employed in the studies on the relationship between CG and corporate environmental performance as well. Post, Rahman and Rubow (2011) using the sample of 78 Fortune1000 companies to study the influence of board composition and firms' environmental performance. Natural environment ratings from KLD was utilized in their study as the measure for firms' environmental performance. The study showed that independent directors, women on board, board average age, and proportion of Western Europe directors are associated with the higher KLD environmental score. Walls, Berrone and Phan (2012) took a more comprehensive approach to examine the link between ownership, the board of directors, management and firms' KLD environmental scores. They revealed various direct and interaction effects of ownership, governance, and management on corporate environmental performance. This study, notwithstanding, covered only S&P 500 firms from primary and manufacturing industries with Standard Industrial Classification code under 50.

Besides the KLD database, measures for corporate social performance are also taken from some other local database. Dunn and Sainty (2009) studied the relationship between the board of director characteristics and corporate social performance with a sample of 104 Canadian firms. The proxy for the dependent variable was corporate social performance score taken from the *Canadian Social Investment Database*, which rates 300 largest listed firms on Toronto Stock Exchange with criteria pretty similar to the KLD database (Dunn and Sainty, 2009). McGuinness, Vieito and Wang (2017) investigated the role of board gender and foreign ownership in corporate social responsibility performance of A-share companies listing on Shanghai & Shenzhen Stock Exchange. The scores for corporate social responsibility performance taken from *Rankins (RKS)* ratings, the leading independent CSR-rating organization in China (McGuinness, Vieito and Wang, 2017). Bernard, Godard and Zouaoui (2018) examined the impacts of CEOs' turnover on the corporate sustainability performance of 88 French firms. They utilized *Viego ratings*, which assess European companies on their performance of environmental, social, and governance issues, as the proxy for the dependent variable.

Some other scholars choose to self-measure corporate sustainability performance based on available standards or frameworks such as the Global Reporting Initiative (GRI). Hussain, Rigoni and Orij (2018) measure the corporate sustainability performance by first measure the sustainability disclosure based on GRI dimensions, then they assess the quality of each dimension by categorizing them into positive and negative information. This manual content analysis approach only allows them to study a relatively small number of 100 US companies. Manning, Braam and Reimsbach (2019), on the other hand, assess firms' CSP by scoring environmental and social indicators with a dichotomous scale. Those indicators are taken from prior studies and only cover social and environmental aspects. Similar to other studies apply the self-measuring method to assess CSP, this study only covers a small number sample of 91 Dutch firms.

Among studies investigate the determinants of corporate sustainability performance, only two studies found to employ results from the RobecoSAM annual corporate sustainability assessment as a proxy for CSP. Those studies, nonetheless, only use the dichotomous variable of whether the company belongs to the Dow Jones Sustainability Index or not. Artiacha *et al.* (2010) investigate the driven factors of high corporate sustainability performance using a univariate comparison between firms belong to DJSI and conventional firms. They showed that leading CSP companies are larger, have a higher return on equity, and a higher level of growth. Likewise, Chams and García-Blandón (2019) study the role of the board on firms' sustainability performance. They employ the dummy variable of whether the firms

belong to DJSI is employed as the dependent variable. The study found a positive relationship between board size, board gender diversity, board average age, number of committees and corporate sustainability performance. The utilization of nominal variables as a proxy for CSP in this study, nevertheless, limits the accuracy of the study since it can only distinguish between high-performance group and so-called 'low' performance group without considering the detail differences between them. In addition, when using a dichotomous variable of whether the firms belong to DJSI, those studies can only cover the top 10% of the companies assessed by RobecoSAM in their sample.

6.3. The relationship between corporate governance factors and sustainability performance (Analysis 2.1)

Before investigating the moderating effects of cultures and religions on the relationship between corporate governance and sustainability performance, this dissertation is going to examine which corporate governance factors have a significant association with triple bottom line performance measured by percentile RobecoSAM ranking.

6.3.1. Research design

a) Statistical model

To control for the effects of cultures, religions, and other time-invariant factors, panel data analysis with a fixed effect model is utilized in this examination. By combining data in two dimensions, i.e. cross-sectional and time series, panel data provides more informative results and less collinearity among variables (Baltagi, 2005). It helps to explore more issues than do cross-sectional or time-series data alone and can produce more reliable parameter estimates. Panel data also allows controlling for variables that cannot be observed or variables that do not change over time such as cultural or religious factors. Panel data may have time effects, individual effects, or both, and is analyzed most commonly by fixed effect model or random effect model (Park, 2011).

The fixed-effects model investigates the relationship between predictors and outcome within an entity and allows to control for all time-invariant differences between entities so that it can provide reliably estimated coefficients and not be biased by omitted time-invariant factors like religion, culture, or political system (Kohler and Kreuter, 2012). This serves well for the purpose of this analysis.

b) Dependent variable

Percentile RobecoSAM ranking is employed as the proxy for corporate sustainability performance. Each company receives a score between 0 – 100 which calculated based on a range of criteria covering the environmental, social, and economic aspects. Data for percentile RobecoSAM ranking are collected from Bloomberg Terminal.

Though there are certain criteria of corporate governance in the economic dimension of the RobecoSAM ranking score, the weight of though criteria is small. In addition, the total RobecoSAM score is an aggregated score which is progressively weighted and summed until a final score is reached. Thus, the criteria of corporate governance factors included in RobecoSAM are supposed to not violate the test on the relationship between corporate governance factors and CSP in this study. A similar approach in this issue has been also adopted by other scholars (e.g. Nadeem, Zaman and Saleem, 2017). The detailed calculation method of the RobecoSAM ranking score is provided in Appendix 1.

c) Independent and control variables

As suggested from prior studies, this analysis is going to test the relationship between *board independence* (Liao, Luo and Tang, 2015; Haque, 2017); *board gender diversity* (Boulouta, 2013; Liao, Luo and Tang, 2015); *board average age* (Post, Rahman and Rubow, 2011; Chams and García-Blandón, 2019); *board size* (Hussain, Rigoni and Orij, 2018; Chams and García-Blandón, 2019); *CEO duality* (Gul and Leung, 2004; Webb, 2004) and corporate sustainability performance.

Board independence is measured by the percentage of independent directors on the board; whilst board gender diversity is measured by the percentage of women on the board of directors, as reported by the company. Board average age is the average age of all members of the board, and board size is the number of directors on the company's board. CEO Duality is a dummy variable that indicates whether the company's chief executive officer is also chairman of the board. If the company's CEO is also the chairman, CEO Duality receives value 1, and 0 otherwise.

Several control variables including firm size, profitability, and leverage are also included in the research model. Firm size is measured by the natural logarithm of firms' market capitalization in million USD, profitability is measured by return on assets, and leverage is measured by the percentage of total debt relative to total assets.

Data for independent variables and control variables are collected from the Bloomberg database and lagged by one year compared to the data of the dependent variable (CSP).

d) Sample selection

The sample is collected on the basis of maximum data availability. Data of all company around the world which have percentile RobecoSAM sustainability rankings available on Bloomberg platform are collected. The data is collected for 4 years from 2016, the first year RobecoSAM percentile ranking is available on Bloomberg database, to 2019 (the last update is in August 2019).

For the more accuracy of panel data analysis, only companies with at least two observations (two years of data availability) are kept. The final sample included 2,720 companies with 8,663 observations.

Table 6: Variables description

<i>Variables</i>	<i>Description</i>
CSP	Corporate sustainability performance. Measured by RobecoSAM percentile rankings. Collected from Bloomberg Terminal from 2016 to 2019 (last updated August 2019).
BODIND	Board independence. Measured by independent directors as a percentage of total board membership. Collected from Bloomberg database for the year from 2015 to 2018 (average percentage of each year).
BODDIV	Board gender diversity. Measured by the percentage of women on the Board of Directors. Collected from Bloomberg database for the year from 2015 to 2018 (average percentage of each year).
BODAGE	Board average age. Measured by the average age of the members of the Board. Collected from Bloomberg database for the year from 2015 to 2018.
BODSIZE	Board size. Measured by the number of directors on the company's board. Collected from Bloomberg database for the year from 2015 to 2018 (average number of each year).
CEODUAL	CEO duality. Equals 1 if the company's Chief Executive Officer is also Chairman of the Board, and 0 otherwise. Data collected from the Bloomberg database for the year from 2015 to 2018.
FIRMSIZE	Firm size. Measured by the natural logarithm of market capitalization, i.e. the monetary value of all outstanding shares stated in the pricing currency. Collected from the Bloomberg database for the year from 2015 to 2018 (average of outstanding shares in each year).
ROA	Profitability. Measured by return on assets for the year from 2015 to 2018, which calculated as (Trailing 12 months Net Income/ Average Total Assets)*100. Collected from the Bloomberg database.
LEV	Leverage. Measured by (average) total debt to (average) total asset for the year from 2015 to 2018. Collected from the Bloomberg database.

6.3.2. Results

a) Research model validity

Panel data analysis deals with heterogeneity, i.e. the individual effects that are not captured in independent variables, by using either fixed or random effect model. A fixed effect model examines if the intercepts (constants) vary across time or individual periods; whilst a random effect model studies differences in error variance components across time or individual periods. If heterogeneity does not exist, ordinary least squares (OLS) is sufficient to estimate consistent parameters (Park, 2011). However, if the individual effect does exist, the assumptions of homoskedasticity, i.e. error terms have the same variance, and non-autocorrelation, i.e. these error terms are not related to each other, maybe violated. Thus, the OLS model will be biased and no longer an efficient estimator. In this case, panel data models provide better solutions for the estimation.

To verify that the fixed effect model is the most suitable method for the panel data in the current study, several tests have been conducted. First, F-test is carried out to determine if there is equality between the fixed intercepts of the fixed effect model. In other words, this test identifies whether the fixed effect model outperforms the ordinary least squares (pooled OLS) model for this set of panel data. The result showed that the null hypothesis of the F-test is rejected, i.e. the fixed effect model is superior to pooled OLS regression in this analysis. The second test to be conducted is the Lagrange multiplier (LM) test. This test is to verify if the random effect model is more suitable than the pooled OLS model. The result revealed that the null hypothesis is rejected, i.e. random effect model outperforms the pooled OLS model in possessing this set of panel data. Finally, the Hausman test is employed to decide the more suitable model between the fixed effect model and random effect model. The null hypothesis of the Hausman test is rejected, i.e. the fixed effect model is more favorable than the random effect model in this analysis.

b) Descriptive and correlation analysis

Table 8 presents the descriptive analysis result. The mean of CSP is around 39.2 with the range from 0 to 100. The standard deviation for corporate sustainability performance is about 30. Board independence have a relatively high mean value around 0.6 which means the average rate of independent directors among examined companies is approximately 60%; whilst mean for board gender diversity is relatively low at 0.16, which indicates the low percentage of women directors on board. The average age of directors on board is around 60.8 with the youngest board of directors is around 38.6 years old and the oldest board is 79.3 years old. The smallest board consists of 3 members; whilst the largest board has 30 members. The average board size is 10.5 (members).

