

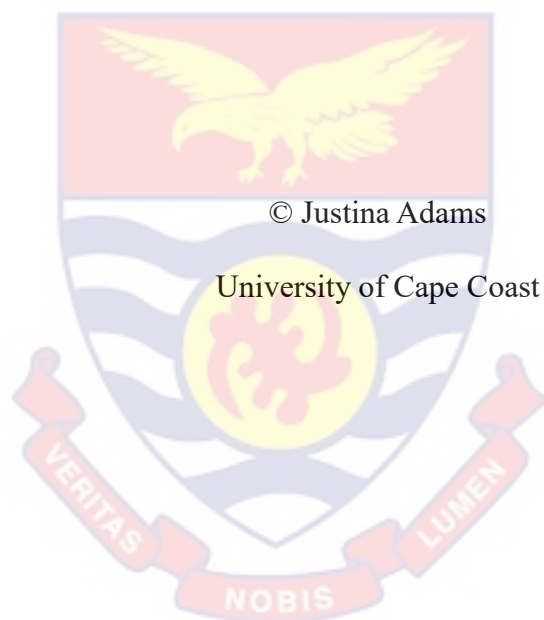
UNIVERSITY OF CAPE COAST

CULTURAL ORIGIN, GREEN REPORTING AND FIRM PERFORMANCE
OF LISTED MANUFACTURING FIRMS IN SUB-SAHARAN AFRICA



JUSTINA ADAMS

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UNIVERSITY OF CAPE COAST

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OF LISTED MANUFACTURING FIRMS IN SUB-SAHARAN AFRICA

BY

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Thesis submitted to the Department of Accounting of the School of Business,
College of Humanities and Legal Studies, University of Cape Coast, in partial
fulfillment of the requirements for the award of Doctor of Philosophy in
Business Administration

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DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this University or elsewhere.

Candidate's Signature: Date:

Name: Justina Adams

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature: Date:

Name: Rev. Prof. George Tackie

Co-Supervisor's Signature: Date:

Name: Dr. Anthony Adu-Asare Idun

ABSTRACT

This thesis has four empirical papers. The first two papers examine the impact of CEO and holding company cultural origins, respectively, on green reporting of listed manufacturing firms in Sub-Saharan Africa. The third and fourth papers analyze the role of cultural origins of CEOs and holding companies in the relationship between green reporting and firm performance of listed manufacturing firms in Sub-Saharan Africa. The period of the study spans from 2015 to 2021 and the study includes a total of 115 listed manufacturing firms, selected from 8 Anglophone countries in sub-Saharan Africa. The study employs fixed-effect panel quantile regression to achieve objectives 1&2. However, to analyze the green reporting-firm performance nexus, the study employs the Instrumental Variable-Generalized Method of Moments (IV-GMM) technique to address potential endogeneity issues. The results show that CEOs from power distance and uncertainty avoidance cultural origin have a negative impact on green reporting at the higher quantiles. In contrast, those from masculine, individualistic, and indulgent cultural backgrounds show a positive relationship. In addition, holding companies from power distance, indulgence, and uncertainty avoidance cultures exhibit a positive association with green reporting of their subsidiary companies at the higher quantiles. However, those with individualistic and Long-term orientation cultural backgrounds show a negative relationship. Furthermore, the results show that green reporting positively affects ROA and ROE. In the same vein, the relationship between green reporting and firm performance is influenced by the cultural traits of the CEO and holding company, with differing effects across different cultural dimensions. The study therefore implies that CEO and

Holding company cultural origins induce green reporting in SSA. The results also imply that in SSA, manufacturing firms' green reporting induces firm performance, but its impacts vary across cultural origins. The study therefore recommends that cultural origin should be taken into consideration during CEO appointments because it influences the CEO's corporate decisions and affects overall firm performance. The results also highlight the need for regulators to consider the importance of the cultural disposition of people when seeking to develop a single global standard for ESGD.

KEYWORDS

CEO Cultural Origin

Chief Executive Officer

Firm Performance

Fixed Effect Panel Quantile Regression

Green Reporting

Holding Company Cultural Origin

Instrumental Variable-Generalized Method of Moments

National culture of the manufacturing company

Sub-Saharan Africa

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DEDICATION

To my Mum, Juliana Yankey

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LIST OF ABBREVIATIONS

AditInd	audit independence
BIND	Board Independence
BSIZE	Board Size
CEO	Chief Executive Officer
CEOGENDIVER	CEO gender diversity
CEOTEN	CEO's tenure
CIND	CEO individualism
CINDU	CEO indulgence
CLTO	CEO long-term orientation
CMAS	CEO masculinity
COP	Conference of the Parties
CPD	CEO power distance
CSR	Corporate social Responsibility
CUNA	CEO uncertainty avoidance
ESGD	Environmental Social and Governance Disclosure
FirmAge	Firm Age
FIRMAUD	Firm audit
FirmSizeLog	Firm Size
GDP	Gross Domestic Product
GreenReport	Green reporting
GRI	Global Reporting initiative
HCCO	Holding company cultural origin
HIND	Holding company individualism
HINDU	Holding company indulgence

HLTO	Holding company's long-term orientation
HMAS	Holding company masculinity
HPD	Holding company power distance
HUNA	Holding company uncertainty avoidance
IMF	International Monetary Fund
Inflation	Deflated by Annual GDP
IPCC	Intergovernmental Panel on Climate Change
Jamlab	Journalism and Media Lab
Lev	Leverage
NIND	National individualism
NINDU	National indulgence
NLTO	National long-term orientation
NMAS	National masculinity
NPD	National power distance
NUNA	Holding company uncertainty avoidance
OECD	Organization for Economic Cooperation and Development
PCA	Principal Component Analysis
RegQuality	Estimate of the Regulation Quality of a Country
ROA	Return on Assets
ROE	Return on Equity
SDGs	Sustainable Development Goals
SSA	Sub-Saharan Africa

CHAPTER ONE

INTRODUCTION

Due to the growing concern over climate change, academics, professionals, and organisations are focusing on improving corporate green reporting. However, research on the relationship between cultural origin, green reporting, and firm performance is still sparse. Cultural origin, specifically CEOs' and holding companies' cultural origins could significantly affect corporate green reporting and firm performance because firms' decisions cannot be culturally free. This thesis contributes to the literature on green reporting and firm performance by examining how CEOs' cultural origin and holding companies' cultural origin affect the relationship between green reporting and firm performance. This thesis is vital to policymakers as they seek to harmonise sustainability reporting standards.

Background to the study

Pollution, resource depletion, and the intensifying threat of global warming are among the most pressing environmental challenges in recent times. These challenges pose significant risks to economic stability, corporate sustainability, and firm performance (Adams et al., 2025; Dong & Huang, 2023; Paleri, 2022; Rees, 2023). Although carbon dioxide (CO₂) emissions temporarily declined by 5.6% in 2020 due to the COVID-19 pandemic (UN, 2021), projections indicate that global greenhouse gas emissions will increase by nearly 50% by 2050, primarily due to a 70% rise in energy-related CO₂ emissions (OECD, 2022). If left unaddressed, these trends will exacerbate climate change and its catastrophic socio-economic consequences. Consequently, the Intergovernmental Panel on Climate Change (IPCC) has

issued repeated warnings emphasizing the urgent need for concerted climate action. Although nations have pledged emission reductions under the 2015 COP21 Paris Agreement and subsequent climate summits (COP26, COP27, and COP28), these commitments remain insufficient to curb global temperature rise (IPCC, 2021; Watts, 2020).

Recognizing the urgency of addressing climate risks, the International Sustainability Standards Board (ISSB) introduced two key sustainability reporting standards: IFRS S1 (General Requirements for Disclosure of Sustainability-related Risks and Opportunities) and IFRS S2 (Climate-related Disclosures). IFRS S1 mandates firms to disclose material sustainability-related financial risks, ensuring investors have consistent and comparable sustainability information. IFRS S2 focuses specifically on climate-related disclosures, requiring firms to report greenhouse gas emissions, climate adaptation measures, and transition plans toward low-carbon economies (Bohn et al., 2025; Krivogorsky, 2024; Wahyuni et al., 2024). These standards mark a significant milestone in global corporate governance by integrating sustainability into mainstream financial reporting. However, the extent to which compliance with these standards influences firm performance remains uncertain, particularly in Sub-Saharan Africa's (SSA) manufacturing sector, where regulatory enforcement and corporate governance mechanisms are often weak (Ntim et al., 2024; Zhu et al., 2024).

Green reporting plays a critical role in advancing the United Nations Sustainable Development Goals (SDGs) (Khan et al., 2021). While it primarily aligns with environmental SDGs such as SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 12 (Responsible

Consumption and Production), SDG 13 (Climate Action), and SDG 15 (Life on Land), its implications extend beyond environmental concerns. A profitable manufacturing sector fosters job creation (SDG 8: Decent Work and Economic Growth), enhances industrial innovation (SDG 9: Industry, Innovation, and Infrastructure), reduces poverty (SDG 1: No Poverty), and promotes inclusive economic growth (SDG 10: Reduced Inequalities) (Van Der Waal et al., 2021). Since SSA lags behind other regions in terms of industrialization, improving manufacturing firm performance through green reporting could significantly contribute to these SDGs (Babatunde & Afolabi, 2024; Khan et al., 2021). Green reporting is defined in this study as the provision of information to external parties about an organization's environmental policies, activities, and performance (Gerged, et al., 2021). The significance of green reporting has grown in addressing global climate change and resource scarcity, as well as in aligning corporate actions with societal values which indirectly improves their firm performance (Albitar et al., 2020; Gerged et al., 2021). However, the degree to which green reporting translates into these socio-economic benefits depends on leadership decisions, regulatory enforcement, and cultural orientations (Altarawneh et al., 2020; Balcilar et al., 2023; Barbero & Puig, 2015; Cho et al., 2021).

Firm performance is a fundamental economic metric that reflects an organization's ability to efficiently utilize resources to achieve profitability and sustainability (Charles & Ochieng, 2023; Özbuğday et al., 2020; Samad, 2022). Traditional financial indicators such as Return on Assets (ROA), Return on Equity (ROE), and Tobin's Q remain critical in assessing corporate success. However, the increasing prominence of Environmental, Social, and

Governance (ESG) considerations has shifted the focus beyond financial indicators. Investors, consumers, and regulatory bodies are progressively integrating ESG criteria into decision-making, reinforcing the importance of green reporting in firm performance evaluations (Fonseca & Carvalho, 2019; Khan et al., 2021; Rosamartina et al., 2022). This transition highlights the necessity of aligning sustainability initiatives with financial performance, particularly in SSA's manufacturing sector, where sustainability efforts remain relatively underdeveloped (Adams et al., 2025; Mensah & Bein, 2023).

Green reporting is largely shaped by stakeholder expectations, regulatory mandates, and strategic incentives (Albitar et al., 2020; García-Sánchez et al., 2020). Stakeholder Theory (Freeman, 1984) suggests that firms that prioritize green reporting can enhance relationships with investors, employees, and customers, ultimately strengthening financial performance. Legitimacy Theory (Dowling & Pfeffer, 1975) posits that firms engage in green reporting to align with societal expectations and gain reputational benefits, which translate into better financial outcomes (Cantele et al., 2018; Mathew, 1997; Pham & Tran, 2020). Signaling Theory highlights that green reporting can serve as a strategic communication tool that signals corporate commitment to sustainability, reducing information asymmetry and attracting investment (Malik et al., 2023; Spence, 1973). However, the extent to which these mechanisms hold across firms depends on cultural factors that influence corporate decision-making (Adams et al., 2025; DasGupta & Roy, 2023).

The cultural background of CEOs and holding companies is a significant yet underexplored determinant of green reporting and firm performance (Adams et al., 2025). CEO cultural origin refers to the cultural

background of a CEO, typically inferred from their country of birth or ancestral heritage, which shapes their managerial philosophies and corporate governance style (Adams et al., 2025; Hofstede et al., 2010). Holding company cultural origin refers to the cultural background of the parent company, determined by the country of establishment or headquarters location, which influences corporate policies and sustainability strategies (Bava & Gromis di Trana, 2019; Hofstede et al., 2010).

Upper Echelons Theory (Hambrick & Mason, 1984) suggests that executives' backgrounds, values, and cognitive frameworks directly shape corporate strategies, including sustainability priorities. Hofstede's Cultural Value Framework (Hofstede, 1980) further explains how power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence influence managerial behaviors and decision-making processes. For instance, CEOs from high uncertainty avoidance cultures may favor comprehensive sustainability disclosures to mitigate regulatory risks (Luo et al., 2013; Coulmont et al., 2015), whereas CEOs from high individualism and masculinity cultures may prioritize short-term financial returns over long-term sustainability goals (García-Sánchez et al., 2013; Hur & Kim, 2017; Lu & Wang, 2021; Thanetsunthorn & Wuthisatian, 2019).

Similarly, Institutional Theory of Isomorphism (DiMaggio & Powell, 1983) could aid an explanation of how holding companies enforce sustainability reporting across subsidiaries through coercive, mimetic, and normative pressures. A holding company from a long-term-oriented culture may promote sustainability as a strategic priority, encouraging subsidiaries to incorporate green reporting into their business models (Disli et al., 2016;

Halkos & Skouloudis, 2017). Cultural Capital Theory (Bourdieu, 1986) complements this argument by suggesting that firms with strong sustainability cultures can leverage their cultural capital to enhance green reporting and firm performance.

Despite the growing global emphasis on sustainability, empirical evidence on the green reporting–firm performance nexus remains inconclusive (Adams et al., 2025; Aluchna et al., 2023; Cantele et al., 2018; Huang et al., 2018; Lu & Taylor, 2018). Some studies find a positive relationship (Adams et al., 2025; Aluchna et al., 2023; Cantele et al., 2018; Malik et al., 2023), while others report no significant effect or even negative associations (Huang et al., 2018; Lu & Taylor, 2018). These discrepancies suggest that cultural origin may be a key moderating factor shaping how green reporting translates into financial performance.

This study directly addresses this gap by examining how CEO and holding company cultural origin influence green reporting (Objectives 1 & 2) and how green reporting influences firm performance when conditioned on cultural backgrounds (Objectives 3 & 4). Unlike prior research (Shi & Veenstra, 2020; Wasiuzzaman et al., 2022) that broadly examines national culture, this study focuses on the individual cultural origins of CEOs and holding companies, allowing for a granular analysis of cultural variations in sustainability practices in SSA manufacturing sector. Manufacturing firms in SSA provide an ideal setting for this investigation. The region is highly climate-vulnerable yet contributes minimally to global emissions (Schilling et al., 2020). Additionally, environmental challenges, weak regulatory enforcement, and the sector's economic relevance justify the need for research

into cultural factors influencing green reporting and firm performance in the region (Ofoezie et al., 2022; Punchihewa, 2021). Moreso, previous research has revealed that in developing countries context (particularly Africa), the level of CSR is found to be generally low and unsatisfactory (Ali et al., 2017; Ali & Frynas, 2017; Dobers & Halme, 2009). Also, the manufacturing sector faces mounting concerns regarding resource utilization, waste management, air pollution, water contamination, and employee well-being (Chen et al., 2015). Manufacturing activities contribute to environmental harm through emissions, waste generation, effluents, and resource depletion (Sanusi & Sanusi, 2019). Punchihewa (2021) underlines the significant environmental impact of manufacturing, stemming from the consumption of environmental resources, energy, water, and pollution, as well as the establishment of manufacturing facilities in industrial zones that adversely affect local communities through air, water, and noise pollution. Given their substantial resource consumption, manufacturing industries bear significant responsibilities and risks related to sustainability (Ahmad et al., 2019; Ye et al., 2022).

In all, this thesis contributes theoretically and empirically to the green reporting- firm performance nexus by examining the role of specific cultural origins such as CEO cultural origin and holding company cultural origin in the nexus. By addressing these gaps, this study provides practical insights for policymakers, corporate leaders, and investors to optimize sustainability strategies and drive economic and environmental performance in SSA's manufacturing sector.

Statement of the Problem

Green reporting has become an indispensable component of sustainability, particularly in today's context of climate change, resource scarcity, and growing socio-environmental pressures (Dong & Huang, 2023; Paleri, 2022; Rees, 2023). The International Financial Reporting Standards (IFRS) S1 (General Requirements for Disclosure of Sustainability-related Risks and Opportunities) and IFRS S2 (Climate-related Disclosures) reflect the increasing importance of sustainability disclosure. These standards require firms to report material sustainability-related financial information, including both direct and indirect greenhouse gas emissions, to improve transparency and accountability in corporate practices (Avi, 2022). Despite these global developments, green reporting remains largely understudied in Sub-Saharan Africa (SSA), particularly regarding how it affects firm performance and the moderating role of cultural origin (Adams et al., 2025; Igwe et al., 2023).

Sub-Saharan Africa, though not a significant contributor to global climate change, is highly vulnerable to climate-induced risks due to its limited adaptation capacity and multiple socio-economic stressors (Szaboova, 2023). Over the past two decades, Africa's economy has grown significantly, ranking fifth globally in terms of GDP growth (Appiah et al., 2022). However, this growth has been accompanied by increasing environmental challenges such as resource depletion, pollution, and rising CO₂ emissions (Gyamfi et al., 2021). Emissions from the manufacturing sector alone accounted for 440 MtCO₂e, representing 30%–40% of total emissions on the continent (Jayaram et al., 2021). Without proactive decarbonization efforts, these emissions could grow to 830 MtCO₂e by 2050, posing significant risks to firm performance, such as

reduced profitability, operational disruptions, and restricted access to debt financing (Cevik & Miryugin, 2022; Grippa & Demekas, 2021; Ozkan et al., 2022).

Manufacturing firms in SSA face unique challenges related to resource efficiency and sustainability practices (Jayaram et al., 2021). These firms operate in a business environment marked by weak regulatory enforcement, financial constraints, and socio-economic vulnerabilities, which make adopting green reporting even more critical (Zhu et al., 2024). Green reporting can help manufacturing firms manage these risks by improving operational efficiency, enhancing access to capital, and strengthening stakeholder trust, ultimately boosting Return on Assets (ROA), Return on Equity (ROE), and Tobin's Q (Adams et al., 2025; Cantele et al., 2018; Malik et al., 2023). However, despite its importance, the adoption of green reporting remains inconsistent across the region, with many firms failing to disclose their environmental performance adequately (Wachira, 2020; Wachira & Mathuva 2022).

As stakeholder expectations continue to evolve, firms are now required to disclose non-financial information alongside traditional financial data. Failure to meet these expectations can lead to reputational damage, diminished investor confidence, and restricted access to capital markets (World Bank, 2022). The growing emphasis on Sustainable Development Goals further reinforces the importance of green reporting as a strategic tool for corporate sustainability. A profitable manufacturing sector contributes significantly to multiple SDGs, including job creation (SDG 8: Decent Work and Economic Growth), industrial innovation (SDG 9: Industry, Innovation, and

Infrastructure), poverty alleviation (SDG 1: No Poverty), and inclusive economic development (SDG 10: Reduced Inequalities) (Bebbington & Unerman, 2018; Van Der Waal et al., 2021). Enhancing manufacturing firm performance through green reporting can play a crucial role in achieving these global development objectives (Babatunde & Afolabi, 2024).

While the relationship between green reporting and firm performance has been extensively studied in developed markets, existing research in SSA is limited and inconclusive. Some studies have found a positive relationship between green reporting and financial performance, highlighting its potential to enhance corporate reputation and stakeholder trust (Cantele et al., 2018; Malik et al., 2023). However, others have reported a negative or neutral relationship, suggesting that the impact may be context-dependent (Lu & Taylor, 2018; Huang et al., 2018). This suggests the need for a more nuanced understanding of the factors that influence this relationship.

In this context, the role of cultural origin becomes crucial (EU, 2022; Ordonez-Ponce, 2022). According to the upper echelon's theory, the values, attitudes, and decision-making processes of top managers are shaped by their backgrounds and cultural orientations, which in turn influence their strategic choices (Hambrick & Mason, 1984). Hofstede's cultural dimensions and cultural capital theory provide a useful framework for understanding how cultural orientation may affect green reporting practices (Hofstede, 2011; Hofstede et al., 2010). For instance, CEOs and holding companies from high uncertainty avoidance cultures are more likely to prioritize compliance and risk management, resulting in more comprehensive green reporting (Luo et al., 2013; Coulmont et al., 2015), while long-term-oriented cultures emphasize

future-focused strategies and sustainability (Durach & Wiengarten, 2017; Disli et al., 2016; Halkos and Skouloudis, 2017). Conversely, high-power distance cultures may concentrate decision-making at the top, potentially limiting transparency and stakeholder engagement (Disli et al., 2016; Gallego-Álvarez & Ortas, 2017; Ringov, 2007; Thanetsunthorn, 2015).

Despite the growing recognition of the importance of cultural orientation, there is a notable gap in the literature regarding how CEO and holding company cultural origins moderate the relationship between green reporting and firm performance. While existing studies have focused on observable CEO characteristics such as age, education, and gender (Huang, 2012; McGuinness et al., 2017; Shahab et al., 2018), very few have examined the deeper role of cultural background (Adams et al., 2025). Moreover, these studies are predominantly conducted in developed economies, which differ significantly from the Sub-Saharan African context in terms of regulatory environments, financial structures, and green reporting enforcement mechanisms (Du et al., 2014; Elmagrhi et al., 2018).

Additionally, the influence of holding company's cultural origin on subsidiary green reporting remains largely unexplored. According to institutional theory and Hofstede's cultural value theory, holding companies can shape the reporting practices of their subsidiaries through cultural diffusion and regulatory pressure (Chwialkowska et al., 2020; Wasiuzzaman et al., 2022). To the best of knowledge, no study has systematically examined how these cultural influences operate in SSA's manufacturing sector, where sustainability challenges are particularly acute. This presents a significant gap in the literature that this study seeks to fill.

Using longitudinal data from 2015 to 2021, this study examines the role of CEO cultural origin in influencing green reporting in SSA, expanding beyond commonly studied demographic attributes, also, the influence of holding company cultural origin on subsidiary green reporting focusing on an underexplored context in SSA. The study further examines the moderating role of CEO and holding company cultural origins in the relationship between green reporting and firm performance, helping to clarify mixed findings in the existing literature. Drawing on stakeholder theory, legitimacy theory, upper echelons theory, institutional theory of isomorphism, Hofstede's cultural value theory, and cultural capital theory, the study will offer both theoretical insights and practical guidance for improving firm performance, sustainability practices, corporate governance, and reporting standards in SSA.

By focusing on the manufacturing sector in SSA, this research will contribute to the growing body of knowledge on sustainability, firm performance, and cultural diversity. The findings will offer valuable insights for policymakers, corporate boards, and business leaders on how to enhance green reporting practices, align corporate strategies with stakeholder expectations, and ultimately achieve long-term profitability while supporting the broader SDG agenda.

Purpose of the Study

The purpose of the study is to investigate the impact of green reporting on firm performance when conditioned on cultural origin (CEOs' cultural origin and holding companies' cultural origin), with a special focus on the Sub-Saharan African manufacturing sector.

Research Objectives

To achieve the study purpose, the following four objectives are set:

1. To assess the relationship between CEO cultural origin and green reporting of listed manufacturing firms in Sub-Sahara Africa.
2. To evaluate the relationship between holding companies' cultural origin and green reporting of listed manufacturing firms in Sub-Sahara Africa.
3. To analyse the impact of green reporting on firm performance of listed manufacturing firms in Sub-Sahara Africa when conditioned on CEOs' cultural origin.
4. To investigate the impact of green reporting on firm performance of listed manufacturing firms in Sub-Sahara Africa when conditioned on holding companies' cultural origin.

Research hypotheses

H₁: CEO cultural origin significantly affects the green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{1a}: CEOs from power distance cultural origin negatively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{1b}: CEOs from individualistic cultural origin negatively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{1c}: CEOs from masculinity cultural origin negatively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{1d}: CEOs from indulgence cultural origin negatively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.

- H_{1e}: CEOs from uncertainty avoidance cultural origin positively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.
- H_{1f}: CEOs from long-term orientation cultural origin positively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.
- H₂: Holding companies' cultural origin significantly affects the green reporting of listed manufacturing firms in Sub-Saharan Africa.
- H_{2a}: Holding companies from power distance cultural origin negatively influences green reporting of listed manufacturing firms in Sub-Saharan Africa.
- H_{2b}: Holding companies from an individualistic cultural origin negatively influences green reporting of listed manufacturing firms in Sub-Saharan Africa.
- H_{2c}: Holding companies from masculinity cultural origin negatively influences green reporting of listed manufacturing firms in Sub-Saharan Africa.
- H_{2d}: Holding companies from indulgence cultural origin negatively influences green reporting of listed manufacturing firms in Sub-Saharan Africa.
- H_{2e}: Holding companies from uncertainty cultural origin positively influences green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{2f}: Holding companies from long-term orientation cultural origin positively influences green reporting of listed manufacturing firms in Sub-Saharan Africa.

H₃: The relationship between green reporting and firm performance of listed manufacturing firms in Sub-Saharan Africa varies when conditioned on CEOs' cultural origins.

H_{3a}: Green reporting has a significant positive influence on firm performance of listed manufacturing firms in Sub-Saharan Africa.

H_{3b}: Green reporting has a positive impact on firm performance when conditioned on CEOs from low power distance cultural origin.

H_{3c}: Green reporting has a positive impact on firm performance when conditioned on CEOs from low individualism cultural origin.

H_{3d}: Green reporting has a positive impact on firm performance when conditioned no CEOs from low-masculinity cultural origin.

H_{3e}: Green reporting has a positive impact on firm performance when conditioned on CEOs from low indulgence cultural origin.

H_{3f}: Green reporting has a positive impact on firm performance when conditioned on CEOs from high uncertainty avoidance cultural origin.

H_{3g}: Green reporting has a positive impact on firm performance when conditioned on CEOs from high long-term orientation cultural origin.

H₄: The relationship between green reporting and firm performance of listed manufacturing firms in Sub-Saharan Africa varies when conditioned on Holding companies' cultural origins.

H_{4a}: Green reporting has a significant positive influence on firm performance.

H_{4b}: Green reporting has a positive impact on firm performance when conditioned on Holding companies from low power distance cultural origin.

H_{4c}: Green reporting has a positive impact on firm performance when conditioned on Holding companies from low individualism cultural origin.

H_{4d}: Green reporting has a positive impact on firm performance when conditioned on Holding companies from low masculinity cultural origin.

H_{4e}: Green reporting has a positive impact on firm performance when conditioned on Holding companies from low indulgence cultural origin.

H_{4f}: Green reporting has a positive impact on firm performance when conditioned on Holding companies from high uncertainty avoidance cultural origin.

H_{4g}: Green reporting has a positive impact on firm performance when conditioned on Holding companies from high long-term orientation cultural origin.

Significance of Study

This thesis makes valuable contributions to theory and practice. The Upper echelons theory suggests that a firm's top management is an integral part of the strategic management process, and both financial and nonfinancial outcomes are determined by the quality and attributes of top management. Similarly, cultural capital theory suggests that cultural background can serve as a form of capital that firms can leverage to enhance their green reporting (Bourdieu, 1986, Throsby, 1995). Thus, this research contributes to the upper echelons' theory and cultural capital theory by delving into the relatively underexplored trait of CEO cultural origin as a defining characteristic of executives, and its impact on green reporting and firm performance. Hofstede's cultural value framework proposes that every person in a society has values and beliefs that shape their judgments and decision-making, which in turn affect how they act as individuals, groups, and organizations. Hofstede's cultural value theory may therefore be found in this thesis that the cultural origin of CEOs and holding companies can influence green reporting and firm performance in manufacturing firms in Sub-Sahara Africa.

The theories of legitimacy, stakeholder, and signaling, on which this study is founded, contend that green reporting acts as a vital tool for these manufacturing firms to demonstrate their commitment to environmental sustainability, thereby gaining legitimacy and acceptance among stakeholders. This transparency satisfies stakeholder demands, aligns with their expectations, and fosters trust, ultimately enhancing relationships and positively influencing financial performance. Moreover, green reporting serves as a powerful signal, communicating the firm's values and commitment to

environmental responsibility, enabling differentiation in the market, attracting eco-conscious stakeholders, and potentially leading to competitive advantages and improved brand image, all of which collectively impact the firm's overall performance positively. Specifically, this thesis makes these contributions to existing literature:

To the best of my knowledge,

- This study is the first to provide empirical evidence on CEO cultural origin and green reporting in the Sub-Saharan Africa manufacturing sector. Previous studies (like Pinheiro et al., 2023) only provide evidence for the relationship between the effects of national culture on environmental disclosure: A cross-country analysis.
- This thesis is the first to provide empirical evidence on holding companies' cultural origin and green reporting in the Sub-Saharan African manufacturing sector. Thus, this study examines the Impact of holding companies' geographical cultural origin on green reporting and firm performance. This study differs from Previous studies (like Peng et al., 2022) which only provided evidence for Board Gender Diversity, Corporate Social Disclosures, and National Culture.
- This thesis is the first to employ measures of CEOs that do not only consider the observable characteristics of CEOs, such as their age, education, gender, duality, tenure, and political connections (like Kang, 2016; Reimer et al., 2017). Also, by examining the role of CEO cultural origin in the relationship between green reporting and firm performance, this thesis differentiates itself from Wasiuzzaman et al. (2022). Wasiuzzaman et al. (2022) provide evidence for the role of

national culture in the relationship between environmental, social, and governance (ESG) disclosure and firm performance.

- This study is the first to employ a special measure of holding companies that have not been employed before. Also, by examining the role of holding companies' cultural origin in the relationship between green reporting and firm performance, this thesis differentiates itself from Wasiuzzaman et al. (2022). Wasiuzzaman et al. (2022) provide evidence for the role of national culture in the relationship between environmental, social, and governance (ESG) disclosure and firm performance.

In terms of social relevance, the findings from this study may have a considerable impact on CEO nominations made by boards of directors. Moreover, the study's findings may show how important it is to take cultural considerations into account when formulating standards and regulations that may entice large firms to voluntarily disclose their participation in the agenda 2030 and 2063. Additionally, this study contributes to the existing literature by offering empirical evidence in support of the Hofstede Model, which identifies national cultural dimensions that affect accounting and organizational practices. In summary, the research results greatly contribute to the comprehension of how culture impacts managerial reactions to climate change. This knowledge is crucial, as climate change is a human-managed issue, and people's attitudes are shaped by their respective national cultural values.

Study Delimitation

This study investigated the role of cultural origin (CEOs' cultural origin and holding companies' cultural origin) in the relationship between green reporting and firm performance, with a special focus on the Sub-Saharan African manufacturing sector. The present study was limited to only manufacturing firms in SSA. The decision of the researcher to use manufacturing firms is informed by the relative ease it is to get the much-needed information from the various stock exchanges and manufacturing firms are one of the leading contributors of carbon emissions.

Limitations of the study

The study employs an econometric approach, which is stochastic and has its problems. Thus, it does not sometimes follow theory. This study did not consider all the listed manufacturing firms in Sub-Saharan Africa since some of them do not have variables needed for the study. This study was conducted on a sample of Sub-Saharan Africa's economies for 2015-2021. Also, the analysis has several restrictions because it only uses a quantitative research approach. Although the quantitative approach is effective for estimating correlations between and across variables, it does not allow for a comprehensive understanding of the subject of the study by examining the qualitative side. Also, the study did not employ all the firm-specific factors for the analysis. It was chosen randomly to meet the purpose and availability of such information.

Organization of the Study

This thesis consists of essays, with Chapters 4, 5, 6, and 7 being presented as journal articles. These four chapters each have had manuscripts

submitted to prestigious peer-reviewed journals. They adhere to the journal article style, requiring an introduction, literature review, research methods, results, and discussion sections, in addition to a summary and conclusions section. While each empirical chapter stands on its own, collectively, they explore the significance of cultural origin in shaping the relationship between green reporting and firm performance. The study is structured as follows:

Chapter One: Introduction

This chapter provides a summary of the study's background. It is concise because subsequent sections provide a more thorough context for each empirical chapter. A brief motivation for the entire thesis is also provided in this chapter, setting the stage for the motivation for the subsequent studies that are reported in each empirical chapter.

Chapter Two: Literature Review

The sole focus of this chapter is on the conceptual and theoretical review. This is because each of the empirical papers contains its own literature review. The conceptual review section of this chapter aims to provide an overview of the concepts that are utilized throughout the study. Specifically, it elaborates on Cultural origin, green reporting, sustainability, and Firm performance. Later, this chapter contextualizes some of these variables within Sub-Saharan Africa to enhance their meaning, given that the study is focused on economies in this region.

The theoretical review portion of this chapter critically evaluates various theories that may inform the four empirical chapters. Firstly, the section explores theories that shed light on the reasons behind green reporting in the Sub-Saharan Africa region, and theories on how CEOs and holding

companies' cultural origin affect the outcomes of the manufacturing sector, particularly in terms of their green reporting. The section then delves into corporate governance theories that explain the importance of CEOs and holding companies' cultural origin in the relationship between green reporting and firm performance. It is important to note that this chapter does not follow the structure of a journal article.

Chapter Three: Research Methods

This chapter provides a broad overview of the methodology adopted for this study. The comprehensive methodology, which includes model specification, variable measurement and sources, and estimation technique for each objective, is detailed in the four empirical papers contained in chapters 4, 5, 6, and 7. Additionally, this chapter explains the philosophical perspective of the study, the research design, and the approach employed. Likewise, the chapter outlines the data collection process and concludes with a thorough examination of the econometric approaches utilized in this study.

Chapter Four: CEO cultural origin and green reporting in the Sub-Saharan Africa manufacturing sector

This is the earliest empirical chapter and has been presented in journal article format. This chapter contributes to the existing literature on the relationship between CEOs and green reporting by employing CEO measures that have not been previously employed. Specifically, the empirical chapter examines how specific measures of CEOs like power distance, uncertainty avoidance, individualism, masculinity, indulgence, and long-term orientation affect green reporting in Sub-Saharan Africa.

Chapter Five: Holding companies' cultural origin and green reporting in Sub-Saharan Africa. This study employs Holding companies' cultural origin measures to provide an understanding of how several aspects of Holding companies' cultural origin measures matter in green reporting.

Chapter Six: Green Reporting and Firm Performance in Sub-Saharan Africa Manufacturing Sector: Does CEOs Cultural Origin Matter?

This chapter elucidates the function of CEOs' Cultural Origin in the association between green reporting and Firm Performance in the Sub-Saharan Africa Manufacturing Sector. To assess the moderating effects, the chapter initially investigates the direct correlation between green reporting and Firm Performance in Sub-Saharan Africa Manufacturing Sector by employing the IV-GMM estimator, which has not been utilized in prior studies to explore the relationship. Subsequently, the chapter examines the impact of CEOs' Cultural Origin on firm performance, followed by an examination of how it affects the correlation between green reporting and Firm Performance in Africa's Manufacturing Sector.

Chapter Six: Green Reporting and Firm Performance in Sub-Saharan Africa Manufacturing Sector: Does Holding Companies Cultural Origin Matter?

This chapter reveals the function of Holding companies' Cultural Origin in the correlation between green reporting and Firm Performance in the Sub-Saharan Africa Manufacturing Sector. To assess the moderating effects, the chapter initially investigates the direct link between green reporting and Firm Performance in Sub-Saharan Africa Manufacturing Sector by employing the IV-GMM estimator, which has not been utilized in prior studies to explore the relationship. Subsequently, the chapter examines the impact of Holding

companies' Cultural Origin on firm performance, followed by an examination of how it affects the relationship between green reporting and Firm Performance in the Sub-Saharan Africa Manufacturing Sector.

Chapter Eight: Summary, Conclusions and Recommendations

The final chapter summarises the notable findings from the study to show the contribution to theory, extant empirical findings, policy, and practice. This chapter also presents recommendations for further research in the area.

Definition of Terms

Firm performance – The study measures firm performance as Return on Assets (ROA), Return on Equity (ROE), and Tobin's Q (Alodat et al., 2023; Jan et al., 2019; Wu et al., 2006). ROE is the ratio of net income to shareholder capital and ROA is profit before interest and taxes divided by the average total assets (in book value). Additionally, Tobin's Q is determined by dividing the market value of the company by the replacement cost of its assets.

Green reporting- Green reporting (GreenReport) refers to the provision of information to external stakeholders about an organization's environmental policies, activities, and performance (Adams et al., 2025; Arthur et al., 2017).

Chief Executive Officer (CEO) cultural origin- CEO cultural origin refers to the cultural background inferred from a CEO's country of birth or ancestral origins. Utilizing Hofstede's (2001) framework, culture is described as the collective programming of the mind that distinguishes groups, indicating that diverse cultural backgrounds can influence CEOs' mindsets and their decisions regarding green reporting.

Holding company cultural origin- In this study, the cultural origin of a holding company refers to the cultural background inferred from the country

of origin where the parent or holding company was established or its headquarters are located.

National culture of the manufacturing company- In this study, the national culture of the manufacturing company refers to the cultural background of the manufacturing firm in our study, inferred from the country where it is operating.

CEO's Tenure- Refers to the number of years since the executive has been appointed to the CEO position, indicating the duration of their leadership role within the company (Loukil & Yousfi, 2022).

CEO Gender Diversity- A dummy variable that is equal to 1 if the CEO is male and 0 otherwise, reflecting the gender representation in top executive positions (Loukil & Yousfi, 2022)

Firm Size- Measured as the logarithm of total assets, this metric indicates the scale of the firm's operations (Bhatia & Tuli, 2017; Alotaibi, 2020).

Firm Audit- A binary variable where 1 indicates that the firm is audited by a Big Four accounting firm and 0 indicates otherwise, highlighting the quality of audit services received (Oehoedoe et al., 2023).

Firm Age- The number of years since the company's founding date, which can reflect the experience and stability of the firm in the market (Bhatia & Tuli, 2017; Alotaibi, 2020).

Board Independence- The percentage of independent directors relative to the total number of directors on the board, indicating the level of independent oversight in corporate governance (Ofoegbu et al., 2018).

Board Size- The total number of directors on the board of a company, which can influence decision-making and governance dynamics (Ofoegbu et al., 2018).

Leverage- Calculated as the ratio of the company's debts to its total assets, this measure indicates the extent to which a company is financed by debt (Nzekwe et al., 2021; Lee and Roh, 2012).

GDP per Capita- Measured by the gross domestic product of an economy divided by its population, this metric provides insight into the economic performance and standard of living in a country (Guryay et al., 2007).

Inflation- Defined as the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services, measured by changes in the Consumer Price Index (CPI) (Kim et al., 2010).

Regulatory Quality- An index that captures perceptions of the government's ability to formulate and implement sound policies and regulations that promote private sector development (Yameogo et al., 2021).

CHAPTER TWO

THEORETICAL AND CONCEPTUAL REVIEW

Introduction

This Theoretical and Conceptual Review explores the core theoretical frameworks and concepts underpinning the relationship between cultural origin, green reporting, and firm performance. The discussion is streamlined to focus on specific theories aligned with each research objective, establishing a clear theoretical foundation and demonstrating how these theories connect the key variables in this study. The review is divided into five core sections: theories related to CEO cultural origin and green reporting, holding company cultural origin and green reporting, CEO cultural origins influence on green reporting and firm performance, holding company cultural origins influence on green reporting and firm performance, and the conceptual review.

Theoretical Review

This theoretical review sheds light on the theories that underpin the relationship between cultural origin, green reporting, and firm performance. Specifically, Upper Echelons Theory, Hofstede's Cultural Value Framework, Institutional Theory of Isomorphism, Cultural Capital Theory, Stakeholder Theory, Legitimacy Theory, and signaling theory

CEO Cultural Origin and Green Reporting

The Upper Echelons Theory (Hambrick & Mason, 1984) posits that organizational outcomes, such as strategic decisions and performance, are influenced by the values, experiences, and characteristics of top executives. This theory emphasizes that CEOs' characteristics shape their strategic decisions, including green reporting practices (Ortiz-de Mandojana et al.,

2018; Shahab et al., 2019). When applied to green reporting, the Upper Echelons Theory suggests that the attributes of CEOs may affect their attitudes toward sustainability and influence the extent of environmental disclosures (Shahab et al., 2022; Shaheen, 2023; Kang, 2017). However, while the Upper Echelons Theory provides a strong foundation for understanding how CEOs' characteristics shape organizational decisions, it does not fully address the sociocultural roots of these characteristics (Adams et al., 2025).

Cultural Capital Theory (Bourdieu, 1986) complements the Upper Echelons Theory by providing deeper insights into how CEOs' cultural origins influence their behaviors and values. Cultural Capital Theory posits that cultural capital—acquired knowledge, values, and disposition guides individuals' perceptions and decision-making processes. CEOs bring this cultural capital, shaped by their socio-cultural background, to the boardroom, where it influences strategic decisions, including those related to green reporting (Situ et al., 2021). This acquired cultural capital, transmitted through education, family background, and life experiences, can affect how CEOs prioritize environmental sustainability and green reporting practices (Ntim & Soobaroyen, 2013; Shahab et al., 2018).

Recent studies, such as Roaldsnes (2024), emphasize how cultural background shapes CEOs' responses to environmental challenges, with long-term-oriented cultures placing greater emphasis on sustainability. Wasiuzzaman et al. (2022) also demonstrate that cultural capital can act as a critical resource in promoting sustainability initiatives within organizations.

Hofstede's Cultural Value Framework (Hofstede, 1980) further strengthens this theoretical foundation by identifying key cultural dimensions

that influence individual and organizational behavior. This framework provides a useful lens to explore how cultural values shape the decision-making processes of CEOs regarding green reporting. Power distance, for instance, reflects the extent to which less powerful members of society accept hierarchical decision-making. CEOs from high power distance cultures may discourage open communication and transparency, which could negatively affect green reporting practices (Ringov, 2007; Thanetsunthorn, 2015). In contrast, CEOs from low power distance cultures may promote greater openness and transparency in sustainability reporting (Diamastuti et al., 2020; Ho et al., 2011).

Similarly, individualism versus collectivism influences whether CEOs prioritize individual goals or collective well-being (Hofstede, 2011). CEOs from individualistic cultures may focus on financial performance over environmental responsibilities, while those from collectivist cultures are more likely to promote collective sustainability goals (Kim & Kim, 2009; Lu & Wang, 2021). Masculinity versus femininity plays a role in determining how companies balance competitiveness and care for the environment. Masculine cultures, which emphasize financial achievement, may deprioritize green reporting, whereas feminine cultures may encourage more comprehensive environmental disclosures (Garcia-Sánchez et al., 2013; Kim and Kim, 2010). Uncertainty avoidance, long-term orientation, and indulgence versus restraint further illustrate how cultural dimensions shape CEOs' strategic priorities. High uncertainty avoidance encourages risk management practices, promoting detailed green reporting, while long-term orientation focuses on future planning and sustainability (Durach & Wiengarten, 2017; Disli et al., 2016;

Sanchez et al., 2016; Halkos & Skouloudis, 2017). On the other hand, indulgent cultures may emphasize short-term gratification, potentially reducing attention to long-term sustainability goals (Thanetsunthorn & Wuthisatian, 2019).

Building on these theories, it becomes clear that the cultural origin of CEOs significantly influences their green reporting decisions. The combination of Upper Echelons Theory, Cultural Capital Theory, and Hofstede's Cultural Value Framework offers a robust framework for understanding how cultural values translate into corporate strategies. For instance, Disli et al. (2021) found that long-term-oriented cultures exhibit higher levels of environmental disclosure, while Luo et al. (2020) showed that power distance negatively affects organizational transparency. In the context of Sub-Saharan Africa, Agyemang et al. (2022) highlights the importance of cultural factors in shaping corporate governance practices and emphasize the need for culturally specific studies to address green reporting gaps.

Based on these insights, the following hypotheses are proposed to explore the relationship between CEO cultural origin and green reporting in Sub-Saharan Africa.

H₁: CEO cultural origin significantly affects the green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{1a}: CEOs from power distance cultural origin negatively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{1b}: CEOs from individualistic cultural origin negatively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{1c}: CEOs from masculinity cultural origin negatively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{1d}: CEOs from indulgence cultural origin negatively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{1e}: CEOs from uncertainty avoidance cultural origin positively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{1f}: CEOs from long-term orientation cultural origin positively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.

Holding Company Cultural Origin and Green Reporting

Institutional Theory of Isomorphism (DiMaggio & Powell, 1983) provides a robust framework for understanding how external pressures influence organizational behavior and decision-making processes. This theory argues that organizations conform to their institutional environment to gain legitimacy, ensure survival, and enhance social acceptance. It highlights three forms of isomorphism: coercive, mimetic, and normative. Coercive isomorphism stems from formal and informal pressures exerted by powerful actors such as holding companies, while mimetic isomorphism arises from the tendency of organizations to imitate successful practices. Normative isomorphism is driven by shared professional standards and norms (Barth & Radev, 2022; Campbell, 2007; Hasan et al., 2023).

In the context of green reporting, Institutional Theory of Isomorphism suggests that holding companies can exert significant coercive and normative pressures on their subsidiaries to align with the cultural values and reporting

practices of the parent organization. Holding companies from different cultural backgrounds may impose distinct expectations on their subsidiaries, shaping their sustainability practices and green reporting efforts (Bourdieu, 1986; Sannino et al., 2020). For instance, holding companies from cultures with high power distance may promote centralized decision-making and reduced transparency, limiting subsidiaries' engagement in comprehensive green reporting (Peng & Lin; 2009; Thanetsunthorn, 2015). Conversely, holding companies from cultures characterized by low power distance may encourage greater openness and accountability, fostering robust sustainability reporting practices (Diamastuti et al., 2020; Ho et al., 2011).

Cultural Capital Theory (Bourdieu, 1986) complements Institutional Theory of Isomorphism by offering a deeper understanding of how cultural origin acts as a valuable resource that can be leveraged to influence organizational behavior. While Institutional Theory explains how external pressures affect organizational conformity, Cultural Capital Theory focuses on how cultural resources, values, and norms shape the strategic decisions of holding companies. Cultural capital, acquired through shared cultural heritage, education, and socialization, becomes a powerful tool for holding companies in determining their subsidiaries' approach to sustainability and green reporting (Adams et al., 2025)

For example, Roaldsnes (2024) emphasizes the role of cultural capital in shaping organizational decision-making, especially in multinational corporations. According to Disli et al. (2021), holding companies from long-term-oriented cultures leverage their cultural capital to promote sustainable practices and ensure their subsidiaries comply with environmental standards.

Similarly, Wasiuzzaman et al. (2022) found that cultural capital significantly influences corporate environmental strategies, particularly in developing economies.

Hofstede's Cultural Dimensions (Hofstede, 1980) further enrich this theoretical framework by identifying key cultural traits that influence organizational behavior. These dimensions include power distance, individualism versus collectivism, masculinity versus femininity, uncertainty avoidance, long-term orientation, and indulgence versus restraint. For instance, holding companies from high power distance cultures tend to favor hierarchical structures and centralized control, which may discourage open reporting and transparency in their subsidiaries (Peng & Lin, 2009; Thanetsunthorn, 2015). In contrast, those from low power distance cultures promote accountability, open communication, and comprehensive environmental reporting (Diamastuti et al., 2020; Ho et al., 2011). Similarly, holding companies from individualistic cultures often prioritize short-term financial goals and shareholder returns, potentially at the expense of long-term environmental stewardship (Kim & Kim, 2010; Lu & Wang, 202). On the other hand, collectivist cultures emphasize collective well-being and long-term sustainability, encouraging subsidiaries to adopt more comprehensive green reporting practices (Ogundajo et al., 2022 & Pinheiro et al., 2023).

Masculine cultures emphasize competitiveness, success, and financial performance, which may deprioritize environmental concerns in favor of economic growth (Hur and Kim, 2017). Feminine cultures, however, are more likely to promote sustainability and environmental care as integral to business strategy (Pinheiro et al., 2023). High uncertainty avoidance cultures favor risk

reduction and stability, which often leads to more detailed and proactive green reporting practices (Peng & Lin, 2009; Kim & Kim, 2009). Long-term-oriented cultures focus on future planning and sustainability, encouraging investments in environmental initiatives and long-term environmental disclosures (Wiengarten, 2017; Disli et al., 2016). In contrast, indulgent cultures prioritize short-term gains and personal gratification, which may reduce the emphasis on long-term sustainability efforts.

Building on these theoretical insights, the following hypotheses are proposed to explore the relationship between holding company cultural origin and green reporting practices in Sub-Saharan Africa. Holding companies from different cultural origins exert unique influences on their subsidiaries' green reporting practices, with varying outcomes based on cultural dimensions. The proposed hypotheses are as follows:

H₂: Holding companies' cultural origin significantly affects the green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{2a}: Holding companies from power distance cultural origin negatively influences green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{2b}: Holding companies from an individualistic cultural origin negatively influences green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{2c}: Holding companies from masculinity cultural origin negatively influences green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{2d}: Holding companies from indulgence cultural origin negatively influences green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{2e}: Holding companies from uncertainty cultural origin positively influences green reporting of listed manufacturing firms in Sub-Saharan Africa.

H_{2f}: Holding companies from long-term orientation cultural origin positively influences green reporting of listed manufacturing firms in Sub-Saharan Africa.

Green Reporting, CEO Cultural Origin, and Firm Performance

Stakeholder Theory (Freeman, 1984) argues that companies must address the needs of multiple stakeholders, including investors, employees, customers, and the broader community, rather than focusing solely on shareholders. From the perspective of stakeholder theory, green reporting serves as a strategic tool for communicating a company's environmental initiatives and commitment to sustainability. Transparent reporting helps companies build trust with stakeholders, which can lead to enhanced brand loyalty, improved reputation, and greater access to financial resources, ultimately boosting firm performance (Menike, 2020; Tien et al., 2019).

Similarly, Legitimacy Theory (Dowling and Pfeffer, 1975) posits that organizations disclose environmental information to align with societal norms and expectations, thereby gaining and maintaining legitimacy. Companies that engage in green reporting are seen as socially responsible and are more likely to secure public trust and stakeholder support. This increased legitimacy can enhance brand reputation and provide a competitive advantage in the market,

ultimately improving financial performance metrics such as Return on Assets (ROA) and Return on Equity (ROE).

Also, Signaling Theory complements these perspectives by suggesting that green reporting reduces information asymmetry between companies and external stakeholders (Spence, 1973). Firms use green reporting to send positive signals about their sustainability practices and long-term viability. These signals help investors make more informed decisions, increasing their confidence in the firm's prospects. As a result, firms that effectively communicate their environmental performance are more likely to experience increased market valuation, reflected in Tobin's Q and other performance indicators.

That aside, the role of CEO cultural origin in shaping green reporting practices can be explained through Upper Echelons Theory, Hofstede's Cultural Value Framework, and Cultural Capital Theory. Upper Echelons Theory (Hambrick and Mason, 1984) emphasizes that an organization's strategic decisions and performance are influenced by the characteristics, experiences, and values of its top executives. According to this theory, CEOs' cultural origins shape their cognitive frameworks and decision-making processes, including their attitudes toward sustainability and green reporting. CEOs from different cultural backgrounds may have varying perceptions of the importance of environmental reporting, which can result in differing levels of commitment to sustainability initiatives (Hofstede, 2011; Lu & Wang, 2021).

Hofstede's Cultural Value Framework (Hofstede, 1980) identifies key cultural dimensions that affect individual and organizational behavior,

providing deeper insights into how cultural origin can influence CEOs' strategic choices. The relevant dimensions for this study include power distance, individualism vs collectivism, masculinity vs femininity, uncertainty avoidance, long-term orientation, and indulgence vs restraint. CEOs from high power distance cultures are more likely to centralize decision-making and limit transparency, resulting in lower levels of green reporting (Gallego-Álvarez & Ortas, 2017; Ringov, 2007), whereas those from low power distance cultures promote openness and accountability, encouraging comprehensive environmental disclosures (Diamastuti et al., 2020; Ho et al., 2011).

Individualistic cultures prioritize personal achievement and short-term gains, which may lead to reduced emphasis on green reporting (Garcia-Sanchez et al., 2013; Khlif et al., 2015), while collectivist cultures emphasize collective welfare and long-term sustainability, increasing the likelihood of green reporting (Ogundajo et al., 2022; Pinheiro et al., 2023). Masculine cultures focus on competitiveness and financial performance, potentially deprioritizing environmental initiatives (Garcia-Sánchez et al., 2013; Kim and Kim, 2010; Hur and Kim, 2017), while feminine cultures value care and cooperation, which can lead to more proactive sustainability practices ((Pinheiro et al., 2023). High uncertainty avoidance cultures prioritize risk mitigation and stability, which may encourage detailed environmental disclosures to reduce future risks (Luo et al., 2013; Coulmont et al., 2015). Cultures with a long-term orientation emphasize sustainability and intergenerational equity, promoting a forward-thinking approach to green reporting (Durach & Wiengarten, 2017; Disli et al., 2016). Finally, CEOs from

indulgent cultures may focus on immediate gratification (Thanetsunthorn & Wuthisatian, 2019), while those from restraint cultures are more likely to adopt disciplined and future-oriented approaches to sustainability (Hofstede et al., 2010; Halkos & Skouloudis, 2017).

Cultural Capital Theory (Bourdieu, 1986) complements Upper Echelons Theory by highlighting how cultural capital—comprising values, knowledge, and socialization—shapes CEOs' perceptions and strategic choices. A CEO's cultural capital, rooted in their socio-cultural background and experiences, influences their attitudes toward environmental reporting. CEOs with cultural backgrounds that emphasize sustainability and environmental responsibility are more likely to prioritize green reporting as a strategic tool for building stakeholder trust and improving firm performance. Recent studies show that cultural capital plays a significant role in shaping strategic decisions and sustainability practices, particularly in environmentally sensitive industries. The study therefore hypothesizes that:

H_{3a}: Green reporting has a significant positive influence on firm performance of listed manufacturing firms in Sub-Saharan Africa.

H_{3b}: Green reporting has a positive impact on firm performance when conditioned on CEOs from low power distance cultural origin.

H_{3c}: Green reporting has a positive impact on firm performance when conditioned on CEOs from low individualism cultural origin.

H_{3d}: Green reporting has a positive impact on firm performance when on CEOs from low-masculinity cultural origin.

H_{3e}: Green reporting has a positive impact on firm performance when conditioned on CEOs from low indulgence cultural origin.

H_{3f}: Green reporting has a positive impact on firm performance when conditioned on CEOs from high uncertainty avoidance cultural origin.

H_{3g}: Green reporting has a positive impact on firm performance when conditioned on CEOs from high long-term orientation cultural origin.

Green Reporting, Holding Company Cultural Origin, and Firm Performance

Green reporting has become an essential component of corporate strategy, particularly in response to increasing demands for transparency and accountability in environmental performance. Stakeholder Theory (Freeman, 1984) posits that firms must balance the needs of various stakeholders, such as investors, employees, customers, regulators, and the broader community. In this context, green reporting serves as a tool for communicating a company's commitment to sustainability, helping build stronger relationships with stakeholders, and improving firm performance. Environmental disclosures enhance stakeholders' trust and foster a favorable reputation, which can lead to increased customer loyalty, employee engagement, and investor confidence (Cantele et al., 2018; Pham & Tran, 2020).

Legitimacy Theory (Dowling and Pfeffer, 1975) reinforces this perspective by emphasizing the importance of aligning organizational practices with societal norms and expectations. Organizations disclose environmental information not only to meet regulatory requirements but also

to legitimize their operations in the eyes of stakeholders. Gaining legitimacy can translate into improved brand reputation, competitive advantage, and financial performance, reflected in traditional metrics such as Return on Assets (ROA), Return on Equity (ROE), and Tobin's Q (Malik et al., 2023; Song et al., 2018). Firms perceived as legitimate and socially responsible are more likely to attract investors and gain easier access to financial resources (Adams et al., 2025).

Signaling Theory complements these frameworks by suggesting that green reporting reduces information asymmetry between firms and external stakeholders (Spence, 1973). Firms use green reporting to send positive signals about their environmental performance and sustainability practices. These signals help stakeholders, particularly investors, make more informed decisions about a company's prospects. Effective green reporting enhances market valuation and stakeholder confidence, thereby improving financial performance (Cantele et al., 2018; Pham & Tran, 2020). However, the relationship between green reporting and firm performance is often influenced by the cultural origins of the holding companies that control these organizations (Shi & Veenstra, 2020; Wasiuzzaman et al., 2022).

Institutional Theory of Isomorphism (DiMaggio and Powell, 1983) provides a useful framework for understanding how holding companies influence the green reporting practices of their subsidiaries. According to this theory, organizations adopt similar practices due to coercive, mimetic, and normative pressures. Holding companies exert coercive pressure by imposing specific sustainability standards and practices on their subsidiaries. Mimetic pressures arise when subsidiaries imitate the green reporting practices of

successful parent companies to gain legitimacy. Normative pressures stem from shared values and professional norms within the corporate group, which influence subsidiaries' adoption of green reporting (Lei, & Chen, 2018; Pucheta-Martínez & Gallego-Álvarez, 2019).

Thus, holding companies from high power distance cultures may discourage transparency and openness in environmental reporting, leading to lower levels of green reporting across their subsidiaries (Roy & Mukherjee, 2022; Vitolla et al., 2019). In contrast, holding companies from low power distance cultures promote accountability and open communication, encouraging comprehensive green reporting practices (Diamastuti et al., 2020; Ho et al., 2011). Similarly, holding companies from individualistic cultures may prioritize short-term profits over long-term sustainability (Khlif et al., 2015; Gallén and Peraita, 2017; Ogundajo et al., 2022), while those from collectivist cultures emphasize collective welfare and environmental stewardship (Gallén and Peraita, 2017; Lu and Wang, 2021).

Masculine cultures focus on competitiveness and achievement, which can lead to a lower emphasis on environmental issues in favor of financial success (Gallego-Álvarez & Ortas, 2017; Pizzi et al., 2021). However, feminine cultures value cooperation and care for the community, which promotes proactive sustainability practices and comprehensive green reporting (Pinheiro et al., 2023). Holding companies from cultures with high uncertainty avoidance prefer stability and risk reduction, which encourages them to adopt detailed environmental disclosures to mitigate future risks (Halkos and Skouloudis, 2017). Finally, long-term-oriented cultures emphasize sustainability and intergenerational equity, promoting proactive environmental

reporting and long-term strategic planning (Hofstede et al., 2010; Halkos & Skouloudis, 2017), while indulgent cultures may prioritize short-term gratification at the expense of long-term environmental responsibility (Hofstede et al., 2010).

Cultural Capital Theory (Bourdieu, 1986) complements Institutional Theory by highlighting how cultural capital—comprising values, social norms, and knowledge—shapes the behavior of holding companies and their subsidiaries. Cultural capital serves as a resource that holding companies can leverage to influence the strategic decisions of their subsidiaries, including decisions related to sustainability and green reporting. For instance, holding companies with cultural values that prioritize sustainability are more likely to pressure their subsidiaries to engage in green reporting, thereby strengthening the relationship between green reporting and firm performance. Therefore, the study hypothesizes that:

H_{4a}: Green reporting has a significant positive influence on firm performance.

H_{4b}: Green reporting has a positive impact on firm performance when conditioned on Holding companies from low power distance cultural origin.

H_{4c}: Green reporting has a positive impact on firm performance when conditioned on Holding companies from low individualism cultural origin.

H_{4d}: Green reporting has a positive impact on firm performance when conditioned on Holding companies from low masculinity cultural origin.

H_{4c}: Green reporting has a positive impact on firm performance when conditioned on Holding companies from low indulgence cultural origin.

H_{4f}: Green reporting has a positive impact on firm performance when conditioned on Holding companies from high uncertainty avoidance cultural origin.

H_{4g}: Green reporting has a positive impact on firm performance when conditioned on Holding companies from high long-term orientation cultural origin.

Conceptual Review

This chapter provides a comprehensive overview of the key concepts relevant to the thesis. It aims to provide a foundational understanding of the concepts discussed in the literature review of each empirical paper. The chapter delves into the conceptual framework of foreign bank penetration and banking sector stability, laying the groundwork for grasping the other concepts linked to these two variables.

The concept of green reporting

Corporate green reporting has become increasingly popular over the last thirty years, attracting interest from a wide range of stakeholders, including governments, international organizations, and related associations, who call on businesses to take responsibility for their environmental impact (Deswanto & Siregar, 2018; Zhang et al., 2022). As a result of this focus, policies, and guidelines that guarantee appropriate and consistent implementation across businesses have been introduced. It is now crucial to stop and lessen environmental degradation because it takes time for natural

resources to replenish, especially in the face of fast industrialization and population growth (Mihalciuc & Apetri, 2019; Gao et al., 2017; Ye et al., 2021). Hence, green reporting emerged as a reaction to the increasing pressure on businesses to reveal their environmental actions and effects to reduce the expectations that are placed on them (Eccles et al., 2014).

Many definitions exist for the term "green reporting," which can range from the simple disclosure of environmental information to a thorough overview of a company's initiatives and activities intended to advance environmental sustainability and have an impact on financial decisions (Baron, 2014; Maama & Marimuthu, 2021). To satisfy stakeholders' demands for accountability and transparency, green reporting includes the disclosure of a company's environmental performance and its interaction with the environment (Akhter et al., 2022; Trumpp et al., 2013). Green reporting is essential to measure a company's environmental and social effects, make informed decisions, and satisfy the needs of diverse stakeholders, (Malik et al., 2023; Stjepanović et al., 2017).

The switch from voluntary to mandatory green reporting to ensure businesses abide by environmental legislation and mitigate environmental degradation reflects a global trend towards increased environmental consciousness and regulatory oversight (Fang et al., 2017; Meech & Bayliss, 2021). Initiatives like the Global Reporting Initiative (GRI) outline reporting principles like transparency and materiality, which firms must follow as they navigate this transition. This may shape the discourse and practices surrounding green reporting (Chvileva & Golovina, 2017; Balluch et al., 2020).

This study follows the work of Gerged, et al., 2020 and defines Corporate green reporting (CGR) as the provision of information to external parties about an organization's environmental policies, activities, and performance. The study contends that this concept may have a positive impact on firm performance.

The concept of firm performance

Firm performance is a multifaceted concept that has been studied extensively in management and finance literature. Researchers have tackled its definition and measurement from a variety of angles reflecting the complex nature of the concept. Financial indicators constitute the most prevalent lens through which corporate performance is viewed. As important indications of a company's financial performance, metrics including profitability, growth, and market value have received attention in many studies (Taouab & Issor, 2019; Selvam et al., 2016). Return on assets (ROA), return on equity (ROE), earnings per share (EPS), and net profit margin are examples of frequently used financial performance metrics. These financial measures shed light on a company's capacity to produce profits, make effective use of its resources, and add value for investors.

However, over time, the concept of company performance has changed, going beyond only emphasizing financial data. To provide a more comprehensive picture of a firm's performance, researchers have realized how important it is to include non-financial factors like customer happiness, environmental performance, and social responsibility (Selvam et al., 2016; Taouab & Issor, 2019). To incorporate the financial, customer, internal process, and learning and growth dimensions in the evaluation of a company's

success, frameworks such as the triple bottom line and the balanced scorecard have been proposed.

Market-based measurements and accounting measures are the two primary measures used in this study. According to Mas-Tur and Ribeiro-Soriano (2013), these classifications encompass a range of metrics, with ROA and ROE being prominent accounting measures. Wu et al (2006) suggest that accounting metrics, like ROA and ROE, offer valuable insights despite being susceptible to manipulation, while market measures, such as Tobin's Q, provide a different perspective on a company's performance, as highlighted by López et al (2007). Tobin's Q, a market-based metric, is utilized for predicting future profitability, although external factors can influence these forecasts, as noted by Griffin and Mahon (1997). In the realm of financial performance indicators, the study delves into ROA, ROE, and Tobin's Q. ROE signifies the ratio of net earnings to shareholder capital, while ROA is computed by dividing pre-interest and pre-tax profit by the average total assets. Additionally, Tobin's Q is determined by dividing the market value of the company by the replacement cost of its assets (Jan et al., 2019). These metrics collectively offer a comprehensive view of a company's financial standing, blending accounting-based and market-based perspectives to provide a holistic assessment of performance.

CEO's Cultural Origin

The role of CEOs in firms' decision-making has received great attention in the literature. Previous studies offer valuable insights into the definition and measurement of CEO characteristics. For instance, the study by Finkelstein and Hambrick (1996) focuses on the "managerial discretion" view,

emphasizing how CEO traits like narcissism and overconfidence can impact decision-making processes and firm performance. On the other hand, research by Hambrick and Mason (1984) explores the "upper echelons" perspective, highlighting the crucial role of CEO attributes such as age, tenure, and education in shaping organizational behavior and performance. Furthermore, Buyl et al. (2019) examined how CEO functional background diversity influences firm innovation, measuring this diversity using a Blau index to capture prior experience across different functional areas.

In a different vein, Zhu, and Chen (2015) investigated the relationship between CEO narcissism and firm performance, utilizing a composite index based on CEO photographs, press coverage, and compensation data to measure CEO narcissism. Moreover, Buyl et al. (2019) explored the joint effects of CEO cognitive ability and narcissism on firm innovation, using composite indices based on CEO education, experience, and personality traits to assess these characteristics.

However, the previous studies have not looked at the cultural origin of the CEOs. This study looks at how CEOs' attitudes toward green reporting and firm performance are influenced by their cultural origin. Cultural origin, unlike many other decisions in both the professional and personal domains, is not a choice. Instead, it is an innate trait that is instilled early in life through socialization (Pan et al., 2022). CEO cultural origin is defined in this study as the cultural background of a CEO, often inferred from their country of birth or ancestral origins.

This thesis takes Hofstede's (2001) definition of culture as "the collective programming of the mind that distinguishes members of one group

or category of people from others." Based on this concept, the study believes that CEOs' diverse cultural backgrounds may impact their mindsets or cultures and so influence their business decision-making processes. These cultural differences are likely to influence CEO Green's reporting decisions.

The study measures CEO's cultural origin using their surnames to trace their origin and then estimate their degree of individualism, power distance, masculinity, long-term orientation, uncertainty avoidance, and indulgence using Hofstede's cultural index (Chui et al., 2010; Gompers et al., 2016; Brochet et al., 2019). The study uses forebears.io, an online name database, to identify the origin of surnames for those companies that did not state the country of origin of their CEOs. These name databases collect genealogical information from various sources, including telephone directories and electoral rolls, and distribute over 11 million surnames worldwide (Merkley et al., 2020; Pan et al., 2020). The study uses the frequency of incidence of a surname to determine whether the surname is dominant in that country. For example, Mohammed may be a surname in Iraq, Ghana, and Dubai. To determine where this surname is often used and dominant, the study uses the frequency of incidence reported in the online name database. The study obtains CEOs' surnames from annual reports.

The study uses cross-referencing between CEO names and their sources as reported in annual reports to assess the accuracy of the forebears.io website. Appendix C describes this validation procedure, which entails entering CEO data from the reports into the forebears.io website and contrasting the website's output with the reports' known origins.

Holding Company Cultural Origin

The concept of a parent company is crucial in various studies, particularly in the context of corporate governance and financial performance analysis. For instance, in the study titled "Financial Restatement on Manufacture Sector Company Reviewed from The Aspect of Corporate Governance and Company-Specific Characteristics" by Haryanto et al. (2019), the researchers examined the influence of corporate governance and company-specific characteristics on financial restatement. In this study, the parent company is not explicitly defined or measured; the focus instead was on the corporate governance and company-specific characteristics that affect financial restatement. On the other hand, studies like "Related Party Transactions, Parent Company Statements, and International Financial Reporting Standards" by Bava and Gromis di Trana (2019) and "Corporate Governance and Performance

Thus, a study of listed subsidiaries" by Bava and Gromis di Trana (2019) explicitly defines and measures the parent company. In these studies, the parent company is considered as the entity that owns and controls the subsidiary or the company under analysis. The researchers use this definition to analyze the impact of related party transactions and corporate governance on financial performance and risk disclosure, respectively. Other studies, such as "Influence of Good Corporate Governance Towards Company Value with Profitability as Intervening Variable in Manufacturing Companies" by Haryanto et al. (2019), do not explicitly define or measure the parent company but rather focus on the impact of corporate governance on company value. These studies often use proxy measures like institutional ownership, audit

committee, managerial ownership, independent Board of Commissioners, and Board of Directors to analyze the effect of corporate governance on company value.

However, most of these studies have not considered the cultural origin of the parent company. The practices of subsidiaries within holding companies are significantly influenced by the cultural origin of the holding companies, creating a coercive effect that promotes isomorphism (Alshbili & Elamer, 2020). Building on Bava and Gromis di Trana's (2019) study, this study defines the holding company's cultural origin as the cultural background of the parent company, often inferred from the country of origin where the parent company was established or where its headquarters are located. The study measures the Holding company's cultural origin using their country of origin and then estimates their degree of individualism, power distance, masculinity, long-term orientation, uncertainty avoidance, and indulgence using Hofstede's cultural index.

The African Culture of the Environment

Africa, which includes the West, Northern, Central, Southern, and Eastern areas, is known for its numerous cultures and beliefs, as well as its deep regard for nature (Behrens, 2010; Mbaiwa, & Siphambe, 2023; Wan & Roy, 2023). These cultural viewpoints highlight the sacredness and interdependence of the natural environment with human life, affected by elements such as history, religion, geography, and indigenous traditions. Northern African Islamic traditions emphasize environmental management and responsibility. Through ceremonies and activities that appreciate and seek

blessings from the natural elements, indigenous traditions across the continent demonstrate the connection between humans and nature.

However, modernity and globalization have put traditional ideas to the test, resulting in the exploitation of natural resources and environmental deterioration. The environment is sacrosanct in Central Africa, with groups considering themselves stewards of the land and its resources. They promote environmental harmony and have excellent traditional ecological expertise. Similarly, Southern African tribes cherish the environment and emphasize interconnection, passing on conservation knowledge through ancestral wisdom, storytelling, and oral history. Nonetheless, urbanization and unsustainable behaviors put these ideas in jeopardy (Abu Abdulai, & Osumanu, 2023; Anane, & Cobbinah, 2022; Mashi et al., 2020).

East Africa has a rich cultural tapestry that is profoundly anchored in nature. Indigenous societies see themselves as guardians, doing rites and customs to keep nature in balance. Water bodies have cultural significance because they symbolise life, purification, fertility, and spiritual regeneration (Mashi et al., 2020). The concept of "ubuntu" promotes communal life and resource management while guiding traditional behaviors (Romm, & Lethole, 2021). Traditional beliefs and practices in East Africa, however, are being challenged by population expansion and climate change.

Continuous efforts are required to preserve Africa's cultural and ecological heritage. Coordination between communities, organizations, and governments is critical for achieving a balance between development and environmental conservation by blending traditional knowledge with modern ways. While addressing the issues of the modern world, it is critical to

understand the complexity and diversity of African traditions, as well as their mutual emphasis on the reverence and interconnectedness of nature.

Chapter Summary

The chapter's review of conceptual and theoretical literature highlights the potential relationships among CEO cultural origin, holding company cultural origin, green reporting, and firm performance. However, there are certain gaps in the empirical literature. Firstly, there is a gap in investigating the relationship between culture and green reporting at the firm level. Additionally, there is a gap in understanding how the specific cultural origin of CEOs impacts green reporting. While existing literature has predominantly used more observable characteristics of CEOs, such as their age, education, gender, duality, and tenure there is a gap in utilizing CEO cultural background as an alternative measure, despite theoretical foundations supporting its relationship with green reporting. Moreover, there is a gap in examining the relationship between holding a company's cultural origin and green reporting. Lastly, there is a gap in examining the role of cultural origin in the relationship between green reporting and firm performance. This thesis aims to address and bridge all these gaps.

CHAPTER THREE

RESEARCH METHODS

Introduction

In this chapter, an overview of the methodology utilized in this study is provided. The specific methodology, including model specification, variable measurement and sources, and estimation technique, for each objective, is presented in the four empirical papers found in Chapters 4, 5, 6, and 7. The chapter commences by elucidating the philosophical stance and subsequently presents the research design and approach employed in the study. Finally, a comprehensive review of the econometric approaches used in this study is presented, highlighting their systematic nature.

Research Philosophy

This study is conducted within the framework of the post-positivist research philosophy. Although accounting, economics, and finance research are often categorized as social sciences, they have been traditionally approached from a positivist perspective, treating them as part of the hard sciences. However, the post-positivist research philosophy offers a more suitable and nuanced approach to investigating complex social phenomena. Post-positivism acknowledges the existence of an external reality, but it recognizes that this reality is subjectively perceived and interpreted by individuals. Researchers within the post-positivist paradigm understand that they bring their biases and assumptions to the research process, and they aim to be transparent about these influences. Instead of seeking objective certainty, post-positivists are more concerned with understanding multiple perspectives

and acknowledging the role of context in shaping knowledge (Guba & Lincoln, 1994).

In the field of accounting, research on the determinants of green reporting can benefit from the post-positivist approach. Instead of relying solely on mathematical and statistical methods, post-positivists value mixed methods, which involve integrating quantitative data with qualitative insights and interpretations. This approach allows researchers to gain a deeper understanding of the complex relationships between cultural origin, green reporting, and firm performance by considering contextual factors and the perspectives of different stakeholders. The adoption of a post-positivist research philosophy for this study is well-suited as it aligns with the research questions at hand. The objective is to explore the relationships among cultural origin, green reporting, and firm performance in different countries in SSA, as well as the interventions that play a role in these relationships. Post-positivism allows for a more comprehensive examination of these relationships by considering the diverse social, cultural, and economic contexts in which they operate.

In this study, data from reputable organizations such as Hofstede Insights and Forebears.io, as well as annual reports, may still be utilized. In adopting the post-positivist research philosophy, the researcher recognizes the subjective nature of constructing CEO cultural origin, parent cultural origin, and green reporting practices. Post-positivism emphasizes the acknowledgement of the researcher's biases and assumptions in the research process. It is understood that the researcher plays an active role in shaping and interpreting the data, including CEO culture values and green reporting

information. Moreover, the researcher acknowledges that the data obtained from sources like Hofstede Insights and Forebears.io are not devoid of subjectivity, as these sources also interpret and present information from their perspectives. By using post-positivism, the study can navigate these complexities and subjectivities, offering a more nuanced understanding of the relationships between cultural origin, green reporting, and firm performance. This approach allows for critical examination, interpretation, and contextualization of the data, ensuring a comprehensive analysis that considers multiple perspectives and acknowledges the researcher's role in shaping knowledge.

Research Design

The research method utilized in a study can be influenced by the chosen research design, which encompasses the plan for data collection, measurement, and analysis, providing a general framework for the investigation (Dubey & Kothari, 2022). In the context of examining the cause-and-effect relationship between one or a group of independent variables and a dependent variable within a theoretical model, an explanatory research design is employed (Saunders et al., 2017). Given the aim of testing theoretical predictions in this study, a causal research design is crucial. This is because the study seeks to examine the impact of variables such as CEO cultural origin, holding company cultural origin, and green reporting on the performance of listed manufacturing firms in Africa.

Research Approach

This study employs the quantitative approach to explore the relationship between the key variables under investigation. A quantitative

approach utilizes numerical and measurable data in its methodologies, measurements, and designs (Simon et al., 2007). This study specifically follows a purely quantitative research design, as it utilizes quantitative variables (both dependent and independent) to analyze and assess the impact of a CEO's cultural origin, holding company cultural origin, and green reporting on the performance of listed manufacturing firms in Africa. Additionally, the study formulates hypotheses based on existing theories, which are then tested to either support or challenge the theories employed in this research.

Fixed Effect Panel Quantile Regression (PQR)

In this study, Panel Quantile Regression (PQR) proposed by Koenker (2004) is employed to explore the unique heterogeneity within panel data for objectives one and two. The model integrates fixed effects and a separable disturbance term, providing a robust framework for analyzing the relationship between cultural origin and green reporting. In recent years, PQR has gained popularity in green research due to its ability to provide deeper insights into heterogeneous relationships across different quantiles of the distribution (Amin et al., 2021; Cheng et al., 2019). Unlike traditional Ordinary Least Squares (OLS) regression, which estimates the mean relationship between independent and dependent variables, PQR offers a more comprehensive perspective by examining how the covariates influence the dependent variable at various points along its distribution. This approach is particularly relevant for green reporting research, where the effects may vary depending on the firm's position in the distribution, such as high or low performers in green reporting practices.

The primary motivation for adopting PQR is its ability to assess the impact of covariates across the entire distribution of the dependent variable. This is crucial for understanding how different levels of green reporting (from low to high) respond to the influence of CEO and holding company's cultural origins. Conventional regression models that focus on the mean may overlook this heterogeneity, providing a limited view of the relationships. PQR, on the other hand, enables policymakers and researchers to design more targeted strategies for firms at different quantiles of green reporting performance.

From a policy perspective, the application of PQR provides valuable insights for stakeholders by revealing how cultural origins influence firms differently across their green reporting performance levels. For instance, firms at lower quantiles might require more regulatory incentives or support to enhance green reporting, while those at higher quantiles may need more advanced sustainability frameworks to maintain their performance. This differentiated approach helps policymakers develop tailored interventions, making PQR particularly suitable for studies focused on environmental and sustainability policies (Cheng et al., 2019; Akram et al., 2020).

The appeal of this methodology lies in its robustness to outliers and its flexibility, as it does not require assumptions of normality in the data distribution. Conditional Mean (CM) methods, such as OLS, derive estimates from the mean of the dependent variable and may yield biased results when the underlying data distribution is non-normal or contains outliers. In contrast, PQR captures the effect of predictors across various quantiles, addressing the heterogeneity present in panel data. This makes it especially useful for green

reporting, where firms may exhibit substantial variation in their sustainability practices and disclosure levels.

The fixed effect PQR model is also effective in handling unobserved heterogeneity for each cross-section, measuring multiple parameters across quantiles (Amin, Dogan, & Khan, 2020). Specifically, the fixed effect PQR approach generates robust estimates by integrating penalty terms to reduce estimation bias and eliminate the influence of unspecified fixed effects. Koenker's (2004) innovation in PQR with fixed effects removes the problem of incidental parameter bias, offering a more reliable estimation method than alternative approaches.

Furthermore, the policy implications derived from this analysis are substantial. By identifying how the influence of cultural origins on green reporting varies across quantiles, policymakers can prioritize interventions for firms at specific performance levels. This enables the formulation of targeted sustainability policies that promote more consistent environmental disclosure practices across the board. Ultimately, PQR offers a comprehensive framework for understanding and improving green reporting in Sub-Saharan Africa's manufacturing sector.

The fixed effect PQR model, as examined by Akram et al. (2020), can be formulated as follows:

$$Q_{y_{it}}(\tau|X_{it}) = (\gamma|(\tau) X_{it} + a_i \quad i = 1, \dots, N, t = 1, \dots, T \dots \dots \dots (1)$$

Here Y_{it} signifies the dependent variable green reporting, $Q_{y_{it}}(\tau|X_{it})$ refers to the τ th quantiles of green reporting, X_{it} signifies the vector of exogenous variables {(CEO power distance (*CPD*), *CEO* Individualism (*CIND*), *CEO* masculinity (*CMAS*), *CEO* long-term orientation (*CLTO*), *CEO*

uncertainty avoidance (*CUNA*), CEO indulgence (*CINDU*), Holding company power distance (*HCPD*), Holding company Individualism (*HCIND*), Holding company masculinity (*HCMAS*), Holding company long-term orientation (*HCLTO*), Holding company uncertainty avoidance (*HCUNA*), and Holding company indulgence (*HCINDU*)} in year t for i country. $(\gamma|(\tau))$ refers to unknown coefficients, a_i indicates the unknown specific country effects. Whereas i denotes the African economies and t indicates the year. The study expresses the successive model for this study:

$$Q_{y_{it}}(\tau|X_{it}) = \gamma_{1\tau} CPD_{it} + \gamma_{2\tau} CIND_{it} + \gamma_{3\tau} CMAS_{tt} + \gamma_{4\tau} CLTO_{tt} + \gamma_{5\tau} CUNA_{tt} + \gamma_{6\tau} CINDU_{tt} + a_i \dots \dots \dots (2)$$

Given that conventional linear regression models are unfit for estimating the PQR model, Koenker (2004) introduced a penalty term aimed at streamlining the estimation process by removing unspecified fixed effects. This technique surpasses alternative methods for two primary reasons. Initially, it effectively reduces the estimated parameters. Additionally, it mitigates the fluctuations attributed to the estimated distinct coefficients (Akram et al., 2020). This study employs this approach to estimate Eq (4) as follows:

$$\text{argmin}_{\beta} \sum_{m=1}^M \sum_{i=1}^N \sum_{t=1}^T W_M \rho_{\tau m} [Y_{it} - \gamma_{1\tau} CPD_{it} - \gamma_{2\tau} CIND_{it} - \gamma_{3\tau} CMAS_{tt} - \gamma_{4\tau} CLTO_{tt} - \gamma_{5\tau} CUNA_{tt} - \gamma_{6\tau} CINDU_{tt} - a_i] + \mu \sum_{i=1}^N |\alpha_i| \dots \dots \dots (3)$$

The expression $\rho_{\tau}(y) = \gamma(\tau - 1_{(y < 0)})$ comprises a standard check function, where 1_A represents the indicator function of set A . Y_{it} denotes the green report in firm i at time t . M serves as the quantile index, and W_m corresponds to the weight assigned to the m 'th quantile for assessing the

position of all quantiles. Meanwhile, μ captures the specific effect (Akram et al., 2020).

The econometric approach described begins by examining the normality of the data. With the identification of non-normality, this study employs panel quantile regression to substantiate the findings of objectives one and two. Concerning endogeneity, the study examined this before introducing Fixed Effect Panel Quantile Regression. The corresponding results justified the conclusion that endogeneity is not likely to influence the results.

Endogeneity problem

When estimating the specified econometric model for green reporting impacts on firm performance, it is crucial to acknowledge the potential endogeneity of green reporting. This is because there might be a two-way causality between green reporting and the dependent variable. There could exist a simultaneous cause-and-effect relationship between green reporting and firm performance. Failing to consider this endogeneity problem can lead to biased and inconsistent estimates of the parameters.

On one side, green reporting can influence firm performance, as outlined in the established empirical papers (Al Hawaj, & Buallay, 2021; Chijoke-Mgbame et al., 2019; Narula et al., 2024). Green reporting significantly impacts firm performance by fostering trust, attracting conscientious investors and consumers, and driving operational efficiencies. By transparently showcasing environmental efforts and sustainable practices, companies enhance their reputation, solidify stakeholder relationships, and build brand loyalty. This positive perception often translates into increased

market share and access to capital, as investors seek socially responsible initiatives.

On the other hand, firm performance can impact green reporting (Cho, & Patten, 2007; Gamerschlag et al., 2010; Sial et al., 2018). The reverse causality may occur due to the possibility of it serving as both a driver and a reflection of a company's commitment to sustainability. A company excelling in its financial performance often has the resources and capability to invest in eco-friendly practices and technologies, enabling robust green reporting. Improved financial performance provides the necessary capital for green reporting. Hence, it is practical to suspect and, importantly, to carefully consider the potential reverse causation stemming from the green reporting variable toward the corresponding dependent variables within the models.

When endogeneity is present, using Ordinary Least Squares (OLS) fixed and random effect models may provide biased outcomes since these models are not able to sufficiently account for endogeneity concerns. When the assumption of exogeneity is broken by a correlation between the independent variables and the error term in a regression model, endogeneity results. When endogeneity is present, OLS models—which include fixed and random effects—assume that the independent variables and the error term are uncorrelated, which can lead to skewed coefficient estimates and contradictory findings. Under such circumstances, the estimates generated by OLS models might not fairly represent the true relationship between the variables, leading to skewed and untrustworthy conclusions.

Thus, the study employed two methods to tackle endogeneity concerns. Initially, the study incorporated a one-year forward measure of firm

performance. This approach assumes that future performance is not influenced by present conditions, thus reducing potential biases stemming from simultaneous causation or reverse causality. Additionally, this study utilized an Instrumental Variable-Generalized Method of Moments (IV-GMM) regression.

The IV -GMM estimation technique

To tackle the potential endogeneity issue in estimating the specified econometric models in objectives 3 and 4, this thesis employs the feasible two-step IV-GMM estimator. Hansen (1982) introduced the GMM estimator, which has gained popularity in applied economics. Unlike the maximum likelihood estimator (MLE), the GMM approach does not rely on distributional assumptions (Hall, 2005). Additionally, compared to Ordinary Least Squares (OLS), fixed effect, or random effect estimators, this technique offers consistent, asymptotically normal, and efficient estimates, especially when addressing endogeneity using appropriate instrumental variables (Doytch & Uctum, 2011; Hall, 2005; Yin et al., 2011).

Utilizing the IV-GMM estimator hinges on selecting applicable instrumental variables that need to exhibit correlation with the potential endogenous variable (firm performance) while remaining uncorrelated with the error term. In real-world applications, locating suitable instruments becomes challenging, especially in intricate models with numerous right-hand-side variables. This challenge primarily arises due to the scarcity of data for crafting instrumental variables that can meet both economic and statistical conditions as mentioned above.

So, prior studies investigating firm performance effects often resort to utilizing past firm performance presence as instrumental variables (Gul, & Ellahi, 2021; Zahid et al., 2020). While employing lags as instruments seems convenient, it can significantly reduce information due to a diminished sample size. This drawback of lag usage within the IV-GMM estimator becomes more pronounced, particularly in short-panel datasets (i.e., large N and small T), as seen in the empirical analysis of this thesis. Likewise, if unobservable individual-specific characteristics impacting green reporting and performance persist over time, using time-lag methods might falsely imply causation due to confounding. Implementing fixed effects such as individual or family fixed effects helps mitigate these issues to some extent. Yet, estimates may still be influenced by time-varying unobserved differences, restricting identification to the limited variation around fixed effects. An alternative approach involves employing external instruments, affecting green reporting directly, with the second variable indirectly impacted via the first, offering a potentially more intricate solution. Consequently, relying on lags as instruments is not the preferred approach in estimating these specific models. Instead, the thesis adopts an alternative IV construction method, elaborated in the subsequent section.

Instrumental Variable (IV) construction

The thesis adopts an instrumental variable that is associated with green reporting but does not directly influence performance. Drawing upon prior research, specifically Wasiuzzaman et al. (2022), which emphasizes the substantial impact of audit independence on a firm's environmental, social, and governance, The study posits that a firm's audit independence could serve

as a suitable instrument positively associated with the likelihood of producing a green report. Arguably, audit independence directly influences green reporting by ensuring the accuracy, credibility, and transparency of reported environmental practices through rigorous assessments and verifications (Boiral et al., 2017; Hichri, 2023; Xiao, & Shailer, 2022). However, its relationship with firm performance is indirect, as the enhanced reliability and trustworthiness of green reporting, facilitated by audit independence, may affect investor perceptions, stakeholder trust, and access to capital markets, subsequently impacting firm performance (Rodgers et al., 2019).

Diagnostic testing

The empirical analysis within this thesis includes several pre- and post-essential diagnostic tests conducted to assess the reliability of the specified econometric models and chosen estimation methods. These tests serve to validate the empirical findings and ascertain the predictive and generalizing capabilities of the research estimates. Precisely, the analysis encompasses significant tests examining normality, potential endogeneity, the relevance of chosen instruments, the validity of selected instruments, the assessment of multicollinearity, heteroskedasticity, autocorrelation, and the overall significance of the model.

Potential endogeneity

As previously discussed, the principal variable of interest, green reporting, is likely to challenge the assumption of exogeneity due to potential reverse causality with the dependent variable of firm performance. When left unaddressed, this issue can result in biased, inconsistent, and inefficient estimates. Consequently, it becomes crucial to examine the presence of

endogeneity, allowing for the use of suitable estimation methods and ensuring the credibility of the model estimation outcomes.

In Chapters 6 and 7, the empirical analyses include tests to determine the exogeneity of the variable of interest, green reporting. These tests rely on the C-statistic, also referred to as the 'GMM distance' or 'difference-in-Sargan' statistic. The null hypothesis states that the suspected regressor can be considered exogenous, while the alternative hypothesis suggests otherwise (Baumn et al., 2003). The respective hypothesis for the specification is formulated as follows:

Model of green report impact on firm performance

$$H_0: \left(\varepsilon_{ik\ jt} \middle| Greenreport_{\varepsilon_{ik\ jt}} \right) = 0$$

$$H_1: \left(\varepsilon_{ik\ jt} \middle| Greenreport_{\varepsilon_{ik\ jt}} \right) \neq 1$$

Hence, rejecting the null hypothesis implies that the examined variable (Green Report) is endogenous, warranting the use of the IV-GMM estimator for accurate estimation within the dataset. This necessitates the use of valid and credible instrumental variables. Conversely, a failure to reject the null indicates that the suspected explanatory variable meets the exogeneity assumption. Therefore, conventional non-IV estimation techniques like OLS, FE, or RE are viable options, as the IV-GMM method might not yield notably more efficient estimates in this scenario. In this study, the Null hypothesis (i.e., Greenreport is exogenous) is rejected at the one percent level giving the C-statistics for the endogeneity test being 12.929 ($p < 0.00$). This result indicates that the IV-GMM estimator is an appropriate method to account for endogeneity.

Relevance of instruments

Should the suspected regressor, green reporting, in the specification, be identified as endogenous, the IV-GMM estimator necessitates the utilization of suitable instruments, which must demonstrate both relevance and validity. The relevance of instrumental variables relies on their close correlation with the endogenous regressor. To assess this relevance, the thesis employs an under-identification test, like a Langrange Multiplier (LM) test, utilizing the Anderson canon. corr. LM statistic. This test enables the determination of whether the minimum canonical correlation between the endogenous regressor and the chosen instruments significantly deviates from zero. Essentially, it examines the null hypothesis, assessing whether excluded instruments possess inadequate explanatory power to forecast the endogenous variable within the specified model for parameter identification purposes.

Fundamentally, the LM test evaluates whether the equation is sufficiently identified or not. Thus, it tests the rank of a matrix: assuming the null hypothesis that the equation is underidentified, the matrix of reduced form coefficients concerning the count of excluded instruments (IVs) attains the rank $\Gamma = x - 1$, where x represents the number of endogenous regressors. The underidentification test in the analyzed models can be articulated as follows:

$$H_0: \Gamma = 0 \text{ (underidentified)}$$

$$H_1: \Gamma = 1 \text{ (identified)}$$

If the associated p-values for the Anderson canon. corr. LM statistic led to a rejection of the null hypothesis; it signifies that the matrix attains full column rank. Essentially, this indicates the relevance of the excluded instruments,

indicating their correlation with the endogenous regressor. Conversely, the inability to reject the null suggests the insignificance of the selected instruments, implying that they lack relevance and are unsuitable for inclusion in the IV-GMM estimation for the specified models. The result from the Anderson canon. corr. LM statistic indicates the relevance of the constructed instruments [$X^2(1) = 8.286$; $p < 0.05$].

Validity of the instrument

Valid instruments must not only exhibit relevance but also validity, meaning they should be uncorrelated with the error term. To assess the validity of the chosen instruments, this thesis employs the overidentification test, given the surplus of instruments compared to the count of endogenous variables. This test also referred to as the Sargan-Hansen test, embodies a joint null hypothesis indicating the validity of the instruments. The hypothesis for the two empirical models can be articulated as follows:

Model of green report impact on firm performance:

$$H_0: E [\varepsilon_{ikjt} | IV1_{k1ajata}, IV2_{k2ajata}] = 0$$

In the case of the efficient GMM estimator, Hansen's J statistic serves as the minimized value derived from the GMM criterion function. Should the null hypothesis be rejected in the overidentification test, it raises concerns regarding the validity of the selected instruments. Conversely, the inability to reject the null in the overidentification test confirms the validity of the constructed instruments. This validation supports their utilization within the IV-GMM estimation, effectively tackling endogeneity bias and inconsistency in the estimation process. The result from Hansen's J statistic indicates the validity of the constructed instruments.

Heteroscedasticity, autocorrelation, and Multicollinearity

Heteroscedasticity and autocorrelation pose significant challenges when estimating regression models, leading to substantial violations of classical assumptions. Heteroscedasticity occurs when the errors' variance isn't consistent across observations, while autocorrelation, known as serial correlation, emerges when error terms show correlation over time. Although ordinary least squares (OLS) estimation might yield unbiased coefficients even in the presence of these issues, it renders standard errors and variances incorrect, affecting the reliability of statistical interval estimation and inference procedures based on OLS estimates. Detecting heteroscedasticity often involves plotting squared residuals against fitted values or regressors, alongside formal tests like White's test or Breusch-Pagan test, assessing the null hypothesis of homoscedastic error terms. For identifying serial correlation, the Durbin-Watson or Wooldridge tests are common approaches. However, an increasingly favored method to address these biases involves calculating robust standard errors (R.S.E), a technique applied in this thesis' IV-GMM estimations following methodologies outlined by Petersen (2008) and Stock and Watson (2008).

The correlation matrix and collinearity measures for the main explanatory variables in the model are shown in various chapters.

The correlation matrixes in the various chapters show that there is little shared variance, with correlation coefficients between the major independent variables being noticeably low, all falling below 0.7. In addition, tolerance values ($1/VIF$) show high values—all more than 0.2. Therefore, there is very little chance of significant multicollinearity. Furthermore, robust standard

errors are used in IV-GMM calculations to mitigate any arbitrary heteroscedasticity (Petersen, 2008; Stock & Watson, 2008).

IV-LEWBEL estimation technique

To assess the robustness of the findings, the study adopts an internal instrumental variable (IV) estimation technique developed by Lewbel (2012). Lewbel (2012) demonstrates an alternative method of creating internal instruments from the model's data. This technique becomes applicable in scenarios lacking valid external instruments and has already found use in empirical economics. Unlike traditional approaches that rely on external instruments, Lewbel's method leverages the heteroskedasticity of regression model errors to internally generate instruments within the existing model. This identification strategy hinges on ensuring that the regressors remain uncorrelated with the product of the heteroskedastic errors, a common characteristic in models where error correlations can be attributed to an unobserved factor (Lewbel 2012).

Chapter Summary

This chapter presents the general method used in conducting this study. This thesis specifically relies on explanatory research design, quantitative research methodology, and positivist research philosophy. The chapter also provided a succinct overview of different panel econometric model estimators and provided evidence for the possibility that the IV-GMM might be used for objectives 3 and 4 and Fixed Effect Quantile Regression might be used for objectives 1 and 2.

CHAPTER FOUR

CEO CULTURAL ORIGIN AND GREEN REPORTING OF LISTED MANUFACTURING FIRMS IN SUB-SAHARAN AFRICA (SSA)

ABSTRACT

The study employs fixed effect panel quantile regression to estimate the effect of Chief Executive Officer's cultural origin on green reporting. The period of the study spans from 2015 to 2021 and the study includes a total of 115 listed manufacturing firms, selected from 8 Anglophone countries in sub-Saharan Africa. The results reveal that CEOs from power distance and uncertainty avoidance cultural origin have a negative impact on green reporting, particularly at the higher quantiles indicating a prioritization of individual goals over sustainability. In contrast, those from masculine, individualistic, and indulgent cultural backgrounds show a positive relationship. However, CEOs from Long-term orientation cultural origins have no association with green reporting. Overall, the findings indicate the Chief Executive Officer's cultural origin influences green reporting. Therefore, there is a need for tailored approaches that consider specific CEO cultural attributes to effectively promote and enhance green reporting practices in Sub-Saharan African manufacturing firms.