Table 7: Model validity test results

	Result	Sig.	Hypothesis	Superior Model
<i>F</i> -test	40.73	0.0000	Reject H_0	Fixed effect
LM test	9744.76	0.0000	Reject H_0	Random effect
Hausman test	373.15	0.0000	Reject H_0	Fixed effect

Table 8: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
CSP	8,663	39.19716	30.25138	0	100
BODIND	8,663	0.599898	0.254348	0	1
BODDIV	8,663	0.166675	0.133075	0	0.8571
BODAGE	8,663	60.88343	4.458771	38.57	79.33
BODSIZE	8,663	10.45481	2.911415	3	30
CEODUAL	8,663	0.351264	0.477392	0	1
FIRMSIZE	8,663	9.003157	1.257923	1.3962	13.5798
ROA	8,663	0.052338	0.076600	-1.3394	2.5202
LEV	8,663	0.253748	0.193211	0	3.892

Notes: CSP – Corporate Sustainability Performance; BODIND – Board Independence; BODDIV – Board Gender Diversity; BODAGE – Board Average Age; BODSIZE – Board size; CEODUAL – CEO Duality; FIRMSIZE – Firm Size; ROA – Return on Assets; LEV – Leverage.

Table 9: Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CSP (1)	1								
BODIND (2)	0.1984	1							
BODDIV (3)	0.3119	0.4749	1						
BODAGE (4)	0.0209	0.1849	-0.1056	1					
BODSIZE (5)	0.1874	-0.079	0.1337	0.0457	1				
CEODUAL (6)	-0.1109	-0.0602	-0.1342	0.1316	-0.0336	1			
FIRMSIZE (7)	0.3691	0.2793	0.262	0.1149	0.2978	0.0057	1		
ROA (8)	-0.0072	-0.0003	0.0457	-0.0445	-0.1005	-0.0063	0.1139	1	
LEV (9)	0.0462	0.1252	0.0627	0.0104	0.0335	-0.0778	0.0342	-0.1023	1

Notes: CSP – Corporate Sustainability Performance; BODIND – Board Independence; BODDIV – Board Gender Diversity; BODAGE – Board Average Age; BODSIZE – Board size; CEODUAL – CEO Duality; FIRMSIZE – Firm Size; ROA – Return on Assets; LEV – Leverage.

Table 9 documents the correlation matrix among independent and control variables in the study. As illustrated, the highest coefficient is 0.47 between board independence and board gender diversity. The absolute value of all correlation coefficients is under 0.5, indicates no noticeable multicollinearity appears among independent and control variables in the study.

c) Empirical results

The empirical results of the fixed effect model generated by the integrated software package STATA (version 14.1) are summarized in Table 10. Accordingly, *board gender diversity* and *board average age* are positively related to corporate sustainability performance at 0.01 and 0.001 significance level respectively. These indicate that the higher the percentage of women directors on board and the more senior board members are, the better sustainability performance corporations have.

Table 10: Fixed effect model results

	Coef.	Sig.	Std.	[95% Conf. Interval]	
Constant	1.1301	No	5.4674	-9.5880	11.8482
BODIND	2.6296	No	2.0235	-1.3372	6.5963
BODDIV	5.7083	**	2.2270	1.3426	10.0739
BODAGE	0.3375	***	0.0722	0.1959	0.4791
BODSIZE	0.1145	No	0.1025	-0.0864	0.3153
CEODUAL	0.3883	No	0.4887	-0.5698	1.3464
FIRMSIZE	1.3669	***	0.3553	0.6703	2.0634
ROA	0.6221	No	1.9354	-3.1719	4.4161
LEV	5.1926	**	2.0066	1.2590	9.1262

*Notes: BODIND – Board Independence; BODDIV – Board Gender Diversity; BODAGE – Board Average Age; BODSIZE – Board size; CEODUAL – CEO Duality; FIRMSIZE – Firm Size; ROA – Return on Assets; LEV – Leverage. No: No significant. ** Coefficient is significant at the 0.01 level. *** Coefficient is significant at the 0.001 level.*

Female directors are supposed to bring different sociological perspectives and understandings to the board. They possess certain feminine-related characteristics that can enhance sustainability performance (Boulouta, 2013). In particular, women directors tend to express more concerns about societal and environmental issues (Liao, Luo and Tang, 2015); process communal characteristics which make them more sensitive on building relationship with stakeholders (Mallin, Michelin and

Raggi, 2013); and is likely to promote innovation in corporate social strategy to focus on long-term outlook (Glass, Cook and Ingersoll, 2016). Likewise, senior board members tend to concern more with social and ethical issues as the capability for moral reasoning is believed to develop over years (Post, Rahman and Rubow, 2011; Chams and García-Blandón, 2019). Senior decision-makers also express higher moral judgment because they tend to take a longer time to acquire meaningful information and diagnose such information accurately (Daboub et al., 1995).

6.4. The moderating effects of national culture and state religion on the relationship between CG factors and CSP (Analysis 2.2)

In the previous analysis (Analysis 2.1), by employing fixed-effect model which control for all time-invariant factors such as religion and culture, the author identified the results which showed the significant relationship between board gender diversity (measured by percentage of women director on the Board); board average age (average age of board members) and corporate sustainability performance. Because it will be meaningless to examine the moderating effects on the relationship between factors which ultimately do not have significant impacts on CSP, the current analysis focus merely on the moderating effects of national culture and state religion on the relationship between board gender diversity, board average age, and corporate triple-bottom-line performance.

In other words, based on the characteristics of some cultural dimensions and religion, the author expects that the relationship between aforementioned corporate governance factors and CSP will be stronger or weaker in some specific country contexts due to the differences in their national cultures and religions.

6.4.1. Hypotheses development

Based on the discussion in existing literature and characteristics of national culture dimensions and religions, the author proposes three hypotheses on potential moderating effects of two cultural dimensions and one religion on the relationship between CG factors and CSP. These hypotheses are originally developed in this dissertation and have not been seen before.

a) Masculinity and board gender diversity

Women directors with their feminine characteristics are supposed to bring different perspectives and understandings to the board. Boulouta (2013) describes that female board members possess certain feminine-related personalities which can

enhance sustainability performance. In particular, women directors tend to express more concerns about societal and environmental issues than their male counterparts (Liao, Luo and Tang, 2015); process communal characteristics which make them more sensitive on building relationship with stakeholders (Mallin, Michelin and Raggi, 2013); and is likely to promote innovation in corporate social strategy to focus on long-term outlook (Glass, Cook and Ingersoll, 2016).

Hofstede, Hofstede and Minkov (2010) describe that the biological differences between men and women are statistically the same all over the world; nonetheless, the social roles and behaviors attached to men and women differ from culture to culture. For example, American men express more strongly “masculine” characteristics such as assertive, competitive, tough, and achievement-oriented whilst Dutch men tend to possess more “feminine” personalities of modest, tender, and concerned with the quality of life. These differences in national culture are captured in the dimension of *masculinity versus femininity*. Labeling this dimension of masculinity and femininity is relative, and it also does not mean offensive to any genders. It is simply used to describe the set of behaviors and social roles which normally attached to male and female but can be different from one culture to another. According to Hofstede, Hofstede and Minkov (2010), cultures with a high score of this dimension, i.e. masculine cultures, are distinct in emotional gender roles. In other words, in such societies, men are supposed to be assertive, tough, and focused on material achievement, whilst women are more modest, tender, and concerned with the environment. Conversely, in feminine societies, emotional gender roles overlap, i.e. both males and females tend to be tender, modest, and concerned with the quality of life.

In the context of masculine cultures, the impacts of female directors on corporate sustainability practices are supposed less effective than in feminine societies. Apparently, feminine characteristics are more connected with sustainable development practices. Prior studies suggested that when female directors appeared on the board, they can bring feminine perspectives and understandings to the board (Boulouta, 2013; Liao, Luo and Tang, 2015). However, in masculine societies, where men and women are clearly distinct in emotional gender behaviors, the opinions, perspectives, suggestions, etc. from female directors can be argued or ignored by their male counterparts as these opinions, suggestions, etc. are very different from men directors’ viewpoints. Hence, the influences of women directors on CSP tend to less effective than in those in feminine cultures, where both men and women pay more attention to the environment and quality of life. Taken together, the author hypothesizes that:

H8: Masculine cultures mitigate the positive relationship between board gender diversity (women director on the Board) and corporate sustainability performance.

b) Long-term orientation and board average age

Board average age measured by the average age of all members of the board. Senior board members tend to concern more with social and ethical issues as the capability for moral reasoning is believed to develop over the years (Chams and García-Blandón, 2019). According to Daboub *et al.* (1995), senior decision-makers also often express higher moral judgment because they tend to take a longer time to acquire meaningful information and diagnose such information accurately. Hence one may expect boards with higher average age to have positive effects on CSP thanks to the more developed moral reasoning of its senior members. Nevertheless, older people have also been considered as more stubborn and opposed to change than young people. These aspects probably limit the engagement of senior members in sustainable development solutions because those activities normally require substantial changes in habitual behaviors and existing institutions (Diamantopoulos *et al.*, 2003) such as innovations in reducing carbon dioxide emissions or cutting waste.

In terms of cultural characteristics, Geert Hofstede used the fifth dimension of long-term orientation (LTO) to describe the attitude of people toward the changes in society. In normative cultures, which scoring low in this dimension, people prefer to maintain time-honored traditions while viewing changes with suspicion. On the other hand, members in societies that score high in the LTO dimension often choose to take pragmatic approaches and be willing to the changes to prepare for the future.

Taken together, the author argues that high LTO cultures will diminish the character of fearing to changes of senior board members, and let their moral reasoning be more effective; thus enhancing the positive relationship between board average age and corporate sustainability performance.

H9: Long-term orientated cultures (high LTO index) enhance the positive relationship between board average age and corporate sustainability performance.

c) Muslim and the Board gender diversity

Islam is a religion originated from Abrahamic tradition, which based on the belief that the world was created by God (Allah). Muslims claim that their teaching and message aims to advance social justice in societies (Kamla and Rammal, 2013). In fact, there is empirical evidence showed that Islam has positive impacts on corporate sustainability practices (Sobhani *et al.*, 2011; Kamla and Rammal, 2013). The result of the previous analysis in this dissertation also demonstrated the positive relationship between Muslim and corporate sustainability performance.