Introduction

Green sustainability constitutes a worldwide priority for both governmental bodies and non-governmental organizations (Hung et al., 2022; Paleri, 2022). In recent years, a multitude of noteworthy environmental incidents have been exposed in developing and emerging nations. These incidents encompass a range of problems including mismanagement of water

resources, leaks in oil pipelines, and instances of metal contamination. What is intriguing is that these revelations have not been initiated by the responsible companies, but rather have been surfaced by the media (Yang et al., 2020). A proposition presented by Aguilera et al. (2007) underscores the significance of companies addressing societal issues, specifically in terms of disclosing information on corporate green sustainability.

In the current landscape of intensified market competition within developing nations, the act of disclosing information regarding corporate green sustainability is transforming into a pivotal mechanism. This disclosure acts as a strategy for companies to establish their legitimacy and cultivate a positive public image (Khan, 2022; Shahab et al., 2019). The escalated scrutiny that companies are currently subjected to emanates from diverse sources, including governmental entities, mass media, and rating agencies. This collective scrutiny has the potential to significantly influence a company's performance (Khan, 2022; Nguyen et al., 2021; Shahab et al., 2019).

Tian et al. (2019) argue that companies are facing significant pressure to reveal their environmental sustainability data. This pressure arises from the implementation of various environmental regulations and the expectations of the public. Recent studies have focused on the crucial role played by CEOs in the context of disclosing green-related information (Aabo & Giorici, 2023; Chen et al., 2021; Shahab et al., 2021). This line of inquiry is built upon the idea that top executives possess substantial influence over a company's strategic decisions (Hambrick & Mason, 1984). Moreover, they hold the

potential to shape choices regarding the disclosure of green-focused information (Ortiz-de-Mandojana et al., 2018; Shahab et al., 2019).

Consequently, a CEO's disposition toward the environment can be influenced by their cultural origin (Altarawneh et al., 2020; European Commission, 2001). Cultural capital theory suggests that cultural background can serve as a form of capital or resources that firms can leverage to enhance their green reporting (Bourdieu, 1986, Throsby, 1995). Therefore, if a CEO hails from a country where environmental preservation is highly valued within cultural norms, it is likely that they would embrace environmentally conscious reporting practices. Nonetheless, our understanding of the direct relationship between CEO cultural origin and green reporting remains limited. Consequently, this study aims to investigate how cultural origin can consistently influence CEOs' attitudes regarding green reporting.

Theoretically, the upper echelons theory posits that CEOs wield significant influence in the formulation and execution of strategic choices, thereby exerting an impact on a company's performance and growth (Hambrick, 2007; Hambrick & Mason, 1984). From this perspective, the psychological elements (e.g., cognitive-driven values) and externally observable factors (e.g., age, professional trajectories, career experiences, and education) inherent in a company's top-level executives significantly influence their corporate decision-making. The extant literature has extensively examined the effect of CEO attributes on corporate social responsibility (CSR) across diverse contexts.

For instance, Shahab et al. (2021) find that CEO influence heightens the disconnect between corporate environmental responsibility (CER) and

CSR. Shaheen et al. (2022) investigate female CEO succession in China and find a positive influence on firm CSR reporting. In contrast, McCarthy et al. (2017) examine the relationship between CEO confidence and CSR, finding a negative association. Additionally, Borghesi et al., (2014) analyze motivating factors behind socially responsible investments and pinpoint larger firms, those with greater free cash flow, and higher advertising expenditures as exhibiting higher levels of CSR engagement.

Nonetheless, these studies predominantly focus on developed markets, with limited attention directed toward green reporting within the African market context (e.g., Shahab et al., 2018; Furlotti et al., 2018). But mounting evidence highlights Africa's high vulnerability to climate change, with Sub-Saharan Africa home to nine of the world's top 10 most vulnerable nations according to the 2021 climate vulnerability index. More so, the 2022 Climate Change Report by the Intergovernmental Panel on Climate Change confirms Africa as a global hot spot for human vulnerability to climate change, leading to significant economic losses estimated between \$7 billion to \$15 billion annually since 2020, potentially reaching \$50 billion by 2030 (7% of Africa's GDP). Consequently, it can be argued that conclusions drawn from research in developed markets might not be readily applicable to developing nations like those in SSA, owing to substantial disparities in monetary resources, reporting practices, governance structures, and environmental regulations. In addition, a noteworthy limitation of most of these studies is their predominant focus on more easily observable characteristics of CEOs, such as age, education, gender, dual roles, tenure, and political affiliations (Kang, 2016;

Marquis & Qian, 2014; McGuinness et al., 2017; Reimer et al., 2017; Aabo & Giorici, 2023).

A growing interest in how unobservable attributes of CEOs such as their cultural origin (power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence) affect corporate decisions have sufficed. The focus of this study centers on investigating how CEO cultural origin affects green reporting in manufacturing firms in SSA. The study focuses on manufacturing firms for several reasons. First, the manufacturing sector in SSA significantly contributes to greenhouse gas emissions, thereby prompting heightened research interest in the domains of social and environmental reporting (Jayaram et al., 2021; Ye et al., 2022). Second, the continent's economic growth propelled by manufacturing activities has yielded adverse environmental repercussions and contributed to climate change (Du, 2015; Du et al., 2014). Consequently, a valuable opportunity arises to investigate the factors underpinning CEO cultural origin and its connection to green reporting within SSA manufacturing firms. This is particularly important because management decisions and business actions cannot be isolated from cultural influences (Hofstede, 1983; Gray, 1988).

The study directly examines how various cultural dimensions of CEOs, that is power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence affect green reporting. CEOs from power distance cultures may inhibit green reporting, as centralized control and authority can deter open disclosure of environmental practices, leading to poor green reporting. Similarly, CEOs from individualistic societies might prioritize corporate interests over environmental concerns, potentially neglecting

thorough green reporting. CEOs from masculine cultures may emphasize competitiveness and profit-making, potentially overshadowing the importance of sustainability/green reporting. Furthermore, CEOs from indulgence-focused cultures might prioritize immediate gratification, which can lead to short-term thinking that hinders comprehensive green reporting. Conversely, CEOs from cultures in uncertainty avoidance tend to emphasize risk mitigation and planning, which can promote detailed and cautious green reporting. Moreover, the study argues that CEOs from long-term-oriented cultures often prioritize sustainable practices and future generations, encouraging comprehensive and forward-thinking green reporting.

This study contributes to the literature in two ways. First, the study contributes to the existing studies examining the consequences of CEO cultural origin. The findings show that the CEO's cultural origin significantly affects green reporting. Additionally, by employing CEO cultural origin as a unique measurement for evaluating CEOs, this study establishes its distinctiveness when compared to earlier studies (Shahab et al., 2021; Shaheen et al., 2022; Kang, 2016). Second, the study contributes methodologically by employing the innovative fixed-effect panel quantile regression (PQR) technique. By utilizing the PQR model, this study investigates the varied impacts of CEOs' cultural origin on green reporting at different quantile levels. Importantly, this approach has not been previously applied in studies focusing on CEO cultural origin and green reporting. The rationale behind adopting PQR lies in its capability to accommodate the heterogeneity present in panel data (Akram et al., 2020). Beyond its econometric merits, the fixed-effect

PQR approach allows for a thorough analysis by estimating the effects of CEOs' cultural origin and other factors at various quantiles of green reporting.

The rest of the paper is organized as follows. Section 2 presents the literature review and hypotheses. Section 3 discusses the research design. Section 4 reports the empirical results, and Section 5 concludes the paper.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

This section presents an empirical review of the relationship between CEO cultural dimensions and green reporting.

CEO's Power Distance and Green Reporting

Power distance entails the acceptance of unequal power distribution within a society, with countries embracing high power distance displaying tolerance for hierarchy and inequality (Minkov & Kaasa, 2021). Numerous studies show an inverse correlation between power distance and corporate social responsibility (CSR) performance (Disli et al., 2016; Gallego-Álvarez & Ortas, 2017; Hsiao et al., 2024; Ringov, 2007; Thanetsunthorn, 2015). Nevertheless, the influence of power distance on CSR practices varies across studies, with some studies reporting negative associations (Ogundajo et al., 2022; Vitolla et al., 2019), while others observe positive (Diamastuti et al., 2020; Ho et al., 2011) or no significant relationships (Sannino et al., 2020).

The impact of CEO power distance on green reporting differs based on organizational factors and practices. In some cases, CEO power distance can negatively affect green reporting by centralizing control over reporting content, potentially leading to biased or incomplete reporting, reduced transparency, and a focus on short-term financial goals. On the other hand, in certain situations, CEO power distance can positively influence green

reporting by enabling swift and decisive action on sustainability initiatives, allowing for top-down leadership commitment, and ensuring that sustainability goals receive high-level attention and resources. However, in organizations with established and independent reporting mechanisms, CEO power distance may have no discernible effect on green reporting. In such cases, reporting processes are standardized and subject to external verification, ensuring accuracy and transparency.

This study posits that CEO power distance can exert a detrimental influence on green reporting levels. CEOs hailing from cultural backgrounds of power distance might exhibit authoritarian tendencies and prioritize immediate gains over long-term sustainability objectives. Based on this, the study presents the hypothesis that:

H1. CEOs from power distance cultural origin negatively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.

CEO Individualism and Green Reporting

Individualism, characterized by a preference for a loosely connected social system, can elicit varied impacts on the support for global initiatives like the Sustainable Development Goals (Hofstede, 2011). Countries with a more individualistic culture might display reduced endorsement for the 2030 and 2063 Agendas in comparison to those with collectivist tendencies (Lu & Wang, 2021). Collectivist cultures emphasize interpersonal connections and assistance, while individualistic cultures prioritize self-reliance. Previous research consistently reveals an inverse relationship between individualism and social and environmental reporting (Garcia-Sanchez et al., 2013; Khlif et al., 2015; Kim & Kim, 2009; Lu & Wang, 2021). The influence of

individualism on corporate social responsibility (CSR) is varied, as certain studies indicate better environmental performance in individualistic cultures, while others uncover a negative correlation with CSR disclosure (Gallén & Peraita, 2017; Lu & Wang, 2021). Other investigations report a positive connection between individualism and corporate sustainability practices (Ogundajo et al., 2022; Pinheiro et al., 2023), while some identify no significant relationship (Sannino et al., 2020).

The impact of CEO individualism on green reporting varies based on the organization's existing reporting practices and culture. In a positive scenario, CEO individualism can enhance green reporting by fostering innovation, personal commitment to sustainability, and the pursuit of ambitious environmental goals. A CEO's individualistic approach may lead to the development of cutting-edge sustainability initiatives and technologies, setting a strong example for the organization's environmental responsibility. However, in a negative context, CEO individualism can hinder green reporting by introducing inconsistencies, unchecked risks, and an overemphasis on personal priorities over broader sustainability objectives. However, in cases where an organization maintains well-established and standardized green reporting processes independently of the CEO's individualism, it may have no noticeable impact on reporting practices. Thus, this paper contends that CEOs with an individualistic background are less inclined to divulge green information. Based on this, the study presents the hypothesis that:

H2. CEOs from individualist cultural origins negatively influence the green reporting of listed manufacturing firms in Sub-Saharan Africa.

CEO Masculinity and Green Reporting

Masculinity, characterized by a preference for achievement and assertiveness, holds implications for the disclosure of green information. Research consistently indicates an adverse relationship between masculinity and both environmental performance and CSR disclosure (Garcia-Sánchez et al., 2013; Kim and Kim, 2010; Hur and Kim, 2017). However, some studies present positive correlations (Pinheiro et al., 2023), while others find no significant relationship (Coulmont et al., 2015). A CEO possessing traits of power and authority may propel sustainability initiatives and persuade stakeholders about the significance of green reporting. Conversely, CEOs prioritizing short-term profits might impede environmental endeavors. Adherence to gender stereotypes could also shape CEOs' perspectives on environmental matters and their inclination to support regulations. Hence, CEOs rooted in a masculinity-oriented cultural background may be less inclined to extensively disclose green information, owing to their relatively reduced concern for social and environmental issues and stakeholders' demands. The study introduces the following hypothesis:

H3. CEOs from masculinity cultural origin negatively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.

CEO Indulgence and Green Reporting

The dimension of indulgence pertains to the extent of self-control individuals exercise over their impulses and desires. Indulgent societies prioritize personal gratification and exhibit weak moral restraint, whereas restrained societies emphasize adherence to strict social norms (Hofstede et al., 2010; Halkos & Skouloudis, 2017). Indulgent societies might demonstrate

reduced consideration for social issues and environmental matters (Thanetsunthorn & Wuthisatian, 2019). Moreover, countries characterized by indulgence tend to display higher levels of carbon dioxide emissions (Disli et al., 2016), while cultures with greater restraint manifest a more pronounced connection between corporate social performance and financial outcomes (Felix et al., 2018). Although the indulgence dimension is less extensively explored within Hofstede's framework, it bears significance in comprehending cultural disparities and their impact on managerial decision-making and environmental concerns. The study introduces the following subsequent hypothesis:

H4. CEOs from indulgence cultural origin negatively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.

CEO Uncertainty Avoidance and Green Reporting

Countries with high uncertainty avoidance tendencies seek security through established rules and regulations, whereas nations with low uncertainty avoidance lean towards embracing ambiguity and change (Hofstede, 2011; Hofstede et al., 2010). The relationship between uncertainty avoidance and corporate social responsibility (CSR) disclosure is intricate and inconclusive (Peng & Lin, 2009; Kim & Kim, 2009; Gallego-Álvarez & Ortas, 2017; Garcia-Sanchez et al., 2016; Halkos & Skouloudis, 2017). CEOs originating from high uncertainty avoidance cultures prioritize furnishing more extensive environmental information to address stakeholder concerns and establish credibility (Luo et al., 2013; Coulmont et al., 2015). They perceive information to diminish uncertainty and manage unfamiliar situations. The study introduces the subsequent hypothesis:

H5. CEOs from uncertainty avoidance cultural origin positively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.

CEO Long-Term Orientation and Green Reporting

Long-term orientation characterizes societies that emphasize persistence and future-directed objectives, while short-term orientation underscores tradition and immediate outcomes (Hofstede et al., 2010; Halkos & Skouloudis, 2017). Research reveals that long-term orientation correlates with heightened engagement in corporate social responsibility (CSR) endeavors. Enterprises within long-term orientation countries extend their focus beyond short-term profits and exhibit a dedication to serving stakeholders and society over the long haul (Durach & Wiengarten, 2017; Disli et al., 2016; Halkos and Skouloudis, 2017; Gallego-Álvarez and Ortas, 2017). Individuals in cultures with a long-term orientation tend to be more inclined to sacrifice immediate gains for future benefits, rendering them more predisposed to engage in environmental practices and generate lower carbon emissions. Thus, the study states the following hypothesis:

H6. CEOs from long-term orientation cultural origin positively influence green reporting.

Control Variables

In examining the relationship between cultural origin and green reporting of listed manufacturing firms in Sub-Saharan Africa, this study incorporates several control variables to ensure robust and reliable results. National culture, based on Hofstede's six cultural dimensions—power distance, individualism, masculinity, uncertainty avoidance, long-term

orientation, and indulgence—captures the broader cultural environment influencing corporate disclosure practices (Hofstede et al., 2010). These dimensions reflect differences in organizational behavior, including green reporting. For instance, high power distance cultures may prioritize hierarchy over transparency, while individualistic cultures tend to prioritize financial performance over sustainability. Similarly, long-term-oriented cultures are more likely to emphasize environmental responsibility, promoting comprehensive green reporting. Additionally, CEO characteristics, such as tenure and gender diversity, are essential control variables. CEO tenure reflects the experience and stability of leadership, which may influence the implementation of long-term sustainability strategies (Loukil & Yousfi, 2022), while gender diversity captures variations in decision-making, with female CEOs often more inclined toward sustainability-focused practices.

Firm-specific variables, such as firm size, age, audit quality, board independence, board size, and leverage, are also crucial to control in the analysis. Larger and older firms with Big Four audit oversight tend to have established governance structures and more comprehensive green reporting frameworks (Bhatia & Tuli, 2017; Ofoegbu et al., 2018; Alotaibi, 2020). Meanwhile, macroeconomic variables such as GDP per capita, inflation, and regulatory quality capture the external environment affecting firm practices. Firms in countries with higher GDP per capita and better regulatory quality face stronger institutional pressures to adopt sustainability practices (Yameogo et al., 2021). High inflation, on the other hand, may constrain corporate resources, limiting the ability to invest in green reporting (Kim et al., 2010).

RESEARCH METHODS

Data Sources

The period of the study spans from 2015 to 2021 and the study includes a total of 115 listed manufacturing firms, selected from 8 Anglophone countries in sub-Saharan Africa. The study focuses on manufacturing companies listed on Anglophone stock markets across Sub-Saharan Africa (SSA) that submitted annual and sustainability reports between 2015 and 2021. The countries in Sub-Saharan Africa (SSA) included in this study are those listed in Hofstede's cultural data, which have available information for the periods under consideration. Additionally, these countries have fully adopted IFRS (International Financial Reporting Standards) for the period under consideration, specifically for their manufacturing firms, to ensure consistency in performance measures. The time frame was purely based on data availability for the variables of interest. The study focuses on Anglophone countries (English-speaking countries) because they have better accounting practices (Adela et al., 2022) and avoid language barriers in data collection (Adu, 2022). Moreover, these countries are listed in Hofstede's cultural data and have fully adopted IFRS. The listed manufacturing companies were selected because of data availability. Information on the number of the companies and their locations is in Appendix B. The study sample comprises 259 unique CEOs and 115 firms.

Variable Measurement

Measure of Green Reporting

Following the works of Arthur et al., 2017, Laskar and Maji, 2017 and Kumar and Prakesh, 2019, the study constructs green reporting based on a

dichotomous approach assigning a value of 1 if a corresponding information is reported and 0 otherwise. The study calculates subindices for green reporting through the application of the globally recognized GRI guidelines and standards. Thus, all answered items are added to obtain the total score for each reporting company. Then each subindex is calculated as the total number of items disclosed by the total number of items presented in GRI-4 guidelines. This study only focuses on the environmental dimension of sustainable reporting, which is how firms' activities impact living and non-living natural systems related to inputs (e.g. material, energy, land, and water) and outputs (effluents, emissions, and waste). In all, 34 environmental indicators are in the GRI-4 framework (See Appendix D).

The measure of CEO Cultural Origin

The study measures CEO's cultural origin using their surnames and then estimates their degree of individualism, power distance, masculinity, long-term orientation, uncertainty avoidance, and indulgence using Hofstede's cultural index (Chui et al., 2010; Gompers et al., 2016; Brochet et al., 2019). The study uses forebears.io, an online name database, to identify the origin of surnames for those companies that did not state the country of origin of their CEOs (Merkley et al., 2020; Pan et al. 2020). The study uses the frequency of incidence of a surname to determine whether the surname is dominant in that country. For example, Mohammed may be a surname in Iraq, Ghana, and Dubai. To determine where this surname is often used and dominant, the study uses the frequency of incidence reported in the online name database. The study obtains CEOs' surnames from annual reports.

Measure of Control Variables

Several control variables included were commonly used by the extant literature, which are the national culture of the home company, CEO's tenure, CEO gender diversity, firm size, firm audit, firm age, board independence, board size, return on assets, GDP, Inflation, Regulatory quality, and firm leverage (Laskar & Maji, 2017; Loukil, & Yousfi, 2022). The extant literature suggests that these variables have a significant effect on green reporting, and thus should be controlled (Kumar & Prakesh, 2019). Control variables and other variables were obtained from annual and sustainability reports.

Research Design- Fixed Effect Panel Quantile Regression (PQR)

The data was processed by STATA version 17. This study employs Koenker's (2004) recommended Panel Quantile Regression (PQR) methodology to explore the unique heterogeneity within panel data. The rationale for employing a quantile regression model for panel data is multifaceted. Unlike conventional regression analyses often found in earlier literature, quantile regression assesses the average impact of covariates on observed variables across different quantiles. This approach is preferable as it captures significant variations between predicted and observed variables, mitigating potential inaccuracies in regression coefficients. Unlike Conditional Mean (CM) methods, which struggle to produce consistent results without normal distribution assumptions, the PQR method operates without imposing any distributional assumptions (Cheng et al., 2019; Akram et al., 2020).

Additionally, the fixed effect PQR approach handles outliers effectively, generating robust outcomes compared to CM methods. PQR reveals distinct influences of predictive variables on the observed variable

across various quantiles. It also delves into unobserved heterogeneity for each cross-section and measures multiple parameters across quantiles (Amin et al., 2020). Beyond its econometric advantages, assessing coefficient values at the extreme ends of the distribution holds significance from a policy perspective. The fixed effect PQR offers a comprehensive analysis of estimating fixed effects and other factors at various distribution points. The fixed effect PQR model, as examined by Akram et al. (2020), can be formulated as follows:

$$Q_{y_{ijt}}(\tau|X_{it}) = (\gamma|(\tau) X_{ijt} + a_i \quad i = 1, \dots, N, t = 1, \dots, T \dots \dots \dots (1)$$

Here Y_{it} signifies the dependent variable green reporting, $Q_{y_{it}}(\tau|X_{it})$ refers to the τ th quantiles of green reporting, X_{it} signifies the vector of exogenous variables (CPD , $CIND$, $CMAS$, $CLTO$, $CUNA$, $CINDU$) in year t for i country. $(\gamma|(\tau)$ refers to unknown coefficients, a_i indicates the unknown specific country effects. Whereas i denotes the African economies and t indicates the year. The study expresses the successive model for this study:

$$Q_{y_{ijt}}(\tau|X_{it}) = \gamma_{1\tau} CPD_{ijt} + \gamma_{2\tau} CIND_{it} \gamma_{1jt} + \gamma_{3\tau} CMAS_{\tau jt} + \gamma_{4\tau} CLTO_{\tau jt} \\ + + \gamma_{5\tau} CUNA_{\tau jt} + + \gamma_{6\tau} CINDU_{\tau jt} + a_i \dots \dots \dots (2)$$

Given that conventional linear regression models are unfit for estimating the PQR model, Koenker (2004) introduced a penalty term aimed at streamlining the estimation process by removing unspecified fixed effects. This technique surpasses alternative methods for two primary reasons. Initially, it effectively reduces the estimated parameters. Additionally, it mitigates the fluctuations attributed to the estimated distinct coefficients (Akram et al., 2020). This study employs this approach to estimate Eq (4) as follows:

$$\begin{aligned} & \operatorname{argmin}_{\beta} \sum_{m=1}^M \sum_{i=1}^N \sum_{t=1}^T W_m \rho_{\tau m} \left[Y_{it} - \gamma_{1\tau} CPD_{it} - \right. \\ & \gamma_{2\tau} CIND_{it} - \gamma_{3\tau} CMAS_{\tau jt} - \gamma_{4\tau} CLTO_{\tau jt} - \gamma_{5\tau} CUNA_{\tau jt} - \gamma_{6\tau} CINDU_{\tau jt} - \\ & \left. a_i \right] + \mu \sum_{i=1}^N |\alpha_i| \dots \dots \dots (3) \end{aligned}$$

The expression $\rho_{\tau}(y) = \gamma(\tau - 1_{(y < 0)})$ comprises a standard check function, where 1_A represents the indicator function of set A. Y_{it} denotes the green report in firm i at time t . M serves as the quantile index, and W_m corresponds to the weight assigned to the m 'th quantile for assessing the position of all quantiles. Meanwhile, μ captures the specific effect (Akram et al., 2020).

EMPIRICAL RESULTS

Descriptive Statistics

Table 1 shows the descriptive statistics for the regression variables.

Table 1: Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max	Kurt.	Prob>z
<i>GreenReport</i>	570	.314	.288	0	.912	1.856	0.0000
<i>CPD</i>	570	61.967	18.142	18	94	1.438	0.0000
<i>CIND</i>	570	51.325	26.848	8	91	1.586	0.0000
<i>CMAS</i>	570	57.67	10.132	14	95	9.278	0.0000
<i>CUNA</i>	570	54.084	13.891	23	100	4.819	0.0000
<i>CLTO</i>	570	29.789	19.238	0	88	3.494	0.0000
<i>CINDU</i>	570	64.628	21.443	0	97	4.414	0.0000
<i>NPD</i>	570	66.884	14.283	49	80	1.234	0.0000
<i>NIND</i>	570	41.579	17.718	15	65	1.489	0.0000
<i>NMAS</i>	570	57.128	8.582	40	63	3.212	0.0000
<i>NUNA</i>	570	52.656	4.14	45	65	4.739	0.0000
<i>NLTO</i>	570	22.632	10.949	4	35	1.244	0.2873
<i>NINDU</i>	570	69.219	16.794	0	84	5.036	0.0000
<i>CEOTEN</i>	570	5.098	6.35	1	44	17.213	0.0025
<i>CEOGENDIVER</i>	570	.072	.259	0	1	11.98	0.0000
<i>BSIZE</i>	570	9.156	2.567	4	17	3.173	0.0000
<i>BIND</i>	570	.68	.148	.077	1	3.51	0.0000
<i>FIRMAUD</i>	570	.739	.44	0	1	2.179	0.0000
<i>FirmSizeLog</i>	570	18.614	2.389	11.964	26.278	4.065	0.0000
<i>FirmAge</i>	570	48.963	35.078	2	171	4.15	0.0000
<i>logLeverage</i>	570	.452	.266	.028	1.925	18.362	0.0000
<i>logROA</i>	570	.066	.188	-.715	.767	10.316	0.0000
<i>logGDP</i>	570	8.031	.576	6.763	8.741	2.071	0.0000
<i>logInflation</i>	570	2.092	.401	.656	3.271	2.995	0.0000
<i>RegulatoryQuality</i>	570	-.486	.455	-1.024	.209	1.313	0.0000

GreenReport is green reporting, CPD is CEO power distance, CIND is CEO individualism, CMAS is CEO masculinity, CUNA is CEO uncertainty avoidance, CLTO is CEO long term orientation, CINDU is CEO indulgence, NPD is home company power distance, NIND is home company individualism, NMAS is home company masculinity, NUNA is home company uncertainty avoidance, NLTO is home company long term orientation, NINDU is home company indulgence, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The dependent variable, green reporting has a mean of 0.314. Thus, listed manufacturing firms in SSA in the sample disclose on average 31.4% of their environmental impacts in their annual report and have a minimum value of 0 and a maximum of 91.2 %. The means (standard deviations) of CPD, CIND, CMAS, CUNA, CLTO, and CINDU scores are 61.967 (18.142), 51.966 (26.848), 57.67 (10.132), 54.084, (13.891), 29.789 (19.238), and 64.628 (21.443) respectively. This means that five of the six dimensions of CEO culture, CPD, CIND, CMAS, CUNA, and CINDU, have an average value above 50% making them high. CLTO is below 50%, meaning CEOs in the sample on average are from short-term-orientated countries. From this, I anticipate that the hypothesis linking CPD, CIND, CMAS, CUNA, and CINDU to green reporting may be supported but CLTO may not be supported. CEOs from high (PD, IND, MAS, and INDU) and low (LTO) may not prioritize green reporting but those from High UNA may prioritize green reporting. However, some of the signs did not go as anticipated because of other factors explained later in this work.

Regarding control variables, four of the six dimensions of national culture of the manufacturing firms NPD, NMAS, NUNA, and NINDU, have an average value above 50% making them high. The remaining two NIND and NLTO are below 50% meaning home companies in our sample on average are from short-term orientated and collectivist countries. The average CEO tenure (CEOTEN) is 5.098 years. This shows that on average, CEOs in the sampled companies stay in the office for above 5 years. Experienced CEOs are more likely to increase sustainable and environmental performance (Shahab et al., 2019). The average board size (Bsize) is 9.156. On average, 68% of board

members are independent directors (BIND) and on average 72% of the sampled CEOs are men. The mean Firm size (FirmSizeLog), Firm audit (FIRMAUD), Firm age, GDP, Inflation, Regulatory quality, return on asset (logROA) and leverage (logLeverage) are 18.614, 0.739, 48.963, 8.031, 2.092, -0.486, 0.066 and 0.452 respectively.

The results from the Shapiro–Wilk W test for normal data show that the data is not normally distributed. Additionally, most of the variables included in the study present either positive or negative skewness and kurtosis patterns. With the identification of these issues, this study employs panel quantile regression to substantiate these findings.

Pairwise Correlation Matrix

Table 2 depicts the correlation matrix of the variables employed in the regression estimations.

Table 2: Pairwise Correlation

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) GreenReport	1.000												
(2) CPD	-0.372*	1.000											
(3) CIND	0.383*	-0.884*	1.000										
(4) CMAS	-0.077	-0.113*	0.191*	1.000									
(5) CUNA	0.006	0.295*	-0.328*	-0.190*	1.000								
(6) CLTO	0.249*	-0.389*	0.363*	-0.111*	-0.011	1.000							
(7) CINDU	-0.203*	0.149*	-0.027	0.139*	0.040	-0.615*	1.000						
(8) NPD	-0.541*	0.629*	-0.561*	-0.023	0.195*	-0.254*	0.165*	1.000					
(9) NIND	0.500*	-0.567*	0.556*	0.073	-0.213*	0.249*	-0.083*	-0.929*	1.000				
(10) NMAS	0.110*	-0.092*	0.212*	0.144*	-0.125*	0.094*	0.149*	-0.219*	0.564*	1.000			
(11) NUNA	-0.521*	0.552*	-0.486*	-0.196*	0.149*	-0.274*	0.127*	0.791*	-0.756*	-0.240*	1.000		
(12) NLTO	0.566*	-0.621*	0.531*	0.107*	-0.165*	0.247*	-0.187*	-0.920*	0.799*	0.057	-0.921*	1.000	
(13) NINDU	-0.402*	0.444*	-0.295*	-0.014	0.051	-0.168*	0.240*	0.574*	-0.267*	0.576*	0.606*	-0.750*	1.000
Variables	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	
(14) CEOTEN	1.000												
(15) CEOGENDIVER	-0.100*	1.000											
(16) BSIZE	-0.086*	-0.141*	1.000										
(17) BIND	-0.146*	0.075	0.033	1.000									
(18) FIRMAUD	-0.120*	0.057	0.197*	0.054	1.000								
(19) FirmSizeLog	0.112*	-0.104*	0.512*	-0.023	0.434*	1.000							
(20) FirmAge	0.145*	0.107*	0.110*	-0.189*	0.204*	0.310*	1.000						
(21) logLeverage	-0.176*	0.133*	-0.069	-0.064	-0.168*	-0.247*	-0.010	1.000					
(22) logROA	0.092*	0.084*	0.009	-0.022	0.218*	0.171*	0.074	-0.269*	1.000				
(23) logGDPperc~2015	0.389*	-0.268*	0.215*	-0.157*	-0.069	0.316*	0.235*	-0.150*	0.013	1.000			
(24) logInflationG~u	-0.165*	0.161*	-0.137*	0.277*	-0.050	-0.276*	-0.187*	0.177*	-0.120*	-0.352*	1.000		
(25) RegulatoryQua~Q	0.362*	-0.102*	0.140*	-0.300*	0.126*	0.430*	0.437*	-0.141*	0.116*	0.664*	-0.392*	1.000	

* *Shows significance at $p < .05$.* GreenReport is green reporting, CPD is CEO power distance, CIND is CEO individualism, CMAS is CEO masculinity, CUNA is CEO uncertainty avoidance, CLTO is CEO long term orientation, CINDU is CEO indulgence, NPD is home company power distance, NIND is home company individualism, NMAS is home company masculinity, NUNA is home company uncertainty avoidance, NLTO is home company long term orientation, NINDU is home company indulgence, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The dependent variable green report is positively correlated with CIND, CUNA, and CLTO but negatively correlated with CPD, CMAS, and CIND. However, CUNA and CINDU are not significant. There is a notable correlation coefficient among certain independent variables. For example, the correlation coefficient between NLTO and NPD is 0.920, which exceeds the threshold of 0.80. This suggests a potential risk of multicollinearity in the model equations (Damodar, 2004). However, it's important to note that the highly correlated variables are not included in the same model.

Main Results (CEO Cultural Origin and Green Reporting)

The regression analysis is carried out with robust standard errors clustered at the firm level to account for heterogeneity and auto-correlation in the data. Additionally, time effects are considered in the model using firm-year. For comparison, the study first presents fixed effect results on CEO cultural Origin and green reporting and then later runs separate tests for all the cultural dimensions using quantile regression at 5%, 15%, 25%, 35%, 50%, 65%, 75%, 85%, and 90%. However, the analysis was solely based on the quantile regression results. This is because the use of the mean approach may cloud the effect of CEO cultural origin on green reporting at various quantiles. The fixed effect was chosen because of the Hausman Test.

CPD (CEO Power Distance)

Table 3 shows the relationship between CEO power distance and green reporting.

Table 3: CEO Power Distance and Green Reporting

	Fixed Effect				Quantiles					
		5%	15%	25%	35%	50%	65%	75%	85%	90%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>
<i>CPD</i>	-0.053 (0.059)	0.062** (0.026)	0.065 (0.065)	0.167** (0.083)	0.186** (0.080)	0.033 (0.082)	-0.128 (0.088)	-0.331*** (0.092)	-0.245*** (0.078)	-0.279** (0.119)
<i>NPD</i>	-0.704*** (0.159)	-0.337*** (0.070)	-0.446** (0.174)	-0.715*** (0.224)	-0.915*** (0.214)	-0.686*** (0.222)	-0.925*** (0.237)	-1.019*** (0.248)	-0.820*** (0.211)	-0.845*** (0.320)
<i>CEO TEN</i>	-0.004*** (0.001)	-0.004*** (0.001)	-0.003* (0.002)	-0.008*** (0.002)	-0.004** (0.002)	-0.005** (0.002)	-0.005** (0.002)	-0.003 (0.002)	-0.001 (0.002)	0.003 (0.003)
<i>CEO GEN DIVER</i>	-0.071** (0.034)	-0.017 (0.015)	-0.044 (0.037)	-0.096** (0.048)	-0.087* (0.046)	-0.107** (0.047)	-0.069 (0.050)	-0.058 (0.053)	-0.074* (0.045)	-0.074 (0.068)
<i>BSIZE</i>	0.013*** (0.004)	0.003* (0.002)	0.006 (0.004)	0.001 (0.005)	0.008 (0.005)	0.012** (0.005)	0.018*** (0.006)	0.021*** (0.006)	0.027*** (0.005)	0.027*** (0.008)
<i>BIND</i>	0.218*** (0.061)	0.036 (0.027)	0.065 (0.066)	0.027 (0.085)	0.189** (0.082)	0.089 (0.084)	0.226** (0.090)	0.112 (0.095)	0.272*** (0.080)	0.332*** (0.122)
<i>FIRM AUD</i>	0.095*** (0.022)	0.022** (0.010)	0.037 (0.024)	0.040 (0.031)	0.071** (0.030)	0.072** (0.031)	0.059* (0.033)	0.071** (0.035)	0.120*** (0.029)	0.135*** (0.045)
<i>Firm Size (Log)</i>	0.035*** (0.005)	0.012*** (0.002)	0.014*** (0.006)	0.032*** (0.007)	0.027*** (0.007)	0.030*** (0.007)	0.033*** (0.007)	0.040*** (0.008)	0.034*** (0.007)	0.036*** (0.010)
<i>Firm Age</i>	0.001*** (0.000)	0.000** (0.000)	0.001*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.001*** (0.000)	0.001** (0.000)	0.001 (0.001)
<i>logLeverage</i>	0.031 (0.034)	-0.089*** (0.015)	0.006 (0.037)	-0.003 (0.048)	0.013 (0.046)	0.014 (0.048)	0.001 (0.051)	0.020 (0.053)	0.043 (0.045)	0.040 (0.069)
<i>logROA</i>	0.193*** (0.046)	0.062*** (0.020)	0.134*** (0.051)	0.161** (0.065)	0.148** (0.062)	0.099 (0.065)	0.099 (0.069)	0.052 (0.072)	0.073 (0.061)	0.048 (0.093)
<i>GDP</i>	0.009 (0.022)	-0.005 (0.010)	-0.008 (0.024)	0.029 (0.030)	0.061** (0.029)	0.050* (0.030)	-0.030 (0.032)	-0.028 (0.034)	-0.062** (0.029)	-0.053 (0.043)
<i>Inflation</i>	-0.068** (0.027)	-0.038*** (0.012)	-0.044 (0.029)	-0.049 (0.037)	-0.060* (0.036)	-0.087** (0.037)	-0.100** (0.040)	-0.047 (0.041)	-0.029 (0.035)	-0.028 (0.054)
<i>RegQuality</i>	-0.035 (0.043)	0.014 (0.019)	-0.009 (0.048)	-0.050 (0.061)	-0.063 (0.059)	-0.038 (0.061)	-0.078 (0.065)	-0.154** (0.068)	-0.014 (0.058)	-0.056 (0.087)
Constant	-0.165	0.098	0.057	-0.389	-0.555*	-0.422	0.373	0.428	0.520	0.431

	(0.243)	(0.107)	(0.265)	(0.342)	(0.327)	(0.338)	(0.361)	(0.378)	(0.322)	(0.489)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	0.560	570	570	570	570	570	570	570	570	570
Adjusted R-squared	0.560	0.0970	0.155	0.246	0.314	0.392	0.445	0.447	0.407	0.373
Hausman test										
Chi2	39.72									
<i>p-value</i>	0.0002									

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. GreenReport is green reporting, CPD is CEO power distance, NPD is home company power distance, CEO TEN represents CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

In Table 3, the results indicate that *CPD* is negatively and significantly related to green reports at the higher quantiles. This means that the sampled CEOs from power distance cultural backgrounds exhibit a lower commitment to green reporting as the demand for it increases. This is because high power distance cultures tend to have centralized power, deference to authority, lack of transparency, and prioritization of short-term results over long-term sustainability - all of which reduce the incentive and accountability for CEOs to prioritize green reporting. Also, because CEOs from power distance cultural backgrounds are more secretive, they tend to restrict the amount of green discourse to preserve power inequality (Gray & Vint, 1995). Thus, *H1* is supported at higher quantiles. This is consistent with previous studies (Disli, Ng, & Askari, 2016; Gallego-Álvarez and Ortas, 2017; Ogundajo et al., 2022; Vitolla et al., 2019) but contradicts the study of Sannino et al. (2020) that had no relationship and Ho et al. (2011) that found a positive relationship.

However, *CPD* is positively and significantly related to green reporting at the lower quantiles, consistent with Ho et al. (2011). This could mean that CEOs in high power distance cultures may be more inclined to engage in green reporting at lower levels of green reporting to manage impressions and maintain their status. This is because green reporting can be used as a symbolic gesture to appease subordinates and the public, without necessarily translating to deeper commitments. Also, initially, when stakeholders first demand green reporting, CEOs may not perceive it as detracting from shareholder wealth creation because the financial burden might be minimal at that point.

Although the relationship between *CPD* and green report is positive and significant at the lower quantiles, their coefficients are lower compared to the coefficients under the higher quantiles. Meaning the impact of *CPD* on green reporting is more pronounced at the higher quantiles of green reporting. Thus, with minimal stakeholder pressure for green reporting, CEOs might disclose their environmental impact if it is cost-effective. However, as demand grows, the financial burden may deter reporting. Finally, the negative significant results confirm the cultural capital theory that CEOs' power distance cultural origin serves as a capital resource that negatively impacts green reporting. However, the positive impact supports stakeholder, legitimacy, and signaling theories.

CIND (CEO Individualism)

Table 4 shows the relationship between CEO individualism and green reporting.

Table 4: CEO Culture (CEO Individualism) and Green Reporting

VARIABLES	Fixed Effect					Quantiles				
		5%	15%	25%	35%	50%	65%	75%	85%	90%
	(1) <i>GreenReport</i>	(2) <i>GreenReport</i>	(3) <i>GreenReport</i>	(4) <i>GreenReport</i>	(5) <i>GreenReport</i>	(6) <i>GreenReport</i>	(7) <i>GreenReport</i>	(8) <i>GreenReport</i>	(9) <i>GreenReport</i>	(10) <i>GreenReport</i>
<i>CIND</i>	0.067* (0.038)	-0.028 (0.021)	-0.030 (0.045)	-0.060 (0.054)	-0.117** (0.052)	0.003 (0.048)	0.085 (0.054)	0.205*** (0.059)	0.167*** (0.050)	0.190*** (0.071)
<i>NIND</i>	0.609*** (0.133)	0.290*** (0.072)	0.388** (0.158)	0.546*** (0.189)	0.825*** (0.182)	0.590*** (0.169)	0.938*** (0.189)	0.935*** (0.206)	0.665*** (0.176)	0.503** (0.249)
<i>CEO TEN</i>	-0.004*** (0.001)	-0.004*** (0.001)	-0.003 (0.002)	-0.008*** (0.002)	-0.004** (0.002)	-0.005*** (0.002)	-0.005** (0.002)	-0.006** (0.002)	-0.002 (0.002)	0.001 (0.003)
<i>CEO GEN DIVER</i>	-0.063* (0.034)	-0.019 (0.018)	-0.034 (0.040)	-0.080* (0.048)	-0.091* (0.046)	-0.103** (0.043)	-0.058 (0.048)	-0.036 (0.052)	-0.026 (0.045)	-0.022 (0.063)
<i>BSIZE</i>	0.013*** (0.004)	0.003 (0.002)	0.006 (0.005)	0.001 (0.005)	0.007 (0.005)	0.012** (0.005)	0.017*** (0.006)	0.022*** (0.006)	0.028*** (0.005)	0.028*** (0.007)
<i>BIND</i>	0.223*** (0.061)	0.042 (0.033)	0.091 (0.072)	0.047 (0.086)	0.195** (0.083)	0.105 (0.077)	0.203** (0.086)	0.208** (0.094)	0.298*** (0.081)	0.347*** (0.114)
<i>FIRM AUD</i>	0.095*** (0.022)	0.016 (0.012)	0.037 (0.026)	0.039 (0.031)	0.068** (0.030)	0.071** (0.028)	0.058* (0.031)	0.089*** (0.034)	0.156*** (0.029)	0.159*** (0.041)
<i>Firm Size</i>	0.034*** (0.005)	0.011*** (0.003)	0.012** (0.006)	0.034*** (0.007)	0.029*** (0.007)	0.030*** (0.006)	0.031*** (0.007)	0.034*** (0.008)	0.026*** (0.007)	0.023** (0.009)
<i>Firm Age</i>	0.001*** (0.000)	0.000*** (0.000)	0.001** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001* (0.001)
<i>logLeverage</i>	0.036 (0.034)	-0.064*** (0.019)	0.007 (0.041)	0.012 (0.049)	0.025 (0.047)	0.017 (0.044)	-0.003 (0.049)	-0.015 (0.053)	0.000 (0.046)	0.008 (0.064)
<i>logROA</i>	0.191*** (0.046)	0.065** (0.025)	0.126** (0.055)	0.174*** (0.066)	0.149** (0.064)	0.101* (0.059)	0.094 (0.066)	0.088 (0.072)	0.065 (0.062)	0.107 (0.087)
<i>GDP</i>	-0.081** (0.032)	-0.050*** (0.017)	-0.065* (0.038)	-0.035 (0.045)	-0.058 (0.044)	-0.032 (0.040)	-0.181*** (0.045)	-0.166*** (0.049)	-0.137*** (0.042)	-0.102* (0.059)
<i>Inflation</i>	-0.068** (0.026)	-0.038*** (0.014)	-0.050 (0.031)	-0.048 (0.038)	-0.057 (0.036)	-0.081** (0.034)	-0.100*** (0.038)	-0.097** (0.041)	-0.020 (0.035)	-0.014 (0.050)
<i>RegQuality</i>	0.046 (0.032)	0.047*** (0.018)	0.046 (0.038)	0.023 (0.046)	0.022 (0.044)	0.045 (0.041)	0.028 (0.046)	-0.002 (0.050)	0.087** (0.043)	0.103* (0.060)
Constant	-0.186	0.192	0.164	-0.473	-0.379	-0.408	0.576*	0.349	0.205	0.024

	(0.246)	(0.133)	(0.291)	(0.348)	(0.336)	(0.311)	(0.349)	(0.380)	(0.325)	(0.459)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	570	570	570	570	570	570	570	570	570	570
Adjusted R-squared	0.563	0.0941	0.152	0.243	0.313	0.394	0.448	0.449	0.413	0.387
Hausman test										
Chi2	32.56									
Pvalue	0.0020									

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. GreenReport is green reporting, CIND is CEO individualism,, NIND is home company individualism, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

In Table 4, the study finds that *CIND* has a positive and significant impact on green reporting at the higher quantiles but is negative and insignificant at the lower quantiles except at the 35% quantile. This indicates that manufacturing firms in SSA with CEOs from individualistic cultural backgrounds are more likely to produce green reports at higher quantiles. This is because, in individualistic cultures, personal values and self-expression are highly prized. CEOs may use green reporting to signal their commitment to sustainability and environmental protection, which can enhance their reputation and social standing. This finding contradicts previous studies (Gallén & Peraita, 2017; Lu & Wang, 2021) but confirms the studies of (Ogundajo et al., 2022; Pinheiro et al., 2023). Moreso, the unexpected relationship between *CIND* and greenreport at the higher quantile is not surprising in the current era, where stakeholders are increasingly demanding sustainability reporting.

Therefore, *H2* is supported only at the 35% quantile. Thus, while individualistic cultures value personal values and self-expression, CEOs in these cultures may prioritize their own interests and reputation over the need for sustainability reporting at the 35% quantile. They may view green reporting as unnecessary or even detrimental to their personal goals.

The positive significant results support stakeholder, legitimacy, and signaling theories. However, the negative significant result at the 35% quantile supports the cultural capital theory that CEOs from societies driven by a culture of self-centeredness serve as a capital resource that prevents green reporting.

CMAS (CEO Masculinity)

Table 5 shows the relationship between (CEO Masculinity) and Green Reporting.

Table 5: CEO Masculinity and Green Reporting

Fixed Effect					Quantiles					
	5%	15%	25%	35%	50%	65%	75%	85%	90%	
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>
<i>CMAS</i>	0.108 (0.088)	0.082** (0.039)	0.131 (0.098)	0.038 (0.130)	-0.109 (0.134)	0.118 (0.109)	0.118 (0.136)	0.272* (0.156)	0.104 (0.130)	0.028 (0.164)
<i>NMAS</i>	0.712** (0.319)	0.763*** (0.139)	0.530 (0.352)	0.599 (0.469)	2.194*** (0.481)	1.324*** (0.393)	0.898* (0.489)	0.444 (0.562)	0.585 (0.470)	0.546 (0.589)
<i>CEO TEN</i>	-0.004*** (0.001)	-0.004*** (0.001)	-0.003* (0.002)	-0.009*** (0.002)	-0.003 (0.002)	-0.005*** (0.002)	-0.004* (0.002)	-0.004 (0.003)	-0.001 (0.002)	-0.002 (0.003)
<i>CEO GEN DIVE</i>	-0.039 (0.035)	-0.015 (0.015)	-0.034 (0.038)	-0.054 (0.051)	-0.081 (0.052)	-0.034 (0.043)	-0.068 (0.053)	-0.035 (0.061)	0.059 (0.051)	0.021 (0.064)
<i>BSIZE</i>	0.011*** (0.004)	0.003** (0.002)	0.004 (0.004)	0.001 (0.006)	0.007 (0.006)	0.010** (0.005)	0.017*** (0.006)	0.018*** (0.007)	0.029*** (0.006)	0.030*** (0.007)
<i>BIND</i>	0.200*** (0.062)	0.024 (0.027)	0.037 (0.068)	0.045 (0.091)	0.053 (0.093)	0.103 (0.076)	0.212** (0.095)	0.226** (0.109)	0.336*** (0.091)	0.431*** (0.114)
<i>FIRM AUD</i>	0.086*** (0.022)	0.002 (0.010)	0.011 (0.025)	0.006 (0.033)	0.030 (0.034)	0.064** (0.027)	0.071** (0.034)	0.091** (0.039)	0.183*** (0.033)	0.184*** (0.041)
<i>Firm Size (Log)</i>	0.039*** (0.005)	0.006*** (0.002)	0.012** (0.006)	0.035*** (0.007)	0.036*** (0.008)	0.038*** (0.006)	0.038*** (0.008)	0.045*** (0.009)	0.029*** (0.007)	0.026*** (0.009)
<i>Firm Age</i>	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.003*** (0.000)	0.003*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001 (0.001)
<i>logLeverage</i>	0.001 (0.034)	0.012 (0.015)	-0.008 (0.038)	-0.052 (0.050)	-0.023 (0.052)	0.033 (0.042)	0.013 (0.053)	0.019 (0.060)	0.037 (0.051)	0.026 (0.063)
<i>logROA</i>	0.176*** (0.047)	0.047** (0.021)	0.086* (0.052)	0.158** (0.069)	0.154** (0.071)	0.099* (0.058)	0.078 (0.072)	0.097 (0.083)	0.099 (0.069)	0.132 (0.087)
<i>GDP</i>	-0.099 (0.063)	-0.144*** (0.027)	-0.110 (0.070)	-0.082 (0.093)	-0.402*** (0.095)	-0.189** (0.078)	-0.162* (0.097)	-0.107 (0.111)	-0.111 (0.093)	-0.115 (0.116)
<i>Inflation</i>	-0.088*** (0.027)	-0.043*** (0.012)	-0.051* (0.030)	-0.054 (0.039)	-0.079* (0.040)	-0.122*** (0.033)	-0.131*** (0.041)	-0.059 (0.047)	-0.048 (0.039)	-0.042 (0.049)
<i>RegQuality</i>	0.237*** (0.056)	0.174*** (0.024)	0.152** (0.062)	0.161** (0.082)	0.412*** (0.084)	0.315*** (0.069)	0.286*** (0.086)	0.310*** (0.098)	0.304*** (0.082)	0.314*** (0.103)
Constant	-0.149 (0.396)	0.682*** (0.171)	0.398 (0.432)	-0.209 (0.575)	1.665*** (0.591)	0.312 (0.483)	0.269 (0.601)	-0.154 (0.689)	-0.035 (0.577)	0.096 (0.723)
Year FE	YES	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Observations	570	570	570	570	570	570	570	570	570
Adjusted R-squared	0.0782	0.138	0.226	0.298	0.385	0.436	0.429	0.388	0.360
Hausman test									
Chi2	27.24								
Pvalue	0.0115								

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. GreenReport is green reporting, CMAS is CEO masculinity, NMAS is home company masculinity, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

Moreover, the study finds from Table 5 that *CMAS* relates positively with green reporting at all levels except at the 35% quantile but surprisingly, significant at just the 5% and 75% quantiles. However, the impact is more pronounced at the 75% quantile. In other words, companies led by CEOs from masculine cultural backgrounds are more inclined to produce green reports at 5% and 75% quantiles. This may be because CEOs from masculine cultures may view green reporting to gain a competitive advantage and demonstrate their company's superiority over competitors. At the 5% and 75% quantiles, CEOs may be more inclined to use green reporting to signal their company's environmental credentials. These findings stand in contrast to prior studies (Garcia-Sánchez et al., 2013; Kim and Kim, 2010; Hur and Kim, 2017) that reported negative results, but confirm the work of (Pinheiro et al., 2023).

On the other hand, the insignificant relationship between *CMAS* and green reports at the remaining quantiles means that CEOs' masculinity cultural backgrounds do not matter at those quantiles as found by Coulmont et al., 2015 that there is no statistically significant effect between *CMAS* and integrated reporting quality.

However, it is not unexpected that *CMAS* and green reports show a positive relationship at the 5% and 75% quantiles, given the current era's rising demand for sustainability reporting among stakeholders. The positive significant results support stakeholder, legitimacy, and signaling theories. However, the insignificant result at the other quantiles supports Friedman's (1970) and Jensen and Murphy's (1990) argument that a firm's primary responsibility is profit maximization and adherence to legal obligations, with the sole focus on increasing shareholder wealth.

CUNA (CEO Uncertainty Avoidance)

Table 6 shows the relationship between uncertainty avoidance as a proxy for CEO culture and green reporting.

Table 6: CEO Uncertainty Avoidance and Green Reporting

VARIABLES	Fixed Effect		Quantiles							
	(1)	5%	15%	25%	35%	50%	65%	75%	85%	90%
	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>
<i>CUNA</i>	-0.047 (0.061)	0.007 (0.036)	-0.006 (0.072)	0.031 (0.095)	-0.110 (0.085)	-0.032 (0.076)	-0.079 (0.075)	-0.198** (0.091)	-0.114 (0.103)	-0.287*** (0.103)
<i>NUNA</i>	-1.974*** (0.267)	-0.558*** (0.157)	-0.678** (0.316)	-1.139*** (0.414)	-1.574*** (0.372)	-2.047*** (0.334)	-2.384*** (0.328)	-2.961*** (0.397)	-3.439*** (0.453)	-3.242*** (0.449)
<i>CEO TEN</i>	-0.004*** (0.001)	-0.004*** (0.001)	-0.003* (0.002)	-0.008*** (0.002)	-0.005** (0.002)	-0.005*** (0.002)	-0.004** (0.002)	-0.003 (0.002)	-0.002 (0.002)	-0.001 (0.002)
<i>CEO GEN DIVER</i>	-0.064* (0.033)	-0.023 (0.019)	-0.035 (0.039)	-0.091* (0.051)	-0.098** (0.046)	-0.083** (0.041)	-0.063 (0.040)	-0.038 (0.049)	-0.061 (0.056)	-0.091 (0.055)
<i>BSIZE</i>	0.011*** (0.004)	0.004** (0.002)	0.005 (0.004)	-0.000 (0.006)	0.006 (0.005)	0.008* (0.005)	0.013*** (0.005)	0.019*** (0.006)	0.028*** (0.006)	0.034*** (0.006)
<i>BIND</i>	0.230*** (0.059)	0.058* (0.035)	0.079 (0.070)	0.063 (0.092)	0.275*** (0.083)	0.152** (0.074)	0.189*** (0.073)	0.165* (0.088)	0.335*** (0.100)	0.288*** (0.099)
<i>FIRM AUD</i>	0.108*** (0.022)	0.014 (0.013)	0.027 (0.025)	0.037 (0.033)	0.108*** (0.030)	0.095*** (0.027)	0.070*** (0.027)	0.100*** (0.032)	0.164*** (0.037)	0.231*** (0.036)
<i>Firm Size (Log)</i>	0.034*** (0.005)	0.008*** (0.003)	0.009 (0.006)	0.033*** (0.008)	0.027*** (0.007)	0.029*** (0.006)	0.037*** (0.006)	0.031*** (0.007)	0.034*** (0.008)	0.028*** (0.008)
<i>Firm Age</i>	0.001*** (0.000)	0.001*** (0.000)	0.001** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.000 (0.000)	0.001 (0.000)
<i>logLeverage</i>	0.053 (0.033)	-0.031 (0.020)	0.017 (0.039)	0.044 (0.052)	0.072 (0.047)	0.029 (0.042)	0.011 (0.041)	-0.009 (0.050)	0.032 (0.057)	0.011 (0.056)
<i>logROA</i>	0.191*** (0.045)	0.070*** (0.026)	0.082 (0.053)	0.167** (0.070)	0.145** (0.063)	0.108* (0.056)	0.084 (0.055)	0.074 (0.067)	0.103 (0.076)	0.087 (0.076)
<i>GDP</i>	0.016 (0.020)	-0.015 (0.012)	-0.008 (0.024)	0.051 (0.032)	0.056** (0.028)	0.024 (0.025)	-0.036 (0.025)	-0.036 (0.030)	-0.006 (0.035)	0.020 (0.034)
<i>Inflation</i>	-0.024 (0.027)	-0.039** (0.016)	-0.034 (0.032)	-0.018 (0.042)	-0.064* (0.038)	-0.005 (0.034)	-0.024 (0.033)	-0.000 (0.040)	0.054 (0.046)	0.047 (0.045)
<i>RegQuality</i>	0.098*** (0.028)	0.079*** (0.017)	0.079** (0.033)	0.061 (0.044)	0.110*** (0.039)	0.123*** (0.035)	0.115*** (0.035)	0.126*** (0.042)	0.040 (0.048)	-0.042 (0.048)

Constant	0.316 (0.247)	0.332** (0.145)	0.279 (0.291)	-0.405 (0.382)	-0.110 (0.344)	0.385 (0.308)	0.989*** (0.303)	1.441*** (0.367)	1.063** (0.418)	0.905** (0.414)
Year FE	YES	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	570	570	570	570	570	570	570	570	570	570
Adjusted R-squared	0.583	0.0957	0.157	0.251	0.324	0.412	0.470	0.467	0.422	0.397
Hausman test										
Chi2	39.92									
Pvalue	0.0001									

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. GreenReport is green reporting, CUNA is CEO uncertainty avoidance,, NUNA is home company uncertainty avoidance, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The study finds that the impact of *CUNA* on green reporting is negative at all quantiles except at the 5% and 25% quantiles. Also, it is only statistically significant at the 75% and 90% quantiles. This result does not support hypothesis 5. The result indicates that firms with CEOs from uncertainty avoidance cultural backgrounds are less likely to produce green reports at the 75% and 90% quantiles but do not have any relationship with green reports at the remaining quantiles. The negative significant connection contradicts the studies of (Williams 1999; Vachon 2010; Garcia-Sanchez et al., 2016; Halkos & Skouloudis, 2017) but supports the studies of (Peng & Lin, 2009; Kim & Kim, 2009; Gallego-Álvarez & Ortas, 2017).

It is worth noting that the direction of the relationship between *CUNA* and green report is not as anticipated except at the 5% and 25% quantiles, as it would have been expected that CEOs from societies driven by a culture of fear of unknown or ambiguous situations may committee more to green reporting. However, the negative association between the two could be interpreted to mean that cultures with strong uncertainty avoidance tend to be less open to change and prefer to maintain the status quo, CEOs from these cultures may be reluctant to embrace green reporting, which can represent a significant shift in business practices and may be perceived as disruptive.

CLTO (CEO Long Term Orientation)

Table 7 shows the relationship between CEO long-term orientation and green reporting.

Table 7: CEO Long-Term Orientation and Green Reporting

VARIABLES	Fixed Effect					Quantiles				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>
<i>CLTO</i>	0.031 (0.044)	0.002 (0.028)	-0.016 (0.052)	0.074 (0.068)	0.076 (0.060)	0.041 (0.058)	-0.029 (0.052)	-0.057 (0.067)	0.032 (0.066)	-0.003 (0.079)
<i>NLTO</i>	0.960*** (0.137)	0.257*** (0.086)	0.367** (0.162)	0.525** (0.211)	0.786*** (0.187)	1.018*** (0.180)	1.296*** (0.160)	1.359*** (0.207)	1.737*** (0.203)	1.796*** (0.244)
<i>CEO TEN</i>	-0.004*** (0.001)	-0.004*** (0.001)	-0.003* (0.002)	-0.007*** (0.002)	-0.004** (0.002)	-0.005*** (0.002)	-0.005*** (0.002)	-0.004* (0.002)	-0.003 (0.002)	-0.003 (0.003)
<i>CEO GEN DIVER</i>	-0.058* (0.033)	-0.017 (0.021)	-0.034 (0.039)	-0.085* (0.051)	-0.082* (0.045)	-0.063 (0.043)	-0.064* (0.038)	-0.022 (0.050)	-0.020 (0.049)	-0.065 (0.059)
<i>BSIZE</i>	0.012*** (0.004)	0.005** (0.002)	0.005 (0.004)	0.001 (0.006)	0.007 (0.005)	0.010** (0.005)	0.017*** (0.004)	0.018*** (0.006)	0.026*** (0.006)	0.029*** (0.007)
<i>BIND</i>	0.237*** (0.059)	0.061* (0.037)	0.068 (0.070)	0.100 (0.091)	0.198** (0.081)	0.185** (0.078)	0.187*** (0.069)	0.241*** (0.090)	0.363*** (0.088)	0.353*** (0.106)
<i>FIRM AUD</i>	0.104*** (0.022)	0.013 (0.013)	0.028 (0.025)	0.045 (0.033)	0.103*** (0.029)	0.087*** (0.028)	0.074*** (0.025)	0.091*** (0.033)	0.145*** (0.032)	0.178*** (0.038)
<i>Firm Size (Log)</i>	0.032*** (0.005)	0.008*** (0.003)	0.009 (0.006)	0.033*** (0.008)	0.024*** (0.007)	0.027*** (0.006)	0.031*** (0.006)	0.040*** (0.007)	0.035*** (0.007)	0.027*** (0.009)
<i>Firm Age</i>	0.001*** (0.000)	0.001*** (0.000)	0.001** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.001*** (0.000)	0.001* (0.000)	0.000 (0.000)	0.000 (0.000)
<i>logLeverage</i>	0.051 (0.034)	-0.023 (0.021)	0.012 (0.040)	0.046 (0.052)	0.055 (0.046)	0.012 (0.044)	-0.003 (0.039)	0.036 (0.051)	0.042 (0.050)	0.025 (0.060)
<i>logROA</i>	0.194*** (0.045)	0.073** (0.028)	0.083 (0.054)	0.198*** (0.070)	0.142** (0.062)	0.137** (0.060)	0.074 (0.053)	0.066 (0.069)	0.113* (0.067)	0.110 (0.081)
<i>GDP</i>	0.060*** (0.021)	0.000 (0.013)	0.012 (0.025)	0.072** (0.032)	0.075*** (0.028)	0.057** (0.027)	0.047* (0.024)	0.045 (0.032)	0.083*** (0.031)	0.058 (0.037)
<i>Inflation</i>	-0.014 (0.028)	-0.037** (0.017)	-0.025 (0.033)	-0.001 (0.043)	-0.048 (0.038)	-0.033 (0.036)	0.001 (0.032)	-0.005 (0.042)	0.049 (0.041)	0.065 (0.049)
<i>RegQuality</i>	-0.017 (0.035)	0.042* (0.022)	0.029 (0.041)	0.023 (0.053)	0.018 (0.047)	0.001 (0.045)	-0.029 (0.040)	-0.030 (0.052)	-0.156*** (0.051)	-0.131** (0.062)
Constant	-1.389*** (0.219)	-0.185 (0.133)	-0.329 (0.251)	-1.373*** (0.328)	-1.300*** (0.291)	-1.224*** (0.279)	-1.255*** (0.248)	-1.413*** (0.322)	-2.007*** (0.316)	-1.690*** (0.379)

Year FE	YES	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	570	570	570	570	570	570	570	570	570	570
Adjusted R-squared	0.580	0.0957	0.157	0.251	0.324	0.409	0.469	0.463	0.421	0.387
Hausman test										
Chi2	29.04									
<i>pvalue</i>	0.0065									

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. GreenReport is green reporting, CLTO is CEO long term orientation, NLTO is home company long term orientation, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The result in Table 7 depicts an insignificant relationship between *CLTO* and green report at all quantiles. It is quite surprising that it is not significant at all quantile because CEOs from long-term-orientated countries prioritize persistence and future-focused goals, while short-term orientation emphasizes tradition and immediate outcomes (Hofstede et al., 2010; Halkos & Skouloudis, 2017). However, the insignificant relationship could mean that long-term-oriented cultures often have a more stakeholder-oriented approach, where the interests of various stakeholders, including employees, customers, and the broader community, are considered. CEOs in these cultures may engage in green reporting to demonstrate their commitment to these stakeholders, regardless of their long-term-orientated origin or the specific quantile. These results also validate the Neoclassical economics argument that firms are primarily shaped by contextual factors, with managers playing a minimal role (Augier & Teece, 2009; DiMaggio & Powell, 1983; Hannan & Freeman, 1977).

CINDU (CEO Indulgence)

Table 8 shows the effect of CEO indulgence on green reporting.

Table 8: CEO Indulgence and Green Reporting

VARIABLES	Fixed Effect		Quantiles							
	(1)	5%	15%	25%	35%	50%	65%	75%	85%	90%
	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>
<i>CINDU</i>	-0.035 (0.041)	0.039* (0.021)	0.013 (0.049)	-0.015 (0.050)	-0.046 (0.053)	0.006 (0.052)	0.060 (0.059)	0.015 (0.071)	0.014 (0.056)	0.021 (0.085)
<i>HINDU</i>	-0.471*** (0.091)	-0.293*** (0.047)	-0.352*** (0.108)	-0.469*** (0.112)	-0.447*** (0.119)	-0.354*** (0.115)	-0.666*** (0.132)	-0.654*** (0.158)	-0.611*** (0.125)	-0.410** (0.189)
<i>CEO TEN</i>	-0.003** (0.001)	-0.004*** (0.001)	-0.003* (0.002)	-0.008*** (0.002)	-0.004* (0.002)	-0.005** (0.002)	-0.004** (0.002)	-0.003 (0.003)	-0.002 (0.002)	-0.001 (0.003)
<i>CEO GEN DIVER</i>	-0.058* (0.034)	-0.024 (0.017)	-0.035 (0.040)	-0.092** (0.041)	-0.101** (0.044)	-0.108** (0.043)	-0.066 (0.049)	-0.033 (0.058)	0.013 (0.046)	-0.053 (0.070)
<i>BSIZE</i>	0.010** (0.004)	0.003* (0.002)	0.005 (0.005)	0.001 (0.005)	0.001 (0.005)	0.007 (0.005)	0.011** (0.006)	0.017*** (0.007)	0.023*** (0.005)	0.032*** (0.008)
<i>BIND</i>	0.191*** (0.060)	0.029 (0.031)	0.060 (0.072)	0.042 (0.074)	0.108 (0.079)	0.085 (0.076)	0.163* (0.088)	0.195* (0.105)	0.361*** (0.083)	0.376*** (0.125)
<i>FIRM AUD</i>	0.088*** (0.022)	0.021* (0.011)	0.031 (0.026)	0.039 (0.027)	0.077*** (0.029)	0.070** (0.028)	0.047 (0.032)	0.095** (0.038)	0.147*** (0.030)	0.184*** (0.045)
<i>Firm Size (Log)</i>	0.039*** (0.005)	0.007*** (0.003)	0.010 (0.006)	0.035*** (0.006)	0.035*** (0.006)	0.037*** (0.006)	0.043*** (0.007)	0.047*** (0.009)	0.043*** (0.007)	0.030*** (0.010)
<i>Firm Age</i>	0.001*** (0.000)	0.000*** (0.000)	0.001** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.001 (0.000)	0.000 (0.000)	0.001 (0.001)
<i>logLeverage</i>	0.025 (0.034)	-0.024 (0.017)	0.013 (0.040)	0.027 (0.042)	0.035 (0.044)	0.028 (0.043)	0.021 (0.049)	0.056 (0.059)	0.069 (0.047)	0.039 (0.071)
<i>logROA</i>	0.175*** (0.046)	0.067*** (0.024)	0.094* (0.055)	0.186*** (0.057)	0.172*** (0.061)	0.090 (0.059)	0.064 (0.068)	0.061 (0.081)	0.085 (0.064)	0.084 (0.097)
<i>GDP</i>	0.150*** (0.030)	0.074*** (0.016)	0.092** (0.036)	0.174*** (0.037)	0.196*** (0.040)	0.166*** (0.038)	0.153*** (0.044)	0.137*** (0.052)	0.136*** (0.041)	0.044 (0.063)
<i>Inflation</i>	-0.042 (0.028)	-0.024* (0.014)	-0.024 (0.033)	-0.007 (0.034)	-0.008 (0.036)	-0.073** (0.035)	-0.047 (0.041)	-0.076 (0.048)	-0.038 (0.038)	-0.024 (0.058)
<i>RegQuality</i>	-0.040 (0.043)	-0.014 (0.022)	-0.036 (0.051)	-0.087* (0.053)	-0.062 (0.056)	-0.032 (0.054)	-0.069 (0.062)	-0.065 (0.074)	-0.010 (0.059)	0.111 (0.089)

Constant	-1.531*** (0.251)	-0.521*** (0.126)	-0.713** (0.291)	-1.739*** (0.302)	-1.911*** (0.321)	-1.656*** (0.309)	-1.524*** (0.356)	-1.450*** (0.425)	-1.546*** (0.336)	-0.734 (0.509)
Year FE	YES	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	570	570	570	570	570	570	570	570	570	570
Adjusted R-squared	0.563	0.101	0.161	0.254	0.316	0.396	0.443	0.432	0.386	0.353
Hausman test										
Chi2	44.28									
Pvalue	0.0000									

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. GreenReport is green reporting, CINDU is CEO indulgence, NINDU is home company indulgence, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The study finally finds that *CINDU* is predominantly positive and insignificantly related to green reports except at the 5% quantile where it is significant. The statistically insignificant relationship indicates that companies led by CEOs from indulgent cultural backgrounds do not have any relationship with green reporting. This could mean that CEOs produce green reports because of other reasons like regulations and stakeholders' pressure other than their indulgent cultural background. These findings contrast with the conclusions of prior studies (Halkos & Skouloudis, 2017; Thanetsunthorn & Wuthisatian, 2019) but align with the works of Kim and Kim, 2010; Hur and Kim, 2017. The positive significance at the 5% quantile could mean that CEOs from indulgence cultural origin may place a strong emphasis on the importance of green reporting, considering them a priority compared to activities that provide immediate pleasure or gratification.

Findings on Control Variables

Concerning control variables, CEO tenure, firm size, Firm audit, firm leverage, and firm age demonstrate largely positive associations with green reporting, while CEO tenure, CEO gender diversity, and board size show mostly negative associations with green reporting. More importantly, it could be observed that the impact of host company culture on green reporting is more pronounced in all instances than that of the CEO's cultural origin. This explains why most of the existing studies have looked at the host company culture instead of the CEO culture. It is also surprising that some of the host culture dimensions turn out to have a negative impact on green reporting since Africans are known for their deep regard for the environment (Behrens, 2010; Mbaiwa, & Siphambe, 2023; Wan & Roy, 2023). However, this supports

Friedman's (1970) and Jensen and Murphy's (1990) argument. A firm's primary responsibility is profit maximization and adherence to legal obligations, with the sole focus on increasing shareholder wealth but not green reporting which takes money away from the firm.

Principal Component Analysis (PCA)

In Table 9, the study also examines the principal composite of all the CEO cultural dimensions. This may give policymakers, governments, organisations, and readers firsthand information on whether the generality of cultural origin matters, and whether the sub-components of the CEO's cultural origin cancel themselves out at the aggregate level.

Table 9: CEO Culture (PCA) and Green Reporting

VARIABLES	Fixed Effect				Quantiles					
	5%	15%	25%	35%	50%	65%	75%	85%	90%	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>
<i>PCACEOCulture</i>	0.018* (0.010)	-0.008 (0.005)	-0.009 (0.012)	-0.017 (0.015)	-0.033** (0.014)	0.003 (0.013)	0.025* (0.014)	0.061*** (0.015)	0.048*** (0.013)	0.053*** (0.018)
<i>PCAHCulture</i>	-0.075*** (0.016)	-0.034*** (0.009)	-0.046** (0.019)	-0.061** (0.025)	-0.098*** (0.023)	-0.070*** (0.022)	-0.101*** (0.023)	-0.123*** (0.024)	0.094*** (0.022)	-0.083*** (0.030)
<i>CEO TEN</i>	-0.004*** (0.001)	-0.004*** (0.001)	-0.003 (0.002)	-0.008*** (0.002)	-0.004** (0.002)	-0.005*** (0.002)	-0.004** (0.002)	-0.005** (0.002)	-0.003 (0.002)	0.001 (0.003)
<i>CEO GEN DIVER</i>	-0.067** (0.034)	-0.018 (0.018)	-0.035 (0.040)	-0.085* (0.051)	-0.095** (0.047)	-0.104** (0.045)	-0.051 (0.048)	-0.040 (0.049)	-0.040 (0.044)	-0.040 (0.061)
<i>BSIZE</i>	0.012*** (0.004)	0.003* (0.002)	0.006 (0.005)	0.001 (0.006)	0.007 (0.005)	0.011** (0.005)	0.019*** (0.005)	0.023*** (0.006)	0.028*** (0.005)	0.028*** (0.007)
<i>BIND</i>	0.220*** (0.060)	0.042 (0.032)	0.083 (0.071)	0.044 (0.092)	0.195** (0.085)	0.111 (0.080)	0.241*** (0.085)	0.207** (0.087)	0.293*** (0.079)	0.327*** (0.110)
<i>FIRM AUD</i>	0.095*** (0.022)	0.018 (0.012)	0.041 (0.026)	0.040 (0.033)	0.077** (0.031)	0.066** (0.029)	0.071** (0.031)	0.086*** (0.032)	0.144*** (0.029)	0.152*** (0.040)
<i>Firm Size (Log)</i>	0.034*** (0.005)	0.011*** (0.003)	0.014** (0.006)	0.035*** (0.008)	0.029*** (0.007)	0.031*** (0.007)	0.030*** (0.007)	0.033*** (0.007)	0.029*** (0.007)	0.024*** (0.009)
<i>Firm Age</i>	0.001*** (0.000)	0.000*** (0.000)	0.001** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001* (0.000)
<i>logLeverage</i>	0.037 (0.034)	-0.069*** (0.018)	0.008 (0.040)	0.004 (0.052)	0.018 (0.048)	0.020 (0.046)	0.005 (0.049)	0.002 (0.050)	-0.002 (0.045)	0.007 (0.062)
<i>logROA</i>	0.190*** (0.046)	0.065*** (0.024)	0.137** (0.055)	0.180** (0.070)	0.158** (0.065)	0.095 (0.061)	0.093 (0.065)	0.071 (0.067)	0.050 (0.061)	0.104 (0.084)
<i>GDP</i>	-0.030 (0.024)	-0.018 (0.013)	-0.025 (0.029)	0.014 (0.037)	0.015 (0.034)	0.025 (0.032)	-0.086** (0.034)	-0.109*** (0.035)	-0.096*** (0.032)	-0.084* (0.044)
<i>Inflation</i>	-0.067** (0.026)	-0.037*** (0.014)	-0.053* (0.031)	-0.050 (0.040)	-0.062* (0.037)	-0.079** (0.035)	-0.117*** (0.037)	-0.093** (0.038)	-0.022 (0.035)	-0.009 (0.048)
<i>RegQuality</i>	-0.007 (0.038)	0.024 (0.020)	0.015 (0.045)	-0.010 (0.058)	-0.041 (0.054)	0.000 (0.051)	-0.038 (0.054)	-0.098* (0.055)	0.011 (0.050)	0.016 (0.070)
Constant	-0.343	0.021	-0.041	-0.686**	-0.688**	-0.653**	0.202	0.336	0.180	0.131

	(0.224)	(0.116)	(0.261)	(0.336)	(0.311)	(0.294)	(0.313)	(0.320)	(0.291)	(0.402)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	570	570	570	570	570	570	570	570	570	570
Adjusted R-square	0.563	0.0939	0.151	0.242	0.311	0.393	0.448	0.452	0.416	0.388

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All the variables are previously defined. *PCACEOCulture* is CEO PCA, CEO TEN represent CEO tenure, Firm Size is firm size, CEO GEN DIVER is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

In Table 9, the results indicate that *CEOPCA* is positively and statistically significant on green reports at the higher quantile levels but negative and insignificant at the lower quantile levels. This suggests that CEO cultural origin does not matter at the lower quantiles. The positive effect of CEO cultural origin on green reports at the higher quantile levels supports the Upper echelons theory, cultural capital theory, stakeholder theory, and legitimacy theory. That is CEOs' cultural origin serves as a resource firms use to enhance their green reporting, helping them meet stakeholders' needs and gain legitimacy. Taken together, the results in Table 9 suggest that CEO cultural origin on green report varies at different quantiles but is mostly significant at the higher quantile levels.

Robustness (Alternative Measure of CEO Cultural Origin)

Table 10 shows the effect of CEO Cultural Origin on green reporting using Schwartz culture dimensions.

Table 10: CEO CULTURE AND GREEN REPORTING --- FIXED REGRESSION

VARIABLES	(1) GreenReport	(2) GreenReport	(3) GreenReport	(4) GreenReport	(5) GreenReport	(6) GreenReport	(7) GreenReport
<i>Charmony</i>	-0.176*** (0.039)						
<i>Hharmony</i>	0.713*** (0.141)						
<i>Cembedded</i>		-0.008 (0.027)					
<i>Hembedded</i>		-0.466*** (0.068)					
<i>Chierarchy</i>			-0.031 (0.037)				
<i>Hhierarchy</i>			-0.285 (0.220)				
<i>Cmastery</i>				0.081 (0.071)			
<i>Hmastery</i>				0.439*** (0.138)			
<i>Caff auton</i>					0.017 (0.019)		
<i>Haffauton</i>					0.172*** (0.027)		
<i>Cintel auton</i>						-0.006 (0.027)	
<i>Hintelauton</i>						0.734*** (0.146)	
<i>Cegalitar</i>							-0.002 (0.048)
<i>Hegalitar</i>							-0.485*** (0.062)
<i>CEO TEN</i>	-0.001 (0.002)	-0.002 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)
<i>CEO GEN DIVER</i>	-0.050 (0.039)	-0.061 (0.038)	-0.072* (0.040)	-0.066* (0.040)	-0.055 (0.038)	-0.070* (0.039)	-0.057 (0.038)

<i>BSIZE</i>	0.005 (0.004)	0.008** (0.004)	0.005 (0.004)	0.008* (0.004)	0.008** (0.004)	0.007* (0.004)	0.008** (0.004)
<i>BIND</i>	0.180*** (0.059)	0.213*** (0.061)	0.140** (0.061)	0.154** (0.061)	0.216*** (0.060)	0.180*** (0.062)	0.237*** (0.060)
<i>FIRM AUD</i>	0.080*** (0.024)	0.045** (0.023)	0.034 (0.024)	0.033 (0.023)	0.047** (0.023)	0.034 (0.023)	0.055** (0.022)
<i>Firm Size (Log)</i>	0.057*** (0.005)	0.047*** (0.005)	0.053*** (0.006)	0.052*** (0.005)	0.045*** (0.005)	0.051*** (0.006)	0.046*** (0.005)
<i>Firm Age</i>	0.001*** (0.000)	0.001*** (0.000)	0.002*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001** (0.000)
<i>logLeverage</i>	0.007 (0.037)	-0.017 (0.035)	-0.043 (0.037)	-0.042 (0.036)	-0.009 (0.035)	-0.037 (0.036)	-0.003 (0.035)
<i>logROA</i>	0.120** (0.049)	0.112** (0.049)	0.138*** (0.051)	0.127** (0.050)	0.110** (0.048)	0.122** (0.050)	0.107** (0.048)
<i>GDP</i>	0.017 (0.030)	0.022 (0.029)	-0.007 (0.046)	0.117*** (0.035)	-0.023 (0.030)	0.082*** (0.030)	0.081*** (0.029)
<i>Inflation</i>	0.012 (0.010)	-0.012 (0.010)	-0.007 (0.011)	-0.010 (0.010)	-0.015 (0.010)	-0.008 (0.010)	-0.010 (0.009)
<i>RegQuality</i>	-0.031 (0.028)	0.007 (0.027)	0.038 (0.031)	0.015 (0.028)	0.064** (0.027)	-0.063** (0.032)	0.026 (0.026)
Constant	-3.258*** (0.545)	1.015** (0.406)	0.030 (0.944)	-3.871*** (0.711)	-1.131*** (0.251)	-4.309*** (0.650)	0.802** (0.362)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	635	635	635	635	635	635	635
Adjusted R-squared	0.469	0.481	0.438	0.449	0.487	0.458	0.492
Hausman test							
Chi2	28.66	21.56	28.75	22.92	26.23	23.34	21.53
Pvalue	0.0073	0.0626	0.0071	0.0427	0.0062	0.0034	0.0631

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All the variables are previously defined. *PCACEOCulture* is CEO PCA, CEO TEN represent CEO tenure, Firm Size is firm size, CEO GEN DIVER is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

To validate the findings, the study substitutes the Hofstede culture model with the Schwartz culture model (See Appendix C). Interestingly, each dimension bears conceptual similarities to one of Hofstede's (1980) original dimensions. Intellectual autonomy versus embeddedness aligns with Hofstede's individualism versus collectivism, while affective autonomy versus conservatism shares commonalities with Hofstede's uncertainty acceptance versus avoidance. Furthermore, the concepts of hierarchy versus egalitarianism and mastery versus harmony resemble Hofstede's power distance versus closeness and certain aspects of his masculinity versus femininity, respectively (Kaasa, 2021; Maleki & de Jong, 2013).

However, the expected signs between the two models are substantially similar, except in a few instances. This is not surprising because Imm Ng et al. (2007) found that the two were found to be non-congruent. Also, there exist differences concerning theoretical reasoning, methods, respondents, and periods (Schwartz, 1994). Schwartz (1992) defines values based on needs, encompassing "individuals' requirements as biological organisms, society's need for coordinated social interaction, and groups' need for survival and support." In contrast, Hofstede's (2001) framework was developed using macroeconomic variables and was shaped based on norms. Moreover, the results in the fixed effect panel quantile regression are confirmed in the fixed effect model.

Conclusion and Policy Recommendations

The study presented an analysis of CEO cultural origin and green reporting of listed manufacturing firms in SSA Anglophone countries. The fixed effect panel quantile regression was employed to achieve the purpose of the study. This study sought to find out whether CEOs' power distance, CEOs'

individuality, CEOs' masculinity, CEOs' uncertainty avoidance, CEOs' long-term orientation, and CEOs' indulgence affect the green reporting of listed manufacturing firms in SSA. The study is the first attempt to assess the nexus between these variables in Africa, where voluntary green reporting still lags that of developed countries. Also, due to different levels of green reporting over a given period among African economies, the paper adopts the fixed effect panel quantile regression to establish the extent of heterogeneity in green reporting.

The results reveal that CEOs from power distance and uncertainty avoidance cultural origins have a negative impact on green reporting, particularly at the higher quantiles indicating a prioritization of individual goals over sustainability. Also, CEOs from Long-term orientation cultural origins have no association with green reporting. This supports Friedman's (1970) and Jensen and Murphy's (1990) argument that a firm's primary responsibility is profit maximization and adherence to legal obligations, with the sole focus on increasing shareholder wealth. In contrast, those from masculine, individualistic, and indulgent cultural backgrounds show a positive relationship. These positive relationships support the Upper echelons theory, cultural capital theory, and stakeholder and legitimacy theories. That is CEOs' cultural origin serves as a resource that firms can use to enhance their green reporting, helping them meet stakeholders' needs and gaining legitimacy.

The study's findings hold important policy implications for organizations aiming to enhance green reporting, particularly within the context of CEO cultural dimensions in Sub-Saharan Africa. Specifically, mandatory disclosure regulations should be implemented for CEOs hailing from high power distance

and uncertainty avoidance cultures. These regulations will ensure that comprehensive environmental reporting becomes a standard practice, fostering greater transparency and accountability in sustainability efforts. Moreover, compliance mechanisms and performance-based incentives can be introduced to motivate companies to disclose their sustainability practices, thereby promoting a culture of accountability and responsible environmental stewardship. Moreover, Stakeholders, including investors, regulators, and NGOs, should exert pressure on CEOs from high power distance and uncertainty avoidance cultures to disclose environmental information, reinforcing accountability.

Furthermore, organizations aiming to strengthen their green reporting of all other things being equal should prioritize the selection of CEOs from cultural backgrounds characterized by masculinity, individualism, and indulgence. Leaders from these cultures are often more inclined to champion sustainability initiatives, driving their firms toward proactive environmental practices. To support this endeavor, regulatory bodies can provide guidelines outlining the cultural traits associated with effective environmental leadership. This guidance will assist organizations in making informed hiring decisions that align with their sustainability goals.

In addition to regulatory measures and strategic hiring practices, it is crucial to focus on the development of targeted training and awareness programs for CEOs. Firms should implement structured sustainability training programs specifically designed for leaders from high power distance and uncertainty avoidance cultures. Such programs can enhance their understanding of the strategic and financial benefits of sustainability, equipping them with the knowledge necessary to integrate these practices into their corporate governance

frameworks. Simultaneously, CEOs from masculine, individualistic, and indulgent cultures should be actively encouraged to take the lead in green reporting efforts, ensuring that sustainability becomes a core element of corporate decision-making.

CHAPTER FIVE

HOLDING COMPANY CULTURAL ORIGIN AND GREEN REPORTING OF LISTED MANUFACTURING FIRMS IN SUB- SAHARAN AFRICA(SSA)

ABSTRACT

This chapter investigates how the cultural disposition of holding companies affects their subsidiaries' decision to disclose green information in Sub-Saharan Africa at various quantiles. The period of the study spans from 2015 to 2021 and the study includes a total of 72 listed manufacturing firms that are controlled by a parent company, selected from 8 Anglophone countries in sub-Saharan Africa. The study employs the fixed effect panel quantile regression technique to estimate the funding. The study finds that Holding companies from power distance, indulgence, and uncertainty avoidance cultures exhibit a positive association with green reporting of their subsidiary's companies, particularly at the higher quantiles. In contrast, those with individualistic and Long-term orientation cultural backgrounds show a negative relationship, indicating a prioritization of individual goals over sustainability. However, holding companies from masculine cultures have no association with green reporting. The study underscores the importance of tailoring policies to specific cultural attributes within holding companies to effectively promote and enhance green reporting practices among subsidiaries.

INTRODUCTION

The global shift towards sustainable development has placed increasing importance on corporate green reporting as a means of promoting transparency and accountability in business practices (Arvidsson, 2023; Asogwa, 2023; Baumüller, & Sopp, 2021; Jan et al., 2022). Understanding the

factors that influence green reporting is crucial for fostering sustainable practices (Asogwa, 2023; Chaudhary, 2019; Li et al., 2019; Vitolla, et al., 2019). In the context of SSA, this article explores the relationship between a holding company's geographical cultural origin (power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence) and green reporting of listed manufacturing companies, utilizing the institutional theory of isomorphism, cultural capital theory, and employing Hofstede's cultural dimensions model to assess cultural origins. This is because mounting evidence highlights Africa's high vulnerability to climate change, with Sub-Saharan Africa home to nine of the world's top 10 most vulnerable nations according to the 2021 climate vulnerability index.

Theoretically, institutional theory underlines the impact of cultural influences on the structures and practices of an organization (Scott, 1987). Thus, organizations are viewed as responsive entities, shaped by regulations originating from the broader national system that holds hierarchical superiority over firms (Zucker, 1987). DiMaggio and Powell (1983) assert that managerial choices are subject to the influence of three institutional mechanisms: coercive, mimetic, and normative isomorphism. Coercive isomorphism emerges from both formal and informal forces imposed upon organizations. Formal forces are the regulations embedded within the institutional environment, while informal forces stem from the cultural traits of the nation. Concerning mimetic isomorphism organizations may adopt the characteristics of others as models in uncertain institutional contexts. Normative isomorphism results from the exchange of insights among professionals, consultants, and academic institutions within a specific field (DiMaggio & Powell, 1983).

To attain legitimacy, organizations strive to align their products, programs, and policies with the national context of operation (Meyer & Rowan, 1977). The established rules, encompassing laws, norms, social conventions, and other written or unwritten guidelines, exert an influence on business conduct (Scott, 2008). Consequently, the examination of how holding companies' national attributes impact subsidiaries, particularly in terms of green reporting (Chwialkowska et al., 2020; EU, 2023; Wasiuzzaman et al., 2022), becomes pertinent. This is because internal mechanisms within international corporations impact subsidiary green reporting. Moreover, the appointment of individuals from the holding company to key roles in SSA subsidiaries shapes green reporting initiatives.

Lastly, the holding company's subtle influence on subsidiary actions, emphasizing a shared corporate culture of green responsibility, contributes to aligned sustainability goals. Thus, the interplay of internal structures, key personnel appointments, and corporate culture collectively shape the green reporting dynamics of subsidiaries in Africa (Barth & Radev, 2022; Hasan et al., 2023). Thus, subsidiaries disclose green information due to informal pressures from the holding companies' nation, influenced by factors like holding companies' national culture, which in turn shape behaviors and impose certain expectations (Campbell, 2007). Also, cultural capital theory posits that cultural background can serve as a form of capital (resource) that firms can leverage to enhance their green reporting (Bourdieu, 1986, Throsby, 1995). Thus, holding a company's cultural origin serves as a cultural resource that firm possesses that impacts its green reporting (Bourdieu, 1986).

Within the framework of informal institutions, prior studies have explored the interplay between national culture and corporate social responsibility (Mohamed et al., 2018; Gallén and Peraita, 2017; Garcia-Sánchez et al., 2016; Pinheiro et al., 2023; Pucheta-Martínez & Gallego-Álvarez, 2018; Sannino et al., 2020). Investigating the nexus between informal institutions and green disclosure is critical, as many studies focusing on national attributes and green disclosure primarily analyze formal structures like legal systems, financial attributes, and political contexts (Garcia-Sánchez et al., 2016; Pinheiro et al., 2021). Garcia-Sánchez et al. (2016) studied the impact of national culture on Corporate Social Responsibility (CSR) disclosure using Tobit regression penal data models. Their results indicate that companies situated in countries with collectivist, egalitarian cultures and lower power distance tend to reveal more CSR-related information. Mohamed et al. (2018) investigated 203 companies from China, Malaysia, India, and the United Kingdom, highlighting that nations where hierarchical disparities are less accepted exhibit greater environmental information disclosure within official reports. Their study used Pooled OLS and concluded that mimetic isomorphism leads to similar amounts of environmental information disclosure within the same country.

Moreover, Sannino et al., 2020 investigated the impact of cultural dimensions on the commitment to Global Reporting Initiatives (GRI) within corporate social responsibility (CSR) reports of banks affiliated with the OECD. Utilizing stakeholder theory and Hofstede's cultural dimensions, the research explored determinants of GRI commitment across 819 observations from 2012 to 2018 in 27 countries. Applying the probit model, the study

revealed the influence of masculinity, avoidance, long-term orientation, and indulgence on GRI commitment. Similarly, Pinheiro et al., 2023 explored how national culture shapes environmental disclosure in liberal economies, focusing on the influence of informal institutions (national culture) compared to formal institutional factors. The research highlighted environmental disclosure patterns in these economies, where financial and governance information disclosure is common. The analysis covers 1,037 companies in Australia, Canada, Ireland, New Zealand, the United Kingdom, and the United States from 2015 to 2018. Using Hofstede's cultural dimensions, the study revealed that power distance, individualism, and masculinity positively affect environmental disclosure, while lower uncertainty-averse cultures show increased disclosure.

In summary, the studies outlined above delve into the impact of the national culture of the home country on CSR and green disclosure. This study, however, deviates from the above studies in two ways. The study directly examines how holding companies' national culture influences the green reporting of their subsidiaries. For instance, the power distance cultures of holding companies may inhibit the green reporting of subsidiary firms, as centralized control and authority can deter open disclosure of environmental practices, leading to poor green reporting. Similarly, holding companies located in individualistic societies might prioritize corporate interests over environmental concerns, potentially discouraging thorough green reporting by their subsidiaries. The masculine cultural behavior of holding companies may emphasize competitiveness and profit-making, potentially overshadowing the importance of sustainability/green reporting by their subsidiaries.

The study contributes to the literature in two ways. First, the study investigates how holding companies' national culture influences the green reporting of their subsidiaries. This is because within the context of green reporting, the regulations and rules imposed by holding companies exert coercive, normative, and mimetic pressures on subsidiaries, influencing their environmental activities (Cho et al., 2021; Othman et al., 2011). Holding companies with different geographical cultural backgrounds impose varying degrees of monitoring pressure on green reporting, either facilitating or endorsing specific practices (Cho et al., 2021; Pedersen et al., 2013). Holding companies serve as key actors in establishing strategic goals and policies for their subsidiaries. Understanding the impact of their geographical cultural origin becomes crucial in comprehending the green reporting practices of these subsidiaries.

Second, this paper makes a distinctive methodological contribution by employing the innovative fixed-effect panel quantile regression (PQR) approach. Utilizing the PQR model, this study examines the diverse effects of parent companies' cultural origin and other crucial factors on green reporting. Notably, this approach has not been utilized in previous parent company cultural origin and green reporting studies. The motivation behind adopting PQR is its capacity to account for panel data heterogeneity (Akram et al., 2020).

The rest of the paper is organized as follows. Section 2 presents the literature review and hypotheses. Section 3 discusses the research design. Section 4 reports the empirical results, and Section 5 concludes the paper.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The following sub-sections provide the empirical review of the relationship between the Holding company's cultural origin and green reporting.

Holding Company Power Distance and Green Reporting

Power Distance is the extent to which less powerful members of a society accept and expect that power is distributed unequally (Bhagat, 2002). Several studies, including Ringov (2007), Peng and Lin (2009), Thanetsunthorn (2015), and Gallego-Álvarez and Ortas (2017) provide negative evidence between power distance and CSR reporting while others observe positive (Diamastuti et al., 2020; Ho et al., 2011) or insignificant relationships (Sannino et al., 2020). Parent companies from power distance cultural backgrounds can also have varying degrees of influence on the green reporting of their subsidiaries. On one hand, their hierarchical structures enable them to set clear sustainability directives and allocate resources efficiently, fostering a top-down commitment to environmental goals. This can encourage subsidiaries to align with the parent company's vision and practice transparent green reporting, driven by a sense of responsibility and the desire to maintain a harmonious relationship.

However, the extent of influence largely depends on the parent company's commitment to sustainability and its ability to communicate these values effectively. If the parent company lacks interest in environmental matters or fails to set clear expectations, the hierarchical nature may not lead to significant influence, and subsidiaries may operate independently, potentially neglecting green reporting or pursuing their agendas. The study

argues that holding companies from power distance cultural backgrounds may influence their subsidiaries to retain and not disclose information to preserve power inequalities, leading to more secrecy. The study therefore hypothesizes that:

H1. Holding company power distance is negatively associated with green reporting of listed manufacturing firms in Sub-Sahara Africa.

Holding Company Individualism and Green Reporting

Individualism is the degree to which people in a society are integrated into groups (Hofstede, 2011). countries that score high on individualism (e.g., the United States) focus on “I” while countries that score low on individualism (e.g., South Korea) focus on “we”. Previous research consistently reveals an inverse relationship between individualism and social and environmental reporting (Garcia-Sanchez et al., 2013; Khelif et al., 2015; Kim and Kim, 2010; Lu and Wang, 2021). That notwithstanding studies like Ogundajo et al., 2022 and Pinheiro et al., 2023 found a positive relationship while Sannino et al., 2020 identify no significant relationship

Parent companies with individualistic cultural backgrounds can have varying degrees of impact on the green reporting of their subsidiaries. On one side, their emphasis on personal values and ethics can promote a corporate culture of environmental responsibility, motivating subsidiaries to embrace sustainability initiatives and innovate in green reporting. However, the pursuit of individual autonomy and short-term profits may limit their influence, potentially leading to variations in green reporting practices across subsidiaries, particularly if clear sustainability guidelines are lacking. In such

cases, the parent company may struggle to ensure consistent environmental standards and transparent reporting throughout the organization.

Thus, this paper contends that holding companies hailing from an individualism-oriented cultural background, characterized by reduced emphasis on social and environmental matters, are less inclined to influence their subsidiaries to divulge green information. Considering this, the study introduces the following hypothesis:

H2. Holding company individualism is negatively associated with green reporting of listed manufacturing firms in Sub-Sahara Africa.