However, concerning the role of the women, it is well-known that the status of women relative to men is low in most of the Islamic societies (Saleh, 1972; Cooke, 2005). Though there are many concerns about gender equality in Muslim countries (Roald, 2004), the issues of women's role continue to dominate the Islamic world with a very slow change in the status of women compare to men. This problem is blamed on the age-old laws formulated by Muslim jurists in the early stage of Islam and very difficult to change (Asghar, 2008).

Table 11: Women director on board from Muslim countries

Observations from Muslim countries	157 obs
Observations from Muslim countries which have women director on board	138 obs
The proportion of observations from Muslim countries which have women directors on board	87.9%
The minimum percentage of women directors on board from Muslim countries	8.33%
The maximum percentage of women directors on board from Muslim countries	57.14%
Mean percentage of women directors on board from Muslim countries	22.58%

Women directors are believed to positively contribute to corporate sustainability performance thanks to their feminine characteristics which generally in line with triple-bottom-line practices. The rate of companies which have women director on board in Muslim countries from this study's observations is pretty high at 87.9%, in which the minimum percentage of women director on board in Muslim countries is 8.33% and the maximum percentage is 57.14% (see Table 11). The mean percentage of women directors on board in Muslim countries (22.58%) is even higher than the mean percentage of women directors on board of the whole observations (16.67% - see Table 8). Nonetheless, based on the above argument that the role of female directors in Muslim countries is not as strong as male directors, it is supposed that the role of women directors on board as well as the impacts of them on sustainable development issues in Islamic countries are weaker than those in other contexts. Taken together, the researcher hypothesizes that:

H10: The positive relationship between board gender diversity (the percentage of women directors on Board) and corporate sustainability performance is weaker in the Muslim country contexts.

Figure 3 below illustrated the proposed framework for the moderating effects of national culture dimensions and state religions on the relationship between corporate governance and corporate sustainability performance based on the three aforementioned hypotheses. *Analysis 2.1* showed that among other corporate governance factors, board gender diversity and board average age have significant positive relationships with corporate sustainability performance. Based on the arguments above, the author proposed three hypotheses that masculine cultures mitigate the positive relationship between board gender diversity and corporate sustainability performance (*Hypothesis 8*), long-term orientated cultures enhance the positive relationship between board average age and corporate triple-bottom-line performance (*Hypothesis 9*), and Islam limits the positive impacts of women directors on corporate sustainability performance (*Hypothesis 10*).

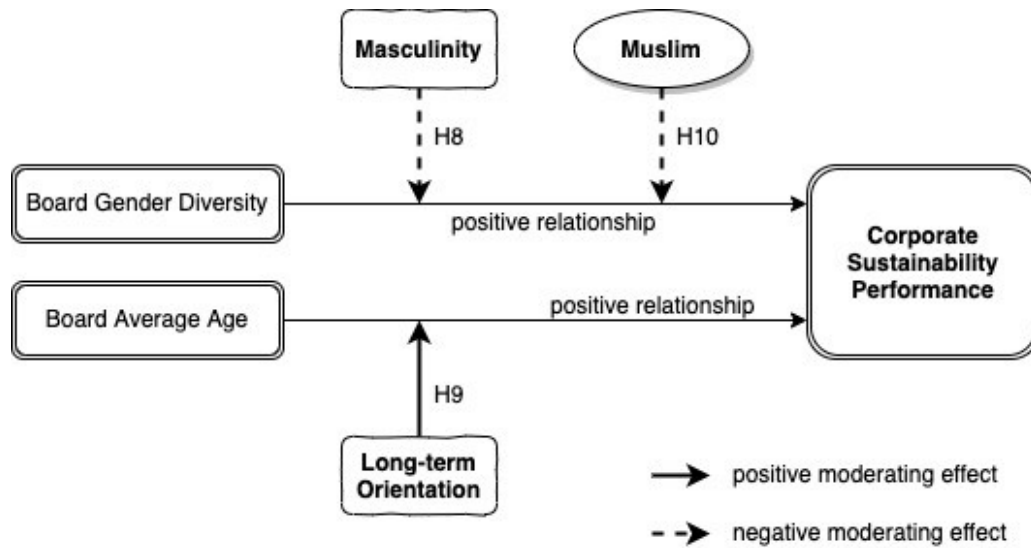


Figure 3: Hypotheses on the moderating effects of national culture and state religion on the relationship between corporate governance and CSP

6.4.2. Research design

a) Research method

The author employed the moderator regression analysis method to test the hypotheses on the moderating effects of national culture dimensions and state religion. A moderator analysis is used to determine whether the relationship between two variables depends on or moderated by the value of a third variable (moderator).

The standard method including the addition of linear interaction terms in the multiple regression model to determine whether moderating effects exist is

employed. This method is also known as moderated multiple regression (MMR) method (Aguinis, 2004).

b) Variables description

Similar to other analyses in this dissertation, this analysis also employed percentile RobecoSAM rankings as the proxy for corporate sustainability performance. Measures for corporate governance factors are collected from the Bloomberg database, lagged one year compared to RobecoSAM rankings data. Hofstede's cultural dimensions are collected from Hofstede Insights, whilst classification for state religion replies on Barro and McCleary (2005) and World Christian Encyclopedia as described in Chapter 4.

To avoid multicollinear effects in the moderator regression model, this analysis utilizes compound variables for cultural effect and religious effect instead of using separate culture dimensions and state religion variables. Based on the results of Analysis One (Chapter 5), i.e. individualism (IDV), uncertainty avoidance (UAI), long-term orientation (LTO), and Indulgence (IVR) positively related to CSP and power distance (PDI), masculinity (MAS) negatively related to CSP, the "Culture" variable in this analysis is constructed by the sum of IDV, UAI, LTO, IVR minus PDI and MAS. This approach is similar to one adopted in Gray (1988); Gray and Vint (1995); Hope et al., (2008); and Orij (2010). In terms of religion, the variable "Religion" is a dummy variable equals 1 if the company based on a country that has state religion (Buddhism, Muslim, or Christianity), and 0 otherwise.

The analysis also comprised several control variables including national economic development measured by the natural logarithm of GDP per capita; firm size measured by the natural logarithm of market capitalization, profitability measured by return on assets, and leverage measured by total debt to total asset. Data for control variables are lagged by one year and are taken from Bloomberg database for corporate-level variables and World Bank for the country-level variable. Table 12 provides detail descriptions of all the variables included in the study.

c) Sample selection

The sample is collected similarly to Analysis 2.1, i.e. data of all company around the world which have percentile RobecoSAM sustainability rankings available on Bloomberg terminal from 2016, the first year RobecoSAM percentile ranking is available on Bloomberg database, to 2019 (the last update is in August 2019) are collected. However, compared to Analysis 2.1, the sample from two countries/territories of Macau and Israel are excluded because there is not enough Hofstede cultural dimensions data for these two countries. The final sample includes 2,704 companies with 8,618 observations from 46 countries.

Table 12: Variables description

<i>Variables</i>	<i>Description</i>
CSP	Corporate sustainability performance. Measured by RobecoSAM percentile rankings. Collected from Bloomberg Terminal from 2016 to 2019 (last updated August 2019).
BODDIV	Board gender diversity. Measured by the percentage of women on the Board of Directors. Collected from Bloomberg database for the year from 2015 to 2018 (average percentage of each year).
BODAGE	Board average age. Measured by the average age of the members of the Board. Collected from Bloomberg database for the year from 2015 to 2018.
MAS	Masculinity index, collected from Hofstede Insights.
LTO	Long-term orientation index, collected from Hofstede Insights.
Muslim	Dummy variable. Equals 1 if the sample company based on the country have a state religion is Islam, and 0 otherwise.
Culture	Compound variable for culture impacts. <i>equals to</i> IDV + UAI + LTO + IVR – PDI – MAS
Religion	Dummy variable, equals 1 if sample company based on the country have state religion, and 0 otherwise.
FIRMSIZE	Firm size. Measured by the natural logarithm of market capitalization, i.e. the monetary value of all outstanding shares stated in the pricing currency. Collected from the Bloomberg database for the year from 2015 to 2018 (average of outstanding shares in each year).
ROA	Profitability. Measured by return on assets for the year from 2015 to 2018, which calculated as (Trailing 12 months Net Income/ Average Total Assets)*100. Collected from the Bloomberg database.
LEV	Leverage. Measured by (average) total debt to (average) total asset for the year from 2015 to 2018. Collected from Bloomberg database.
GDPPC	Natural logarithm of GDP per capita. Collected from the World Bank database for the year from 2015 to 2018.

6.4.3. Results

This section presents the results on the moderating effects of national culture dimensions (masculinity and long-term orientation index) and state religion (Muslim) on the relationship between corporate governance factors, particularly board gender diversity and board average age, and corporate sustainability performance. It will provide empirical evidence to test the Hypothesis 8, Hypothesis 9, and Hypothesis 10 discussed above.

a) Descriptive statistics and correlation matrix

Table 13 and Table 14 present the descriptive statistics and correlation matrix of the studied variables. As shown in Table 13, the percentage of women directors on board vary from 0% to 85,71% with the mean is 16,67%. Board average age range from 38.57 to 79.33 with a mean of 60.88. The masculinity index has a minimum value of 5 and the maximum value of 95, whilst the long-term orientation index fluctuates between 0 and 100. Muslim is a dummy variable received values of either 1 or 0. The valid listwise number of observations N is 8,618.

Pearson correlation among independent and control variables as shown in Table 14 are all lower than 0.7, which suggests no multicollinear effects in the research model. Multicollinear effects are also tested by the variance inflation factor (VIF) and the results show that VIF values of all independent and control variables in the research model are lower than 5, which indicates an acceptable level of multiple correlations at 0.9 (Hair *et al.*, 2014, p. 200).

b) Moderated regression analysis results

This moderator regression analysis progressed in three standard steps. In the first step, control variables were used to explain CSP (Model 1). In the second step, CSP was regressed on control variables and predictors of culture, religion, and corporate governance factors (Model 2). Finally, interaction terms were added to the model to test the moderating effects of cultural dimensions and religion. Three interaction terms were created corresponding to three formed hypotheses (Model 3).