Holding Company Masculinity and Green Reporting

Masculinity refers to “the distribution of values between the genders” (Hofstede, 2011). It stands for a preference in society for achievement, heroism, assertiveness, and material success. Its opposite, femininity stands for a preference for relationships, modesty, caring for the weak, and quality of life. Research consistently indicates an adverse relationship between masculinity and both environmental performance and CSR disclosure (Garcia-Sánchez et al., 2013; Kim and Kim, 2010; Hur and Kim, 2017). However, some studies present positive correlations (Pinheiro et al., 2023), while others find no significant relationship (Coulmont et al., 2015).

Parent companies from a cultural background emphasizing masculinity can significantly influence the green reporting of their subsidiaries in various ways, which can be positive, negative, or minimal depending on their specific approach. The focus on competitiveness and profitability often associated with masculinity cultures may drive some parent companies to prioritize sustainability and green reporting to gain a competitive edge and reduce long-

term operational costs. In such cases, they might set ambitious environmental goals, foster a culture of sustainability, and encourage subsidiaries to meet or exceed these targets. Conversely, in situations where corporate values do not strongly prioritize sustainability, parent companies may adopt a hands-off approach, delegating green reporting responsibilities entirely to their subsidiaries. This autonomy allows subsidiaries to develop their practices, potentially minimizing the influence of the parent company's cultural background on green reporting. However, in masculinity-oriented cultures, hierarchical structures and an emphasis on competitiveness may still indirectly impact subsidiaries' sustainability efforts, as profit maximization and short-term gains could take precedence over long-term environmental considerations.

This study argues that holding companies rooted in a masculinity-oriented cultural background are less inclined to pressure their subsidiaries to disclose green information, owing to their reduced concern for social and environmental issues. Therefore, the study hypothesizes that:

H3. Holding company masculinity is negatively associated with green reporting of listed manufacturing firms in Sub-Saharan Africa.

Holding Company Indulgence and Green Reporting

Indulgence is the newest and relatively less studied dimension in Hofstede's framework as Indulgence refers to the "relatively free gratification of basic and natural human desires related to enjoying life and having fun" (Hofstede, 2011). Indulgent countries generate more carbon dioxide emissions (Disli, Ng, and Askari, 2016). Sun et al., 2018 find that the relationship between corporate social performance and financial performance is stronger in

a restrained culture. Similarly, Felix et al., 2018 report that in a restrained culture, religious people are more concerned about the environment.

Parent companies from an Indulgent cultural background can have varying degrees of influence on the green reporting of their subsidiaries. Their emphasis on immediate gratification and personal enjoyment could, in some instances, result in a negative impact on green reporting, as they may prioritize short-term profits and consumerism over long-term environmental sustainability. This might lead to pressure on subsidiaries to cut costs, potentially compromising their environmentally responsible practices and reporting accuracy. However, it's important to note that parent companies can also positively influence green reporting in this context by recognizing the link between sustainability and long-term well-being, aligning with consumer demands for eco-friendly products and services, and fostering a culture of sustainability. Nevertheless, a neutral or hands-off approach is also possible, where parent companies delegate green reporting responsibilities to subsidiaries or rely on local regulations, leaving them to develop their green reporting practices independently, potentially minimizing the direct influence of the parent company's Indulgence-oriented culture on sustainability initiatives.

The paper argues that holding companies rooted in indulgence cultural backgrounds are less inclined to pressure their subsidiaries to disclose green information, owing to the emphasis on immediate gratification and personal enjoyment, which could, in some instances, result in a negative impact on green reporting, as they may prioritize short-term profits and consumerism over long-term environmental sustainability. The study therefore hypothesizes that:

H4. Holding company indulgence is negatively associated with green reporting of listed manufacturing firms in Sub-Sahara Africa.

Holding Company Uncertainty Avoidance and Green Reporting

Uncertainty avoidance is ‘related to the level of stress in a society in the face of an unknown future’ (Hofstede, 2011) and measures the extent to which people tolerate uncertainty. The relationship between uncertainty avoidance and corporate social responsibility (CSR) disclosure is intricate and inconclusive, as certain studies propose a positive correlation (Peng & Lin, 2009; Kim & Kim, 2009; Gallego-Álvarez and Ortas, 2017), while others discover a negative influence (Williams 1999; Vachon 2010; Garcia-Sanchez et al., 2016; Halkos and Skouloudis, 2017).

Parent companies from a cultural background emphasizing Uncertainty Avoidance can have varying degrees of influence on the green reporting of their subsidiaries. While their commitment to compliance and risk mitigation can positively impact green reporting by prioritizing adherence to environmental regulations and standards, it can also lead to a narrow and rigid approach. The excessive focus on meeting minimum requirements may discourage subsidiaries from embracing broader sustainability initiatives or innovative environmental practices. However, some parent companies may adopt a hands-off approach, delegating green reporting responsibilities entirely to their subsidiaries or relying on established regulations to guide sustainability efforts. In such cases, the parent company's Uncertainty Avoidance-oriented culture may exert minimal influence on green reporting, allowing subsidiaries to develop their sustainable practices and policies independently.

The study argues that holding companies with uncertainty avoidance cultural backgrounds are more inclined to pressure their subsidiaries to disclose green information because they view information as a tool to reduce uncertainty and mitigate unknown situations (Luo et al., 2013; Coulmont et al., 2015). The study therefore hypothesizes that:

H5. Holding company uncertainty avoidance is positively associated with green reporting of listed manufacturing firms in Sub-Saharan Africa.

Holding Company Long-Term Orientation and Green Reporting

Long-term/short-term orientation refers to whether people focus on the future or the past/current (Hofstede, 2011). Enterprises within long-term orientation countries extend their focus beyond short-term profits and exhibit a dedication to serving stakeholders and society over the long haul (Durach & Wiengarten, 2017; Disli et al., 2016; Halkos & Skouloudis, 2017; Kim and Kim, 2010; Gallego-Álvarez and Ortas, 2017). Parent companies from a cultural background emphasizing long-term orientation can have varying degrees of influence on the green reporting of their subsidiaries. Their commitment to sustainability, driven by a focus on intergenerational continuity and strategic planning, can positively impact green reporting by fostering a long-term perspective within the organization. This encourages substantial investments in sustainable initiatives, comprehensive green reporting, and ambitious environmental goals.

However, there is also a potential negative influence when short-term financial concerns take precedence, leading to compromises on sustainability efforts and the potential underreporting of environmental impacts.

Additionally, a strong focus on tradition and conformity in long-term-oriented cultures may hinder subsidiaries' adaptability to evolving environmental standards and innovative green reporting practices, potentially limiting their commitment to comprehensive and transparent sustainability reporting. In certain scenarios, parent companies may adopt a hands-off approach, allowing subsidiaries to develop their green reporting practices independently, thereby minimizing direct influence from the parent company's long-term orientation.

The study argues that holding companies in long-term-oriented cultures are more likely to pressure their subsidiaries to disclose green information because they sacrifice present benefits for future gains. The study therefore hypothesizes that:

H6. Holding company long-term orientation is positively associated with green reporting of listed manufacturing firms in Sub-Saharan Africa.

RESEARCH METHODS

Data Sources

The sample consists of 72 listed manufacturing firms that are controlled by a parent company, selected from 8 Anglophone countries in sub-Saharan Africa that had submitted annual and sustainability reports between 2015 and 2021. The study focuses on Anglophone countries (English-speaking countries) because they have better accounting practices (Adela et al., 2022) and avoid language barriers in data collection (Adu, 2022). Moreover, these countries are listed in Hofstede's cultural data and have fully adopted IFRS. The listed manufacturing companies were selected because of data availability. Information on the number of the companies and their locations is in Appendix B.

Variable Measurement

Measure of Green Reporting

The study measures the main dependent variable, green reporting as a percentage of the ratio between the disclosures made by the listed manufacturing companies in their annual and sustainability reports from 2015 to 2021 and the total number of indicators in the GRI-4 framework. This is in line with Arthur et al., 2017; Laskar and Maji, 2017 and Kumar and Prakesh, 2019).

The study obtains control variables and other variables from annual reports (Laskar & Maji, 2017; Loukil, & Yousfi, 2022; Kumar & Prakesh, 2019). The study employed content analysis to analyse the content of the disclosures systematically, accurately, and critically (Krippendorff, 2019; Guthrie & Parker, 1989).

The measure of Holding Company Cultural Origin

The study measures the cultural origin of holding companies using their country of operation of the headquarters. Following the works of Hasan et al., 2023 and Hofstede, 1980, this work utilizes the Hofstede database to gather cultural data, which is widely accessible. The holding company information is extracted manually from the annual reports of the respective firms, and in cases where the country of operations was not explicitly mentioned in the annual report, the headquarters' locations are determined using Google.

Measure of Control Variables

To mitigate the possibility of obtaining biased estimates, several control variables commonly used in the analysis of environmental and CSR

reporting have been introduced into the model, which are the national culture of the subsidiary company, CEO's tenure, CEO gender diversity, firm size, firm audit, firm age, board independence, board size, return on assets and firm leverage. The extant literature suggests that these variables have a significant effect on green reporting, and thus should be controlled (Laskar & Maji, 2017; Loukil, & Yousfi, 2022; Kumar & Prakesh, 2019).

Research Design- Fixed Effect Panel Quantile Regression (PQR)

The data was processed by STATA version 17. This study employs Koenker's (2004) recommended Panel Quantile Regression (PQR) methodology to explore the unique heterogeneity within panel data. Explicitly, the investigation focuses on integrating fixed effects and a separable disturbance term into the panel quantile regression model. In recent years, quantile regression has garnered significant attention and widespread use in green research. The rationale for employing a quantile regression model for panel data is multifaceted. Unlike conventional regression analyses often found in earlier literature, quantile regression assesses the average impact of covariates on observed variables across different quantiles. This approach is preferable as it captures significant variations between predicted and observed variables, mitigating potential inaccuracies in regression coefficients. The appeal of this approach lies in its capacity to accommodate substantial variations between predicted and observed variables, mitigating the risk of inaccuracies in regression coefficients. Unlike Conditional Mean (CM) methods, which struggle to produce consistent results without normal distribution assumptions, the PQR method operates without imposing any distributional assumptions (Cheng et al., 2019). While CM methods neglect

distinct heterogeneity, PQR adeptly addresses both the unique heterogeneity present in panel data and distributional discrepancies (Akram et al., 2020).

Conditional Mean (CM) methods like OLS derive estimates from mean values, while PQR provides a holistic description of selected variables by examining independent variables at distinct points along the dependent variable. Unlike CM methods, PQR does not assume specific distributions or normality. Additionally, the fixed effect PQR approach handles outliers effectively, generating robust outcomes compared to CM methods. PQR reveals distinct influences of predictive variables on the observed variable across various quantiles. It also delves into unobserved heterogeneity for each cross-section and measures multiple parameters across quantiles (Amin et al., 2020). Beyond its econometric advantages, assessing coefficient values at the extreme ends of the distribution holds significance from a policy perspective. The fixed effect PQR offers a comprehensive analysis of estimating fixed effects and other factors at various distribution points. The fixed effect PQR model, as examined by Akram et al. (2020), can be formulated as follows:

$$Q_{y_{ijt}}(\tau|X_{ijt}) = (\gamma|(\tau) X_{ijt} + a_i \quad i = 1, \dots, N, t = 1, \dots, T \dots \dots \dots (1)$$

Here Y_{it} signifies the dependent variable green reporting, $Q_{y_{it}}(\tau|X_{it})$ refers to the τ th quantiles of green reporting, X_{it} signifies the vector of exogenous variables (*HPD*, *HIND*, *HMAS*, *HLTO*, *HUNA*, *HINDU*) in year t for i country. $(\gamma|(\tau)$ refers to unknown coefficients, a_i indicates the unknown specific country effects. Whereas i denotes the African economies and t indicates the year. The study expresses the successive model for this study:

$$\begin{aligned}
Q_{yijt}(\tau|X_{ijt}) = & \gamma_{1\tau} HPD_{ijt} \\
& + \gamma_{2\tau} HIND_{it} \gamma_{1jt} + \gamma_{3\tau} HMAS_{\tau jt} + \gamma_{4\tau} HLTO_{\tau jt} \\
& + + \gamma_{5\tau} HUNA_{\tau jt} + + \gamma_{6\tau} HINDU_{\tau jt} + a_i \dots \dots \dots (2)
\end{aligned}$$

Given that conventional linear regression models are unfit for estimating the PQR model, Koenker (2004) introduced a penalty term aimed at streamlining the estimation process by removing unspecified fixed effects. This technique surpasses alternative methods for two primary reasons. Initially, it effectively reduces the estimated parameters. Additionally, it mitigates the fluctuations attributed to the estimated distinct coefficients (Akram et al., 2020). This study employs this approach to estimate Eq (4) as follows:

$$\begin{aligned}
& \operatorname{argmin}_{\beta} \sum_{m=1}^M \sum_{i=1}^N \sum_{t=1}^T W_M \rho_{\tau m} \left[Y_{ijt} - \gamma_{1\tau} HPD_{ijt} - \right. \\
& \gamma_{2\tau} HIND_{it} \gamma_{1jt} - \gamma_{3\tau} HMAS_{ijt} - \gamma_{4\tau} HLTO_{ijt} - \gamma_{5\tau} HUNA_{ijt} - \gamma_{6\tau} HINDU_{\tau jt} - \\
& \left. a_i \right] + \mu \sum_{i=1}^N |\alpha_i| \dots \dots \dots (3)
\end{aligned}$$

The expression $\rho_{\tau}(y) = \gamma(\tau - 1_{(y < 0)})$ comprises a standard check function, where 1_A represents the indicator function of set A. Y_{it} denotes the green report in firm i at time t . M serves as the quantile index, and W_m corresponds to the weight assigned to the m 'th quantile for assessing the position of all quantiles. Meanwhile, μ captures the specific effect (Akram et al., 2020).

The econometric approach described begins by examining the normality of the data. With the identification of non-normality, this study employs panel quantile regression to substantiate these findings.

EMPIRICAL RESULTS

Descriptive Statistics

Table 11 shows the descriptive statistics for the regression variables.

Table 11: Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max	Skew.	Kurt.	Prob>z
<i>GreenReport</i>	425	.301	.281	0	.941	.732	2.102	0.0000
<i>HPD</i>	425	55.894	18.876	31	80	.26	1.37	0.0000
<i>HIND</i>	425	57.941	25.42	15	91	-.203	1.532	0.0000
<i>HMAS</i>	425	56.459	14.865	8	70	-2.112	6.458	0.0000
<i>HUNA</i>	425	49.299	12.701	8	94	.341	6.229	0.0000
<i>HLTO</i>	425	37.845	22.251	4	87	.434	2.233	0.0000
<i>HINDU</i>	425	67.016	15.676	0	84	-1.798	7.976	0.0025
<i>SPD</i>	425	69.536	13.561	49	80	-.673	1.623	0.0000
<i>SIND</i>	425	37.882	16.935	15	65	.767	2.113	0.0000
<i>SMAS</i>	425	55.944	9.113	40	63	-1.136	2.396	0.0000
<i>SUNA</i>	425	53.607	4.723	45	65	1.003	3.832	0.0000
<i>SLTO</i>	425	20.365	11.067	4	35	.21	1.392	0.0000
<i>SINDU</i>	425	70.362	17.404	0	84	-1.53	5.76	0.0000
<i>CEOTEN</i>	425	4.155	3.926	1	23	2.123	7.963	0.0000
<i>CEOGENDIVER</i>	425	.061	.24	0	1	3.662	14.411	0.0000
<i>BSIZE</i>	425	9.106	2.664	4	17	.685	3.209	0.0000
<i>BIND</i>	425	.687	.145	.077	1	-.564	3.862	0.0000
<i>FIRMAUD</i>	425	.786	.411	0	1	-1.394	2.943	0.0000
<i>FirmSizeLog</i>	425	18.609	2.473	11.964	26.278	.473	4.468	0.0000
<i>FirmAge</i>	425	44.76	30.096	2	141	1.321	4.639	0.0000
<i>logLeverage</i>	425	.475	.302	.028	1.925	3.114	14.474	0.0000
<i>logROA</i>	425	.074	.199	-.715	.767	-.103	10.142	0.0000
<i>logGDP</i>	425	7.947	.533	6.836	8.741	.137	2.269	0.0000
<i>logInflation</i>	425	2.144	.409	.656	3.271	-.544	3.225	0.0000
<i>RegulatoryQuality</i>	425	-.539	.438	-1.024	.209	.416	1.475	0.0000

GreenReport is green reporting, HPD is Holding company power distance, HIND is Holding company individualism, HMAS is Holding company masculinity, HUNA is Holding company uncertainty avoidance, HLTO is Holding company long term orientation, CINDU is Holding company indulgence, SPD is Subsidiary company power distance, SIND is Subsidiary company individualism, SMAS is Subsidiary company masculinity, SUNA is Subsidiary company uncertainty avoidance, SLTO is Subsidiary company long term orientation, SINDU is Subsidiary company indulgence, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The dependent variable, green reporting has a mean of 30.1%. Thus, listed manufacturing firms in Africa in our sample disclose on average 30.1% of their environmental impacts in their annual report and have a minimum value of 0 and a maximum of 94.1 %. A mean of 30.1% indicates a moderate level of disclosure in green reporting among the sample under the study. The means (standard deviations) of HPD, HIND, HMAS, HUNA, HLTO, and HINDU scores are 53.431 (18.837), 61.362 (25.457), 56.461 (15.673), 48.396, (12.355), 39.65 (21.839), and 67.382 (14.49) respectively. These mean that four of the six dimensions of parent companies' culture, HPD, HIND, HMAS, and HINDU, have an average value above 50% making them high. The remaining two HLTO and HUNA are below 50% meaning parent companies in our sample on average are from short-term orientated and restraint countries. From this, I anticipate that the hypothesis linking HPD, HIND, HMAS, and HINDU to green reporting may be supported but HLTO and HUNA may not be supported. Parent companies from high (HPD, HIND, HMAS) and low (HLTO and HUNA) may not prioritize environmental sustainability but those from High HINDU may prioritize environmental sustainability. However, some of the signs did not go as anticipated because of other factors explained later in this work.

Regarding control variables, four of the six dimensions of subsidiary companies' culture SPD, SMAS, SNA, and SINDU, have an average value above 50% making them high. The remaining two SIND and SLTO are below 50% meaning subsidiary companies in our sample on average are from short-term orientated and collectivist countries. The average CEO tenure (CEOTEN) is 4.08 years, this shows that on average, CEOs in the sampled companies stay

in the office for over 4 years. Since experienced CEOs are more likely to increase sustainable and environmental performance (Shahab et al., 2019), CEO tenure could mostly have a positive relationship with green reporting practices. The average board size (Bsize) is 8.943. On average, 68.5 % of board members are independent directors (BIND) and on average 8.3% of the sampled CEOs are women. The mean Firm size (FirmSizeLog), Firm audit (FIRMAUD), Firm age, return on asset (logROA), GDP, Inflation, Regulatory quality, and leverage (logLeverage) are 18.515, 0.799, 49.281, 0.084, 7.828, 2.177, -.57, and 0.457 respectively.

The results from Shapiro–Wilk W test for normal data show that the data is not normally distributed. Additionally, most of the variables included in the study present either positive or negative skewness and kurtosis patterns. With the identification of these issues, this study employs panel quantile regression to substantiate these findings.

Pairwise Correlation Matrix

Table 12 shows the pairwise correlation matrix between the underpinning variables.

Table 12: Pairwise Correlation

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
(1) Green Report	1.000												
(2) HPD	-0.165*	1.000											
(3) HIND	0.136*	-0.933*	1.000										
(4) HMAS	0.091	0.066	0.023	1.000									
(5) HUNA	0.011	0.316*	-0.217*	-0.256*	1.000								
(6) HLTO	0.058	-0.536*	0.483*	-0.152*	-0.238*	1.000							
(7) HINDU	-0.169*	0.199*	-0.065	0.161*	0.232*	-0.580*	1.000						
(8) SPD	-0.498*	0.375*	-0.301*	-0.102*	0.116*	-0.092	0.295*	1.000					
(9) SIND	0.446*	-0.323*	0.302*	0.332*	-0.087	-0.015	-0.081	-0.911*	1.000				
(10) SMAS	0.069	-0.018	0.115*	0.588*	0.025	-0.220*	0.396*	-0.171*	0.562*	1.000			
(11) SUNA	-0.439*	0.299*	-0.226*	-0.007	0.066	-0.058	0.237*	0.738*	-0.751*	-0.330*	1.000		
(12) SLTO	0.508*	-0.397*	0.297*	-0.106*	-0.093	0.131*	-0.336*	-0.913*	0.804*	0.098*	-0.906*	1.000	
Variables	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
(13) SINDU	1.000												
(14) CEOTEN	-0.097*	1.000											
(15) CEOGENDIVER	-0.078	-0.110*	1.000										
(16) BSIZE	0.059	0.108*	-0.084	1.000									
(17) BIND	0.217*	0.010	0.011	0.118*	1.000								
(18) FIRMAUD	-0.125*	-0.124*	0.133*	0.139*	0.154*	1.000							
(19) FirmSizeLog	-0.192*	0.198*	-0.061	0.481*	0.108*	0.396*	1.000						
(20) FirmAge	-0.476*	-0.011	0.224*	-0.034	-0.133*	0.143*	0.123*	1.000					
(21) logLeverage	0.184*	-0.161*	0.114*	-0.051	-0.107*	-0.230*	-0.277*	-0.009	1.000				
(22) logROA	-0.162*	0.060	0.099*	-0.042	0.007	0.164*	0.107*	0.041	-0.283*	1.000			
(23) logGDPperc~2015	0.051	0.411*	-0.213*	0.312*	-0.069	-0.095	0.338*	0.051	-0.098*	-0.060	1.000		
(24) logInflationG~u	0.271*	-0.125*	0.160*	-0.125*	0.150*	-0.008	-0.249*	-0.055	0.185*	-0.090	-0.383*	1.000	
(25) RegulatoryQua~Q	-0.554*	0.342*	-0.045	0.089	-0.194*	0.080	0.346*	0.347*	-0.083	0.060	0.588*	-0.312*	1.000

* *Shows significance at $p < .05$* GreenReport is green reporting, HPD is Holding company power distance, HIND is Holding company individualism, HMAS is Holding company masculinity, HUNA is Holding company uncertainty avoidance, HLTO is Holding company long term orientation, CINDU is Holding company indulgence, SPD is Subsidiary company power distance, SIND is Subsidiary company individualism, SMAS is Subsidiary company masculinity, SUNA is Subsidiary company uncertainty avoidance, SLTO is Subsidiary company long term orientation, SINDU is Subsidiary company indulgence, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

Furthermore, the research includes a pairwise Pearson correlation matrix that examines the relationships between the variables used in the regression analysis. The primary purpose of using the correlation matrix is to identify potential multicollinearity issues in the regression analysis. Using a threshold of 0.80, as suggested by Kenedy (2008), the study concludes that there is a notable correlation coefficient among certain independent variables. This suggests a potential risk of multicollinearity in the model equations. However, it is important to note that the highly correlated variables are not included in the same model.

Main Results (Holding Company Cultural Origin and Green Reporting)

The regression analysis is carried out with robust standard errors clustered at the firm level to account for heterogeneity and auto-correlation in the data. Additionally, time effects are considered in the model using firm-year. For comparison, the study first presents fixed effect results on holding company cultural origin and green reporting and then later runs separate tests for all the cultural dimensions using quantile regression at 5%, 15%, 25%, 35%, 50%, 65%, 75%, 85%, and 90%. However, the analysis was solely based on quantile regression results. This is because the use of the mean approach may cloud the effect of holding company's cultural origin on green reporting at various quantiles. The fixed effect was chosen because of the Hausman Test.

HPD (Holding Company Power Distance)

Table 13 shows the effect of holding company power distance on green reporting.

Table 13: Holding Company Culture (Power Distance) and Green Reporting

VARIABLES	Fixed Effect				Quantiles					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>
<i>HPD</i>	0.001 (0.001)	-0.000 (0.000)	-0.000 (0.000)	-0.001 (0.001)	0.000 (0.001)	0.001 (0.001)	0.000 (0.001)	0.000 (0.001)	0.002** (0.001)	0.003*** (0.001)
<i>SPD</i>	-0.009** (0.003)	-0.004*** (0.000)	-0.005*** (0.001)	-0.007*** (0.002)	-0.007*** (0.002)	-0.007*** (0.002)	-0.009*** (0.003)	-0.008** (0.003)	-0.008*** (0.003)	-0.005** (0.002)
<i>CEO TEN</i>	0.002 (0.007)	-0.002*** (0.001)	-0.003* (0.002)	0.000 (0.004)	0.004 (0.004)	0.008* (0.004)	0.002 (0.005)	0.000 (0.006)	0.007 (0.005)	0.014*** (0.004)
<i>CEO GEN DIVER</i>	-0.068 (0.070)	-0.010 (0.010)	-0.029 (0.022)	-0.058 (0.055)	-0.076 (0.066)	-0.124* (0.064)	-0.117 (0.074)	0.079 (0.092)	0.003 (0.072)	0.006 (0.057)
<i>BSIZE</i>	0.009 (0.009)	0.005*** (0.001)	0.006*** (0.002)	0.009* (0.006)	0.003 (0.007)	0.002 (0.007)	0.016** (0.008)	0.020** (0.010)	0.016** (0.007)	0.009 (0.006)
<i>BIND</i>	0.275* (0.142)	0.057*** (0.018)	0.106*** (0.038)	0.175* (0.094)	0.219* (0.112)	0.124 (0.108)	0.217* (0.126)	0.403** (0.157)	0.566*** (0.122)	0.574*** (0.098)
<i>FIRM AUD</i>	0.110* (0.061)	0.029*** (0.007)	0.042*** (0.015)	0.076** (0.036)	0.039 (0.043)	0.085** (0.042)	0.092* (0.049)	0.123** (0.061)	0.143*** (0.047)	0.094** (0.038)
<i>Firm Size (Log)</i>	0.036*** (0.013)	0.006*** (0.001)	0.010*** (0.003)	0.021*** (0.007)	0.039*** (0.009)	0.036*** (0.008)	0.038*** (0.010)	0.041*** (0.012)	0.036*** (0.009)	0.049*** (0.007)
<i>Firm Age</i>	0.000 (0.001)	0.001*** (0.000)	0.001*** (0.000)	0.000 (0.000)	0.001** (0.001)	0.001** (0.001)	0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	0.000 (0.000)
<i>logLeverage</i>	0.035 (0.053)	0.003 (0.009)	0.017 (0.019)	0.025 (0.048)	0.021 (0.057)	0.027 (0.055)	0.027 (0.064)	0.036 (0.080)	-0.024 (0.062)	-0.036 (0.050)
<i>logROA</i>	0.213*** (0.067)	0.093*** (0.012)	0.123*** (0.027)	0.219*** (0.066)	0.203** (0.079)	0.146* (0.077)	0.145 (0.089)	0.104 (0.111)	0.036 (0.086)	0.044 (0.069)
<i>GDP</i>	-0.027 (0.046)	-0.015** (0.007)	-0.045*** (0.014)	-0.072** (0.035)	-0.002 (0.042)	-0.011 (0.041)	-0.041 (0.047)	-0.045 (0.059)	-0.038 (0.046)	-0.028 (0.037)
<i>Inflation</i>	-0.042 (0.038)	-0.021*** (0.008)	-0.018 (0.016)	-0.035 (0.040)	-0.045 (0.048)	-0.106** (0.046)	-0.084 (0.054)	-0.062 (0.067)	-0.002 (0.052)	0.001 (0.042)
<i>RegQuality</i>	-0.026 (0.091)	-0.006 (0.010)	-0.005 (0.022)	-0.013 (0.054)	-0.023 (0.065)	0.045 (0.063)	0.007 (0.073)	0.063 (0.091)	0.069 (0.071)	0.088 (0.057)
Constant	0.074	0.240***	0.460***	0.609	-0.288	0.009	0.305	0.149	-0.089	-0.567

	(0.485)	(0.070)	(0.152)	(0.374)	(0.446)	(0.430)	(0.501)	(0.625)	(0.486)	(0.389)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	425	425	425	425	425	425	425	425	425	425
Adjusted R-squared	0.498	0.127	0.153	0.203	0.267	0.323	0.382	0.401	0.378	0.377
Hausman test										
Chi2	20.76									
Pvalue	0.0779									

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. GreenReport is green reporting, HPD is Holding company power distanceSPD is Subsidiary company power distance, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

From Table 13, the study finds that HPD has a positive significant impact on green reporting levels at 85% to 90% quantiles. This indicates that firms with holding companies from power distance cultural backgrounds are more likely to produce green reports at the 85% to 90% quantiles but are likely not to have any relationship with green reports at the remaining quantiles. Thus, in high power distance cultures, power is concentrated at the top of the hierarchy. Holding companies exert significant control and authority over their subsidiaries, which can lead to a strong influence on their green reporting, especially at higher quantiles where the stakes are higher. This makes holding companies pressure their subsidiaries in African manufacturing firms to produce green reports. The positive significant findings contradict previous studies (Gallén and Peraita, 2017; Lu and Wang, 2021) that found a negative relationship but confirm the studies of (Ogundajo et al., 2022; Vitolla et al., 2019).

The observed relationship between HPD and Greenport is unexpected. However, this can be attributed to the increasing demand for green reporting from stakeholders in today's environment. This supports the stakeholder theory while challenging the cultural capital theory.

HIND (Holding Company Individualism)

Table 14 shows the effect of holding company individualism on green reporting.

Table 14: Holding Company Individualism and Green Reporting

VARIABLES	Fixed Effect					Quantiles				
	5%		15%		25%		35%		50%	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>
<i>HIND</i>	-0.000 (0.001)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.038 (0.085)	-0.002** (0.001)	-0.002*** (0.001)
<i>SIND</i>	0.006* (0.003)	0.003*** (0.000)	0.005*** (0.001)	0.006*** (0.002)	0.006*** (0.002)	0.006*** (0.002)	0.008*** (0.002)	0.005* (0.003)	0.004* (0.002)	0.003* (0.002)
<i>CEO TEN</i>	0.002 (0.007)	-0.003*** (0.001)	-0.003** (0.001)	-0.000 (0.004)	0.004 (0.004)	0.008* (0.005)	0.002 (0.005)	0.000 (0.006)	0.008 (0.005)	0.013*** (0.004)
<i>CEO GEN DIVER</i>	-0.061 (0.075)	-0.011 (0.010)	-0.033 (0.022)	-0.060 (0.054)	-0.076 (0.065)	-0.120* (0.066)	-0.132* (0.075)	0.145* (0.087)	0.017 (0.077)	0.039 (0.057)
<i>BSIZE</i>	0.010 (0.009)	0.004*** (0.001)	0.006*** (0.002)	0.010* (0.006)	0.002 (0.007)	0.004 (0.007)	0.015* (0.008)	0.019** (0.009)	0.017** (0.008)	0.011* (0.006)
<i>BIND</i>	0.261* (0.141)	0.039** (0.016)	0.104*** (0.037)	0.171* (0.093)	0.239** (0.110)	0.136 (0.113)	0.225* (0.127)	0.376** (0.148)	0.560*** (0.130)	0.547*** (0.097)
<i>FIRM AUD</i>	0.103* (0.061)	0.022*** (0.006)	0.044*** (0.014)	0.072** (0.036)	0.036 (0.043)	0.075* (0.044)	0.104** (0.049)	0.095* (0.057)	0.121** (0.050)	0.094** (0.037)
<i>Firm Size (Log)</i>	0.037*** (0.013)	0.004*** (0.001)	0.011*** (0.003)	0.020*** (0.007)	0.039*** (0.009)	0.033*** (0.009)	0.036*** (0.010)	0.042*** (0.011)	0.037*** (0.010)	0.043*** (0.007)
<i>Firm Age</i>	0.001 (0.001)	0.001*** (0.000)	0.000** (0.000)	0.000 (0.000)	0.002*** (0.001)	0.001** (0.001)	0.001 (0.001)	-0.000 (0.001)	0.000 (0.001)	0.000 (0.000)
<i>logLeverage</i>	0.024 (0.058)	0.002 (0.008)	0.017 (0.019)	0.022 (0.047)	0.030 (0.056)	0.017 (0.057)	0.026 (0.065)	-0.007 (0.075)	-0.015 (0.066)	-0.030 (0.049)
<i>logROA</i>	0.212*** (0.065)	0.072*** (0.012)	0.127*** (0.026)	0.217*** (0.066)	0.199** (0.078)	0.156* (0.080)	0.141 (0.090)	0.081 (0.105)	0.083 (0.092)	0.064 (0.068)
<i>GDP</i>	-0.110 (0.077)	-0.069*** (0.009)	-0.131*** (0.019)	-0.168*** (0.048)	-0.108* (0.057)	-0.109* (0.059)	-0.162** (0.066)	-0.102 (0.077)	-0.073 (0.068)	-0.060 (0.050)
<i>Inflation</i>	-0.052 (0.040)	-0.025*** (0.007)	-0.030* (0.016)	-0.040 (0.039)	-0.040 (0.047)	-0.114** (0.048)	-0.090* (0.054)	-0.084 (0.063)	-0.006 (0.055)	-0.004 (0.041)

<i>RegQuality</i>	0.085 (0.073)	0.031*** (0.007)	0.063*** (0.017)	0.072* (0.042)	0.056 (0.050)	0.121** (0.051)	0.118** (0.058)	0.183*** (0.067)	0.141** (0.059)	0.147*** (0.044)
Constant	0.031 (0.506)	0.361*** (0.066)	0.615*** (0.149)	0.614 (0.376)	-0.130 (0.447)	0.256 (0.458)	0.429 (0.517)	0.014 (0.603)	-0.286 (0.529)	-0.323 (0.392)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	425	425	425	425	425	425	425	425	425	425
Adjusted R-squared	0.488	0.125	0.150	0.197	0.265	0.318	0.376	0.395	0.371	0.365
Hausman test										
Chi2	21.96									
Pvalue	0.0561									

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. GreenReport is green reportingHIND is Holding company individualism, SIND is Subsidiary company individualism, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The findings in Table 14 show a significant and negative association between HIND and Greenreport at quantiles 85% and 90%, suggesting that subsidiary companies with parent companies from individualistic countries are less likely to produce green reports in their annual report at the 85% and 90% quantiles. This finding confirms previous studies (Gallén and Peraita, 2017; Lu and Wang, 2021) but contradicts the studies of (Ogundajo et al., 2022; Pinheiro et al., 2023). This could be interpreted as holding companies in individualistic cultures view sustainability reporting as a competitive disadvantage, as it can reveal information that competitors could use to gain an advantage. At the 85% and 90% quantiles, where the pressure to outperform competitors is high, holding companies may discourage their subsidiaries from engaging in green reporting. Also, companies from individualistic cultural backgrounds tend to prioritize individual goals and achievements over collective concerns. In such cultures, environmental sustainability and green reporting might not be seen as significant priorities, leading to a reduced likelihood of subsidiaries engaging in such reporting. Thus, holding companies from individualistic cultures might pressure their subsidiaries not to produce green reports. This validates the cultural capital theory.

HMAS (Holding Company Masculinity)

Table 15 shows the effect of holding company masculinity on green reporting.

Table 15: Holding Company Culture (Holding company Masculinity) and green reporting

VARIABLES	Fixed Effect					Quantiles				
		5%	15%	25%	35%	50%	65%	75%	85%	90%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>
<i>HMAS</i>	-0.001 (0.002)	-0.000 (0.000)	0.000 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.002 (0.002)
<i>SMAS</i>	-0.000 (0.008)	0.006*** (0.001)	0.005** (0.002)	0.004 (0.005)	-0.002 (0.005)	-0.001 (0.005)	0.001 (0.007)	-0.001 (0.006)	0.001 (0.006)	0.003 (0.006)
<i>CEO TEN</i>	0.003 (0.008)	-0.003*** (0.001)	-0.003* (0.002)	-0.001 (0.004)	0.004 (0.004)	0.008* (0.004)	0.005 (0.006)	0.003 (0.005)	0.011** (0.004)	0.009* (0.005)
<i>CEO GEN DIVER</i>	-0.040 (0.089)	-0.017* (0.009)	-0.042* (0.025)	-0.064 (0.062)	-0.083 (0.065)	-0.084 (0.061)	-0.119 (0.085)	0.162** (0.074)	0.136** (0.068)	0.191** (0.074)
<i>BSIZE</i>	0.007 (0.009)	0.004*** (0.001)	0.004* (0.003)	0.006 (0.006)	0.002 (0.007)	0.004 (0.006)	0.011 (0.009)	0.013* (0.008)	0.019*** (0.007)	0.013* (0.008)
<i>BIND</i>	0.214 (0.141)	0.009 (0.015)	-0.006 (0.041)	0.035 (0.100)	0.120 (0.105)	0.128 (0.100)	0.223 (0.138)	0.371*** (0.121)	0.476*** (0.110)	0.558*** (0.121)
<i>FIRM AUD</i>	0.075 (0.060)	0.005 (0.006)	0.001 (0.016)	0.042 (0.039)	0.028 (0.041)	0.041 (0.039)	0.058 (0.054)	0.069 (0.047)	0.127*** (0.043)	0.154*** (0.047)
<i>Firm Size (Log)</i>	0.043*** (0.013)	0.005*** (0.001)	0.009*** (0.003)	0.029*** (0.008)	0.044*** (0.008)	0.041*** (0.008)	0.047*** (0.011)	0.047*** (0.009)	0.042*** (0.009)	0.036*** (0.009)
<i>Firm Age</i>	0.001 (0.001)	0.001*** (0.000)	0.001*** (0.000)	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)	-0.000 (0.001)
<i>logLeverage</i>	-0.016 (0.078)	0.003 (0.008)	-0.023 (0.021)	-0.034 (0.052)	0.015 (0.055)	0.023 (0.052)	0.004 (0.072)	-0.007 (0.063)	0.006 (0.057)	-0.012 (0.063)
<i>logROA</i>	0.195*** (0.059)	0.058*** (0.011)	0.111*** (0.030)	0.215*** (0.073)	0.196** (0.077)	0.165** (0.073)	0.135 (0.101)	0.136 (0.088)	0.033 (0.080)	0.122 (0.088)
<i>GDP</i>	0.042 (0.165)	-0.104*** (0.017)	-0.110** (0.046)	-0.082 (0.114)	0.082 (0.120)	0.076 (0.114)	-0.027 (0.158)	0.004 (0.138)	0.004 (0.125)	0.041 (0.138)
<i>Inflation</i>	-0.064* (0.038)	-0.046*** (0.007)	-0.056*** (0.019)	-0.085* (0.047)	-0.072 (0.049)	-0.108** (0.047)	-0.094 (0.065)	-0.022 (0.057)	-0.027 (0.051)	-0.011 (0.056)

<i>RegQuality</i>	0.107 (0.139)	0.128*** (0.015)	0.133*** (0.039)	0.134 (0.097)	0.065 (0.102)	0.127 (0.097)	0.239* (0.134)	0.262** (0.117)	0.194* (0.106)	0.163 (0.117)
Constant	-0.901 (1.029)	0.494*** (0.110)	0.574* (0.297)	0.029 (0.732)	-1.200 (0.768)	-1.047 (0.729)	-0.426 (1.009)	-0.651 (0.883)	-0.814 (0.803)	-1.072 (0.881)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	425	425	425	425	425	425	425	425	425	425
Adjusted R-squared	0.462	0.0923	0.117	0.168	0.244	0.300	0.354	0.386	0.362	0.353
Hausman test										
Chi2	22.93									
Pvalue	0.0425									

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. GreenReport is green reporting, HMAS is Holding company masculinity, SMAS is Subsidiary company masculinity, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

As shown in Table 15, HMAS is negative and statistically insignificant. The results do not support *H3*. This result suggests that subsidiary companies with holding companies from a masculine cultural background have no relationship with green reporting. This finding confirms the previous study (Coulmont et al., 2015) but contradicts the study of (Pinheiro et al., 2023). This contradicts the cultural capital theory. Masculine cultures value assertiveness, ambition, and the pursuit of material success. Holding companies in these cultures may be more focused on outperforming competitors and achieving financial goals rather than forcing their subsidiaries in SSA to prioritize sustainability reporting.

The insignificant result at all quantiles also validates Reitz et al. (1979) argument, that organizations are not solely influenced by institutional pressures to conform, but also by their need to acquire resources from external sources to ensure their survival and success. Thus, other factors, such as regulatory requirements, industry standards, and internal policies, might play a more dominant role in determining green reporting rather than culture.

HUNA (Holding Company Uncertainty Avoidance)

Table 16 shows the effect of holding company uncertainty avoidance on green reporting.

Table 16: Holding Company Culture (Holding Company Uncertainty Avoidance) and Green Reporting

VARIABLES	Fixed Effect					Quantiles				
	(1)	5%	15%	25%	35%	50%	65%	75%	85%	90%
	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>
<i>HUNA</i>	0.001 (0.001)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.001)	0.000 (0.001)	0.001 (0.001)	0.001 (0.001)	0.002 (0.001)	0.005*** (0.001)	0.006*** (0.001)
<i>SUNA</i>	-0.019*** (0.005)	-0.007*** (0.001)	-0.010*** (0.001)	-0.013*** (0.004)	-0.014*** (0.004)	-0.023*** (0.004)	-0.023*** (0.004)	-0.021*** (0.004)	-0.017*** (0.005)	-0.016*** (0.004)
<i>CEO TEN</i>	0.002 (0.007)	-0.002*** (0.001)	-0.002 (0.002)	-0.001 (0.004)	0.004 (0.004)	0.004 (0.004)	0.004 (0.004)	0.003 (0.005)	0.014*** (0.005)	0.015*** (0.004)
<i>CEO GEN DIVER</i>	-0.053 (0.074)	-0.012 (0.010)	-0.018 (0.023)	-0.055 (0.058)	-0.074 (0.063)	-0.086 (0.064)	-0.115* (0.064)	0.078 (0.067)	0.023 (0.078)	-0.004 (0.064)
<i>BSIZE</i>	0.008 (0.009)	0.004*** (0.001)	0.007*** (0.002)	0.007 (0.006)	0.002 (0.006)	0.007 (0.006)	0.006 (0.006)	0.013* (0.007)	0.015* (0.008)	0.016** (0.006)
<i>BIND</i>	0.297** (0.140)	0.039** (0.016)	0.067* (0.038)	0.171* (0.096)	0.245** (0.105)	0.117 (0.107)	0.261** (0.107)	0.280** (0.113)	0.493*** (0.131)	0.525*** (0.107)
<i>FIRM AUD</i>	0.113* (0.061)	0.026*** (0.006)	0.047*** (0.015)	0.075** (0.038)	0.043 (0.041)	0.056 (0.042)	0.093** (0.042)	0.100** (0.045)	0.210*** (0.052)	0.099** (0.042)
<i>Firm Size (Log)</i>	0.036*** (0.011)	0.003** (0.001)	0.008*** (0.003)	0.022*** (0.007)	0.037*** (0.008)	0.028*** (0.008)	0.042*** (0.008)	0.051*** (0.008)	0.040*** (0.010)	0.039*** (0.008)
<i>Firm Age</i>	0.000 (0.001)	0.001*** (0.000)	0.000** (0.000)	0.001 (0.001)	0.001*** (0.001)	0.001 (0.001)	0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)	-0.000 (0.001)
<i>logLeverage</i>	0.052 (0.047)	0.007 (0.008)	0.015 (0.020)	0.035 (0.050)	0.043 (0.055)	0.014 (0.056)	0.056 (0.056)	0.093 (0.059)	0.019 (0.068)	0.049 (0.056)
<i>logROA</i>	0.201*** (0.064)	0.061*** (0.012)	0.108*** (0.027)	0.194*** (0.069)	0.198*** (0.075)	0.127 (0.077)	0.127* (0.077)	0.126 (0.081)	0.007 (0.094)	0.197** (0.077)
<i>GDP</i>	-0.028 (0.044)	-0.022*** (0.006)	-0.059*** (0.014)	-0.066* (0.036)	-0.012 (0.040)	-0.064 (0.040)	-0.019 (0.040)	-0.020 (0.043)	0.013 (0.049)	-0.017 (0.040)
<i>Inflation</i>	0.007 (0.036)	-0.019** (0.007)	-0.028 (0.017)	-0.027 (0.044)	-0.031 (0.048)	-0.025 (0.049)	0.005 (0.048)	0.021 (0.051)	0.019 (0.059)	0.017 (0.048)

<i>RegQuality</i>	0.153** (0.063)	0.069*** (0.007)	0.108*** (0.017)	0.123*** (0.043)	0.130*** (0.047)	0.246*** (0.048)	0.199*** (0.048)	0.163*** (0.051)	0.051 (0.059)	0.101** (0.048)
Constant	0.487 (0.515)	0.492*** (0.071)	0.870*** (0.167)	0.752* (0.420)	0.144 (0.457)	1.409*** (0.467)	0.613 (0.465)	0.219 (0.493)	-0.434 (0.570)	-0.164 (0.465)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	425	425	425	425	425	425	425	425	425	425
Adjusted R-squared	0.519	0.132	0.160	0.208	0.280	0.341	0.408	0.430	0.398	0.391
Hausman test										
Chi2	20.70									
Pvalue	0.790									

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. GreenReport is green reporting, HUNA is Holding company uncertainty avoidance, SUNA is Subsidiary company uncertainty avoidance, SLTO is Subsidiary company long term orientation, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The paper finds that the impact of HUNA is positively associated with green reporting at 25% to 90% quantiles but significant at only 85% to 90% quantiles. This supports the studies of Peng and Lin, 2009, Kim and Kim, 2010 and Gallego-Álvarez and Ortas, 2017 that found positive relationship but contradict the studies of Vachon 2010, Garcia-Sanchez et al., 2016 and Halkos and Skouloudis, 2017 that found negative relationship. Accordingly, the results support hypothesis *H5* at the higher quantiles suggesting that subsidiaries with parent companies operating in uncertainty avoidance societies characterized by a strong emphasis on rules, regulations, and formal structures may use their influence to ensure their subsidiaries comply with mandatory and non-mandatory environmental regulations and engage in green reporting, especially at higher quantiles where the scrutiny is more intense. This supports cultural capital and legitimacy theories.

However, the insignificant results at the remaining quantiles suggest that holding companies from uncertainty avoidance cultural backgrounds do not influence the green reporting of their subsidiaries in any way. This could mean that other factors, such as regulatory requirements, industry standards, and internal policies, might play a more dominant role in determining green reporting practices rather than culture.

HLTO (Holding Company Long-Term Orientation)

Table 17 shows the effect of holding company long-term orientation on green reporting.