Multicollinearity is always a problem in moderator regression analysis. Scholars have various perspectives on this issue. Much has been said about the mean centering method for interpretation and multicollinearity reasons (Cohen *et al.*, 2003); however, the accuracy of this method over multicollinearity problem has still been questioned (Hayes, 2018). In this analysis, the author takes a different approach to deal with multicollinearity issues. Particularly, in the main effect model, the author uses the ‘compound’ variable to represent the moderator effects from culture and religion instead of using separate cultural dimensions and each state religions variables. The construction of ‘Culture’ variable and ‘Religion’ variable are based on Analysis 1’s results. The use of a compound variable is similar to the

method adopted in Gray (1988); Gray and Vint (1995); and Hope *et al.*, (2008). Thanks to this approach, multicollinearity is not a problem in this analysis when all variance inflation factors (VIF) calculated are lower than 5 suggesting an acceptable level of multiple correlations at 0.9 (Hair *et al.*, 2014, p. 200).

As shown in Table 15, the results for Model 1 were significant ($R^2=.138, p<.001$), as were the results for Model 2 ($R^2=.256, p<.001$) and Model 3 ($R^2=.270, p<.001$). The main-effect model (Model 2) explained significantly more variance in CSP than in the control model (Model 1) ($\Delta R^2=.118, p<.001$). The explanatory power of the moderating effect model (Model 3) was significantly higher than the main-effect model (Model 2) ($\Delta R^2=.014, p<.001$).

The moderating effect model (Model 3) shows two out of three interaction terms were significant ($p<.05$). They were the interaction terms of long-term orientation index and board average age, and Muslim and board gender diversity. The interaction term for long-term orientation index and board average age had a positive coefficient ($\beta=0.002, p<.001$), whilst the interaction term for Muslim and board gender diversity had a negative coefficient ($\beta=-45.112, p<.001$). These results support *Hypothesis 9* and *Hypothesis 10*, i.e. long-term orientated culture enhances the positive relationship between board average age and corporate sustainability performance, and Muslim religion mitigates the positive relationship between board gender diversity and triple-bottom-line performance. Finally, the interaction of masculinity index and board gender diversity had a negative coefficient as predicted in *Hypothesis 8*, but not significant ($\beta=-0.003, p>.05$). The results for the main effects of culture, religion, board gender diversity, and board average age are positive and significant as predicted in the previous analyses.

In sum, the moderator regression analysis revealed empirical results to support *Hypothesis 9* and *Hypothesis 10*. The positive relationship between board average age and corporate sustainability performance is stronger in long-term oriented cultures (high LTO index) with the coefficient for direct impact of board average age on CSP is $\beta=0.27$ ($p<0.001$) and the adjustment for interaction term with long-term orientation index is $\beta=0.002$ ($p<0.001$). On the other hand, the positive relationship between board gender diversity and triple-bottom-line performance is substantially eliminated in Muslim countries, with the coefficient for direct impact of board gender diversity on CSP is $\beta=49.729$ ($p<0.001$) whilst the adjustment for interaction term with Muslim religion is $\beta=-45.112$ ($p<0.001$). The total moderating effects of cultural dimensions (MAS & LTO) and state religion (Muslim) significantly increase the explanatory power of the main-effect model by 1.4%. Masculine culture shows a negative moderating effect on the relationship between board gender diversity and CSP, but not significant (*Hypothesis 8* is not supported).

Table 13: Descriptive statistics

	N	Range	Minimum	Maximum	Mean Statistic	Std. Error	Std. Deviation
CSP	8663	100	0	100	39.2	0.325	30.251
Culture	8618	258	-42	216	114.0848	0.4816	44.7034
Religion	8654	1	0	1	0.1	0.003	0.304
BODDIV	8663	0.8571	0	0.8571	0.1667	0.0014	0.1331
BODAGE	8663	40.76	38.57	79.33	60.8834	0.0479	4.4588
MAS	8654	90	5	95	62.88	0.221	20.564
LTO	8654	100	0	100	53.72	0.296	27.506
Muslim	8663	1	0	1	0.02	0.001	0.133
FIRMSIZE	8663	12.1836	1.3962	13.5799	9.0032	0.0135	1.2579
ROA	8663	3.8596	-1.3394	2.5202	0.0523	0.0008	0.0766
LEV	8663	3.892	0	3.892	0.2538	0.0021	0.1932
GDPPC	8663	4.2437	7.4023	11.646	10.4268	0.0085	0.7948
Valid N (listwise)	8618						

Notes: CSP – corporate sustainability performance; Culture – compound variable for culture impacts; Religion – dummy variable for state religion; BODDIV – board gender diversity; BODAGE – board average age; MAS – masculinity index; LTO – long-term orientation; Muslim – dummy variable for Muslim state religion; FIRMSIZE – firm size; ROA – return on asset; LEV – leverage; GDPPC – GDP per capita.

Table 14: Correlation matrix

	CSP	Culture	Religion	BODDIV	BODAGE	MAS	LTO	Muslim	FIRMSIZE	ROA	LEV	GDPPC
CSP	1	.238**	.166**	.313**	0.02	-.197**	-.073**	-.051**	.368**	-0.006	.046**	.078**
Culture		1	-.060**	.301**	.109**	-.142**	-.124**	-.315**	.063**	0	0.014	.639**
Religion			1	.178**	-.103**	-.264**	-.129**	.410**	-0.013	.026*	0.014	-.151**
BODDIV				1	-.107**	-.407**	-.451**	.033**	.264**	.047**	.063**	.202**
BODAGE					1	.162**	-.198**	0.002	.114**	-.044**	0.011	.255**
MAS						1	.348**	-.086**	-.116**	-.067**	-.088**	.091**
LTO							1	-.066**	-.195**	-.056**	-.166**	-.188**
Muslim								1	-.068**	-0.001	0.004	-.212**
FIRMSIZE									1	.116**	.032**	.179**
ROA										1	-.102**	-.027*
LEV											1	.043**
GDPPC												1

Notes: CSP – corporate sustainability performance; Culture – compound variable for culture impacts; Religion – dummy variable for state religion; BODDIV – board gender diversity; BODAGE – board average age; MAS – masculinity index; LTO – long-term orientation; Muslim – dummy variable for Muslim state religion; FIRMSIZE – firm size; ROA – return on asset; LEV – leverage; GDPPC – GDP per capita.

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Listwise N=8618.

Table 15: Moderator regression results

	Model 1 (Control)			Model 2 (Main)			Model 3 (Interaction)			VIF
	Coef.	Std. Err.	P-value	Coef.	Std. Err.	P-value	Coef.	Std. Err.	P-value	
Constant	-44.671	4.247	0.000***	1.256	5.324	0.814	-20.759	5.636	0.000***	
FIRMSIZE	8.917	0.246	0.000***	8.407	0.239	0.000***	8.411	0.238	0.000***	1.157
ROA	-18.064	4.005	0.000***	-23.318	3.728	0.000***	-20.087	3.705	0.000***	1.037
LEV	4.579	1.579	0.004**	3.379	1.471	0.022*	6.128	1.476	0.000***	1.044
GDPPC	0.328	0.387	0.397	-7.448	0.485	0.000***	-6.811	0.489	0.000***	1.952
BODDIV				34.046	2.384	0.000***	49.729	4.633	0.000***	2.16
BODAGE				0.165	0.067	0.014*	0.270	0.067	0.000***	1.154
Culture				0.204	0.008	0.000***	0.183	0.009	0.000***	4.071
Religion				13.703	0.975	0.000***	16.141	1.034	0.000***	1.233
MAS x BODDIV							-0.003	0.075	0.963	4.907
LTO x BODAGE							0.002	0.0001971	0.000***	1.376
Muslim x BODDIV							-45.112	10.129	0.000***	1.271
Adjusted R^2	0.138			0.256			0.270			
F-value	346.86		0.000***	371.00		0.000***	290.01		0.000***	
ΔR^2				0.118			0.014			
F change (for ΔR^2)				340.460		0.000***	55.306		0.000***	

Notes: CSP – corporate sustainability performance; Culture – compound variable for culture impacts; Religion – dummy variable for state religion; BODDIV – board gender diversity; BODAGE – board average age; MAS – masculinity index; LTO – long-term orientation; Muslim – dummy variable for Muslim state religion; FIRMSIZE – firm size; ROA – return on asset; LEV – leverage; GDPPC – GDP per capita.

No: * Coefficient is significant at 0.05 level. ** Coefficient is significant at the 0.01 level. *** Coefficient is significant at the 0.001 level.

c) *Robustness test*

Clustered robust standard errors

Similar to Analysis One, the author employed robust standard errors to deal with the problem of heteroskedasticity. However, due to the data in this analysis is panel data with two dimensions: cross-sectional and time series, clustered standard errors two dimensions are employed instead of conventional robust standard errors. Clustered standard errors deal with heteroskedasticity across clusters of observations. In this robustness test, two-dimensional clustered robust standard errors at the country and year levels are employed. The results generated from the integrated software package STATA are demonstrated in Table 16 below. As shown in the table, though there are changes in significance levels, the overall results are not changed. Thus, the moderated regression analysis results in the prior test (Table 15) are confirmed.

Multicollinearity test

In the moderated regression test above, the author utilized the ‘compound’ variable of culture and religion to avoid multicollinearity problems in moderator regression analysis. Thanks to this approach, all variance inflation factors (VIF) calculated in the interaction model (Model 3 – Table 15) are lower than 5 suggesting an acceptable level of multiple correlations at 0.9 (Hair *et al.*, 2014, p. 200).

In this further test, separate variables for cultural dimensions and each state religions are utilized to see the differences in results compared to the previous test. The results of this test are demonstrated in Table 17 below. Generally, the results of the previous test are confirmed. The results for the control model (Model 1) were significant ($R^2=.138, p<.001$), as were the results for the main model (Model 2) ($R^2=.284, p<.001$) and interaction model (Model 3) ($R^2=.297, p<.001$). The explanatory power of Model 2 and Model 3 are slightly higher than those in the previous test.

The interaction model (Model 3 – Table 17) still shows significant results for two interaction terms of long-term orientation index and board average age ($\beta=0.003, p<.001$), and Muslim and board gender diversity ($\beta=-35.738, p<.05$), i.e. *Hypothesis 9* and *Hypothesis 10* are supported and the previous test’s results are confirmed. The remaining interaction between masculinity index and board gender diversity also has significant result in this test; however, variance inflation factors (VIF) for this interaction term and some other variables in Model 3 shows extremely high values (*see* Table 17). Though multicollinearity is still a controversial issue among scholars (Cohen *et al.*, 2003; Hayes, 2018), too high VIF values suggest inaccurate estimation for coefficients. Thus, the approach in the prior test (Table 15) is preferable.