Table 17: Holding Company Culture (Long-Term Orientation) and Green Reporting

VARIABLES	Fixed Effect					Quantiles				
		5%	15%	25%	35%	50%	65%	75%	85%	90%
	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>
<i>HLTO</i>	0.000 (0.001)	0.000*** (0.000)	0.001** (0.000)	0.001** (0.001)	0.001 (0.001)	0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.003*** (0.001)	-0.004*** (0.001)
<i>SLTO</i>	0.009*** (0.003)	0.003*** (0.000)	0.004*** (0.001)	0.007*** (0.002)	0.008*** (0.002)	0.010*** (0.002)	0.012*** (0.002)	0.010*** (0.002)	0.011*** (0.002)	0.008*** (0.002)
<i>CEO TEN</i>	0.002 (0.007)	-0.002** (0.001)	-0.002 (0.002)	0.002 (0.004)	0.003 (0.004)	0.004 (0.005)	0.002 (0.004)	0.001 (0.005)	0.002 (0.005)	0.014*** (0.004)
<i>CEO GEN DIVER</i>	-0.053 (0.077)	-0.018 (0.012)	-0.029 (0.027)	-0.068 (0.054)	-0.078 (0.059)	-0.098 (0.068)	-0.105 (0.064)	0.117 (0.071)	0.046 (0.075)	-0.065 (0.063)
<i>BSIZE</i>	0.009 (0.009)	0.006*** (0.001)	0.008*** (0.003)	0.009 (0.006)	0.002 (0.006)	0.012 (0.007)	0.017** (0.007)	0.016** (0.008)	0.008 (0.008)	0.001 (0.007)
<i>BIND</i>	0.299** (0.139)	0.057*** (0.019)	0.101** (0.046)	0.162* (0.090)	0.223** (0.098)	0.076 (0.113)	0.196* (0.107)	0.377*** (0.119)	0.552*** (0.126)	0.589*** (0.106)
<i>FIRM AUD</i>	0.113* (0.059)	0.024*** (0.008)	0.038** (0.018)	0.071** (0.035)	0.075* (0.038)	0.061 (0.044)	0.089** (0.042)	0.094** (0.047)	0.097** (0.049)	0.058 (0.041)
<i>Firm Size (Log)</i>	0.034*** (0.012)	0.004*** (0.001)	0.007** (0.004)	0.023*** (0.007)	0.034*** (0.008)	0.022** (0.009)	0.031*** (0.008)	0.045*** (0.009)	0.047*** (0.010)	0.056*** (0.008)
<i>Firm Age</i>	0.000 (0.001)	0.001*** (0.000)	0.001** (0.000)	0.000 (0.000)	0.001** (0.001)	0.001** (0.001)	0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)
<i>logLeverage</i>	0.048 (0.049)	0.015 (0.010)	0.021 (0.024)	0.052 (0.046)	0.048 (0.051)	-0.016 (0.059)	0.021 (0.055)	0.040 (0.062)	0.020 (0.065)	-0.031 (0.055)
<i>logROA</i>	0.207*** (0.063)	0.073*** (0.014)	0.095*** (0.033)	0.172*** (0.064)	0.211*** (0.070)	0.135* (0.081)	0.109 (0.076)	0.109 (0.085)	0.084 (0.090)	0.040 (0.075)
<i>GDP</i>	0.022 (0.046)	-0.015** (0.007)	-0.025 (0.017)	-0.020 (0.033)	0.039 (0.036)	0.017 (0.042)	0.029 (0.040)	0.034 (0.044)	0.017 (0.047)	-0.053 (0.039)
<i>Inflation</i>	0.015 (0.038)	-0.014 (0.009)	-0.015 (0.021)	0.013 (0.041)	0.001 (0.045)	-0.037 (0.052)	0.011 (0.049)	0.011 (0.055)	0.049 (0.058)	0.025 (0.049)

<i>RegQuality</i>	0.033 (0.069)	0.043*** (0.009)	0.047** (0.022)	0.038 (0.043)	0.052 (0.048)	0.086 (0.055)	0.048 (0.052)	0.062 (0.058)	0.047 (0.061)	0.090* (0.051)
Constant	-1.156** (0.436)	-0.080 (0.070)	-0.120 (0.164)	-0.623* (0.322)	-1.250*** (0.352)	-0.643 (0.406)	-1.099*** (0.384)	-1.406*** (0.429)	-1.264*** (0.451)	-0.568 (0.379)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	425	425	425	425	425	425	425	425	425	425
Adjusted R-squared	0.512	0.136	0.169	0.225	0.286	0.336	0.404	0.426	0.395	0.386
Hausman test										
Chi2	22.23									
Pvalue	0.0021									

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. GreenReport is green reporting, HLTO is Holding company long term orientation, SLTO is Subsidiary company long term orientation, SINDU is Subsidiary company indulgence, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The findings from Table 17 confirm hypothesis 6 (H6) at the 5%, 15%, and 25% quantiles. This could be that at lower quantiles, holding companies from long-term oriented cultures may prioritize sustainability and use their influence to drive green reporting in their subsidiaries. They recognize the long-term benefits of sustainability and may see it as a way to ensure the organization's longevity. Conversely, the results show a significant negative connection between the 85% and 90% quantiles. Interestingly, the negative significance at the higher quantiles is intriguing given that holding companies hailing from long-term-oriented cultures prioritize persistence and future-oriented objectives. However, this could mean that as the pressure for short-term results increases at higher quantiles, holding companies may become less willing to invest in sustainability initiatives and more resistant to change thereby not influencing their subsidiaries in SSA to disclose their environmental information. This finding confirms studies of (Durach and Wiengarten, 2017; Disli et al., 2016; Halkos and Skouloudis, 2017; Kim and Kim, 2010; Gallego-Álvarez and Ortas, 2017) that reported a negative relationship.

HLTO (Holding Company Indulgence)

Table 18 shows the effect of holding company indulgence on green reporting.

Table 18: Holding Company Culture (Indulgence) and Green Reporting

VARIABLES	Fixed Effect					Quantiles				
		5%	15%	25%	35%	50%	65%	75%	85%	90%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>
<i>HINDU</i>	0.002 (0.001)	0.000 (0.000)	-0.001*** (0.000)	-0.002* (0.001)	-0.000 (0.001)	0.001 (0.001)	0.003* (0.002)	0.003** (0.001)	0.005*** (0.001)	0.006*** (0.001)
<i>SINDU</i>	-0.007*** (0.002)	-0.003*** (0.000)	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)	-0.006*** (0.002)	-0.010*** (0.002)	-0.008*** (0.002)	-0.007*** (0.002)	-0.008*** (0.001)
<i>CEO TEN</i>	0.003 (0.008)	-0.002** (0.001)	-0.002 (0.002)	-0.000 (0.003)	0.003 (0.004)	0.009** (0.004)	0.006 (0.005)	0.006 (0.005)	0.010** (0.004)	0.014*** (0.004)
<i>CEO GEN DIVER</i>	-0.051 (0.078)	-0.013 (0.014)	-0.032 (0.024)	-0.059 (0.049)	-0.075 (0.054)	-0.092 (0.063)	-0.139* (0.079)	0.043 (0.073)	0.011 (0.061)	-0.042 (0.057)
<i>BSIZE</i>	0.003 (0.009)	0.005*** (0.001)	0.008*** (0.002)	0.009* (0.005)	0.002 (0.006)	-0.000 (0.006)	-0.000 (0.008)	0.002 (0.008)	0.008 (0.006)	0.002 (0.006)
<i>BIND</i>	0.277* (0.142)	0.044* (0.023)	0.097** (0.039)	0.110 (0.083)	0.198** (0.091)	0.208** (0.105)	0.224* (0.131)	0.358*** (0.122)	0.518*** (0.101)	0.571*** (0.094)
<i>FIRM AUD</i>	0.100 (0.060)	0.035*** (0.009)	0.055*** (0.015)	0.074** (0.032)	0.032 (0.035)	0.057 (0.041)	0.031 (0.051)	0.023 (0.048)	0.107*** (0.039)	0.087** (0.037)
<i>Firm Size (Log)</i>	0.040*** (0.011)	0.002 (0.002)	0.010*** (0.003)	0.022*** (0.006)	0.043*** (0.007)	0.042*** (0.008)	0.047*** (0.010)	0.057*** (0.009)	0.045*** (0.008)	0.044*** (0.007)
<i>Firm Age</i>	0.000 (0.001)	0.001*** (0.000)	0.001*** (0.000)	0.000 (0.000)	0.001* (0.000)	0.001 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
<i>logLeverage</i>	0.024 (0.055)	0.015 (0.012)	0.020 (0.020)	0.034 (0.042)	0.031 (0.047)	0.036 (0.054)	-0.011 (0.067)	-0.010 (0.063)	-0.034 (0.052)	-0.064 (0.049)
<i>logROA</i>	0.175*** (0.057)	0.045*** (0.016)	0.148*** (0.028)	0.190*** (0.060)	0.222*** (0.065)	0.143* (0.076)	0.089 (0.095)	0.072 (0.088)	0.062 (0.073)	0.093 (0.068)
<i>GDP</i>	0.165*** (0.061)	0.079*** (0.011)	0.083*** (0.019)	0.095** (0.040)	0.128*** (0.044)	0.143*** (0.050)	0.198*** (0.063)	0.146** (0.059)	0.148*** (0.049)	0.170*** (0.045)
<i>Inflation</i>	0.022 (0.040)	-0.004 (0.011)	0.002 (0.018)	-0.004 (0.039)	-0.006 (0.042)	-0.025 (0.049)	0.034 (0.062)	0.040 (0.057)	0.038 (0.047)	0.061 (0.044)

<i>RegQuality</i>	-0.068 (0.087)	-0.041*** (0.014)	-0.065*** (0.024)	-0.089* (0.050)	-0.049 (0.055)	-0.039 (0.064)	-0.067 (0.080)	-0.031 (0.075)	-0.049 (0.062)	-0.090 (0.058)
Constant	-1.782*** (0.525)	-0.518*** (0.091)	-0.590*** (0.159)	-0.859** (0.334)	-1.486*** (0.367)	-1.539*** (0.424)	-1.895*** (0.531)	-1.873*** (0.495)	-1.965*** (0.410)	-2.113*** (0.382)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	425	425	425	425	425	425	425	425	425	425
Adjusted R-squared	0.514	0.142	0.179	0.235	0.290	0.333	0.389	0.418	0.398	0.390
Hausman test										
Chi2	20.39									
Pvalue	0.0860									

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. GreenReport is green reporting, CINDU is Holding company indulgence, SINDU is Subsidiary company indulgence, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

Finally, the study finds that HINDU is negatively and significantly related to the green report at the 15% to 25% quantiles confirming the works of (Hofstede et al., 2010; Halkos and Skouloudis, 2017; Thanetsunthorn and Wuthisatian, 2019) but also surprisingly it is positively and significantly related to the green report at the higher quantiles. However, the impact of PINDU on green reporting is more pronounced at the higher quantiles. The negative significant relationship means that holding companies from indulgence cultural origin may not place a strong emphasis on the importance of sustainable practices and green reporting, considering them less of a priority compared to activities that provide immediate pleasure or gratification. This may cause them not to pressure their subsidiaries in SSA to disclose their environmental impact. However, the positive significant results at the higher quantiles mean that at higher quantiles, holding companies in indulgent cultures may face increasing pressure from stakeholders, such as investors and regulators, to prioritize sustainability. They may use their influence to drive green reporting in their subsidiaries to meet these stakeholder expectations.

Findings on Control Variables

Concerning control variables, CEO tenure, firm size, CEO gender diversity, Firm audit, firm leverage, board size, and firm age demonstrate largely positive associations with green reporting. More importantly, it could be observed that the impact of host or subsidiary company culture on green reporting is more pronounced in all instances than that of the parent company's cultural origin. This explains why the majority of the existing studies have looked at the host company culture instead of the parent company culture. It is also surprising that most of the host culture dimensions turn out to have a

negative impact on green reporting since Africans are known for their deep regard for the environment (Behrens, 2010; Mbaiwa, & Siphambe, 2023; Wan & Roy, 2023). However, this supports Friedman's (1970) and Jensen and Murphy's (1990) arguments. A firm's primary responsibility is profit maximization and adherence to legal obligations, with the sole focus on increasing shareholder wealth but not green reporting which takes money away from the firm.

Principal Component Analysis (PCA)

The study begins the analysis of holding company cultural origin on green reporting by looking at the principal composite of all the cultural dimensions. This may give policymakers, governments, organisations, and readers firsthand information on whether the generality of cultural origin matters, and whether the sub-components of the holding company's cultural origin cancel themselves out at the aggregate level.

Table 19: PCA CULTURE AND GREEN REPORTING

VARIABLES	Fixed Effect		Quantiles							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>	<i>GreenReport</i>
<i>HPCA</i>	0.014 (0.011)	-0.001 (0.003)	-0.008 (0.006)	-0.016 (0.014)	0.007 (0.017)	0.020 (0.016)	0.003 (0.019)	0.001 (0.023)	0.046** (0.019)	0.064*** (0.014)
<i>SPCA</i>	-0.084*** (0.016)	-0.037*** (0.004)	-0.052*** (0.008)	-0.067*** (0.020)	-0.070*** (0.024)	-0.065*** (0.024)	-0.092*** (0.028)	-0.077** (0.034)	-0.058** (0.027)	-0.043** (0.020)
<i>CEO TEN</i>	0.002 (0.003)	-0.002*** (0.001)	-0.003* (0.002)	0.000 (0.004)	0.004 (0.004)	0.009** (0.004)	0.002 (0.005)	0.000 (0.006)	0.009* (0.005)	0.013*** (0.004)
<i>CEO GEN DIVER</i>	-0.066 (0.044)	-0.011 (0.010)	-0.029 (0.023)	-0.058 (0.054)	-0.076 (0.065)	-0.121* (0.063)	-0.124* (0.074)	0.096 (0.091)	0.020 (0.073)	0.017 (0.053)
<i>BSIZE</i>	0.009** (0.005)	0.004*** (0.001)	0.006*** (0.002)	0.009 (0.006)	0.003 (0.007)	0.002 (0.007)	0.014* (0.008)	0.020** (0.009)	0.015** (0.008)	0.010* (0.006)
<i>BIND</i>	0.270*** (0.075)	0.041** (0.017)	0.106*** (0.038)	0.161* (0.093)	0.217** (0.110)	0.110 (0.108)	0.236* (0.126)	0.398** (0.154)	0.568*** (0.124)	0.591*** (0.091)
<i>FIRM AUD</i>	0.108*** (0.029)	0.026*** (0.007)	0.043*** (0.015)	0.071** (0.036)	0.040 (0.043)	0.083** (0.042)	0.097** (0.049)	0.116* (0.060)	0.126*** (0.048)	0.092*** (0.035)
<i>Firm Size (Log)</i>	0.036*** (0.006)	0.005*** (0.001)	0.010*** (0.003)	0.020*** (0.007)	0.039*** (0.008)	0.037*** (0.008)	0.040*** (0.010)	0.040*** (0.012)	0.039*** (0.010)	0.049*** (0.007)
<i>Firm Age</i>	0.001 (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.000 (0.000)	0.001*** (0.001)	0.001** (0.001)	0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)	0.000 (0.000)
<i>logLeverage</i>	0.031 (0.038)	0.004 (0.009)	0.017 (0.019)	0.024 (0.047)	0.023 (0.056)	0.034 (0.055)	0.036 (0.064)	0.002 (0.078)	-0.016 (0.063)	-0.034 (0.046)
<i>logROA</i>	0.212*** (0.053)	0.084*** (0.012)	0.127*** (0.027)	0.207*** (0.066)	0.202** (0.078)	0.135* (0.076)	0.142 (0.090)	0.095 (0.109)	0.051 (0.088)	0.044 (0.064)
<i>logGDP</i>	-0.066** (0.031)	-0.034*** (0.007)	-0.075*** (0.016)	-0.099** (0.039)	-0.044 (0.046)	-0.056 (0.045)	-0.081 (0.053)	-0.080 (0.065)	-0.054 (0.052)	-0.045 (0.038)
<i>logInflation</i>	-0.046 (0.032)	-0.020*** (0.007)	-0.026 (0.016)	-0.043 (0.040)	-0.051 (0.047)	-0.113** (0.046)	-0.087 (0.054)	-0.067 (0.066)	-0.006 (0.053)	-0.007 (0.039)
<i>Regulatory Quality</i>	0.020 (0.039)	0.006 (0.009)	0.018 (0.020)	0.019 (0.048)	0.010 (0.057)	0.082 (0.056)	0.045 (0.065)	0.120 (0.080)	0.129** (0.064)	0.111** (0.047)
Constant	-0.153 (0.282)	0.161** (0.065)	0.349** (0.142)	0.330 (0.343)	-0.391 (0.410)	-0.017 (0.399)	-0.020 (0.469)	-0.074 (0.572)	-0.372 (0.458)	-0.561* (0.337)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	425	425	425	425	425	425	425	425	425	425
Adjusted R-squared	0.495	0.126	0.152	0.201	0.266	0.323	0.380	0.398	0.377	0.377

From Table 19, HCCO PCA is negatively and insignificantly associated with green reports from 5% and 35% quantile. However, positive relations from the 35% to 90% quantiles but only significant at 85%, and 90% quantiles. This indicates that HCCO cancel themselves out at the aggregate level at most of the quantiles. The positive significant impact at the 85% to 90% quantiles indicates that cultural origin positively influences green reporting at these quantiles. This could mean that the sampled CEOs do emphasize participative decision-making. This inclusive approach promotes a sense of ownership and commitment among the management team, board of directors, and employees, potentially leading to improved green reporting. The significant relationship also supports the institutional theory of isomorphism, cultural capital theory, stakeholder, and legitimacy theories. That is Holding company's cultural origin serves as a resource that their subsidiaries use to enhance their green reporting, helping them meet stakeholders' needs and gaining legitimacy. However, the insignificant results support Reitz et al. (1979) argument that organizations are not solely influenced by institutional pressures to conform, but also by their need to acquire resources from external sources to ensure their survival and success. This means that other factors other than holding company culture might be influencing green reporting.

Robustness (Alternative Measure of Holding Company Cultural Origin)

Table 20 shows the effect of holding company cultural origin on green reporting using Schwartz culture dimensions.

Table 20: Other Culture and Green Reporting

VARIABLES	(1) <i>GreenReport</i>	(2) <i>GreenReport</i>	(3) <i>GreenReport</i>	(4) <i>GreenReport</i>	(5) <i>GreenReport</i>	(6) <i>GreenReport</i>	(7) <i>GreenReport</i>
<i>Pharmony</i>	0.230** (0.104)						
<i>Pembedded</i>		0.026 (0.051)					
<i>Phierarchy</i>			-0.009 (0.059)				
<i>Pmastery</i>				-0.256 (0.166)			
<i>Paffauton</i>					-0.020 (0.036)		
<i>Pintelauton</i>						-0.005 (0.048)	
<i>Pegalitar</i>							-0.054 (0.088)
<i>CEO TEN</i>	0.011 (0.009)	0.009 (0.010)	0.009 (0.010)	0.010 (0.009)	0.009 (0.010)	0.009 (0.010)	0.009 (0.010)
<i>CEO GEN DIVER</i>	0.030 (0.065)	0.026 (0.065)	0.025 (0.066)	0.026 (0.063)	0.027 (0.065)	0.025 (0.066)	0.025 (0.065)
<i>BSIZE</i>	0.016* (0.009)	0.008 (0.008)	0.010 (0.008)	0.010 (0.008)	0.008 (0.008)	0.010 (0.008)	0.010 (0.008)
<i>BIND</i>	0.209 (0.128)	0.162 (0.122)	0.174 (0.124)	0.173 (0.122)	0.158 (0.125)	0.170 (0.122)	0.173 (0.121)
<i>FIRM AUD</i>	0.012 (0.055)	0.020 (0.058)	0.020 (0.058)	0.007 (0.059)	0.021 (0.058)	0.020 (0.058)	0.023 (0.058)
<i>Firm Size (Log)</i>	0.042*** (0.010)	0.050*** (0.011)	0.048*** (0.011)	0.049*** (0.010)	0.050*** (0.011)	0.049*** (0.011)	0.050*** (0.011)
<i>Firm Age</i>	0.001* (0.001)	0.001* (0.001)	0.001* (0.001)	0.001* (0.001)	0.001* (0.001)	0.001* (0.001)	0.001 (0.001)

<i>logLeverage</i>	-0.078 (0.075)	-0.074 (0.077)	-0.075 (0.078)	-0.078 (0.074)	-0.075 (0.077)	-0.074 (0.078)	-0.069 (0.078)
<i>logROA</i>	0.154*** (0.058)	0.165** (0.064)	0.168*** (0.061)	0.154** (0.060)	0.164** (0.064)	0.168*** (0.063)	0.170*** (0.062)
<i>GDP</i>	0.021 (0.039)	0.004 (0.044)	0.011 (0.045)	-0.003 (0.040)	0.006 (0.042)	0.008 (0.044)	0.004 (0.042)
<i>Inflation</i>	-0.009 (0.016)	-0.018 (0.017)	-0.016 (0.017)	-0.015 (0.016)	-0.018 (0.017)	-0.017 (0.017)	-0.019 (0.016)
<i>RegQuality</i>	0.079* (0.047)	0.090* (0.050)	0.084* (0.050)	0.086* (0.048)	0.090* (0.051)	0.086* (0.049)	0.088* (0.049)
Constant	-1.813*** (0.595)	-0.936** (0.383)	-0.861** (0.368)	0.233 (0.719)	-0.786* (0.419)	-0.844* (0.483)	-0.583 (0.596)
Observations	550	550	550	550	550	550	550
Adjusted R-squared	0.449	0.429	0.428	0.439	0.429	0.428	0.429
Hausman test							
Chi2	74.92	44.00	44.81	39.83	51.03	44.88	47.89
Pvalue	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All the variables are previously defined. *PCACEOCulture* is CEO PCA, CEO TEN represent CEO tenure, Firm Size is firm size, CEO GEN DIVER is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

To check the robustness and accuracy of the results the study substitutes the Hofstede culture model with the Schwartz culture model. The study repeats the same analysis as discussed earlier. Interestingly, each dimension bears conceptual similarities to one of Hofstede's (1980) original dimensions. Intellectual autonomy versus embeddedness aligns with Hofstede's individualism versus collectivism, while affective autonomy versus conservatism shares commonalities with Hofstede's uncertainty acceptance versus avoidance. Furthermore, the concepts of hierarchy versus egalitarianism and mastery versus harmony resemble Hofstede's power distance versus closeness and certain aspects of his masculinity versus femininity, respectively (Kaasa, 2021; Maleki & de Jong, 2013; Nardon & Steers, 2009).

However, the expected signs between the two models are substantially similar, except in a few instances. This is not surprising because Imm Ng et al., (2007) found that the two were found to be non-congruent. Also, there exist differences concerning theoretical reasoning, methods, respondents, and periods (Schwartz, 1994). Schwartz (1992) defines values based on needs, encompassing "individuals' requirements as biological organisms, society's need for coordinated social interaction, and groups' need for survival and support." In contrast, Hofstede's (2001) framework was developed using macroeconomic variables and was shaped based on norms.

CONCLUSION AND POLICY RECOMMENDATIONS

The study presented an analysis of holding company cultural origin and green reporting of listed manufacturing firms in SSA Anglophone countries. The fixed effect panel quantile regression was employed to achieve

the purpose of the study. This study sought to find out whether holding companies' power distance, holding companies' individuality, holding companies' masculinity, holding companies' uncertainty avoidance, holding companies' long-term orientation, and holding companies' indulgence affect the green reporting of listed manufacturing firms in SSA. The study is the first attempt to assess the nexus between these variables in SSA, where voluntary green reporting still lags that of developed countries. Also, due to different levels of green reporting over a given period among African economies, the paper adopts the fixed effect panel quantile regression to establish the extent of heterogeneity in green reporting.

The study reveals several noteworthy findings regarding the impact of various cultural dimensions on green reporting. Holding companies from power distance, indulgence, and uncertainty avoidance cultures exhibit a positive association with green reporting of their subsidiary companies, particularly at the higher quantiles. The positive significant relationships support the institutional theory of isomorphism, cultural capital theory, stakeholder, and legitimacy theories. That is Holding company cultural origin serves as a resource that their subsidiaries use to enhance their green reporting, helping them meet stakeholders' needs and gaining legitimacy. In contrast, those with individualistic and Long-term orientation cultural backgrounds show a negative relationship, indicating a prioritization of individual goals over sustainability. However, holding companies from masculine cultures have no association with green reporting. This supports Friedman's (1970) and Jensen and Murphy's (1990) argument that a firm's

primary responsibility is profit maximization and adherence to legal obligations, with the sole focus on increasing shareholder wealth.

To ensure comprehensive green reporting, it is essential to mandate specific green reporting standards for holding companies that originate from cultures characterized by high power distance, indulgence, and uncertainty avoidance. These cultural traits have been shown to positively influence the green reporting practices of their subsidiaries, especially at higher quantiles. Additionally, developing sector-specific regulatory frameworks will help standardize environmental disclosures across subsidiaries that operate under varying cultural influences.

Firms aiming to bolster their sustainability efforts should all other things being equally, actively seek affiliation with holding companies from power distance, indulgence, and uncertainty avoidance. These characteristics encourage green reporting practices at the subsidiary level. Conversely, industries striving for enhanced sustainability leadership should all other things being equally, avoid partnerships with holding companies from individualistic and long-term oriented cultures, as these firms may deprioritize green reporting in favor of short-term financial goals. Regulatory bodies should promote global corporate governance practices that compel parent companies to incorporate green reporting as a core strategic objective across their subsidiaries.

Institutional investors, policymakers, and regulatory bodies should enforce stricter compliance with environmental disclosure requirements for holding companies from individualistic and long-term oriented cultures, as these firms often prioritize financial outcomes over sustainability initiatives.

To encourage proactive sustainability practices, market-driven incentives such as green bonds, ESG-linked financial products, and carbon credit benefits should be offered to holding companies that actively promote sustainability across their subsidiaries. Furthermore, corporate boards should embed green reporting metrics into the executive compensation structures of holding companies, ensuring that sustainability remains a priority in decision-making at both the parent and subsidiary levels.

CHAPTER SIX

GREEN REPORTING AND FIRM PERFORMANCE OF LISTED MANUFACTURING FIRMS IN SSA: DOES CEO CULTURAL ORIGIN MATTER?

ABSTRACT

This study investigates the relationship between green reporting and firm performance and how it is influenced by CEO cultural origin. Using data from 115 listed manufacturing firms across eight Anglophone Sub-Saharan African countries between 2015 and 2021, the study employs the Instrumental Variable-Generalized Method of Moments (IV-GMM) estimation technique to address endogeneity concerns. Findings confirm that green reporting enhances internal financial performance, improving Return on Assets (ROA) and Return on Equity (ROE) in line with legitimacy, stakeholder, and signaling theories. However, no significant relationship is found with Tobin's Q, indicating that while sustainability efforts boost internal financial health, they do not necessarily translate into higher market valuations. CEO's cultural background significantly moderates these effects. High power distance and high uncertainty avoidance cultures strengthen the positive impact of green reporting on ROA and ROE, while low individualism and low long-term orientation also enhance this relationship. High individualism and low power distance CEOs improve Tobin's Q, whereas low masculinity cultures show a negative effect, and indulgent cultures exhibit no impact. The study advocates that policymakers and corporate governance bodies in Sub-Saharan Africa should integrate cultural considerations into CEO selection and green reporting policies to maximize sustainability-driven financial outcomes.

INTRODUCTION

The argument underlying the relationship between green reporting and firm performance has gained momentum (Bissoondoyal-Bheenick et al., 2023; Cerciello et al., 2022; Malik et al., 2023; Hasan et al., 2021). Stakeholders such as investors, customers, employees, and the community at large have placed increasing importance on green reporting (Shaikh, 2022; Suchman, 1995). The legitimacy theory proposed by Suchman (1995), indicates that entities must align their operations with societal expectations to maintain membership in the community. Failure to meet these expectations threatens legitimacy while green reporting enhances legitimacy and positively impacts firm performance (Cantele et al., 2018; Pham & Tran, 2020). Stakeholder theory also emphasizes meeting stakeholders' expectations to maintain legitimacy and foster long-term stakeholder relationships. Simultaneously, signaling theory suggests that green reporting can signal a company's commitment to sustainability, building trust, enhancing legitimacy, and potentially improving performance.

Notwithstanding the empirical research exploring green reporting and firm performance, the findings are inconclusive (Ye et al., 2021; Park, 2024). Wang et al. (2016) argue that the relationship between green reporting and firm performance can be misleading. It is possible that omitted variables may influence this connection. Unfortunately, existing research reveals a dearth of research focusing on the factors that could potentially intervene in this relationship (Brooks, & oikonomou, 2018; Wang et al., 2016). Bearing this void in mind and grounding our investigation in the literature on the roles played by CEOs and culture in CSR reporting (Aabo, & Giorici, 2023; Lee et al., 2022; Vitolla et al., 2019), The study postulates that the presence of CEO

cultural origin influences the alignment between green reporting and firm performance.

The upper echelon theory posits that the characteristics of CEOs can impact a company's strategic choices, which in turn can influence various firms' behavior (Hambrick & Mason, 1984). Yet, prior studies have primarily focused on factors such as age, gender, tenure, and financial expertise of a firm's executives (Aabo, & Giorici, 2023; Oware, & Amoako, 2022). However, culture can also influence a CEO's risk appetite and risk-taking behavior, thereby impacting green reporting because CEOs' decisions and actions cannot be viewed as culturally free (Hofstede, 1983; Gray & Font, 1988).

For a long time, there has been interest in the effects of culture on company policies. Studies show that national culture influences several business operations, including debt maturity (Mogha, & Mayiams, 2021; Zheng et al., 2012), investment (Shao et al., 2013), and green reporting (Lee et al., 2022; Vitolla et al., 2019). However, the effect of CEOs' cultural backgrounds on green reporting and firm performance has received limited attention. This study aims to fill this void by using listed manufacturing firms in SSA.

This is because mounting evidence highlights Africa's high vulnerability to climate change, with Sub-Saharan Africa home to nine of the world's top 10 most vulnerable nations according to the 2021 climate vulnerability index. Moreover, the 2022 Climate Change Report confirms Africa as a global hotspot for human vulnerability to climate change, leading to significant economic losses estimated between \$7 billion to \$15 billion

annually since 2020, potentially reaching \$50 billion by 2030 (7% of Africa's GDP). Further, the manufacturing sector in Africa significantly contributes to greenhouse gas emissions, thereby prompting heightened interest in social and environmental reporting (Jayaram et al., 2021).

This study fills the void in the literature and contributes to green reporting and firm performance in two significant ways. Firstly, the effect of the CEO's cultural background on green reporting and firm performance has received no attention. Shi and Veenstra (2020) and Wasiuzzaman et al. (2022) have examined the effect of national culture on the relationship between corporate social performance and disclosure, findings that the impact of CSP/R on FP depends on the culture of the country where the firm operates. The study adds to the significance of culture in understanding the effects of green reporting on firm outcomes. The study focuses on the CEO's cultural background as it may interact with green reporting and consequently have varying effects on firm performance. Second, the study employs innovative IV-GMM and IV-Lewbel techniques. They are effective in handling endogeneity concerns, making them a suitable choice for this study because of the persistent nature of firm performance and the possible existence of reverse causality between green reporting and firm performance.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Green reporting and firm performance

Although organizations' disclosure may encompass various dimensions, such as environmental, social, and governance. This study focuses solely on the green dimension of disclosure because it has been largely neglected in the past due to limited data. However, there has been a recent

surge in the importance of such disclosure due to mounting pressure to reduce carbon emissions. For instance, Mathuva and Kiweu (2016) found a negative relationship between corporate social disclosure, environmental disclosure, and firm performance. They suggested that this could be attributed to factors such as the regulatory framework or the shift of corporations towards a profit-oriented approach. Fahad and Busru (2021), Oware and Mallikarjunappa (2020), Wasiuzzaman et al. (2022), and Yoon et al. (2018) reported similar negative relationships. Hasan et al. (2021) emphasized that the effect of CSR disclosure on financial performance varies across industries and the chosen financial performance measure.

However, Malik et al. (2023) found a positive association between environmental disclosure and firm performance. They suggested that Chinese firms can enhance their performance by increasing their level of environmental disclosure and emphasizing environmental practices. Similarly, Huang et al. (2018) provided evidence that implementing appropriate environmental and precautionary measures can enhance business efficiency, ultimately leading to improved financial performance. This creates a win-win situation for businesses. Song et al. (2018) examined the CSR communication strategies of both controversial and non-controversial Fortune 500 companies and stakeholders' responses to these strategies. They emphasized the importance of aligning environmental management with economic benefits to achieve long-term environmental protection and contribute positively to the environment.

Meanwhile, Huang et al. (2018) found no significant relationship between environmental disclosure and profitability, and Buallay et al., 2024,

found that sustainability reporting has a different impact on different performance measures. This contradictory evidence raises the need for further investigation into this issue. Grounded by stakeholder, legitimacy, and signaling theories, the study argues that organizations need to align their activities with societal expectations to maintain their standing within the community. Failure to meet these expectations poses a threat to legitimacy, while adopting green reporting practices can enhance legitimacy and positively impact firm performance (Cantele et al., 2018; Pham & Tran, 2020). The study, therefore, hypothesises that:

H1. Green reporting positively influences the firm's performance of listed manufacturing firms in Sub-Sahara Africa.

The Role of CEO Cultural Origin

Several studies have utilized the Hofstede cultural dimensions theory to explain green reporting and firm performance. Notably, Wasiuzzaman et al. (2022) established a negative relationship between environmental, social, and governance disclosure and firm performance but concluded that when cultural dimensions are considered, power distance and long-term orientation moderate the relationship. Lee and Hutchison (2005) have established a connection between corporate social disclosure and firm performance. They also acknowledge the inconclusive outcomes of examining this relationship. Furthermore, Guidry and Patten (2012) and Orij (2010) also highlight the need to consider cultural dimensions in understanding social and environmental practices. Hofstede et al. (2005) identified five cultural dimensions: power distance (PD), Individualism (IND), Uncertainty Avoidance (UNA), Long-term orientation (LTO), Masculinity (MAS), and Indulgence (INDU).

The role of CEO Power Distance

Cultures marked by high power distance (PD) typically prioritize secrecy and uphold power imbalances by limiting information disclosure. Existing research consistently shows that PD cultures generally have lower levels of disclosure (Gallego-Álvarez & Ortas, 2017; Ogundajo et al., 2022; Orij, 2010; Roy & Mukherjee, 2022; Vitolla et al., 2019). However, conflicting findings also emerge, with some studies suggesting higher levels of disclosure in PD cultures (Diamastuti et al., 2020), while others find no definitive relationship (Sannino et al., 2020). This study proposes that CEOs from cultural backgrounds with lower power distances, which place less emphasis on secrecy and power inequalities, are more likely to engage in green reporting. This stance aligns with the increasing importance of sustainability in today's business environment and can significantly influence firm performance. This leads to the second hypothesis:

H2. Green reporting has a positive impact on firm performance when conditioned on CEOs from low power distance cultural origin.

The Role of CEO Individualism

Collectivist cultures prioritize stakeholders' needs over investors' interests. These societies experience higher stakeholder pressure leading to increased levels of disclosure. On the other hand, individualistic societies prioritize economic growth and material success, resulting in a lower emphasis on inclusion and cooperation (Gallén & Peraita, 2017; Lu, & Wang, 2021). Firms operating in collectivist cultures are more likely to disclose ESG information to meet stakeholder expectations (Ogundajo et al., 2022; Pinheiro et al., 2023). Therefore, CEOs from societies with low individualism cultural

backgrounds have the potential to positively moderate the link between green reporting and firm performance through fostering collaboration, shared responsibility, consensus building, and a sustained focus on sustainability. By prioritizing inclusivity, seeking consensus, and emphasizing collective responsibility, these CEOs cultivate an environment where diverse perspectives enrich green reporting practices, ensuring a more comprehensive and effective approach to sustainability. This committed obligation shown in green reporting signals the company's enduring dedication to sustainability, appealing to long-term investors and bolstering the overall performance of the firm. This leads to the hypothesis that:

H3. Green reporting has a positive impact on firm performance when conditioned on CEOs from low individualistic cultural origins.

The Role of CEO Masculinism

Masculinity (MAS) also influences CSR/sustainability disclosure. Masculine societies emphasize economic success and assertiveness, leading to a negative relationship with CSR/sustainability disclosure (Orij, 2010; Peng et al., 2014; Thanetsunthorn, 2015; Disli et al., 2016; Gallego-Álvarez & Ortas (2017), Halkos & Skouloudis, 2017; Gallén and Peraita, 2017; Ogundajo et al., 2022). In contrast, masculine societies tend to be more assertive and success-oriented and have higher levels of disclosure (Gray and Vint, 1995). Similarly, Pinheiro et al., 2023 showed a positive relationship and some no significant relationship (Coulmont et al., 2015). This study opposes that CEOs from low masculinity cultural origin, tend to exhibit leadership styles emphasizing collaboration, inclusivity, and relationship nurturing. These cultural attributes often align with values of care for the environment and sustainability. CEOs

from such backgrounds are inclined to integrate these societal values into their organizational strategies, fostering sincere efforts towards environmentally responsible practices. This genuine commitment to sustainability, seen through green reporting, reflects the organization's dedication to societal values. By aligning their approaches with cultural norms and societal priorities, these CEOs can drive more authentic and comprehensive green reporting initiatives, potentially enhancing the overall performance of the firm. Therefore, the study hypothesizes that:

H4. Green reporting has a positive impact on firm performance when conditioned on CEOs from low-masculinity cultural origin.

The role of CEO Indulgence

Lastly, Indulgent countries have more carbon dioxide emissions (Disli, Ng, & Askari, 2016). Sun et al., 2019 find that the relationship between corporate social performance and financial performance is stronger in a restrained culture. The study argues that CEOs from low-indulgent cultural backgrounds often cultivate environments that prioritize restraint, discipline, and a focus on long-term goals. These cultural settings tend to emphasize frugality and self-control over immediate gratification. CEOs from such backgrounds may integrate these values into the organizational ethos, fostering a culture that values resource efficiency and sustainable practices. Their leadership style might encourage prudent resource allocation and a strategic approach towards environmentally responsible initiatives. This integration of values aligns with a societal inclination towards long-term thinking and responsibility, potentially reflected in green reporting as a commitment to sustainable practices. By integrating these cultural values into their leadership

and organizational strategies, CEOs can contribute to a more conscientious and resource-efficient approach, potentially enhancing the overall performance of the firm while showcasing a commitment to sustainability. Therefore, the study hypothesizes that:

H5. Green reporting has a positive impact on firm performance when conditioned on CEOs from low Indulgence cultural origin.

The role of CEO Uncertainty Avoidance

In high UNA cultures, firms restrict information to avoid potential conflicts. However, the relationship between UNA and sustainability disclosure is not consistently clear. Some studies indicate a negative relationship, suggesting that the cost of disclosure outweighs the benefits in high-uncertainty situations (García-Sánchez et al., 2016; Halkos and Skouloudis, 2017), while others find that firms in high UAI cultures pay more attention to CSR disclosure (Kumar Prakash, 2019; Peng et al., 2014; Thanetsunthorn, 2015). Additionally, stakeholders' pressures play a significant role in influencing CSR practices in high UNA cultures (Gallén and Peraita, 2017). This study contends that CEOs hailing from high uncertainty avoidance cultures can positively impact the link between green reporting and firm performance. Their focus on risk aversion and adherence to rules complement a meticulous approach to green reporting, assuring stakeholders and reducing risks tied to non-compliance while gradually improving environmental practices. This, in turn, can enhance firm performance by boosting credibility, attracting long-term investors, and signaling a sustained commitment to sustainability. This leads to hypothesis that:

H6. Green reporting has a positive impact on firm performance when conditioned on CEOs from high uncertainty avoidance cultural origin.

The Role of CEO Long-Term Orientation

Long-term orientated (LTO) societies encourage firms to adhere to societal and environmental norms, leading to increased disclosure and engagement in environmental practices (Halkos & Skouloudis, 2017; Kim and Kim, 2010; Gallego-Álvarez and Ortas, 2017; Lu & Wang, 2021). This study claims that CEOs originating from societies with a high long-term orientation often prioritize future planning, sustainability, and enduring commitments. In such cultural settings, there's a prevalent focus on fostering practices that ensure stability and success in the long run. CEOs from these backgrounds tend to embed sustainability goals into their strategic vision for the company, emphasizing the importance of environmentally responsible practices. Their leadership reflects a sustained dedication to initiatives that align with societal values of sustainability, reflected in green reporting. This alignment with long-term societal values and commitments can enhance the credibility of the firm, attracting investors who prioritize stability and ethical practices. By integrating these cultural values into their leadership and business strategies, CEOs contribute to a more holistic and enduring approach to green reporting, potentially bolstering the overall performance of the firm. Therefore:

H7. Green reporting has a positive impact on firm performance when conditioned on CEOs from high Long-term orientation cultural origin.

RESEARCH METHODS

Data Sources

The study sample involves 115 listed manufacturing firms, selected from 8 Anglophone countries in sub-Saharan Africa that had submitted annual and sustainability reports between 2015 and 2021. The study focuses on Anglophone countries (English-speaking countries) because they have better accounting practices (Adela et al., 2022) and avoid language barriers in data collection (Adu, 2022). Moreover, these countries are listed in Hofstede's cultural data and have fully adopted IFRS. The listed manufacturing companies were selected because of data availability. Information on the number of the companies and their locations is in Appendix B. The study sample comprises 259 CEOs and 115 firms.

Variable Measurement

Measure of Firm Performance

The study measures firm performance such as Return on Assets, Return on Equity and Tobin's Q. ROE is the ratio of net income to shareholder capital and ROA is profit before interest and taxes divided by the average total assets (in book value). Additionally, Tobin's Q is determined by dividing the market value of the company by the replacement cost of its assets (Jan et al., 2019).

Measure of Green Reporting

Green reporting is measured by following the works of Arthur et al., 2017, Laskar and Maji, 2017 and Kumar and Prakesh, 2019. The study constructs green reporting based on a dichotomous approach assigning a value of 1 if corresponding information is reported and 0 otherwise. The study

calculates subindices for green reporting through the application of the globally recognized GRI guidelines and standards. Thus, all answered items are added to obtain the total score for each reporting company. Then each subindex is calculated as the total number of items disclosed by the total number of items presented in GRI-4 guidelines. This study only focuses on the environmental dimension of sustainable reporting, which is how firms' activities impact living and non-living natural systems related to inputs (e.g. material, energy, land, and water) and outputs (effluents, emissions, and waste). In all, 34 environmental indicators are in the GRI-4 framework (See Appendix D).

Measure of CEO Cultural Origin

The study measures CEO's cultural origin using their surnames and then estimates their degree of individualism, power distance, masculinity, long-term orientation, uncertainty avoidance, and indulgence using Hofstede's cultural index (Gompers et al., 2016; Brochet et al., 2019). We use forebears.io, an online name database, to identify the origin of surnames for those companies that did not state the country of origin of their CEOs (Merkley et al., 2020; Pan et al. 2020). The study uses the frequency of incidence of a surname to determine whether the surname is dominant in that country. CEOs' surnames were obtained from annual reports.

Measure of Control Variables

The study includes control variables commonly used by the extant literature, which are the national culture of the home company, CEO's tenure, CEO gender diversity, firm size, firm audit, firm age, board independence, board size, return on assets, and firm leverage. The extant literature suggests

that these variables have a significant effect on green reporting, and thus should be controlled (Loukil, & Yousfi, 2022; Kumar & Prakesh, 2019; Orazalin & Mahmood, 2019).

Research Design

As traditional approaches encounter persistent challenges, including issues like omitted variable bias and measurement errors, the study opted for the IV-GMM model. Renowned for its effectiveness in addressing endogeneity and heterogeneity concerns, the IV-GMM model consistently yields robust results when compared to the fixed and random effect models. To estimate the effect of green reporting, the study specifies the following model:

$$\sum_{i=1}^n FP_{ijt} = \beta_0 + \beta_2 GreenReport_{ijt} + \beta_3 \sum_{i=1}^n X_{ijt} + \varepsilon_{ijt} \dots \dots \dots (1)$$

Where, β 's are the regression coefficients to be estimated, whilst i, j , and t are individual countries, firms, and years respectively. FP_{ijt} is the regression representing a vector of the firm performance. $GreenReport$ is green reporting, X is a vector of the control variables and ε_{ijt} is the error term.

To test for the effect of the presence of CEO cultural origin on the relationship between green reporting and firm performance, the study modifies the equation (1) to include an interaction term between green reporting and firm performance to state the following equation:

$$\sum_{i=1}^n FP_{ijt} = \beta_0 + \beta_2 GreenReport_{ijt} + \beta_3 \sum_{i=1}^n CEOCH_{ijt} + \beta_4 \sum_{i=1}^n (GreenReport * CEOCH)_{ijt} + \beta_5 \sum_{i=1}^n X_{ijt} + \varepsilon_{ijt} \dots \dots \dots (2)$$

FP_{ijt} is the regression representing a vector of the firm performance. $GreenReport$ is green reporting, $CEOCO$ is a vector for CEO cultural origin, X is a vector of the control variables and ε_{ijt} is the error term.

EMPIRICAL RESULTS

Summary Statistics

Table 21 shows the descriptive statistics for the regression variables.

Table 21: Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max	Skew.	Kurt.
<i>logROA</i>	555	.074	.181	-.715	.767	-.013	10.995
<i>logROE</i>	555	.11	.394	-3.349	1.509	-1.741	20.725
<i>logTobinsQ</i>	555	.703	.564	.009	3.37	1.856	8.157
<i>GreenReport</i>	555	.318	.288	0	.912	.583	1.832
<i>CPD</i>	555	61.672	18.242	18	94	-.207	1.416
<i>CIND</i>	555	51.917	26.939	8	91	.256	1.561
<i>CMAS</i>	555	57.827	10.122	14	95	-2.257	9.63
<i>CUNA</i>	555	54.13	13.997	23	100	1.213	4.756
<i>CLTO</i>	555	29.802	19.253	0	88	.973	3.526
<i>CINDU</i>	555	64.739	21.379	0	97	-1.35	4.545
<i>NPD</i>	555	66.841	14.317	49	80	-.306	1.228
<i>NIND</i>	555	41.667	17.81	15	65	.433	1.47
<i>NMAS</i>	555	57.178	8.557	40	63	-1.45	3.254
<i>NUNA</i>	555	52.661	4.172	45	65	1.175	4.711
<i>NLTO</i>	555	22.656	10.986	4	35	-.081	1.245
<i>NINDU</i>	555	69.236	16.762	0	84	-1.279	5.158
<i>CEOTEN</i>	555	5.148	6.422	1	44	3.362	16.796
<i>CEOGENDIVER</i>	555	.068	.253	0	1	3.417	12.679
<i>BSIZE</i>	555	9.225	2.552	4	17	.584	3.174
<i>BIND</i>	555	.679	.15	.077	1	-.514	3.474
<i>FIRMAUD</i>	555	.742	.438	0	1	-1.108	2.228
<i>FirmSizeLog</i>	555	18.658	2.379	11.964	26.278	.244	4.133
<i>FirmAge</i>	555	49.314	35.131	2	171	1.233	4.123
<i>logLeverage</i>	555	.447	.268	.028	1.925	3.485	18.646
<i>logGDP</i>	555	8.036	.576	6.763	8.741	-.182	2.08
<i>logInflation</i>	555	2.091	.401	.656	3.271	-.29	3.01
<i>RegulatoryQuality</i>	555	-.48	.456	-1.024	.209	.202	1.301

LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, *CPD* is CEO power distance, *CIND* is CEO individualism, *CMAS* is CEO masculinity, *CUNA* is CEO uncertainty avoidance, *CLTO* is CEO long term orientation, *CINDU* is CEO indulgence, *NPD* is home company power distance, *NIND* is home company individualism, *NMAS* is home company masculinity, *NUNA* is home company uncertainty avoidance, *NLTO* is home company long term orientation, *NINDU* is home company indulgence, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The dependent variables, ROA, ROE, and TobinsQ exhibit a mean of 0.074, 0.11, and 0.703, with the lowest values recorded at -0.715, -3.349, and 0.009, and the highest values reaching 0.767, 1.509 and 3.37, respectively. This implies that on average, listed manufacturing firms in SSA make

approximately 7.4% and 11% on invested assets and owners' equity respectively. TobinsQ with a mean value less than 1 also signifies that the stock of listed manufacturing companies in Africa is undervalued. Green reporting has a mean of 31.8. Thus, listed manufacturing firms in SSA in the study sample disclose on average 31.8% of their green impacts in their annual report and have a minimum value of 0 and a maximum of 91.2 %. The means (standard deviations) of CPD, CIND, CMAS, CUNA, CLTO, and CINDU scores are 61.672 (18.242), 51.917 (26.939), 57.827 (10.122), 54.13, (13.997), 29.802 (19.253), and 64.739 (21.379) respectively. This means that five of the six dimensions of CEO culture, CPD, CIND, CMAS, CUNA, and CINDU, have an average value above 50% making them high. CLTO is below 50% meaning CEOs in the study sample on average are from short-term-orientated countries. Regarding control variables, four of the six dimensions of national culture of the manufacturing firms NPD, NMAS, NUNA, and NINDU, have an average value above 50% making them high. The remaining two NIND and NLTO are below 50% meaning home companies in our sample on average are from short-term orientated and collectivist countries. CEO tenure (CEOTEN) is 5.148 years. The average board size (Bsize) is 9.225. On average, 67.9 % board members are independent directors (BIND) and on average 92.25% of the sampled CEOs are men. The mean Firm size (FirmSizeLog), Firm audit (FIRMAUD), Firm age, GDP, Inflation, Regulatory quality, and leverage (logLeverage) are 18.658, 0.742, 49.314, 8.036, 2.092, -0.48 and 0.447 respectively.

Pairwise Correlation Matrix

Table 22 depicts the correlation matrix, revealing a strongly positive and statistically significant correlation between ROA, ROE and TobinsQ. This outcome is expected as these variables capture a similar concept. The dependent variables, ROA, TobinsQ, and ROE, exhibit positive correlations with the majority of the regressors. Beyond the ROA-ROE correlation, the most substantial significant correlation coefficient among the independent variables is 0.523, remaining below the 0.80 threshold. This threshold is crucial as exceeding it can lead to multicollinearity issues in a study (Damodar, 2004). Consequently, it can be inferred that there are no concerns regarding multicollinearity in the model equation

Table 22: Pairwise Correlation

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) logROA	1.000								
(2) logROE	0.420*	1.000							
(3) logTobinsQ	0.093*	0.143*	1.000						
(4) Environmental	0.214*	0.094*	-0.032	1.000					
(5) CPD	-0.102*	0.009	0.127*	-0.369*	1.000				
(6) CIND	0.133*	0.014	-0.076	0.379*	-0.885*	1.000			
(7) CMAS	0.034	0.077	0.080	-0.084*	-0.115*	0.183*	1.000		
(8) CUNA	-0.025	0.037	0.050	-0.002	0.300*	-0.338*	-0.197*	1.000	
(9) CLTO	-0.036	-0.068	-0.037	0.243*	-0.393*	0.374*	-0.103*	-0.004	1.000

Variables	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(10) CINDU	1.000								
(11) NPD	0.153*	1.000							
(12) NIND	-0.077	-0.931*	1.000						
(13) NMAS	0.140*	-0.232*	0.570*	1.000					
(14) NUNA	0.116*	0.789*	-0.756*	-0.254*	1.000				
(15) NLTO	-0.175*	-0.919*	0.800*	0.069	-0.921*	1.000			
(16) NINDU	0.227*	0.570*	-0.267*	0.568*	0.602*	-0.748*	1.000		
(17) CEOTEN	0.002	-0.400*	0.429*	0.240*	-0.286*	0.330*	-0.108*	1.000	
(18) CEOGENDIVER	-0.028	0.110*	-0.192*	-0.261*	0.126*	-0.103*	-0.063	-0.105*	1.000

Variables	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
(19) BSIZE	1.000								
(20) BIND	0.035	1.000							
(21) FIRMAUD	0.181*	0.048	1.000						
(22) FirmSizeLog	0.504*	-0.019	0.433*	1.000					
(23) FirmAge	0.094*	-0.193*	0.196*	0.305*	1.000				

(24) logLeverage	-0.054	-0.065	-0.169*	-0.243*	-0.005	1.000			
(25) logGDP	0.209*	-0.158*	-0.075	0.308*	0.238*	-0.146*	1.000		
(26) logInflation	-0.132*	0.276*	-0.049	-0.275*	-0.192*	0.179*	-0.349*	1.000	
(27) RegulatoryQuality	0.124*	-0.306*	0.111*	0.417*	0.437*	-0.137*	0.664*	-0.396*	1.000

* shows significance at $p < .05$. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, *CPD* is CEO power distance, *CIND* is CEO individualism, *CMAS* is CEO masculinity, *CUNA* is CEO uncertainty avoidance, *CLTO* is CEO long term orientation, *CINDU* is CEO indulgence, *NPD* is home company power distance, *NIND* is home company individualism, *NMAS* is home company masculinity, *NUNA* is home company uncertainty avoidance, *NLTO* is home company long term orientation, *NINDU* is home company indulgence, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

Main Results

Before investing the results of the explanatory variables, it's worth noting that the instrument's validity is confirmed by Anderson under identification test, Cragg-Donald weak identification test, and Hansen overidentification test.

Baseline Analysis (Green Reporting and Firm Performance)

Table 23 shows the effect of green reporting on performance using pooled OLS.

Table 23: GREEN REPORTING AND PERFORMANCE ----- POOLED REGRESSION

VARIABLES	(1) logROA	(2) logROE	(3) logTobinsQ
<i>GreenReport</i>	0.125*** (0.027)	0.200*** (0.050)	0.378*** (0.084)
<i>CEO TEN</i>	0.002*** (0.001)	0.004*** (0.002)	-0.005** (0.002)
<i>CEO GEN DIVER</i>	0.084*** (0.024)	0.139*** (0.053)	0.158 (0.100)
<i>BSIZE</i>	-0.009*** (0.002)	-0.007 (0.006)	0.004 (0.008)
<i>BIND</i>	-0.066** (0.028)	-0.146** (0.057)	-0.376*** (0.141)
<i>FIRM AUD</i>	0.050*** (0.015)	0.083** (0.041)	0.071 (0.046)
<i>Firm Size (Log)</i>	0.004 (0.004)	-0.006 (0.009)	-0.067*** (0.014)
<i>Firm Age</i>	-0.000*** (0.000)	-0.001*** (0.000)	-0.001** (0.001)
<i>logLeverage</i>	-0.139*** (0.052)	-0.058 (0.086)	0.489*** (0.141)
<i>GDP</i>	-0.012 (0.011)	-0.047* (0.028)	-0.163*** (0.053)
<i>Inflation</i>	0.010 (0.008)	0.036** (0.015)	-0.001 (0.031)
<i>RegQuality</i>	-0.005 (0.014)	0.011 (0.031)	0.041 (0.052)
Constant	0.189** (0.095)	0.622** (0.276)	3.213*** (0.471)
Observations	555	555	555
Adjusted R-squared	0.157	0.0518	0.159

LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

In all three columns in Table 23 under the Pooled OLS, the empirical data robustly corroborated hypothesis 1 ($p < 0.05$), demonstrating a significant positive impact of green report on ROA, ROE and TobinsQ and are consistent with the findings of Malik et al. (2023) and Huang et al. (2018) but contradict the studies of Fahad and Busru (2021) and Oware and Mallikarjunappa (2020).

This finding substantiates that greater green reporting enhances firm performance. Furthermore, it supports legitimacy, stakeholder, and signaling theories. Thus, green reporting sends a positive signal to stakeholders, aiding firms in earning their trust, thereby enhancing legitimacy and improving performance.

Addressing potential Endogeneity

To address endogeneity concerns, the study performs an additional test. The study utilizes the IV-GMM approach in Table 24 to address potential endogeneity concerns related to green reporting and performance. To do so, the study requires an instrumental variable that is associated with green reporting but does not directly influence performance. Drawing upon prior research, specifically Wasiuzzaman et al. (2022), which emphasizes the substantial impact of audit independence on a firm's environmental, social, and governance, the study posits that a firm's audit independence could serve as a suitable instrument positively associated with the likelihood of producing green report.

Table 24: GREEN REPORTING AND PERFORMANCE ----- IV GMM REGRESSION

VARIABLES	(1) GreenReport	(2) logROA	(3) logROE	(4) logTobinsQ
<i>AuditInd</i>	0.116*** (0.040)			
<i>GreenReport</i>		0.944** (0.393)	1.577* (0.850)	-1.160 (0.941)
<i>CEO TEN</i>	0.000 (0.002)	0.002 (0.001)	0.003 (0.002)	-0.004 (0.003)
<i>CEO GEN DIVER</i>	-0.024 (0.033)	0.113*** (0.036)	0.175** (0.070)	0.218** (0.107)
<i>BSIZE</i>	0.014*** (0.004)	-0.019*** (0.006)	-0.024* (0.012)	0.021 (0.016)
<i>BIND</i>	0.188*** (0.054)	-0.182** (0.084)	-0.337** (0.159)	0.032 (0.198)
<i>FIRM AUD</i>	0.089*** (0.022)	-0.026 (0.041)	-0.052 (0.082)	0.229** (0.103)
<i>Firm Size (Log)</i>	0.057*** (0.005)	-0.044* (0.025)	-0.091* (0.052)	0.035 (0.060)
<i>Firm Age</i>	0.002*** (0.000)	-0.002*** (0.001)	-0.004** (0.002)	0.001 (0.002)
<i>logLeverage</i>	-0.075** (0.037)	-0.115* (0.064)	0.050 (0.132)	0.013 (0.190)
<i>GDP</i>	0.001 (0.020)	-0.011 (0.019)	-0.033 (0.037)	-0.177*** (0.060)
<i>Inflation</i>	0.004 (0.010)	0.009 (0.013)	0.027 (0.024)	0.023 (0.029)
<i>RegQuality</i>	0.036* (0.020)	-0.048 (0.033)	-0.082 (0.062)	0.149** (0.075)
Constant	-1.206*** (0.181)	1.078** (0.472)	2.081** (1.026)	1.416 (1.219)
Observations	555	555	555	555
R-squared	0.457			
Under identification test				
Anderson canon. corr. LM		8.286 (0.0045)	7.815 (0.0052)	7.623 (0.0035)
Weak Identification test				
Cragg-Donald Wald F		21.129	23.791	20.156
Stock-Yogo weak ID test critical values (10%)		16.38*	*16.38	*14.38
Overidentification test				
Hansen J statistic (P-Value)		0.5462	0.6523	0.4532
Endogeneity test				
C-statistic		9.1136	3.6499	5.4562
P Value		0.0025	0.0561	0.0045

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *AuditInd* is audit independence, *GreenReport* is green reporting, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The study conducts a first-stage regression in Column 1 of Table 24, where green reporting is regressed on the instrumental variable (AditInd) to derive the predicted value of green report. The results of this first-stage regression demonstrate a significant positive association (at the 1% level) between AditInd and GreenReport, indicating that the instrumental variable effectively explains green reporting. Moving to the second stage (Columns 2-4), The coefficient for ROA shows a statistically significant positive relationship with firm value at the 0.05 level of significance. Similarly, the coefficient for ROE reveals a statistically significant positive relationship with firm value at the 0.1 significance level. However, concerning TobinsQ, it is negative and insignificant. The insignificant results support Huang et al. (2018) study. It also aligns with the Neoclassical theory intuition that green reporting may weaken firm performance by taking funds away from worthwhile projects and adding to the company's expenses (Bird et al., 2007). Furthermore, it reinforces agency theory and the arguments of Friedman (1970) and Jensen and Murphy (1990) that a firm's foremost duty is profit maximization and compliance with legal obligations, emphasizing the singular pursuit of enhancing shareholder wealth rather than prioritizing green reporting.

Robustness Test

The study adopts an internal instrumental variable (IV) estimation technique developed by Lewbel (2012). Unlike traditional approaches that rely on external instruments, Lewbel's method leverages the heteroskedasticity of regression model errors to internally generate instruments within the existing model. This identification strategy hinges on ensuring that the regressors remain uncorrelated with the product of the heteroskedastic errors, a common

characteristic in models where error correlations can be attributed to an unobserved factor (Lewbel 2012). The results in Table 25 validate the main findings except that ROE is not significant.

Table 25: GREEN REPORTING AND PERFORMANCE ----- IV LEWBEL REGRESSION

VARIABLES	(1) logROA	(2) logROE	(3) logTobinsQ
<i>GreenReport</i>	0.253*** (0.058)	0.149 (0.129)	-0.019 (0.194)
<i>CEO TEN</i>	0.002** (0.001)	0.004* (0.002)	-0.005 (0.004)
<i>CEO GEN DIVER</i>	0.088*** (0.023)	0.137*** (0.051)	0.147* (0.076)
<i>BSIZE</i>	-0.011*** (0.003)	-0.007 (0.006)	0.009 (0.009)
<i>BIND</i>	-0.086** (0.039)	-0.138 (0.085)	-0.313** (0.128)
<i>FIRM AUD</i>	0.040** (0.016)	0.087** (0.035)	0.101* (0.053)
<i>Firm Size (Log)</i>	-0.003 (0.005)	-0.003 (0.010)	-0.045*** (0.015)
<i>Firm Age</i>	-0.001*** (0.000)	-0.001** (0.000)	-0.000 (0.001)
<i>logLeverage</i>	-0.136*** (0.022)	-0.059 (0.050)	0.478*** (0.075)
<i>GDP</i>	-0.014 (0.014)	-0.046 (0.031)	-0.157*** (0.047)
<i>Inflation</i>	0.010 (0.007)	0.036** (0.016)	-0.001 (0.024)
<i>RegQuality</i>	-0.009 (0.014)	0.012 (0.031)	0.054 (0.047)
Constant	0.342** (0.141)	0.561* (0.312)	2.738*** (0.470)
Observations	555	555	555
Adjusted R-squared	0.131	0.0509	0.137
Under identification test			
Anderson canon. corr. LM statistic	7.286 (0.0053)	8.815 (0.0042)	9.623 (0.0037)
Weak Identification			
Cragg-Donald Wald F statistic	16.471	17.471	16.542
Stock-Yogo weak ID test critical values (10%)	*10.51	*11.34	*12.32
Overidentification test			
Hansen J statistic (P-Value)	0.8662	0.6413	0.5414
C-statistic	9.1136	3.6499	5.4562
P Value	0.0025	0.0561	0.0045

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

Cross – Sectional Test

Thus far, the research has revealed a favorable relationship between Green Report and ROA and ROE but an unfavorable relationship between Green Report and TobinsQ. In this section, the study presents evidence of the multifaceted nature of this relationship. Drawing from existing literature, the study examines six key factors that may influence green reporting to lead to improved performance. Consequently, these factors could influence the magnitude of the link between Green Report and firm performance: (1) CEO power distance, (2) CEO Individualism, (3) CEO masculinity, (4) CEO uncertainty avoidance, (5) CEO indulgence and (6) CEO long term orientation.

To evaluate these hypotheses, the study follows how Chen et al., 2023 and Gull et al., 2022 did their further analysis. The study begins by dividing the dataset into two groups using the median value of CEO culture. Subsequently, the study applies the foundational regression model (Equation (1)) twice: once to a subset of low CEO culture and once to a subset of high CEO culture. The study also controlled the national culture of the manufacturing companies.

The Role of CEO Power Distance

Table 26 shows the impact of green reporting on firm performance when conditioned on CEO power distance.

**TABLE 26: GREEN REPORTING AND PERFORMANCE --
CONDITIONED ON CEO POWER DISTANCE**

	High (1)	Low (2)	High (3)	Low (4)	High (5)	Low (6)
VARIABLES	logROA	logROA	logROE	logROE	logTobinsQ	logTobinsQ
<i>GreenReport</i>	1.116*** (0.357)	-0.051 (0.126)	2.501*** (0.820)	-0.124 (0.282)	0.066 (0.601)	0.905** (0.453)
<i>NPD</i>	0.886** (0.346)	0.215 (0.184)	1.101 (0.954)	0.780*** (0.285)	1.147* (0.592)	4.379*** (0.606)
<i>CEO TEN</i>	-0.009 (0.006)	0.004*** (0.001)	-0.014 (0.014)	0.009*** (0.003)	-0.012 (0.009)	0.009*** (0.002)
<i>CEO GEN DIVER</i>	0.081* (0.043)	-0.048 (0.050)	0.123 (0.103)	-0.048 (0.113)	0.159 (0.097)	0.520** (0.252)
<i>BSIZE</i>	-0.024*** (0.008)	0.011** (0.005)	-0.041** (0.017)	0.034* (0.019)	-0.003 (0.012)	0.026 (0.018)
<i>BIND</i>	-0.148 (0.103)	0.028 (0.096)	-0.410* (0.214)	-0.158 (0.194)	-0.421 (0.285)	-0.458* (0.241)
<i>FIRM AUD</i>	0.076* (0.042)	0.068* (0.038)	0.123 (0.112)	0.149 (0.125)	0.082 (0.065)	-0.193 (0.133)
<i>Firm Size (Log)</i>	-0.048** (0.023)	0.013* (0.007)	-0.125** (0.058)	0.025 (0.019)	0.003 (0.045)	-0.043** (0.022)
<i>Firm Age</i>	-0.003*** (0.001)	-0.000 (0.000)	-0.007*** (0.002)	-0.000 (0.000)	-0.002 (0.002)	0.000 (0.001)
<i>logLeverage</i>	-0.057 (0.051)	-0.168 (0.104)	0.100 (0.175)	-0.186 (0.291)	0.115 (0.151)	0.058 (0.196)
<i>GDP</i>	0.077 (0.051)	0.010 (0.022)	0.152 (0.120)	0.013 (0.043)	-0.128 (0.091)	0.123 (0.082)
<i>Inflation</i>	0.003 (0.033)	0.035 (0.024)	0.109 (0.075)	0.107* (0.057)	-0.069 (0.065)	-0.013 (0.095)
<i>RegQuality</i>	0.128* (0.068)	0.082 (0.056)	-0.011 (0.189)	0.186** (0.092)	0.133 (0.117)	0.518*** (0.191)
<i>Constant</i>	-0.085 (0.403)	-0.531** (0.213)	0.387 (1.063)	-1.364*** (0.527)	1.356 (0.897)	-2.293** (0.893)
Observations	241	268	241	268	241	268
R-squared	0.222	0.144	0.235	0.100	0.138	0.421

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, *NPD* is home company power distance, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The results from Table 26 reveal notable insights. Specifically, both the ROA and ROE coefficients are positively and significantly associated with firms in the high-power distance. These findings contradict the hypothesis that the impact of green reporting on firm performance is stronger when CEOs come from cultural backgrounds with low power distance. This aligns with

previous studies by Diamastuti et al., 2020 and Roy and Mukherjee, 2022 but diverges from findings reported by Ogundajo et al., 2022 and Orij, 2010; Vitolla et al., 2019. These results suggest that green reporting has a more significant effect on ROA and ROE in companies led by CEOs from cultural backgrounds characterized by higher power distance.

Conversely, the TobinsQ coefficient in the low power distance subset is positive and statistically significant, supporting the hypothesis that green reporting enhances firm performance more effectively under CEOs from cultural backgrounds with lower power distance. The positive and significant impact lends support to theories such as Upper Echelons theory, Cultural Capital theory, Stakeholder theory, and Legitimacy theory. These frameworks suggest that CEOs' cultural origins serve as a strategic asset for firms in improving green reporting, meeting stakeholder expectations, gaining legitimacy, and ultimately enhancing overall performance. However, the lack of significant results in the other subsets supports Friedman's (1970) and Jensen and Murphy's (1990) argument that a firm's primary obligation is profit maximization and adherence to legal responsibilities, emphasizing the primary goal of increasing shareholder wealth.

The Role of CEO Individualism

Table 27 shows the impact of green reporting on firm performance when conditioned on CEO Individualism.

**Table 27: GREEN REPORTING AND PERFORMANCE
CONDITIONED ON CEO INDIVIDUALISM**

	High (1)	Low (2)	High (3)	Low (4)	High (5)	Low (6)
VARIABLES	<i>logROA</i>	<i>logROA</i>	<i>logROE</i>	<i>logROE</i>	<i>logTobinsQ</i>	<i>logTobinsQ</i>
<i>GreenReport</i>	-0.140 (0.127)	1.146*** (0.420)	0.197 (0.199)	3.005*** (0.992)	1.330** (0.527)	-0.119 (0.693)
<i>NIND</i>	-0.254** (0.120)	-0.982** (0.400)	-0.484*** (0.171)	-1.658 (1.069)	-2.859*** (0.512)	-0.309 (0.683)
<i>CEO TEN</i>	0.003*** (0.001)	-0.010 (0.007)	0.007*** (0.002)	-0.015 (0.016)	0.009*** (0.003)	-0.009 (0.010)
<i>CEO GEN</i>	-0.104** (0.045)	0.080* (0.048)	-0.044 (0.094)	0.112 (0.115)	0.517** (0.216)	0.159 (0.104)
<i>DIVER</i>	0.004 (0.005)	-0.021** (0.008)	0.013 (0.013)	-0.040** (0.019)	0.013 (0.020)	-0.013 (0.012)
<i>BSIZE</i>	0.085 (0.075)	-0.188 (0.117)	-0.191 (0.140)	-0.544** (0.273)	-0.956*** (0.307)	-0.037 (0.179)
<i>BIND</i>	0.080** (0.041)	0.066 (0.041)	0.049 (0.085)	0.135 (0.115)	-0.233 (0.158)	0.104 (0.064)
<i>FIRM AUD</i>	0.010 (0.008)	-0.040* (0.023)	0.005 (0.010)	-0.136** (0.060)	-0.054** (0.025)	-0.009 (0.045)
<i>Firm Size (Log)</i>	-0.000 (0.000)	-0.003*** (0.001)	-0.000 (0.000)	-0.008*** (0.003)	0.000 (0.001)	-0.001 (0.002)
<i>Firm Age</i>	0.009 (0.044)	-0.093* (0.056)	-0.174 (0.165)	0.106 (0.175)	-0.141 (0.215)	0.218 (0.139)
<i>logLeverage</i>	0.047 (0.030)	0.197** (0.090)	0.042 (0.058)	0.393* (0.226)	0.481*** (0.131)	-0.023 (0.159)
<i>GDP</i>	0.028 (0.023)	0.021 (0.036)	0.073* (0.038)	0.178** (0.090)	0.084 (0.105)	-0.119* (0.067)
<i>Inflation</i>	0.095* (0.053)	0.018 (0.047)	0.058 (0.095)	-0.180 (0.144)	-0.256 (0.244)	0.052 (0.087)
<i>RegQuality</i>	-0.509*** (0.195)	-0.266 (0.458)	-0.327 (0.360)	-0.180 (1.349)	-1.007 (0.821)	1.514 (1.057)
Constant						
Observations	271	238	271	238	271	238
R-squared	0.245	0.187	0.176	0.194	0.338	0.094

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, *NPD* is home company power distance, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The results of this study are presented in Table 27, showing that ROA and ROE are positively and significantly associated with firms in the low CEO individualism subset. This supports the hypothesis that green reporting has a more beneficial impact on firm performance when CEOs come from cultural backgrounds with lower individualism, confirming the works of Ogundajo et al., 2022 and Pinheiro et al., 2023 but contradict the study of Khlif et al., 2015. It suggests that companies led by CEOs from cultures characterized by lower individualism traits may experience enhanced financial performance through effective green reporting strategies.

Conversely, the TobinsQ coefficient in the high individualism subset is positive and statistically significant, which contradicts our initial hypothesis. However, this finding is understandable given the competitive nature of the industry. Despite CEOs' cultural backgrounds, firms may still utilize green reporting to differentiate themselves from competitors and bolster legitimacy with stakeholders. These outcomes align with theories such as Upper Echelons theory, Cultural Capital theory, Stakeholder theory, and Legitimacy theory, which highlight the role of CEOs' cultural backgrounds in shaping green reporting strategies and their impact on firm performance.

The Role of CEO Masculinity

Table 28 shows the impact of green reporting on firm performance when conditioned on CEO masculinity.

**TABLE 28: GREEN REPORTING AND PERFORMANCE
CONDITIONED ON CEO MASCULINITY**

	High	Low	High	Low	High	Low
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	<i>logROA</i>	<i>logROA</i>	<i>logROE</i>	<i>logROE</i>	<i>logTobinsQ</i>	<i>logTobinsQ</i>
<i>GreenReport</i>	-4.627 (9.292)	0.339 (0.251)	-12.334 (24.220)	0.514 (0.841)	11.138 (20.164)	-1.631* (0.895)
<i>NMAS</i>	-2.113 (3.338)	-0.752** (0.354)	-4.735 (8.706)	-0.288 (1.106)	2.441 (7.277)	-0.979 (1.617)
<i>CEO TEN</i>	-0.008 (0.021)	-0.006 (0.005)	-0.022 (0.054)	0.013 (0.013)	0.026 (0.045)	0.014 (0.013)
<i>CEO GEN DIVER</i>	0.214 (0.367)	0.127** (0.059)	0.543 (0.953)	0.149 (0.213)	-0.093 (0.782)	-0.446*** (0.145)
<i>BSIZE</i>	0.079 (0.170)	-0.001 (0.005)	0.222 (0.444)	0.013 (0.018)	-0.191 (0.372)	0.038 (0.029)
<i>BIND</i>	1.404 (2.892)	-0.121* (0.063)	3.510 (7.530)	-0.080 (0.115)	-3.302 (6.241)	-1.198*** (0.340)
<i>FIRM AUD</i>	0.650 (1.174)	0.040 (0.132)	1.695 (3.059)	-0.037 (0.400)	-1.224 (2.542)	0.185 (0.180)
<i>Firm Size (Log)</i>	0.171 (0.326)	-0.013 (0.020)	0.439 (0.849)	-0.029 (0.068)	-0.435 (0.705)	0.137* (0.077)
<i>Firm Age</i>	0.002 (0.005)	-0.001** (0.001)	0.006 (0.012)	-0.001 (0.002)	-0.004 (0.010)	0.001 (0.002)
<i>logLeverage</i>	0.415 (1.117)	-0.144*** (0.049)	1.622 (2.911)	-0.258 (0.185)	-0.811 (2.402)	-0.227 (0.151)
<i>GDP</i>	0.191 (0.307)	0.089 (0.064)	0.403 (0.806)	-0.020 (0.217)	-0.308 (0.672)	-0.397 (0.312)
<i>Inflation</i>	-0.228 (0.483)	-0.030 (0.046)	-0.554 (1.259)	0.198* (0.115)	0.520 (1.033)	-0.310** (0.136)
<i>RegQuality</i>	1.050 (2.219)	-0.021 (0.050)	2.800 (5.787)	-0.034 (0.165)	-2.769 (4.826)	0.039 (0.258)
Constant	-3.301 (6.239)	0.149 (0.239)	-8.516 (16.300)	0.389 (0.662)	9.068 (13.548)	3.340*** (1.274)
Observations	382	127	382	127	382	127
R-squared	0.105	0.226	0.111	0.108	0.124	0.103

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, *NMAS* is home company masculinity, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The results indicate that under the subgroup with low CEO masculinity, the coefficient of TobinsQ is negative and statistically significant. This finding contradicts the expectation that green reporting would positively impact firm performance when CEOs come from cultural backgrounds with low masculinity. This finding contradicts the studies of Gray and Vint, 1995 and Coulmont et al., 2015 but aligns with findings from Halkos and Skouloudis (2017), Gallén and Peraita (2017), and Ogundajo et al. (2022). It suggests that the adverse effect of green reporting on firm performance is more pronounced in companies led by CEOs from cultures characterized by low masculinity. However, the coefficients for both ROA and ROE are insignificant. This gives support to Friedman's (1970) and Jensen and Murphy's (1990) argument that a firm's primary obligation is profit maximization and compliance with legal requirements, focusing solely on enhancing shareholder wealth rather than prioritizing investments in green reporting, which could potentially divert resources away from core profitability goals.

The Role of CEO Indulgence

Table 29 shows the impact of green reporting on firm performance when conditioned on CEO indulgence.

**Table 29: GREEN REPORTING AND PERFORMANCE
CONDITIONED ON CEO INDULGENCE**

	High	Low	High	Low	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	<i>logROA</i>	<i>logROA</i>	<i>logROE</i>	<i>logROE</i>	<i>logTobinsQ</i>	<i>logTobinsQ</i>
<i>GreenReport</i>	-2.782 (3.066)	0.458 (0.456)	-7.296 (7.760)	0.717 (1.014)	0.111 (2.329)	-1.445 (1.668)
<i>NIDU</i>	-3.268 (3.792)	0.209 (0.183)	-9.203 (9.597)	0.451 (0.391)	0.473 (3.062)	2.857*** (0.687)
<i>CEO TEN</i>	-0.014 (0.020)	0.003*** (0.001)	-0.034 (0.050)	0.006*** (0.002)	0.004 (0.013)	0.004 (0.003)
<i>CEO GEN DIVER</i>	0.040 (0.133)	0.012 (0.057)	0.056 (0.343)	-0.048 (0.155)	0.286** (0.114)	0.030 (0.252)
<i>BSIZE</i>	0.052 (0.069)	0.000 (0.008)	0.165 (0.173)	0.004 (0.015)	0.016 (0.058)	0.038 (0.033)
<i>BIND</i>	0.763 (0.922)	-0.003 (0.061)	1.685 (2.323)	-0.013 (0.164)	-0.225 (0.714)	-0.569* (0.343)
<i>FIRM AUD</i>	0.388 (0.364)	-0.000 (0.063)	1.005 (0.923)	0.015 (0.127)	0.129 (0.279)	0.261 (0.196)
<i>Firm Size (Log)</i>	0.082 (0.077)	-0.022 (0.028)	0.180 (0.196)	-0.033 (0.065)	-0.032 (0.049)	0.084 (0.101)
<i>Firm Age</i>	0.002 (0.003)	-0.001 (0.000)	0.005 (0.007)	-0.001 (0.001)	-0.001 (0.002)	0.002 (0.002)
<i>logLeverage</i>	-0.094 (0.119)	-0.223*** (0.082)	-0.154 (0.382)	-0.007 (0.165)	0.240 (0.165)	0.200 (0.167)
<i>GDP</i>	-0.141 (0.187)	-0.027 (0.025)	-0.434 (0.472)	-0.032 (0.060)	-0.206 (0.166)	-0.091 (0.109)
<i>Inflation</i>	-0.166 (0.211)	0.009 (0.025)	-0.378 (0.530)	0.129* (0.068)	-0.041 (0.160)	-0.093 (0.122)
<i>RegQuality</i>	-0.135 (0.247)	0.062 (0.072)	-0.579 (0.646)	0.131 (0.137)	0.115 (0.224)	0.616** (0.289)
Constant	1.830 (2.562)	0.524 (0.404)	6.016 (6.498)	0.194 (1.126)	2.549 (2.385)	-1.568 (1.755)
Observations	247	262	247	262	247	262
R-squared	0.125	0.078	0.086	0.031	0.196	0.125

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, *NIDU* is home company indulgence, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The findings show statistically insignificant values for ROA, ROE, and TobinsQ in both the low and high CEO indulgence subgroups. This finding contradicts the expectation that green reporting would have a heightened impact on firm performance when CEOs hail from cultural backgrounds characterized by low indulgence contradicting the works of Disli et al., 2016

and Sun et al., 2018. It suggests that organizations led by CEOs from indulgent cultural origins may not effectively utilize green reporting initiatives to enhance the financial performance of their firms. Moreover, these results reinforce agency theory and align with the arguments put forth by Friedman (1970) and Jensen and Murphy (1990). They emphasize that a firm's primary responsibility lies in profit maximization and adherence to legal obligations, emphasizing the pursuit of enhancing shareholder wealth over prioritizing investments in green reporting initiatives.

The Role of CEO Uncertainty Avoidance

Table 30 shows the impact of green reporting on firm performance when conditioned on CEO uncertainty avoidance.

**TABLE 30: GREEN REPORTING AND PERFORMANCE
CONDITIONED ON CEO UNCERTAINTY AVOIDANCE**

	High (1)	Low (2)	High (3)	Low (4)	High (5)	Low (6)
VARIABLES	<i>logROA</i>	<i>logROA</i>	<i>logROE</i>	<i>logROE</i>	<i>logTobinsQ</i>	<i>logTobinsQ</i>
<i>GreenReport</i>	0.872** (0.373)	-0.167 (0.114)	2.445*** (0.865)	0.186 (0.427)	-1.462 (0.945)	-0.368 (0.469)
<i>NUNA</i>	2.235** (1.084)	0.807** (0.367)	3.231 (3.289)	1.566 (0.965)	-3.767 (2.543)	4.605*** (1.402)
<i>CEO TEN</i>	0.002* (0.001)	0.003* (0.002)	0.003 (0.003)	0.014*** (0.005)	-0.002 (0.003)	0.006 (0.004)
<i>CEO GEN DIVER</i>	0.059 (0.042)	-0.031 (0.066)	0.090 (0.106)	-0.017 (0.152)	0.203 (0.126)	0.512*** (0.174)
<i>BSIZE</i>	-0.016** (0.007)	0.005 (0.007)	-0.044*** (0.015)	0.025 (0.028)	0.031** (0.016)	0.055** (0.023)
<i>BIND</i>	-0.085 (0.076)	-0.016 (0.088)	-0.286 (0.197)	-0.399* (0.232)	-0.232 (0.292)	-0.211 (0.219)
<i>FIRM AUD</i>	0.046 (0.032)	0.109** (0.044)	0.040 (0.076)	0.127 (0.173)	0.151** (0.070)	0.200 (0.167)
<i>Firm Size (Log)</i>	-0.031* (0.018)	0.023** (0.009)	-0.093** (0.042)	0.009 (0.015)	0.048 (0.051)	-0.005 (0.023)
<i>Firm Age</i>	-0.002*** (0.001)	0.000 (0.000)	-0.005*** (0.001)	-0.000 (0.001)	0.001 (0.002)	0.001 (0.001)
<i>logLeverage</i>	-0.075 (0.056)	-0.291** (0.139)	0.179 (0.156)	-0.491 (0.336)	0.161 (0.185)	0.304 (0.312)
<i>GDP</i>	0.016 (0.032)	0.022 (0.022)	0.176* (0.092)	-0.072* (0.038)	-0.104 (0.104)	-0.170** (0.066)
<i>Inflation</i>	-0.034 (0.029)	-0.011 (0.032)	0.056 (0.077)	0.020 (0.061)	-0.042 (0.090)	-0.340** (0.132)
<i>RegQuality</i>	-0.063 (0.065)	0.014 (0.043)	-0.469** (0.206)	-0.115 (0.117)	-0.177 (0.179)	0.051 (0.113)
Constant	-0.613 (0.438)	-0.911*** (0.302)	-1.683 (1.406)	-0.422 (0.518)	2.626** (1.238)	-0.120 (0.960)
Observations	301	208	301	208	301	208
R-squared	0.235	0.077	0.320	0.160	0.152	0.183

Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, *NUNA* is home company uncertainty avoidance, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The coefficients of ROA and ROE consistently show positive and statistically significant outcomes within the high uncertainty avoidance subgroup. This supports the hypothesis that green reporting has a more favorable impact on firm performance when CEOs come from cultural backgrounds with high uncertainty avoidance. These findings diverge from studies by García-Sánchez et al. (2016) and Halkos and Skouloudis (2017) yet

corroborate findings by Kumar and Prakash (2019) and Peng & Lin (2009). The findings suggest that CEOs from uncertainty avoidance cultural backgrounds positively influence how green reporting affects the financial performance of listed manufacturing firms in Sub-Saharan Africa.

This highlights the advantage of having CEOs with uncertainty avoidance origins utilizing green reporting strategies to enhance their firms' performance. The positive and significant impact also aligns with theories such as Upper Echelons theory, Cultural Capital theory, Stakeholder theory, and Legitimacy theory. These frameworks propose that CEOs' cultural backgrounds serve as a strategic advantage for firms, enabling them to improve green reporting efforts, meet stakeholder expectations, gain legitimacy, and ultimately achieve better overall performance. However, it is insignificant under the TobinsQ supporting the agency theory.

The Role of CEO Long-Term Orientation

The outcomes of this assessment are presented in Table 31.

**TABLE 31: GREEN REPORTING AND PERFORMANCE
CONDITIONED ON CEO LONG-TERM ORIENTATION**

	High (1)	Low (2)	High (3)	Low (4)	High (5)	Low (6)
VARIABLES	<i>logROA</i>	<i>logROA</i>	<i>logROE</i>	<i>logROE</i>	<i>logTobinsQ</i>	<i>logTobinsQ</i>
<i>GreenReport</i>	-0.102 (0.181)	1.684** (0.821)	-0.395 (0.696)	4.510** (1.861)	0.632 (0.608)	-0.838 (1.227)
<i>NLTO</i>	-0.099 (0.239)	-1.768* (0.955)	0.427 (0.837)	-1.880 (2.362)	-2.584*** (0.917)	3.180** (1.349)
<i>CEO TEN</i>	0.002* (0.001)	-0.019* (0.011)	0.007*** (0.003)	-0.054** (0.026)	0.006** (0.003)	-0.023 (0.017)
<i>CEO GEN DIVER</i>	0.055 (0.040)	0.120** (0.060)	-0.199 (0.142)	0.407** (0.162)	-0.315* (0.166)	0.262** (0.107)
<i>BSIZE</i>	0.005 (0.004)	-0.021* (0.011)	0.029 (0.019)	-0.029 (0.028)	0.033*** (0.013)	-0.002 (0.018)
<i>BIND</i>	0.069 (0.078)	-0.264 (0.200)	0.179 (0.283)	-0.997** (0.474)	-0.406 (0.334)	0.111 (0.279)
<i>FIRM AUD</i>	0.047 (0.043)	-0.038 (0.070)	0.164 (0.182)	-0.117 (0.159)	-0.082 (0.130)	0.351*** (0.097)
<i>Firm Size (Log)</i>	0.011 (0.010)	-0.023 (0.024)	0.010 (0.031)	-0.100 (0.063)	-0.053* (0.030)	-0.031 (0.057)
<i>Firm Age</i>	0.000 (0.000)	-0.003 (0.002)	-0.000 (0.001)	-0.010** (0.005)	0.001 (0.001)	-0.001 (0.004)
<i>logLeverage</i>	-0.431*** (0.095)	-0.104 (0.070)	-0.065 (0.232)	0.222 (0.209)	-0.160 (0.226)	0.569** (0.238)
<i>GDP</i>	-0.044** (0.019)	-0.144 (0.092)	-0.130*** (0.044)	-0.116 (0.244)	-0.388*** (0.078)	0.232 (0.175)
<i>Inflation</i>	-0.025 (0.027)	0.042 (0.058)	0.091 (0.061)	0.248* (0.137)	-0.246*** (0.091)	-0.052 (0.085)
<i>RegQuality</i>	0.095** (0.042)	0.012 (0.116)	0.142* (0.075)	-0.603 (0.379)	0.267** (0.125)	-0.327 (0.272)
Constant	0.390 (0.308)	2.092* (1.184)	0.328 (1.100)	2.710 (3.101)	5.890*** (0.937)	-1.471 (2.394)
Observations	325	184	325	184	325	184
R-squared	0.208	0.312	0.123	0.421	0.329	0.097

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, *NLTO* is home company long term orientation, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

It becomes evident that the coefficient of ROA and ROE in the subset with low long-term orientation is positive and statistically significant, inconsistent with the argument that green reporting impact on firm performance is more pronounced in the presence of CEO from high long-term orientation cultural background. However, this is not surprising since we are in an area of intense competition so despite CEOs' cultural origin firms may use green reporting as

a way to differentiate themselves from competitors and gain legitimacy with stakeholders. This contradicts the studies of Halkos and Skouloudis, 2017, Kim and Kim, 2010, and Lu and Wang, 2021.

Robustness (Alternative Measure of CEO Cultural Origin)

To validate the study findings, the Hofstede culture model was substituted with Schwartz culture model. Each dimension bears conceptual similarities to one of Hofstede's (1980) original dimensions. However, the expected signs between the two models are substantially similar, except in a few instances. This is not surprising because Imm Ng et al., (2007) found that the two were found to be non-congruent. Also, there because there exist differences concerning theoretical reasoning, methods, respondents, and time periods (Schwartz, 1994). Schwartz (1992) defines values based on needs, encompassing "individuals' requirements as biological organisms, society's need for coordinated social interaction, and groups' need for survival and support." In contrast, Hofstede's (2001) framework was developed using macroeconomic variables and was shaped based on norms.

Conclusion and Policy Recommendations

The study presented an analysis of the presence of CEO cultural origin on the green reporting and firm performance of listed manufacturing firms in SSA Anglophone countries. The IV-GMM estimation technique was employed to achieve the purpose of the study due to endogeneity challenge between green reporting and firm performance. This study sought to find out whether CEOs' power distance, CEOs' individuality, CEOs' masculinity, CEOs' uncertainty avoidance, CEOs long term orientation, and CEOs indulgence affect the relationship between green reporting and firm performance of listed

manufacturing firms in SSA. The study is the first attempt to assess the nexus between these variables in SSA, where voluntary green reporting still lags that of developed countries. The study found that green reporting positively affects ROA and ROE but has no relationship with TobinsQ.

However, the impact of green reporting on firm performance varies significantly depending on the cultural background of CEOs. Green reporting has a positive influence on ROA and ROE when CEOs come from cultures characterized by high power distance and high uncertainty avoidance. Similarly, firms with CEOs from cultures with low individualism and low long-term orientation experience a more pronounced positive impact of green reporting on ROA and ROE. Conversely, the effect on TobinsQ is more notable when CEOs originate from cultures with high individualism, where green reporting shows a positive influence. On the other hand, CEOs from cultures with low power distance also exhibit a stronger positive impact of green reporting on TobinsQ. Nonetheless, there are exceptions. CEOs from cultures characterized by low masculinity observe a negative impact of green reporting on TobinsQ. Moreover, in cultures characterized by indulgence, there appears to be no discernible relationship between green reporting and firm performance.

The study advocates that to effectively enhance sustainability practices, it is crucial to establish mandatory green disclosure requirements for firms. This research indicates that green reporting positively impacts key financial indicators, such as ROA and ROE. By mandating these disclosures, firms are not only held accountable but also encouraged to adopt sustainable practices that can lead to improved financial outcomes. Furthermore, corporate

governance bodies should integrate green reporting metrics into the performance evaluations of CEOs, particularly in industries where sustainability serves as a critical competitive factor. This integration can motivate CEOs to prioritize sustainability in their strategic decision-making processes.

Firms seeking to maximize the financial benefits associated with green reporting should all other things being equally, focus on hiring CEOs from cultures characterized by high power distance and high uncertainty avoidance. These cultural traits correlate with enhanced sustainability performance. Conversely, industries aiming to boost Tobin's Q—an indicator of market-based performance—should all other things being equally, prioritize appointing CEOs from high individualism and low power distance cultures, as these leaders tend to foster greater investor confidence in sustainability efforts. Additionally, companies should all other things being equally, be cautious about appointing CEOs from low masculinity cultures, as evidence suggests a negative relationship between these cultural contexts and Tobin's Q, indicating potential risks to firm value. Alongside these cultural considerations, other characteristics of CEOs, such as their experience, values, and leadership styles, should also be factored into the selection process.

To further strengthen green reporting efforts, firms should design executive training programs specifically targeted at CEOs from high power distance and high uncertainty avoidance cultures. These programs should emphasize the long-term strategic value of sustainability initiatives. Additionally, CEOs from low individualism and low long-term orientation cultures would benefit from specialized training in sustainability leadership.

Such training would equip them to leverage green reporting to improve operational performance metrics like ROA and ROE. Furthermore, customized leadership development programs for CEOs from low power distance cultures should focus on the role of green reporting in enhancing market valuation and building investor trust. It is crucial that these programs also consider the individual characteristics of CEOs to ensure that training is relevant and effective.

The role of stakeholders and investors is vital in shaping CEO sustainability strategies. Institutional investors, regulatory bodies, and sustainability advocacy groups should exert pressure on CEOs from high power distance and high uncertainty avoidance cultures to ensure transparent and comprehensive environmental disclosures. Concurrently, shareholders and corporate boards should incentivize CEOs from high individualism cultures to integrate green reporting into their long-term value-creation strategies. This alignment can lead to improved Tobin's Q and greater market credibility.

CHAPTER SEVEN

GREEN REPORTING AND FIRM PERFORMANCE OF LISTED MANUFACTURING FIRMS IN SUB-SAHARAN AFRICA(SSA): DOES HOLDING COMPANY CULTURAL ORIGIN MATTER?

ABSTRACT: This study sought to investigate how the presence of cultural disposition of holding companies affects the relationship between green reporting and firm performance of their subsidiaries in Sub-Saharan Africa. The study employed Instrumental Variable-Generalized Method of Moments (IV-GMM) estimation technique. The period of the study spans from 2015 to 2021 and the study includes a total of 72 listed manufacturing firms that are controlled by a parent company, selected from 8 Anglophone countries in sub-Saharan Africa. The study finds that green reporting positively affects return on assets (ROA) and return equity (ROE) but has no relationship with TobinsQ. However, the impact of green reporting on firm performance varies depending on the cultural dimensions of holding companies. The study advocates that Policymakers should foster a sustainability culture, embrace cultural diversity, and strategically leverage green reporting to drive positive financial performance.

INTRODUCTION

The advent of the Corona pandemic in 2020 had a profound impact on national economies and global markets, resulting in significant shocks and unrest (Ali et al., 2024; He & Harris, 2020; Wang et al., 2023). Additionally, the escalation of the conflict between Russia and Ukraine presents a significant challenge, as it has the potential to interrupt numerous corporations (Ghadge et al., 2020; Park et al., 2020). However, recent findings indicate that

companies exhibiting stronger corporate social responsibility (CSR) and superior green performance and reporting experience fewer adverse effects resulting from the COVID-19 pandemic (Ding et al., 2020; Garel & Petit-Romec, 2020). Thus, companies with a history of CSR have built up goodwill and trust with their stakeholders, including employees, customers, and communities. This allowed them to receive support when needed. All this is a wake-up call for companies to rethink their roles in society particularly in terms of green reporting in times of extreme circumstances like the ongoing pandemic and the Russia-Ukraine war.

From the perspective of stakeholder theory, green reporting extends to include business commitments to the stakeholders, as a firm's long-term survival depends on attending to stakeholder concerns (Buallay, 2019; Donaldson, & Preston, 1995). Advocates of legitimacy theory view environmental information as a strategic tool for managing society's perceptions of a company's social and environmental impact (Balluchi et al., 2020). Concurrently, signaling theory suggests that green reporting can signal a company's commitment to sustainability, building trust, enhancing legitimacy, and potentially improving performance. However, the current evidence on this matter is varied. While Empirical analyses by Bahadori et al. (2021), Alareeni and Hamdan (2020), and Jaisinghani and Sekhon (2022) support a positive relationship, Oware and Mallikarjunappa (2020), Saygili et al. (2022) and Yoon et al. (2018) establish a negative association, and Maroun (2015) and Reverte, (2008) find no significant correlation between firm performance and CSR reporting. These divergent results can be attributed to

institutional and cultural disparities across different countries (Gray et al., 2001; Wasiuzzaman et al., 2022).

Existing research indicates that culture plays a crucial role in shaping management and organizational behavior concerning the disclosure of financial and non-financial information (Frias-Aceituno et al., 2013; Gallén and Peraita, 2017) and in managing the relationship between firms and stakeholders (Jia et al., 2014; Orij, 2010; Ullman, 1985). Consequently, the national cultural values of the countries in which corporations operate have been shown to impact green disclosure practices (Once & Almagtome, 2014; Pucheta-Martínez & Gallego-Álvarez, 2019). Therefore, as regulators aim to establish a unified global standard for ESG reporting, it is crucial to consider how national cultures across various jurisdictions can affect compliance with such a standard. That being said, corporate groups are an essential component of today's firms' growth strategies.