Table 16: Clustered robust standard errors test

	Model 1 (Control)			Model 2 (Main)			Model 3 (Interaction)		
	Coef.	Std. Err.	P-value	Coef.	Std. Err.	P-value	Coef.	Std. Err.	P-value
Constant	-44.671	37.823	0.239	1.256	34.631	0.971	-20.759	30.865	0.502
FIRMSIZE	8.917	3.906	0.000***	8.407	1.004	0.000***	8.411	1.146	0.000***
ROA	-18.064	3.189	0.056*	-23.318	8.257	0.005**	-20.087	7.262	0.006**
LEV	4.579	9.407	0.153	3.379	2.285	0.141	6.128	2.364	0.010**
GDPPC	0.328	1.422	0.933	-7.448	3.320	0.026*	-6.811	3.158	0.032*
BODDIV				34.046	8.933	0.000***	49.729	18.064	0.007**
BODAGE				0.165	0.246	0.504	0.270	0.199	0.176
Culture				0.204	0.067	0.003**	0.183	0.074	0.014*
Religion				13.703	3.099	0.000***	16.141	3.029	0.000***
MAS x BODDIV							-0.003	0.251	0.989
LTO x BODAGE							0.002	0.000962	0.013*
Muslim x BODDIV							-45.112	23.821	0.060*
<i>R-squared</i>	0.139			0.256			0.270		
<i>F-value</i>	41.12		0.000***	83.82		0.000***	84.06		0.000***
ΔR^2				0.117			0.014		

Notes: CSP – corporate sustainability performance; Culture – compound variable for culture impacts; Religion – dummy variable for state religion; BODDIV – board gender diversity; BODAGE – board average age; MAS – masculinity index; LTO – long-term orientation; Muslim – dummy variable for Muslim state religion; FIRMSIZE – firm size; ROA – return on assets; LEV – leverage; GDPPC – GDP per capita.

* Coefficient is significant at the 0.1 level. ** Coefficient is significant at the 0.01 level. *** Coefficient is significant at the 0.001 level.
All test statistics and significance levels are calculated based on the standard errors adjusted by a two-dimensional cluster at the country and year levels.

Table 17: Multicollinearity robustness test

	Model 1 (Control)			Model 2 (Main)			Model 3 (Interaction)			VIF
	Coef.	Std. Err.	P-value	Coef.	Std. Err.	P-value	Coef.	Std. Err.	P-value	
Constant	-44.671	4.247	0.000***	-31.121	8.719	0.000***	57.942	11.500	0.000***	
FIRMSIZE	8.917	0.246	0.000***	8.868	0.241	0.000***	8.841	0.239	0.000***	1.214
ROA	-18.064	4.005	0.000***	-21.875	3.671	0.000***	-18.700	3.647	0.000***	1.044
LEV	4.579	1.579	0.004**	6.363	1.471	0.000***	5.738	1.459	0.000***	1.060
GDPPC	0.328	0.387	0.397	-3.679	0.613	0.000***	-2.992	0.610	0.000***	3.161
BODDIV				55.528	2.766	0.000***	23.926	6.246	0.000***	9.263
BODAGE				0.292	0.070	0.000***	-1.348	0.155	0.000***	6.403
MAS				-0.212	0.018	0.000***	-0.307	0.024	0.000***	3.166
LTO				0.104	0.026	0.000***	-1.638	0.152	0.000***	233.782
PDI				-0.286	0.041	0.000***	-0.184	0.042	0.000***	6.282
IDV				-0.121	0.030	0.000***	-0.069	0.030	0.021*	8.722
UAI				0.327	0.019	0.000***	0.287	0.019	0.000***	2.552
IVR				0.201	0.039	0.000***	0.231	0.039	0.000***	5.980
Muslim				3.889	2.688	0.148	7.248	4.316	0.093	4.458
Buddhism				17.369	2.648	0.000***	19.933	2.632	0.000***	1.419
Protestant				14.119	1.465	0.000***	13.140	1.465	0.000***	1.264
Catholic				9.432	2.203	0.000***	9.472	2.189	0.000***	1.154
Orthodox				-1.518	8.202	0.853	1.153	8.132	0.887	1.026
MAS x BODDIV							0.541	0.101	0.000***	7.723
LTO x BODAGE							0.030	0.003	0.000***	230.710
Muslim x BODDIV							-35.738	17.252	0.038*	3.832
Adjusted R^2	0.138			0.284			0.297			
F-value	346.859		0.000***	202.064		0.000***	182.846		0.000***	
ΔR^2				0.147			0.013			
F change (for ΔR^2)				135.798		0.000***	53.120		0.000***	

Notes: *FIRMSIZE* – firm size; *ROA* – return on asset; *LEV* – leverage; *GDPPC* – GDP per capita. *BODDIV* – board gender diversity; *BODAGE* – board average age; *MAS* – Masculinity index; *LTO* – Long-term orientation index; *PDI* – Power distance index; *IDV* – Individualism index; *UAI* – Uncertainty avoidance index; *IVR* – Indulgence versus restraint index. *Muslim*, *Buddhism*, *Protestant*, *Catholic*, *Orthodox*: dummy variables for corresponding state religions.

* Coefficient is significant at the 0.05 level. ** Coefficient is significant at the 0.01 level. *** Coefficient is significant at the 0.001 level.

Chapter 7

Discussion and Conclusion

7.1. Summary of key findings

This dissertation aims to explore the direct impacts and indirect impacts (moderating effects) of national culture and state religion on corporate sustainability performance. In terms of direct impacts, Analysis 1 (Chapter 5) revealed that, among six Hofstede's national cultural dimensions, power distance index (PDI) and masculinity index (MAS) have negative influences on CSP, whilst individualism index (IDV), uncertainty avoidance index (UAI), long-term orientation index (LTO) and indulgence versus restraint index (IVR) have positive relationship with triple-bottom-line performance. State religion also demonstrated a strong positive impact on corporate sustainability performance. When examining the impacts of each religion separately, Buddhism, Muslim, Protestant, and Catholic showed a positive and significant relationship with CSP, while Orthodox presented a positive but not significant association with triple-bottom-line performance. Regarding the indirect impacts, i.e. moderating effects, national culture and state religion have on CSP, this dissertation particularly investigates the moderating effects of national culture and state religion on the relationship between corporate governance factors and sustainability performance. Analysis 2.1 indicated that among corporate governance factors, board gender diversity and board average age have a positive and significant association with triple-bottom-line performance. Analysis 2.2 then proposed three hypotheses on the moderating effects of masculinity index, long-term orientation index, and Muslim religion on the association between those corporate governance factors and CSP. Analysis 2.2's results confirmed that long-term orientated cultures enhance the positive relationship between board average age and CSP, and Muslim religion substantially mitigates the positive association between board gender diversity and CSP, whilst the remaining hypothesis that masculine cultures weaken the positive relationship between board gender diversity and CSP was not confirmed.

The thesis findings confirm the argument from stakeholder theory that firms manage their behaviors to meet the stakeholders' expectations. Stakeholders from different countries/regions have different characteristics; thus, firms' behaviors change accordingly. On the other hand, the process of how culture and religion impact on firm behaviors and transform from firm to firm within the same cultural and religious conditions are explained with the help of three isomorphisms of the institutional theory.

7.2. Interpretations and discussions

The power distance index expresses the attitude of members in society toward the fact that not all individuals are equal. The negative relationship between power distance index and corporate sustainability performance means that companies based on countries with lower power distance index, i.e. countries with characteristics such as people have equal rights, power is decentralized, control is disliked, employees are consulted, and attitude towards managers are informal and on first-name basis, exhibit better performance on triple-bottom-line activities. Communication in low power distance culture is direct and participative; thus, it helps to open the connection between various stakeholders, both inside and outside companies, and the management team. Stakeholders in low power distance cultures are also more free to exert pressure on companies' management for their own benefits or the benefits of societies as a whole. For example, the employees and managers in these societies have less distance in power; hence, employees can raise concerns about their benefits to managers, or managers can count on the experience of team members more frequently. Benefits of not merely shareholders are focused, but also of various stakeholders are concerned. The negative result between (high) power distance index and CSP is in line with stakeholder theory. Hypothesis 1 is supported.

The individualism index describes the degree of interdependence among each member in a society. The root differences between different cultures in terms of this index are about the role of the individual versus the role of the group. Analysis 1's results showing a positive relationship between individualism index and CSP means that companies based on high IDV countries, i.e. highly independent culture, tend to have higher sustainability performance scores. Prior studies often show a negative relationship between individualism index and sustainability practices (e.g. Ringov and Zollo, 2007; Thanetsunthorn, 2015; Thanetsunthorn and Wuthisatian, 2018). They argued that people in high individualistic societies focus more on self-interest rather than the interests of the group. However, the 'groups' defined here by Hofstede are the small groups which directly related to each individual such as their families or companies. Therefore, in collectivist societies of Hofstede's framework, people tend to owe lifelong loyalty to one organization and work on such organization's interests. Given the fact that engagement in sustainability practices can cause costs and reduce firms' profitability in the short-term (Friedman, 1970), individuals in collectivist societies may try to avoid engaging in sustainability practices for their own organizations' interests, i.e. reducing costs. On the other hand, in individualistic societies, people work on their own interests; hence, they will exert more pressure on organizations for better behaviors with

social and environmental issues because those issues are directly related to living conditions. This result is opposite to prediction in Hypothesis 2.

The masculinity index is about the masculine and feminine characteristics of a society. The negative relationship between MAS and CSP as shown in the analysis one suggests that companies based on countries with more feminine characteristics such as caring about the quality of life, relationship and living in harmony with environment exhibit better sustainability performance. Masculinity and femininity are used here to describe the characteristics that normally belong to males and females respectively. However, this is relative, not absolute. Depending on each culture, a man can have feminine characteristics and vice versa. Masculine characteristics or masculine cultures that are described as the cultures are driven by competition, material achievements and successes, whilst feminine cultures care more about the quality of life, relationships, and surrounding environments. Apparently, feminine characteristics are more aligned with sustainable development activities. In feminine countries, people care more about the relationship, quality of life, and environment; thus, they will exert pressure on corporates to require sustainability-related practices. On the other hand, the characteristics of masculine societies tend to be more favorable with financial successes; hence, less attention is paid to social and environmental issues because those activities are more costly to the companies. The significant and negative relationship between masculinity index and corporate sustainability performance supports Hypothesis 3.

Uncertainty avoidance index measures how willing people in societies deal with ambiguity in the future. The positive relationship between UAI and CSP means that companies based on countries with high uncertainty avoidance index have better corporate sustainability performance scores. High UAI cultures prefer to avoid unknown coming situations by strict laws, regulations, and formality. Actions that may cause damage to the society or environment are watched and controlled. In other words, corporate sustainability-related practices are preferable in high uncertain avoidance countries because those practices are towards sustainable and maintainable development, with less uncertainty and damages to society and the environment. Corporate sustainability practices may also be controlled by regulations and laws in such countries. For instance, Japan is a country with very high score of uncertainty avoidance index, 92, and in Japan, there are total 28 provisions consider ESG³ issues; in which, all 15 reporting requirements are mandatory for companies that fit the specified criteria (World Business Council for Sustainable Development, 2019). Compare to the world, the mandatory legal

³ ESG: Environmental Social and Corporate Governance.

requirements for ESG disclosure in Japan are 61 percent whilst this rate for the rest of the world is 55 percent and for the top ten major economies is only 44 percent (World Business Council for Sustainable Development, 2019, p. 8). The positive relationship between UAI and CSP supports Hypothesis 4.

The long-term orientation index describes how societies spend their efforts towards the future versus the present and the past. The positive relationship between long-term orientation index and CSP means that companies based on countries with high long-term orientation index, i.e. countries which tend to take pragmatic approaches to prepare for the future, will have higher scores of corporate sustainability performance. The fifth dimension, long-term orientation index (LTO), was added by Geert Hofstede to his cultural framework in 2001 based on independent research in Hong Kong (Hofstede, 2001). Long-term orientation index divided societies into two types: normativism and pragmatism. Normativism or normative societies, which scoring low in this dimension, prefer to maintain time-honored traditions while viewing changes with suspicion. Normativism is short-term orientation, stands for the fostering of merits related to the past and present. Conversely, pragmatism is long-term orientation which orients towards future rewards. The pragmatic approach is supposed to be in line with corporate pollution prevention, recycling, and waste reduction activities (Hackert et al., 2012). The existing literature, nonetheless, does not have much evidence on the relationship between LTO and CSP. It is probably due to the lack of data as previously Hofstede's study provides LTO scores for only twenty-three countries, compare to around fifty countries for other dimensions. The positive relationship between LTO and CSP supports Hypothesis 5.

Indulgence versus restraint index, the newest dimension in Hofstede's framework, demonstrates the extent people try to control their natural desires and impulses. The positive relationship between IVR and CSP means that companies based on countries with high IVR, i.e. indulgence culture, have better corporate sustainability performance. In indulgence cultures, people tend to allow their gratification of natural human desires with enjoying life and having fun, whilst restrain cultures have a tendency to curb or restrict their own desires and obey rules and social norms. This index is formed based on the items about happiness, or subjective well-being, taken from the World Values Survey (Hofstede, Hofstede and Minkov, 2010). The characteristics of indulgence versus restraint index, at first, seem to be unrelated to corporate sustainability performance. Nonetheless, Hofstede, Hofstede and Minkov (2010) indicated that there is a strong correlation between indulgence and freedom of speech, i.e. indulgence countries have higher rates of people choosing freedom of speech as the most important national goals than restraint countries. Freedom of speech is viewed as important in indulgence cultures, while it is not a primary

concern in restraint societies. Ismail and Hoo (2014) describe that individual in indulgence cultures prefer happiness and tend to create a perception of freedom, good health, and control over life. The preference for freedom of speech in indulgence societies helps to open the communication channels between stakeholders and corporate management, and also allows stakeholders to express and exert their pressures for sustainable development concerns to corporate managers. The positive relationship between IVR and CSP confirms Hypothesis 6.

The state religion is defined as the official religion adopted by a country. In this dissertation, the state religion is recognized as an all-or-nothing choice. A country may or may not have state religion depend on its historical context. The classification of state religions is replied on the World Christian Encyclopedia (as cited from Barro and McCleary, 2005). Analysis 1's results showed a positive relationship between state religion and corporate sustainability performance means that companies based on countries that have state religions tend to have better corporate sustainability performance scores. The state religion in this thesis is used as a proxy for the level of religiosity; hence, this result can be also understood as religions (Christianity, Islam, and Buddhism) have positive impacts on corporate sustainability performance. When examining the influences of each religion separately, i.e. Buddhism, Islam, Protestant, Catholic, Orthodox, the first four religions demonstrated significant and positive impacts on CSP, whilst the last one, Orthodox, showed a positive but significant relationship with CSP. The use of state religion in this dissertation is based on the argument that the presence of state religion raised religious participation and beliefs (McCleary and Barro, 2006). In other words, the author considers religiosity of some particular religions (Buddhism, Islam, and Christianity) is stronger in countries that have state religions than in those countries do not have. With the positive result on the relationship between state religion and CSP, but not significant for Orthodox, Hypothesis 7 is partially supported.

Moving to the next analysis, in Analysis 2.1, the author retests the relationship between various corporate governance factors and corporate sustainability performance. Among other factors, the results showed a significant and positive relationship between board gender diversity, board average age and CSP. The positive relationship between board gender diversity and CSP means that companies with a higher percentage of women directors on board tend to have better sustainability performance, whilst the positive association between board average age and CSP implies companies with more senior directors (older directors) have higher scores of triple-bottom-line performance.

Then, in the Analysis 2.2, the author further analyzes the moderating effects of several cultural dimensions and religions on the relationship between the

aforementioned corporate governance factors and CSP. Analysis 2.2's results revealed that long-term orientated cultures improve the positive relationship between board average age and CSP, which means that senior board members can contribute better to corporate sustainability performance in long-term oriented countries than those in the short-term oriented countries. Senior board members, i.e. older directors, are supposed to positively contribute to triple-bottom-line performance thanks to their moral reasoning accumulated over the years. However, senior board members are also supposed to be more stubborn and opposed to change than young people. Those characteristics, on the other side, limit the engagement of senior board members in sustainability-related practices because those sustainable activities often require considerable changes in habitual behaviors (Diamantopoulos et al., 2003) such as innovations in reducing carbon dioxide emissions or cutting waste. In this circumstance, long-term oriented cultures help to reduce those characteristics of senior board members because individuals in high LTO cultures often take a pragmatic approach and be more willing to the changes to prepare for the future (Hofstede, Hofstede and Minkov, 2010). The positive moderating effect of long-term orientation index (LTO) on the relationship between board average age and CSP supports Hypothesis 9.

Analysis 2.2's results also showed that Muslim religion substantially eliminates the positive association between board gender diversity and CSP, which means that, in general context, women directors can positively contribute to corporate sustainability performance, however, in the context of Muslim countries, this contribution is very low or insignificant. In other words, it is suggested that Muslim norms and characteristics limit and decrease the role of women directors in relation to corporate triple-bottom-line performance. The role of women has always been an issue in Muslim cultures (Cooke, 2005). Generally, the status of women relative to men is low in Muslim countries (Saleh, 1972). This problem is blamed on the age-old laws formulated by Muslim jurists in the early stage of Islam (Asghar, 2008). Women directors are believed to positively contribute to corporate sustainability performance thanks to their feminine characteristics which generally in line with triple-bottom-line practices. Nonetheless, under the context of Muslim cultures, the ideas, opinions, and suggestions from women directors on sustainability-related issues may not have enough significant effects in the board room. Thus, the impacts of women directors on CSP in Islamic countries are much lower than the other contexts. The negative moderating effect of Muslims on the relationship between board gender diversity and CSP confirms Hypothesis 10. This result, nonetheless, is only based on the current study's sample and may not cover all the Islamic country contexts. The author acknowledges that the Islamic world is very large and the conditions may be different from country to country.

In the Analysis 2.2, the researcher also proposed that masculine cultures mitigate the relationship between board gender diversity and CSP; however, moderator regression analysis showed the insignificant result on this moderating effect, which means that the impact of women directors on CSP is not different between high and low MAS cultures. Hypothesis 8 is not supported.

Thesis's findings and the relevant literature

For the relationship between the first four Hofstede's cultural dimensions and corporate sustainability performance, the results for PDI, MAS, and UAI are generally in line with prior studies (e.g. Gray, 1988; Husted, 2005; Park, Russell and Lee, 2007; Hope et al., 2008; Orij, 2010), whilst the results for IDV is opposite to some previous researchers (Ringov and Zollo, 2007; Thanetsunthorn, 2015; Thanetsunthorn and Wuthisatian, 2018). The existing literature, nonetheless, does not investigate the relationship between national cultural dimensions and triple-bottom-line performance. Previous studies in relevant literature mostly focus on the relationship between Hofstede's cultural framework and non-financial disclosure (Hope, 2003; van der Laan Smith, Adhikari and Tondkar, 2005; Orij, 2010); social performance (Ringov and Zollo, 2007; Vachon, 2010); or environmental performance (Husted, 2005; Park, Russell and Lee, 2007) alone. Thus, this dissertation contributes to the literature by examining the influences of Hofstede's cultural dimensions on corporate sustainability performance which refers to all three aspects of the environment, society, and economy. In addition, this dissertation employed newly updated values of Hofstede's cultural dimensions from Hofstede Insights (<https://www.hofstede-insights.com/>) and sample from 49 worldwide countries to provide more precise and generalizable results on such relationships.

Besides four original dimensions in Hofstede's framework, this thesis also examines two newly added dimensions which are long-term orientation (LTO) and indulgence versus restraint (IVR). The results confirm a positive relationship between both of these two dimensions and CSP. As few prior studies refer to those new dimensions, these results provide a further understanding of the influences other cultural characteristics on sustainability-related practices, rather than those mentioned in the first four Hofstede's cultural dimensions. The robustness test of the analysis one then further compares the results between the two most well-known cultural frameworks, i.e. Hofstede's national cultural dimensions and GLOBE cultural dimensions (House et al., 2004), to confirm the results and also to compare the similarities and differences between these two frameworks.

Concerning the impact of religion, the use of state religion variable for the first time is a notable contribution of this thesis to the current literature. Though state religion has a long history and has been well studied in sociological literature (Smith, 1791; Finke and Stark, 1992; Barro and McCleary, 2005), the use of state religion to examine the impacts of religions on CSP is a completely new approach developed in this thesis. This approach helps to overcome the difficulties in measuring religious impacts and allows the current study to investigate a large worldwide sample. Prior studies employed several self-developed methods to measure religious impacts such as the distance from companies to religious monasteries (Du et al., 2014); the number of adherents in companies' headquarter areas (Cui, Jo and Velasquez, 2019; Zolotoy, O'Sullivan and Chen, 2019); the religious beliefs of firms' executives and owners (Abeydeera, 2016; Khalil and O'sullivan, 2017); or content analysis of annual reports (Mohammed et al., 2009; Sobhani, Amran and Zainuddin, 2012; Kamla and Rammal, 2013). Those methods, nonetheless, all have limitations and can only be applied to investigate in regional contexts with a small number of samples.

Investigating the moderating effects of national culture and religion on the relationship between corporate governance factors and corporate sustainability performance is also a new approach developed in this thesis. Prior studies when examining the influences of cultural factors on corporate sustainability practices mostly focus on the direct impacts of cultural dimensions but did not concern how cultural and religious factors affect and moderate the relationship between other factors and CSP. On the other hand, scholars concerning about the relationship between corporate governance and sustainability practices also did not consider the moderating or interacting effects of culture and religion on these relationships, and they demonstrated controversial results on these relationships as well (e.g. Johnson and Greening, 1999; Post, Rahman and Rubow, 2011; Hussain, Rigoni and Orij, 2018). Therefore, this study provided a new understanding of how culture and religion impact corporate behavior, particularly corporate sustainability practices, not only the direct impacts but also the moderating effects (indirect impacts) of them on the CG – CSP relationship.

7.3. Practical implications

The motivations of this dissertation are twofold. First is to improve understanding of how culture and religion affect corporate sustainability practices, and second is to derive practical implications for encouraging corporate sustainable development. Understanding the impacts of cultural and religious factors on CSP can help to explain why some countries have a greater capacity for sustainability than the others. For instance, Costa Rica is a relatively poor country in Central America but has

spent significant resources on sustainability practices (Husted, 2005). An investigation on cultural values and religion of Costa Rica revealed that this country has low power distance index (35), low masculinity (21), and very high uncertainty avoidance (86) (Hofstede Insights, 2017); the state religion of Costa Rica is Catholic (Barro and Mccleary, 2005). These cultural characteristics and state religion status are all in line with sustainable development as the results demonstrated in Analysis 1. Thus, it can be easier to understand and explain why Costa Rica has spent remarkable social and institutional resources on sustainability-related practices.

Though understanding the roles of national cultures and state religions in contributing to corporate sustainability practices can help to explain why some countries have better triple-bottom-line performance or have spent more resources on sustainable development than the others, it is impossible to alter cultural or religious characteristics because those factors are normally considered as stable over time or at least not changeable in short time period. The study findings, nonetheless, can still provide practical implications to policymakers and business leaders for promoting corporate sustainability practices. Several practical implications derived from the thesis's results are as follows.

First, Analysis One's results showed that high power distance cultures have negative impacts on corporate sustainability performance. However, one characteristic of the high PDI societies is that senior members and top managers in such societies have more power and significant impacts over the junior members and employees. Therefore, one potential solution to encourage sustainable development in such societies is focusing on top managers. When the interests of the top managers are linked to sustainable performance indicators, it might not merely encourage the top managers to engage in sustainability practices, but also the engagement of the whole systems.

Second, in masculine cultures, societies are driven by competition, achievement, and success. These characteristics are opposite to feminine features and are shown not aligned with sustainability practices. To promote triple-bottom-line performance in masculine countries, social and environmental practices can be linked to economic prosperity. Business people should understand that sustainable development practices can bring financial success in a long-term period (Orlitzky, Schmidt and Rynes, 2003; Wood, 2010), and sustainability performance should be included in key performance indicators for promotion as well.

Third, in low individualism cultures, i.e. collective societies, people care more about the benefits of their 'close groups' rather than themselves. The focus of sustainability promoting programs in collective countries should be raising awareness of people about the potential harm that unsustainable development

practices can cause to their close groups. For example, damages in the environment will harm their family and surrounding people, or focus on short-term targets can bring temporary financial benefits to their companies but may destroy them in long-term development.

Three aforementioned implications are derived from Analysis One's results and the characteristics of each type of culture. The strategies to promote corporate sustainability practices mentioned in such implications, nevertheless, need more practical evidence in future studies to prove and confirm their effectiveness.

Derived from Analysis Two's results are some implications on corporate structure. The presence of women directors on board is proved to positively influence on corporate sustainability performance. However, this positive impact is substantially eliminated and becomes insignificant in Muslim contexts. Thus, in Muslim countries, an increasing percentage of women on board to promote corporate sustainability performance is not effective. Instead, the focus should be the Islam teachings which demonstrated to positively influence corporate sustainability practices (Sobhani *et al.*, 2011; Kamla and Rammal, 2013).

Conversely, the positive impacts of senior board members on corporate sustainability performance are shown to be improved in long-term oriented cultures. Hence, in countries that have a high LTO index, corporate structure with more senior board members is an effective approach to enhance CSP.

7.4. Thesis contributions

By adopting new measurements/variables and approach, this dissertation contributes to the literature in several aspects. *First*, it contributes to the scant literature on the relationship between cultures, religions and corporate triple-bottom-line performance by simultaneously investigating the impacts of national culture and state religion on CSP with a large number of samples and observations from nearly 50 countries. Thus, the results of this study can be generalized to the global context. *Second*, newly revised six dimensions of Hofstede's cultural framework are employed as the proxy for national culture. Prior researchers in relevant literature often adopt only four original dimensions (i.e. power distance, individualism, masculinity, and uncertainty avoidance) in their studies. In this dissertation, the author considers all six dimensions of Hofstede's cultural framework, with the fifth and sixth dimensions (i.e. long-term orientation and indulgence) are added by Geert Hofstede to his framework in 2001 and 2010 respectively (Hofstede, 2001; Hofstede, Hofstede and Minkov, 2010). In addition, data for Hofstede's national culture dimensions are collected from Hofstede Insights, which are more updated and complete than the values provided in

Hofstede's books before (Hofstede, 1980, 2001; Hofstede, Hofstede and Minkov, 2010). *Third*, this is the first time that state religion is introduced as the measure for the level of religiosity in examining the relationship between religion and corporate behaviors. Evidence from prior studies in religious literature showed that the presence of state religion increased religious participation and beliefs (McCleary and Barro, 2006). Thus, in this dissertation, the author employs state religion as a dummy variable to represent the level of religiosity in examined countries. It helps to overcome the difficulties in measuring the impacts of religion and allows the present study to examine the sample from a broader context. *Fourth*, so far as the author is aware, this is also the first study employ percentile RobecoSAM ranking as the measure for corporate sustainability performance. RobecoSAM has used industry-specific questionnaires to assess firms' annual sustainability performance since 1999. The results of this assessment form the backbone for constructing the well-known Dow Jones Sustainability Indices (DJSI) (RobecoSAM, 2018). According to the Rate the Raters (*see* Appendix 2), RobecoSAM has been considered as the most reliable ESG rating in the market for many years (Wong *et al.*, 2019). Prior studies in the field when using RobecoSAM results only utilize the dichotomous variable of whether companies belong to DJSI (e.g. Baskin, 2006; Artiacha *et al.*, 2010; Chams and García-Blandón, 2019). It is probably due to the limitation of public data. Previously, merely DJSI component lists are published widely each year. Only since 2016, percentile rankings of all assessed companies by RobecoSAM are available on the Bloomberg database platform for its subscribers. The use of percentile RobecoSAM rankings provides a reliable measure for CSP and helps to access a large number of samples worldwide. *Finally*, this dissertation comprises of several analyses which examine both direct impacts and moderating effects of culture and religion on corporate sustainability performance. This approach contributes to the literature by drawing a more comprehensive picture of the overall influences of culture and religion upon triple-bottom-line performance. Not only the direct connections between culture, religion and CSP are examined, but also the moderating effects culture and religion have upon the relationship between other factors and CSP are investigated.

7.5. Limitations and future research

While employing new approaches and have significant contributions to the existing literature, the author also acknowledges several limitations of the current thesis. *First* is the limitation exists within Hofstede's cultural dimension framework. Hofstede's cultural dimensions are originally based on the study of IBM employees' survey to build up the national cultural framework. In this framework, each country receives a single value for each cultural dimension. However, several scholars

indicate that countries are not culturally homogeneous (Adler 1984, Enz 1986 as cited from Husted, 2005). The cultural characteristics, which lead to cultural dimensions, may differ across states or regions within a country, especially in big countries. Thus, using uniform culture dimensions for the whole country cannot cover these differences. *Second*, the use of state religion is a completely new approach in this dissertation to examine the impact of religion on corporate sustainability practices. Though the classification of state religion in each country is cited from some reliable sources, i.e. World Christian Encyclopedia and the study of Barro and McCleary (2005), as discussed in Chapter 2, there are still controversies surrounding state religions in some cases such as Italy, Portugal, or Spain. In addition, the classification of state religion here is all or nothing choice. It means that there are only two options, a country has or has not a state religion. Nonetheless, the measures and scales of religiosity in each country may be more complicated than only all or nothing. *Finally*, due to the limit in length and time of one dissertation, this thesis only considers the moderating effects of culture and religion on the CG-CSP relationship. There should be more potential moderating effects of culture and religion on the relationship between other factors and corporate sustainability performance such as the influences of culture and religion on various stakeholders' perspectives toward corporate sustainability practices.

Considering the aforementioned limitations, several possible directions for future research are as follows. The first approach is to utilize other cultural frameworks or more detailed cultural dimensions in each state/region. Similarly, scholars may find out more detailed measures or scales for religiosity. One potential framework to consider for the cultural and religious measure is the World Value Survey. The World Value Survey studies changing values and their impact on social and political life in almost 100 countries since 1981 (World Values Survey, 2019) and can be a valuable source in measuring cultural and religious impacts in different areas. Another type of studies can be carried out is to investigate the moderating effects of culture and religion on the perspectives of various stakeholders towards CSP. For instance, the differences in the impacts of culture/religion on the behaviors of more/less religious investors/customers toward corporate sustainable practices.

Appendix

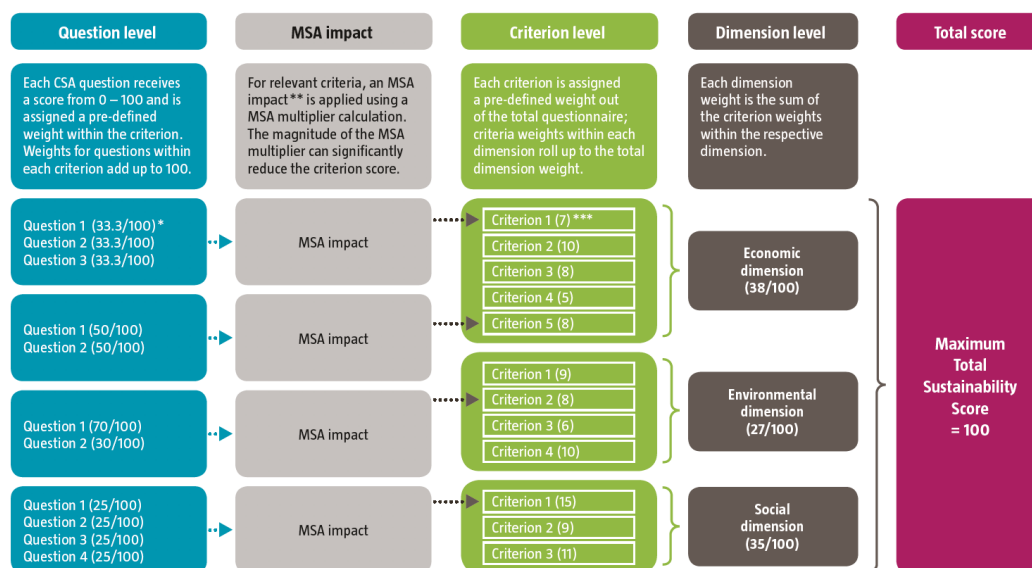
Appendix 1: Explanations of RobecoSAM ranking methodology

(taken from *Measuring Intangibles – RobecoSAM’s Corporate Sustainability Assessment Methodology* (RobecoSAM, 2018))

Each year, RobecoSAM invites more than three thousands of the world’s largest publicly traded companies to participate in their corporate sustainability assessment program. The starting point for RobecoSAM’s corporate sustainability assessment program is an industry-specific questionnaire focusing on financially-relevant economic, environmental and social criteria.

Calculating a company’s final sustainability scores is a process of progressively weighted and summed applying points until a final aggregated score is reached. The starting point consists of individual questions, the values of which are weighted, summed and aggregated into broader areas called criteria. Then, criteria values are weighted, summed and aggregated into even broader areas called dimensions. Following the same pattern, dimensions values are then weighted and summed to find a total sustainability score. The process is demonstrated in the figure below.

Figure: Structure of the RobecoSAM Corporate Sustainability Assessment



* Pre-defined question weight

** Media & Stakeholder Analysis (MSA). Selected criteria in the CSA are assigned an MSA impact. The MSA impact is used to adjust criterion scores downward based on the magnitude of negative impact stemming from an MSA case. For detailed information, please refer to p. 10 of this document and to the [MSA Methodology Guidebook](#)

*** Pre-defined criterion weight

Question, criteria, and dimension weights provided in the diagram above are for illustrative purposes only. The actual number of questions, criteria and their corresponding weights will vary from industry to industry.

Source: RobecoSAM

Notes: The number of questions in the Question level is for demonstration purpose only, i.e. actual number is different.

Figure: Examples of criteria and relative dimension weights for the Banks, Electric and Pharmaceutical industries

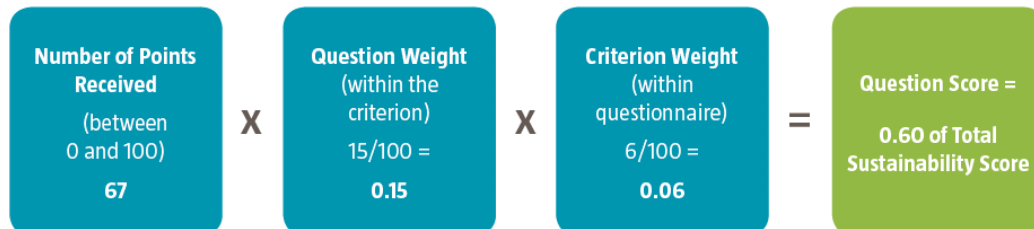
Economic Dimension	Banks	Electric Utilities	Pharmaceuticals	
Anti-crime Policy&Measures	●			industry-specific
Codes of Business Conduct	●	●	●	general
Corporate Governance	●	●	●	general
Customer Relationship Management	●	●		industry-specific
Financial Stability and Systemic Risk	●			industry-specific
Information Security & Cybersecurity	●	●		industry-specific
Innovation Management		●	●	industry-specific
Market Opportunities		●		industry-specific
Marketing Practices			●	industry-specific
Materiality	●	●	●	general
Product Quality and Recall Management			●	industry-specific
Risk & Crisis Management	●	●	●	general
Supply Chain Management		●	●	industry-specific
Tax Strategy	●		●	industry-specific
Total Economic Dimension Weight	43%	31%	48%	
Environmental Dimension				
Biodiversity		●		industry-specific
Business Risks and Opportunities	●			industry-specific
Climate Strategy	●	●	●	industry-specific
Electricity Generation		●		industry-specific
Environmental Policy & Management Systems	●	●	●	general
Environmental Reporting	●	●	●	general
Operational Eco-Efficiency	●	●	●	industry-specific
Transmission & Distribution		●		industry-specific
Water-Related Risks		●		industry-specific
Total Environmental Dimension Weight	23%	40%	9%	
Social Dimension				
Addressing Cost Burden			●	industry-specific
Controversial Issues, Dilemmas in Lending & Financing	●			industry-specific
Corporate Citizenship and Philanthropy	●	●	●	general
Financial Inclusion	●			industry-specific
Health Outcome Distribution			●	industry-specific
Human Capital Development	●	●	●	general
Labor Practices indicators and Human Rights	●	●	●	general
Occupational Health & Safety	3%	4%	3%	industry-specific
Social Reporting	●	●	●	general
Stakeholder Engagement		●		industry-specific
Strategy to Improve Access to Drugs or Products			●	industry-specific
Talent Attraction & Retention	●	●	●	general
Total Social Dimension Weight	34%	29%	43%	

Notes: Criteria and weights are based on the 2016 CSA for the Banking, Electric Utilities and Pharmaceutical industries. Criteria and weights will differ for other industries. Specific criteria and their corresponding weights for subsequent years may change.

Figure: Example on scoring the question from bank industry

Question:	Which of the following qualitative and assurance aspects does your company's on-line financial service/system platform cover? Please provide supporting documents.
Customer Data Security & Data Privacy	
Question Points	0 – 100
Question weight within criterion	15%
Criterion	Customer Relationship Management
Dimension	Economic
RobecoSAM Rationale	New lifestyles such as flexible working hours, increased mobility, and working from home are shifting consumer attitudes towards online services. By adopting a multi-channel strategy that includes online services, companies can further enhance their product offerings, service availability and standardization while improving customer loyalty and lowering costs. RobecoSAM assesses what type of online services banks offer their customers. Networked data and globalized corporate activities require the diligent handling of information. Therefore, not only must companies have a comprehensive (online) privacy policy in place, they must also have the mechanisms to ensure the proper implementation of their policy. Over the past decade, the number of data breaches has grown exponentially. Therefore, RobecoSAM's question asks companies if they have the necessary security systems in place and the ability to evaluate potential costs associated with such data breaches.
Possible Answers	Number of Points Awarded
A) list of potential approaches (company can check all that apply)	0 – 100 (depending on which approaches have been selected)
B) not applicable	A question that has been marked "Not Applicable" will not be scored and the weight of the question will be equally redistributed across the other questions within the same criterion, only if the analyst agrees that the question does not apply to the company's business model. This option is only granted in exceptional cases.
C) not known	0

Assuming the company receives 67 points for its response to this question, its score will be calculated as follows:



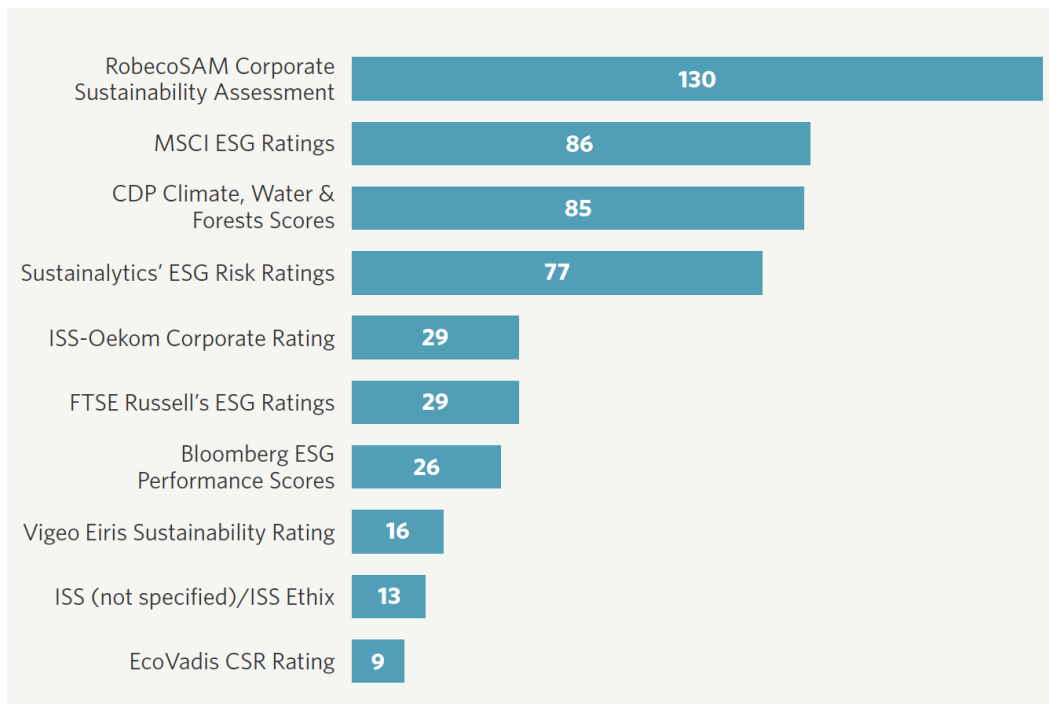
Questionnaires are industry-specific, i.e. the question content and question number may differ among the different industries. The relative question weight and criterion weight are also different depending on each industry. This methodology provides more accurate results for RobecoSAM sustainability ranking scores.

Appendix 2: Experts' view on the best corporate sustainability ranking

SustainAbility is an advisory firm that works to inspire and enable businesses to lead the way to a sustainable economy. Since 2010, SustainAbility launched a multi-phase research program, Rate the Raters. The program was designed to influence and improve the quality and transparency of corporate sustainability ratings.

The figure below demonstrated the expert views on the best corporate sustainability ranking available on the market, as taken from Rate the Raters 2019 survey. In this question, 319 experts on the field around the world are asked to choose three highest quality corporate sustainability rankings available on the market. As illustrated in the figure, RobecoSAM is the most mentioned as the highest quality ranking by 130 experts, following is MSCI ESG Ratings and CDP Climate, Water & Forests Scores.

Figure: Experts' view on the best corporate sustainability ranking



Source: Rate the Raters (Wong *et al.*, 2019)

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