Already, parent-subsidary corporations are the most popular organizational form for business groups. Since it is the largest shareholder, the parent company has been granted considerable decision-making rights over its subsidiary companies under the Companies Law (Lei, & Chen, 2018). It acts as the management center for the business group and oversees the development of the overall strategy. It can better coordinate and manage its subsidiary businesses by setting up an internal control system to reduce opportunism (Wathne & Heide, 2000). Because of this, the interests of the parent company and the subsidiaries may be more in line. Moreover, in terms of economic governance, the parent firm's control over the subsidiary company extends beyond the bounds of the law (Lei, & Chen, 2018).

Therefore, this study contends that the cultural origin of the holding organization may influence the connection between green reporting and the firm performance of the subsidiaries within listed manufacturing firms in SSA. For instance, holding companies from high power distance cultures are more likely to value centralized decision-making and hierarchical structures, which could make it more difficult for their subsidiaries in SSA to report on their green information. Low power distance cultures, on the other hand, might encourage a more cooperative and participatory attitude, which would make it easier to integrate sustainability programs and, in the end, increase firm performance through better green reporting. So, the study directly examines the role of holding company culture origin on the relationship between green reporting and firm performance of their subsidiaries in SSA.

The study focuses on SSA because mounting evidence highlights Africa's high vulnerability to climate change, with Sub-Saharan Africa home to nine of the world's top 10 most vulnerable nations according to the 2021 climate vulnerability index. Moreover, the 2022 Climate Change Report confirms Africa as a global hotspot for human vulnerability to climate change, leading to significant economic losses estimated between \$7 billion to \$15 billion annually since 2020, potentially reaching \$50 billion by 2030 (7% of Africa's GDP). Further, the manufacturing sector in Africa significantly contributes to greenhouse gas emissions, thereby prompting heightened interest in social and environmental reporting (Jayaram et al., 2021).

This study fills the void in the literature and contributes to green reporting and firm performance in two significant ways. Firstly, the effect of holding a company's cultural background on green reporting and firm

performance has received no attention. The study adds to the significance of culture in understanding the effects of green reporting on firm outcomes. The study focuses on holding a company's cultural background as it may interact with green reporting and consequently have varying effects on firm performance. Second, the study employs an innovative IV-GMM technique. It is effective in handling endogeneity concerns, making it a suitable choice for this study because of the persistent nature of firm performance and the possible existence of reverse causality between green reporting and firm performance.

The rest of the paper is organized as follows. Section 2 presents the literature review and hypotheses. Section 3 discusses the research design. Section 4 reports the empirical results, and Section 5 concludes the paper.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

An empirical review of the relationships between green reporting and performance as well as the moderating role of holding company's cultural background is provided in the following sections.

Corporate green reporting and firm performance

In recent research, several studies have examined the relationship between green disclosure and financial performance, shedding light on the broader implications of sustainability and ESG factors on firm success. Malik, et al. (2023) investigated Chinese firms listed on the Shanghai and Shenzhen stock exchanges from 2005 to 2016, focusing on the mediating effect of green innovation. Their findings indicated that environmental disclosure not only directly impacts financial performance but also indirectly influences it through green innovation. Similarly, Menike (2020) conducted a study that analyzed

the impact of environmental accounting disclosure on the performance of food, beverage, and tobacco sector companies listed on the Colombo Stock Exchange. The study revealed a significant positive effect of environmental accounting disclosure on return on assets. Furthermore, Mohammad and Wasiuzzaman (2021) explored the impact of ESG disclosures on firm performance using data from 661 companies listed on the Bursa Malaysia from 2012 to 2017. Their findings revealed a positive influence of ESG disclosure on firm performance, even after accounting for competitive advantage. These results suggest that incorporating ESG factors can lead to improved performance.

However, the relationship between ESG disclosure (ESGD) and financial performance (FP) has yielded mixed empirical findings, deviating from the majority consensus of a positive relationship. While Qiu et al. (2016) and Buallay et al. (2020) found no connection between the two variables, Ingram, and Frazier (1983), Sekhon and Kathuria (2019), and Fahad and Busru (2021) reported a negative relationship. This contradictory evidence raises the need for further investigation into this issue. Grounded on stakeholder, legitimacy, and signaling theories, this paper argues that organizations need to align their activities with societal expectations to maintain their standing within the community. This study, therefore, hypothesizes that:

H1: Green reporting has a significant positive influence on firm performance.

The Role of Holding Company Power Distance

Power distance refers to the extent to which a society accepts unequal power distribution (Bhagat, 2002). Cultures with high power distance tolerate hierarchy and inequality, favoring centralized decision-making and hierarchical structures (Minkov & Kaasa, 2021; Ogundajo et al., 2022). Parent companies from such environments may hinder subsidiaries from freely disclosing green information if they do value sustainability reporting. In contrast, cultures with low power distance value decentralized decision-making and collaboration, which supports green reporting efforts (Diamastuti et al., 2020). Power distance cultures tend to maintain power inequalities and limit information disclosure, resulting in lower levels of reporting (Gallego-Álvarez and Ortas, 2017; Ogundajo et al., 2022; Orij, 2010; Roy & Mukherjee, 2022; Vitolla et al., 2019). However, other studies report positive associations (Diamastuti et al., 2020; Ho et al., 2011), and others have no significant relationships (Sannino et al., 2020). This study, therefore, argues that listed manufacturing subsidiaries in Sub-Saharan Africa (SSA) are likely to see improved firm performance in green reporting under holding companies rooted in low power distance cultures, which encourage decentralized decision-making and collaboration, fostering a conducive environment for green reporting. Considering this, the study introduces the following hypothesis:

H2: Green reporting has a positive impact on firm performance when conditioned on Holding companies from low power distance cultural origin.

The Role of Holding Company Individualism

Individualism, reflecting preferences for less structured social frameworks, can significantly influence support for international initiatives such as the Sustainable Development Goals (Hofstede, 2011). Cultures high in individualism often prioritize personal aspirations and independence over collective interests and social responsibility (Lu and Wang, 2021). This orientation can pose challenges in aligning green reporting initiatives with the primary goals of the holding company, potentially impacting both green reporting effectiveness and overall business performance negatively. Conversely, cultures with lower levels of individualism tend to prioritize group cohesion and collective goals, potentially enhancing support for green reporting and thereby improving firm performance (Ogundajo et al., 2022). Low individualism, indicative of collectivist cultures, correlates with increased disclosure in response to stakeholder pressures (Khelif et al., 2015; Gallén and Peraita, 2017; Ogundajo et al., 2022), contrasting with the lower emphasis on disclosure seen in individualistic societies focused on economic growth and material success (Gallén and Peraita, 2017; Lu and Wang, 2021). This study posits that subsidiaries under holding companies from cultures low in individualism are likely to exhibit improved firm performance through enhanced green reporting practices, reflecting the cultural prioritization of environmental reporting initiatives. The study hypothesis is that:

H3: Green reporting has a positive impact on firm performance when conditioned on Holding companies from low individualism cultural origin.

The Role of Holding Company Masculinity

Masculinity, characterized by a preference for achievement and assertiveness, holds implications for the disclosure of green information. High-masculinity cultures value achievement, competitiveness, and assertiveness above all else. This could put pressure on subsidiaries to put short-term profits ahead of long-term environmental sustainability, which would be detrimental to green reporting and overall company performance in SSA's manufacturing sector (Pizzi et al., 2021). On the other hand, societies with low levels of masculinity might place more value on collaboration, nurturing, and an emphasis on quality of life, which would fit in well with green reporting and influence firm performance (Pinheiro et al., 2023).

Numerous studies consistently reveal an inverse relationship between masculinity and corporate social responsibility (CSR) performance, (Orij, 2010; Gallego-Álvarez and Ortas, 2017; Pizzi et al., 2021). However, some studies present positive correlations (Pinheiro et al., 2023), while others find no significant relationship (Coulmont et al., 2015). So, based on the Institutional Theory of Isomorphism, Hofstede cultural dimensions, stakeholder theory, legitimacy theories, and the above works this study postulates that the presence of Holding companies from low masculinity cultural backgrounds may positively impact green reporting which may further strengthen firm performance. Therefore:

H4: Green reporting has a positive impact on firm performance when conditioned on Holding companies from low masculinity cultural origin.

The Role of Holding Company Indulgence

The indulgence vs. restraint dimension concerns the degree to which people control their impulses and desires. Societies that are indulgent place a premium on self-gratification and demonstrate a lack of moral restraint, while societies that are restrained place a premium on conformity to rigid social norms (Hofstede et al., 2010; Halkos & Skouloudis, 2017). Holding firms are more likely to prioritize sustainability in low-indulgence cultures where the values of restraint and long-term planning are emphasized. This is in line with the goals of green reporting. Through the smooth integration of sustainable practices across subsidiaries, green reporting improves brand reputation and operational efficiency, which in turn boosts firm performance. On the other hand, high indulgence cultures may undermine the efficacy of green reporting activities if holding firms prioritize short-term profits over environmental goals.

Additionally, indulgent countries tend to generate higher carbon dioxide emissions (Disli, Ng, & Askari, 2016). The relationship between corporate social performance and financial performance is found to be stronger in restrained cultures (Sun et al., 2018). The study therefore hypothesizes that:

H5: Green reporting has a positive impact on firm performance when conditioned on Holding companies from low indulgence cultural origin.

The Role of Holding Company Uncertainty Avoidance

High uncertainty avoidance cultures have a strong emphasis on risk minimization and systematic decision-making, which helps to create a stable

and predictable work environment (Hofstede et al., 2010). This tendency can boost reputation, draw in socially conscious investors, and encourage investment in environmentally friendly practices, which have a beneficial impact on the association between green reporting and business performance. On the contrary, holding companies with low UNA cultures might be more tolerant of risk and ambiguity, which could result in a lower focus on green reporting. Given that immediate profits take precedence over long-term environmental concerns, this could have a negative effect on the performance of the company.

The relationship between UNA and sustainability disclosure varies, with some studies indicating a negative association due to the perceived costs outweighing the benefits in uncertain situations (García-Sánchez et al., 2016; Halkos and Skouloudis, 2017) others find a positive link (Williams, 1999; Kumar Prakash, 2019; Peng et al., 2014). The study therefore hypothesizes that

H6: Green reporting has a positive impact on firm performance when conditioned on Holding companies from high uncertainty avoidance cultural origin.

The Role of Holding Company Long-Term Orientation

Long-term orientation characterizes societies that emphasize persistence and future-directed objectives, while short-term orientation underscores tradition and immediate outcomes (Hofstede et al., 2010; Halkos & Skouloudis, 2017). Holding firms that have a low Long-Term Orientation may put short-term profits ahead of sustainability activities, which could impede their subsidiaries' adoption of green reporting. On the other hand, holding companies with high Long-Term Orientation cultures are more likely

to be in favor of long-term investments and sustainable practices, which helps to create an atmosphere where integrating green reporting into subsidiaries is possible.

Long-term oriented (LTO) societies encourage firms to adhere to societal and environmental norms, resulting in increased disclosure and engagement in environmental practices (Halkos and Skouloudis, 2017; Kim and Kim, 2010; Gallego-Álvarez and Ortas, 2017). Thus, the study states the following hypothesis:

H7: Green reporting has a positive impact on firm performance when conditioned on Holding companies from high long-term orientation cultural origin.

RESEARCH METHODS

Data Sources

The study sample consists of 72 listed manufacturing firms that are controlled by a parent company, selected from 8 Anglophone countries in sub-Saharan Africa that had submitted annual and sustainability reports between 2015 and 2021. The study focuses on Anglophone countries (English-speaking countries) because they have better accounting practices (Adela et al., 2022) and avoid language barriers in data collection (Adu, 2022). Moreover, these countries are listed in Hofstede's cultural data and have fully adopted IFRS. The listed manufacturing companies were selected because of data availability. Information on the number of the companies and their locations is in Appendix B.

Variable Measurement

Measure of Firm Performance

The study measures firm performance as Return on Assets, Return on Equity and Tobin's Q. ROE is the ratio of net income to shareholder capital and ROA is profit before interest and taxes divided by the average total assets (in book value). Also, Tobin's Q is determined by dividing the market value of the company by the replacement cost of its assets (Jan et al., 2019).

Measure of Green Reporting

Green reporting is measured as a percentage of the ratio between the disclosures made by the listed manufacturing companies from 2015 to 2021 and the total number of indicators in the GRI-4 framework. The study employs content analysis to analyse disclosures systematically, accurately, and critically.

Measure of Holding Company Cultural Origin

The study measures the cultural origin of holding companies using their country of operation of the headquarters. To gather cultural data, this paper utilises the Hofstede database, which is widely accessible. The holding company information is extracted manually from the annual reports of the respective firms, and in cases where the country of operations was not explicitly mentioned in the annual report, the headquarters' locations are determined using Google.

Measure of Control Variables

The study includes control variables commonly used by the extant literature (Loukil, & Yousfi, 2022; Kumar & Prakesh, 2019; Orazalin & Mahmood, 2019), which are the national culture of the subsidiary company,

CEO's tenure, CEO duality, CEO gender diversity, firm size, firm audit, firm age, board independence, board size, return on assets and firm leverage. The extant literature suggests that these variables have a significant effect on green reporting and thus should be controlled.

Research Design

As traditional approaches encounter persistent challenges, including issues like omitted variable bias and measurement errors, this study opted for the IV-GMM model. Renowned for its effectiveness in addressing endogeneity and heterogeneity concerns, the IV-GMM model consistently yields robust results when compared to the fixed and random effect models. To estimate the effect of green reporting, the study specifies the following model:

$$\sum_{i=1}^n FP_{i,j,t} = \beta_0 + \beta_2 GreenReport_{i,j,t} + \beta_3 \sum_{i=1}^n X_{i,j,t} + \varepsilon_{i,j,t} \dots \dots \dots (1)$$

Where, β 's are the regression coefficients to be estimated, whilst i, j , and t are individual countries, firms, and years respectively. FP_{ijt} is the regression representing a vector of the firm's performance. $GreenReport$ is green reporting, X is a vector of the control variables and ε_{ijt} is the error term.

To test for the effect of the presence of holding company cultural origin on the relationship between green reporting and firm performance, the study modifies the equation (1) to include an interaction term between green reporting and firm performance to state the following equation:

$$\sum_{i=1}^n FP_{i,j,t} = \beta_0 + \beta_2 GreenReport_{i,j,t} + \beta_3 \sum_{i=1}^n HCCO_{i,j,t} + \beta_4 \sum_{i=1}^n (GreenReport * HCCO)_{i,j,t} + \beta_4 \sum_{i=1}^n X_{i,j,t} + \varepsilon_{i,j,t} \dots \dots \dots (2)$$

FP_{ijt} is the regression representing a vector of the firm performance. $GreenReport$ is green reporting, $HCCO$ is a vector for Holding company cultural origin, X is a vector of the control variables and ε_{ijt} is the error term.

EMPIRICAL RESULTS

Descriptive Statistics

Descriptive statistics in Table 3 summarize the mean, standard deviation, minimum, and maximum values of both the dependent and independent variables, along with the control variables.

Table 32: Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max	Skew.	Kurt.
<i>logROA</i>	419	.079	.194	-.715	.767	.019	10.622
<i>logROE</i>	419	.119	.412	-3.349	1.509	-1.801	21.627
<i>logTobinsQ</i>	419	.792	.596	.009	3.37	1.723	7.366
<i>GreenReport</i>	419	.302	.282	0	.941	.726	2.088
<i>HPD</i>	419	55.952	18.92	31	80	.253	1.362
<i>HIND</i>	419	57.902	25.468	15	91	-.201	1.529
<i>HMAS</i>	419	56.537	14.789	8	70	-2.132	6.564
<i>HUNA</i>	419	49.31	12.768	8	94	.341	6.182
<i>HLTO</i>	419	37.84	22.317	4	87	.435	2.228
<i>HINDU</i>	419	67.048	15.716	0	84	-1.809	8.005
<i>SPD</i>	419	69.582	13.547	49	80	-.681	1.634
<i>SIND</i>	419	37.816	16.938	15	65	.771	2.121
<i>SMAS</i>	419	55.919	9.126	40	63	-1.129	2.38
<i>SUNA</i>	419	53.628	4.741	45	65	.997	3.805
<i>SLTO</i>	419	20.329	11.078	4	35	.214	1.395
<i>SINDU</i>	419	70.368	17.428	0	84	-1.539	5.793
<i>CEOTEN</i>	419	4.189	3.941	1	23	2.108	7.876
<i>CEOGENDIVER</i>	419	.062	.242	0	1	3.631	14.182
<i>BSIZE</i>	419	9.134	2.668	4	17	.675	3.188
<i>BIND</i>	419	.687	.146	.077	1	-.559	3.847
<i>FIRMAUD</i>	419	.785	.411	0	1	-1.389	2.929
<i>FirmSizeLog</i>	419	18.628	2.466	11.964	26.278	.488	4.515
<i>FirmAge</i>	419	44.995	30.182	2	141	1.313	4.602
<i>logLeverage</i>	419	.473	.303	.028	1.925	3.133	14.49
<i>logGDP</i>	419	7.946	.533	6.836	8.741	.141	2.275
<i>logInflation</i>	419	2.147	.407	.656	3.271	-.554	3.286
<i>RegulatoryQuality</i>	419	-.539	.439	-1.024	.209	.413	1.473

LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, HPD is Holding company power distance, HIND is Holding company individualism, HMAS is Holding company masculinity, HUNA is Holding company uncertainty avoidance, HLTO is Holding company long term orientation, HINDU is Holding company indulgence, SPD is subsidiary company power distance, SIND is subsidiary company individualism, SMAS is subsidiary company masculinity, SUNA is subsidiary company uncertainty avoidance, SLTO is subsidiary company long term orientation, SINDU is subsidiary company indulgence CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

Before performing the regression analysis to the hypothesis, the study calculated the descriptive statistics (see Table 33) of all variables used in the regression and the correlation matrix (see Table 34). The dependent variables,

ROA, ROE, and TobinsQ exhibit a mean of .079, .119, and .792 with the lowest values recorded at -0.715, -3.349, and 0.009, and the highest values reaching 0.767, 1.509, and 3.37 respectively. This implies that on average, listed manufacturing firms in Africa make approximately 8% and 12% on invested assets and owners' equity respectively. TobinsQ with a mean value less than 1 also signifies that stock of listed manufacturing companies in Africa is undervalued. Green reporting has a mean of 30.2. Thus, listed manufacturing firms in SSA in the study sample disclose on average 30.2% of their environmental impacts in their annual report and have a minimum value of 0 and maximum of 94.1 %. The means (standard deviations) of HPD, HIND, HMAS, HUNA, HLTO, and HINDU scores are 55.952 (18.92), 57.902 (25.468), 56.537 (14.789), 49.31, (12.768), 37.84 (22.317), and 67.048 (15.716) respectively. These mean that four of the six dimensions of parent companies' culture, HPD, HIND, HMAS, and HINDU, have an average value above 50% making them high. The remaining two HLTO and HTO are below 50% meaning parent companies in the study sample on average are from short term orientated and restrained countries.

Regarding control variables, four of the six dimensions of subsidiary companies' culture SPD, SMAS, SUNA, and SINDU, have an average value above 50% making them high. The remaining two SIND and SLTO are below 50% meaning subsidiary companies in our sample on average are from short-term orientated and collectivist countries. The average CEO tenure (CEOTEN) is 4.189 years, and the average board size (Bsize) is 9.134. On average, 68.7 % of board members are independent directors (BIND) and on average 93.8% of the sampled CEOs are men. The mean Firm size (FirmSizeLog), Firm audit

(FIRMAUD), Firm age, leverage (logLeverage), GDP, inflation, and regulation quality are 18.628, 0.785, 44.995, 0.473, 7.946, 2.147, and -0.539 respectively.

Pairwise Correlation Matrix

The correlation between the variables has been presented on Table 33.

Table 33: Pairwise Correlation

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) logROA	1.000								
(2) logROE	0.403*	1.000							
(3) logTobinsQ	0.061	0.145*	1.000						
(4) GreenReport	0.212*	0.084	-0.051	1.000					
(5) HPD	0.022	0.110*	0.150*	-0.167*	1.000				
(6) HIND	-0.047	-0.131*	-0.163*	0.137*	-0.933*	1.000			
(7) HMAS	-0.155*	-0.098*	-0.223*	0.085	0.063	0.025	1.000		
(8) HUNA	0.086	0.143*	0.168*	0.011	0.315*	-0.215*	-0.256*	1.000	
(9) HLTO	0.043	-0.053	0.060	0.060	-0.533*	0.480*	-0.147*	-0.238*	1.000

Variables	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(10) HINDU	1.000								
(11) SPD	0.292*	1.000							
(12) SIND	-0.079	-0.911*	1.000						
(13) SMAS	0.393*	-0.173*	0.564*	1.000					
(14) SUNA	0.234*	0.736*	-0.750*	-0.333*	1.000				
(15) SLTO	-0.333*	-0.912*	0.804*	0.100*	-0.906*	1.000			
(16) SINDU	0.623*	0.582*	-0.247*	0.569*	0.533*	-0.721*	1.000		
(17) CEOTEN	-0.073	-0.415*	0.449*	0.238*	-0.271*	0.331*	-0.099*	1.000	
(18) CEOGENDIVER	-0.002	0.052	-0.142*	-0.232*	0.095	-0.067	-0.078	-0.113*	1.000

Variables	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
(19) BSIZE	1.000								
(20) BIND	0.120*	1.000							
(21) FIRMAUD	0.140*	0.147*	1.000						
(22) FirmSizeLog	0.482*	0.111*	0.405*	1.000					
(23) FirmAge	-0.039	-0.133*	0.148*	0.124*	1.000				
(24) logLeverage	-0.046	-0.108*	-0.232*	-0.277*	-0.005	1.000			

(25) logGDP	0.318*	-0.070	-0.098*	0.334*	0.060	-0.099*	1.000	
(26) logInflation	-0.131*	0.145*	-0.015	-0.255*	-0.066	0.192*	-0.382*	1.000
(27) RegulatoryQuality	0.087	-0.199*	0.077	0.339*	0.353*	-0.083	0.586*	-0.319*
								1.000

* Shows significance at $p < .05$. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, HPD is Holding company power distance, HIND is Holding company individualism, HMAS is Holding company masculinity, HUNA is Holding company uncertainty avoidance, HLTO is Holding company long term orientation, HINDU is Holding company indulgence, SPD is subsidiary company power distance, SIND is subsidiary company individualism, SMAS is subsidiary company masculinity, SUNA is subsidiary company uncertainty avoidance, SLTO is subsidiary company long term orientation, SINDU is subsidiary company indulgence CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

Furthermore, the research includes a pairwise Pearson correlation matrix that examines the relationships between the variables used in the regression analysis. The outcomes of this correlation matrix are presented in Table 23. Using a threshold of 0.80, as suggested by Kenedy (2008), the study concludes that there is a notable correlation coefficient among certain independent variables. This suggests a potential risk of multicollinearity in the model equations. However, it's important to note that the highly correlated variables are not included in the same model.

Main Results

The regression analysis is carried out with robust standard errors clustered at the firm level to account for heterogeneity and auto-correlation in the data. Additionally, time effects are considered in the model using firm-year. It is also carried out using pooled OLS, IV-GMM, and Lawbel IV. Before investing the results of the explanatory variables, it's worth noting that the instrument's validity is confirmed by Anderson under-identification test, the Cragg-Donald weak identification test, and Hansen overidentification test.

Baseline Analysis (Green Reporting and Firm Performance)

The baseline analysis is presented in Table 34.

**TABLE 34: GREEN REPORTING AND PERFORMANCE -----
POOLED REGRESSION**

VARIABLES	(1) logROA	(2) logROE	(3) logTobinsQ
<i>GreenReport</i>	0.152*** (0.034)	0.255*** (0.064)	0.432*** (0.114)
<i>CEO TEN</i>	0.003 (0.002)	0.003 (0.004)	-0.018*** (0.005)
<i>CEO GEN DIVER</i>	0.074** (0.035)	0.213*** (0.071)	-0.014 (0.131)
<i>BSIZE</i>	-0.007** (0.003)	-0.009 (0.008)	0.015 (0.011)
<i>BIND</i>	-0.061 (0.043)	-0.073 (0.087)	-0.171 (0.198)
<i>FIRM AUD</i>	0.039 (0.027)	0.105 (0.078)	0.064 (0.054)
<i>Firm Size (Log)</i>	0.000 (0.005)	-0.012 (0.011)	-0.050*** (0.015)
<i>Firm Age</i>	-0.000 (0.000)	-0.002** (0.001)	-0.002** (0.001)
<i>logLeverage</i>	-0.159** (0.066)	-0.178* (0.108)	0.589*** (0.161)
<i>GDP</i>	-0.046*** (0.017)	-0.040 (0.048)	-0.333*** (0.075)
<i>Inflation</i>	0.009 (0.011)	0.038* (0.020)	-0.101* (0.055)
<i>RegQuality</i>	-0.003 (0.022)	-0.054 (0.053)	-0.100 (0.094)
Constant	0.512*** (0.133)	0.644 (0.458)	4.220*** (0.713)
Observations	419	419	419
Adjusted R-squared	0.150	0.0692	0.206

GreenReport is green reporting, LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

In all three columns in Table 34 under the Pooled OLS, the empirical data robustly corroborated hypothesis 1 ($p < 0.05$), demonstrating a significant positive impact of green report on ROA, ROE and TobinsQ and are consistent with the findings of Malik et al. (2023) and Huang et al. (2018) but contradict the studies of Fahad and Busru (2021) and Oware and Mallikarjunappa (2022). This finding substantiates that greater green reporting enhances firm performance. Furthermore, it supports legitimacy, stakeholder, and signaling theories. Thus, green reporting sends a positive signal to stakeholders, aiding

firms in earning their trust, thereby enhancing legitimacy and improving performance.

Addressing potential Endogeneity

Table 35 shows the IV GMM regression.

TABLE 35: GREEN REPORTING AND PERFORMANCE ----- IV GMM REGRESSION

VARIABLES	(1) GreenReport	(2) logROA	(3) logROE	(4) logTobinsQ
<i>AditInd</i>	0.136*** (0.048)			
<i>GreenReport</i>		0.751** (0.380)	1.655* (0.934)	1.018 (1.048)
<i>CEO TEN</i>	0.010*** (0.003)	-0.004 (0.005)	-0.013 (0.013)	-0.025* (0.013)
<i>CEO GEN DIVER</i>	0.014 (0.039)	0.075 (0.049)	0.197* (0.103)	0.024 (0.142)
<i>BSIZE</i>	0.008* (0.005)	-0.012** (0.005)	-0.017* (0.010)	0.000 (0.013)
<i>BIND</i>	0.239*** (0.074)	-0.206* (0.106)	-0.361 (0.228)	-0.417 (0.306)
<i>FIRM AUD</i>	0.108*** (0.031)	-0.024 (0.052)	-0.036 (0.111)	0.052 (0.123)
<i>Firm Size (Log)</i>	0.047*** (0.006)	-0.025 (0.019)	-0.080 (0.050)	-0.057 (0.051)
<i>Firm Age</i>	0.001** (0.000)	-0.001* (0.001)	-0.003** (0.002)	-0.003** (0.001)
<i>logLeverage</i>	-0.123** (0.049)	-0.154* (0.081)	-0.004 (0.234)	0.232 (0.207)
<i>GDP</i>	0.006 (0.026)	-0.052** (0.024)	-0.043 (0.065)	-0.384*** (0.088)
<i>Inflation</i>	-0.006 (0.016)	0.012 (0.018)	0.021 (0.037)	-0.066 (0.068)
<i>RegQuality</i>	0.060* (0.032)	-0.058 (0.052)	-0.198* (0.103)	-0.097 (0.156)
Constant	-1.035*** (0.227)	1.056** (0.428)	1.906 (1.166)	5.026*** (1.253)
Observations	419	419	419	419
R-squared	0.441			
Under identification test				
Anderson canon. corr. LM statist		112.791 0.0000	108.860 0.0000	112.791 0.0000
Weak Identification test				
Cragg-Donald Wald F statistic		21.129	23.791	20.156
Stock-Yogo weak ID test critical values (10%)		16.51	16.31	14.51
Overidentification test				
Hansen J statistic (P-Value)		0.7612	0.5376	0.5672
Endogeneity test				
C-statistic		4.0888	2.7637	2.6734
P Value		0.042	0.0964	0.0735

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, CEO TEN represent *AditInd* is audit independent, *GreenReport* is green reporting, CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

Just like in other research exploring the influence of green reporting on firm performance, endogeneity is a potential challenge in this analysis. To address this concern, the study performs an additional test. The study utilizes the Instrumental Variable-Generalized Method of Moments (IV-GMM) approach in Table 35 under IV-GMM to address potential endogeneity concerns related to green reporting and performance. To do so, the study requires an instrumental variable that is connected to green reporting but does not directly influence performance.

Drawing upon prior research, specifically Wasiuzzaman et al. (2022), which emphasizes the substantial impact of audit independence on a firm's environmental, social, and governance, the study posits that a firm's audit independence could serve as a suitable instrument positively associated with the likelihood of producing green report.

In the initial step, the study conducts a first-stage regression in Column 3 of Table 4, where green reporting is regressed on the instrumental variable (AditInd) to derive the predicted value of green report. The results of this first-stage regression demonstrate a statistically significant positive association (at the 1% level) between AditInd and greenreport, indicating that the instrumental variable effectively explains green reporting.

Furthermore, the statistical tests for under-identification and weak identification, as presented in Table 35, affirm the suitability of the chosen instrument. Moving to the second stage (Columns 2-3), The coefficient for ROA shows a statistically significant positive relationship with firm value at the 0.05 level of significance. Similarly, the coefficient for ROE reveals a statistically significant positive relationship with firm value at the 0.1

significance level. However, for TobinsQ, it is positive and insignificant. The insignificant results support Huang et al. (2018) study. Furthermore, it reinforces agency theory and the arguments of Friedman (1970) and Jensen and Murphy (1990) that a firm's foremost duty is profit maximization and compliance with legal obligations, emphasizing the singular pursuit of enhancing shareholder wealth rather than prioritizing green reporting.

Robustness Test

To assess the robustness of the findings, the study adopts an internal instrumental variable (IV) estimation technique developed by Lewbel (2012). Unlike traditional approaches that rely on external instruments, Lewbel's method leverages the heteroskedasticity of regression model errors to internally generate instruments within the existing model. This identification strategy hinges on ensuring that the regressors remain uncorrelated with the product of the heteroskedastic errors, a common characteristic in models where error correlations can be attributed to an unobserved factor (Lewbel 2012).

The outcomes of this estimation are presented in Table 35 under Lewbel IV and confirm the findings under the IV-GMM technique except that ROE is not significant.

TABLE 36: GREEN REPORTING AND PERFORMANCE ----- IV LEWBEL REGRESSION

VARIABLES	(1) logROA	(2) logROE	(3) logTobinsQ
<i>GreenReport</i>	0.180** (0.079)	0.069 (0.180)	0.010 (0.259)
<i>CEO TEN</i>	0.003 (0.003)	0.005 (0.006)	-0.013 (0.008)
<i>CEO GEN DIVER</i>	0.073** (0.031)	0.214*** (0.070)	-0.010 (0.101)
<i>BSIZE</i>	-0.008** (0.004)	-0.008 (0.008)	0.017 (0.012)
<i>BIND</i>	-0.066 (0.059)	-0.036 (0.133)	-0.086 (0.193)
<i>FIRM AUD</i>	0.036 (0.024)	0.119** (0.056)	0.096 (0.080)
<i>Firm Size (Log)</i>	-0.001 (0.006)	-0.003 (0.013)	-0.030 (0.019)
<i>Firm Age</i>	-0.000 (0.000)	-0.002** (0.001)	-0.001 (0.001)
<i>logLeverage</i>	-0.157*** (0.030)	-0.188*** (0.069)	0.566*** (0.100)
<i>GDP</i>	-0.047** (0.020)	-0.035 (0.045)	-0.321*** (0.065)
<i>Inflation</i>	0.009 (0.012)	0.038 (0.027)	-0.101*** (0.038)
<i>RegQuality</i>	-0.004 (0.023)	-0.045 (0.052)	-0.079 (0.076)
Constant	0.543*** (0.193)	0.434 (0.438)	3.744*** (0.633)
Observations	419	419	419
Adjusted R-squared	0.149	0.0600	0.187
Under identification test			
Anderson canon. corr. LM	102.791 0.0004	105.860 0.0000	112.791 0.0000
Weak Identification test	13.583	16.096	13.583
Cragg-Donald Wald F stat	11.51	14.51	12.51
Stock-Yogo weak ID test	16.922	24.004	100.133
critical values (10%)			
Overidentification test			
Hansen J statistic (P-Value)	0.6217	0.3756	0.6221
Endogeneity test			
C-statistic	4.0888	2.7637	2.6734
P Value	0.042	0.0364	0.0435

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

Cross-Sectional Test

Thus far, the research has revealed a favorable relationship between Green Report and firm performance. In this section, the study presents evidence of the multifaceted nature of this relationship. Drawing from existing literature, the study examines six key factors that may influence green reporting to lead to improved performance. Consequently, these factors could influence the magnitude of the link between Green Report and firm performance: (1) HC power distance, (2) HC Individualism, (3) HC masculinity, (4) HC uncertainty avoidance, (5) HC indulgence and (6) HC long term orientation. To evaluate these hypotheses, the study follows how Chen et al., 2023 and Gull et al., 2022 did their further analysis. The study begins by dividing the dataset into two groups using the median value of holding company (HC) culture. Subsequently, the study applies the foundational regression model (Equation (1)) twice: once to a subset of low HC culture and once to a subset of high HC culture. The study also controlled the subsidiary national culture.

The Role of Holding Company Power Distance

The results from this assessment are displayed in Table 37.

**TABLE 37: GREEN REPORTING AND PERFORMANCE
CONDITIONED ON HOLDING COMPANY POWER DISTANCE**

	High	Low	High	Low	High	Low
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	logROA	logROA	logROE	logROE	logTobinsQ	logTobinsQ
<i>GreenReport</i>	0.191*** (0.047)	0.135* (0.076)	0.438*** (0.106)	0.136 (0.231)	0.508*** (0.113)	0.756*** (0.203)
<i>SPD</i>	0.606*** (0.177)	0.963* (0.516)	0.541 (0.410)	-0.029 (1.584)	2.376*** (0.425)	1.350 (1.386)
<i>CEO TEN</i>	0.003 (0.003)	0.006* (0.003)	0.007 (0.008)	0.007 (0.010)	-0.012 (0.008)	0.009 (0.009)
<i>CEO GEN DIVER</i>	0.133*** (0.046)	0.013 (0.043)	0.099 (0.104)	0.351*** (0.131)	0.029 (0.110)	0.085 (0.116)
<i>BSIZE</i>	-0.015*** (0.005)	-0.001 (0.006)	-0.001 (0.011)	-0.015 (0.020)	0.041*** (0.011)	-0.030* (0.017)
<i>BIND</i>	-0.118 (0.078)	-0.211 (0.130)	-0.450** (0.178)	0.070 (0.402)	-0.547*** (0.187)	-0.196 (0.350)
<i>FIRM AUD</i>	-0.026 (0.031)	0.062 (0.042)	0.113 (0.071)	0.082 (0.132)	0.156** (0.074)	-0.021 (0.112)
<i>Firm Size (Log)</i>	0.000 (0.007)	0.021** (0.010)	-0.074*** (0.016)	0.045 (0.032)	-0.089*** (0.017)	0.048* (0.027)
<i>Firm Age</i>	0.000 (0.000)	-0.000 (0.001)	-0.001* (0.001)	0.001 (0.002)	-0.001 (0.001)	-0.003** (0.001)
<i>logLeverage</i>	-0.300*** (0.063)	-0.284*** (0.061)	-0.063 (0.146)	-0.348* (0.186)	0.520*** (0.152)	0.216 (0.163)
<i>GDP</i>	0.041 (0.037)	-0.085* (0.044)	-0.056 (0.086)	-0.016 (0.135)	-0.250*** (0.090)	-0.364*** (0.118)
<i>Inflation</i>	-0.028 (0.032)	0.037 (0.037)	0.002 (0.075)	0.122 (0.116)	-0.161** (0.078)	-0.051 (0.099)
<i>RegQuality</i>	0.050 (0.052)	0.231** (0.108)	-0.058 (0.118)	-0.262 (0.327)	0.421*** (0.125)	-0.081 (0.289)
<i>Constant</i>	-0.299 (0.399)	-0.141 (0.563)	1.692* (0.924)	-0.996 (1.730)	2.907*** (0.960)	2.044 (1.511)
Observations	245	132	245	132	245	132
R-squared	0.232	0.333	0.192	0.139	0.390	0.274

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, HPD is Holding company power distance, SPD is subsidiary company power distance, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The results indicate that when the holding company originates from a high-power distance cultural background, green reporting has a more positive influence on both ROA and ROE compared to holding companies from low power distance backgrounds. This finding contradicts our hypothesis that green reporting would have a stronger impact on firm performance,

specifically for holding companies with low power distance cultural origins. Regarding Tobin's Q, the impact is notably higher when holding companies come from low power distance backgrounds, supporting our hypothesis in this case. These results underscore the significant moderating role of holding company's cultural background, while also affirming that green reporting remains advantageous irrespective of the holding company's cultural origin.

These findings corroborate the studies by Gallego-Álvarez and Ortas (2017), García-Sánchez et al. (2016), Roy, and Mukherjee (2022), aligning with institutional theory, cultural capital theory, stakeholder theory, legitimacy theory, and signaling theory. They suggest that the cultural background of parent companies can act as a form of capital that influences subsidiary green reporting, thereby enhancing overall firm performance. This contrasts with the findings of Diamastuti et al., 2020 and Ho et al., 2011, which argue differently on these dynamics.

The Role of Holding Company Individualism

The results of this analysis are presented in Panel A of Table 38.

**TABLE 38: GREEN REPORTING AND PERFORMANCE
CONDITIONED ON HOLDING COMPANY INDIVIDUALISM**

	High	Low	High	Low	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	<i>logROA</i>	<i>logROA</i>	<i>logROE</i>	<i>logROE</i>	<i>logTobinsQ</i>	<i>logTobinsQ</i>
<i>GreenReport</i>	0.130*** (0.046)	0.150** (0.070)	0.236* (0.135)	0.305** (0.142)	0.663*** (0.122)	0.230 (0.148)
<i>SIND</i>	-0.071 (0.182)	-1.329* (0.712)	-0.070 (0.533)	0.110 (1.461)	-1.497*** (0.479)	-0.825 (1.513)
<i>CEO TEN</i>	0.005* (0.002)	-0.005 (0.005)	0.011 (0.007)	-0.024** (0.011)	-0.008 (0.006)	-0.012 (0.011)
<i>CEO GEN DIVER</i>	0.011 (0.034)	0.212*** (0.066)	0.192* (0.099)	0.168 (0.135)	-0.195** (0.090)	0.482*** (0.140)
<i>BSIZE</i>	0.001 (0.005)	-0.020*** (0.007)	0.009 (0.014)	-0.023* (0.014)	-0.005 (0.012)	0.040*** (0.014)
<i>BIND</i>	-0.109 (0.077)	-0.079 (0.113)	-0.210 (0.226)	-0.191 (0.231)	-0.377* (0.202)	-0.684*** (0.241)
<i>FIRM AUD</i>	0.065** (0.028)	0.006 (0.041)	0.125 (0.084)	0.175** (0.086)	-0.001 (0.074)	0.229*** (0.088)
<i>Firm Size (Log)</i>	0.004 (0.006)	0.012 (0.012)	0.005 (0.017)	-0.054** (0.026)	0.011 (0.015)	-0.081*** (0.026)
<i>Firm Age</i>	-0.000 (0.000)	0.001 (0.001)	-0.001 (0.001)	-0.002 (0.003)	-0.002*** (0.001)	-0.002 (0.003)
<i>logLeverage</i>	-0.216*** (0.046)	-0.242*** (0.086)	-0.428*** (0.135)	0.159 (0.176)	0.041 (0.121)	0.779*** (0.182)
<i>GDP</i>	-0.080* (0.048)	0.196*** (0.076)	-0.068 (0.141)	0.320** (0.156)	-0.047 (0.127)	0.211 (0.161)
<i>Inflation</i>	0.036 (0.028)	-0.024 (0.040)	0.138 (0.084)	0.040 (0.084)	-0.057 (0.075)	-0.103 (0.086)
<i>RegQuality</i>	0.082** (0.036)	-0.119 (0.097)	-0.064 (0.106)	-0.037 (0.197)	0.062 (0.096)	0.199 (0.205)
Constant	0.674** (0.330)	-1.011 (0.704)	0.322 (0.965)	-1.233 (1.447)	1.820** (0.871)	1.036 (1.495)
Observations	233	144	233	144	233	144
R-squared	0.263	0.292	0.130	0.189	0.303	0.393

LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, SIND is subsidiary company individualism CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The results suggest that green reporting has a more positive impact on ROA and ROE when the holding company is from a low individualism cultural background compared to a high-power distance background. This confirms the hypothesis that green reporting has a more positive impact on firm performance when conditioned on Holding companies from low individualism cultural origin. However, for TobinsQ, the impact is higher for high individualism rejecting the hypothesis. These findings indicate that the holding company's cultural origin is an important moderating factor, but green

reporting remains beneficial regardless of the holding company's background.

This is consistent with the research conducted by Ogundajo et al. (2022) and Gallén and Peraita (2017) but contradict the studies of Gallén and Peraita, 2017 and Lu and Wang, 2021. The results align with institutional theory, cultural capital theory, stakeholder theory, legitimacy theory, and signaling theory.

The Role of Holding Company Masculinity

The results of this analysis are presented in Table 39.

**TABLE 39: GREEN REPORTING AND PERFORMANCE
CONDITIONED ON HOLDING COMPANY MASCULINITY**

	High (1)	Low (2)	High (3)	Low (4)	High (5)	Low (6)
VARIABLES	<i>logROA</i>	<i>logROA</i>	<i>logROE</i>	<i>logROE</i>	<i>logTobinsQ</i>	<i>logTobinsQ</i>
<i>GreenReport</i>	0.062 (0.053)	0.136* (0.072)	0.080 (0.176)	0.260* (0.157)	0.587*** (0.155)	0.189 (0.153)
<i>SMAS</i>	-0.437* (0.240)	-0.312 (0.284)	-0.339 (0.789)	-1.022 (0.630)	1.099 (0.697)	-1.320** (0.604)
<i>CEO TEN</i>	0.006** (0.003)	-0.004 (0.004)	0.015 (0.009)	-0.008 (0.009)	-0.011 (0.008)	-0.013 (0.009)
<i>CEO GEN DIVER</i>	0.038 (0.033)	0.118** (0.060)	0.140 (0.107)	0.377*** (0.130)	-0.100 (0.095)	0.272** (0.127)
<i>BSIZE</i>	0.002 (0.005)	-0.022*** (0.007)	0.017 (0.015)	-0.034** (0.014)	0.004 (0.013)	0.034** (0.014)
<i>BIND</i>	0.065 (0.074)	-0.080 (0.111)	-0.179 (0.246)	-0.075 (0.240)	-0.127 (0.215)	-0.681*** (0.235)
<i>FIRM AUD</i>	0.059** (0.027)	-0.001 (0.042)	0.107 (0.089)	0.085 (0.093)	0.023 (0.078)	0.304*** (0.089)
<i>Firm Size (Log)</i>	-0.004 (0.006)	0.022** (0.011)	0.017 (0.019)	0.000 (0.025)	-0.002 (0.017)	-0.047** (0.023)
<i>Firm Age</i>	-0.000 (0.000)	0.001 (0.001)	-0.002** (0.001)	0.000 (0.002)	-0.002*** (0.001)	0.000 (0.002)
<i>logLeverage</i>	-0.160*** (0.046)	-0.390*** (0.075)	-0.396*** (0.151)	0.002 (0.166)	0.434*** (0.133)	0.623*** (0.160)
<i>GDP</i>	0.002 (0.035)	0.103* (0.055)	-0.087 (0.117)	0.368*** (0.120)	-0.244** (0.103)	-0.074 (0.117)
<i>Inflation</i>	0.019 (0.031)	-0.008 (0.034)	0.058 (0.103)	0.079 (0.076)	-0.042 (0.089)	-0.117 (0.072)
<i>RegQuality</i>	0.056 (0.036)	-0.141** (0.069)	-0.029 (0.120)	-0.347** (0.152)	-0.211** (0.105)	-0.014 (0.146)
Constant	0.284 (0.243)	-0.646 (0.448)	0.562 (0.801)	-2.293** (0.986)	1.769** (0.706)	3.019*** (0.952)
Observations	213	164	213	164	213	164
R-squared	0.235	0.272	0.120	0.140	0.194	0.362

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, SMAS is Subsidiary company masculinity, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The findings indicate that green reporting yields a more positive impact on ROA and ROE when the holding company originates from a low masculinity cultural background. This suggests that subsidiaries under holding companies from low masculinity cultural orientations experience improved ROA and ROE by engaging in green reporting compared to those under high masculinity cultural backgrounds. This supports hypothesis 3. However, for Tobin's Q, the impact is stronger for subsidiaries under high masculinity cultural origins, contradicting the hypothesis.

These results are in line with the research conducted by Pinheiro et al., 2023 but contradict the findings of Gallego-Álvarez and Ortas, 2017; Pizzi et al., 2021. The significant findings align with institutional theory, cultural capital theory, stakeholder theory, legitimacy theory, and signaling theory. However, the non-significant results support Reitz et al. (1979) argument (2015) that organizations are influenced not only by institutional pressures but also by the need to acquire external resources for survival and success. This perspective is also supported by Friedman (1970) and Jensen and Murphy (1990), emphasizing that a firm's primary obligation is profit maximization and compliance with legal responsibilities, prioritizing shareholder wealth over investments in green reporting.

The Role of Holding Company Indulgence

The results of this analysis are presented in Panel A of Table 40.

**TABLE 40: GREEN REPORTING AND PERFORMANCE
CONDITIONED ON HOLDING COMPANY INDULGENCE**

	High (1)	Low (2)	High (3)	Low (4)	High (5)	Low (6)
VARIABLES	<i>logROA</i>	<i>logROA</i>	<i>logROE</i>	<i>logROE</i>	<i>logTobinsQ</i>	<i>logTobinsQ</i>
<i>GreenReport</i>	0.142** (0.066)	0.120** (0.058)	0.314** (0.152)	0.442*** (0.148)	0.288** (0.126)	0.709*** (0.184)
<i>SIDU</i>	0.484 (0.375)	-0.002 (0.082)	-1.532* (0.869)	-0.054 (0.211)	-4.091*** (0.720)	0.008 (0.261)
<i>CEO TEN</i>	-0.007 (0.005)	0.006** (0.003)	-0.016 (0.011)	0.005 (0.008)	-0.024*** (0.009)	-0.032*** (0.010)
<i>CEO GEN DIVER</i>	0.196*** (0.062)	0.011 (0.044)	0.535*** (0.143)	-0.177 (0.114)	0.550*** (0.119)	-0.593*** (0.141)
<i>BSIZE</i>	-0.009 (0.006)	-0.003 (0.007)	-0.010 (0.014)	0.030* (0.017)	0.045*** (0.011)	0.086*** (0.021)
<i>BIND</i>	-0.036 (0.097)	-0.070 (0.083)	0.124 (0.225)	-0.380* (0.217)	-0.502*** (0.186)	0.381 (0.266)
<i>FIRM AUD</i>	0.014 (0.036)	-0.037 (0.035)	0.016 (0.087)	0.194** (0.092)	0.124* (0.070)	0.089 (0.113)
<i>Firm Size (Log)</i>	0.001 (0.009)	0.001 (0.007)	-0.035 (0.022)	-0.035** (0.017)	-0.079*** (0.017)	-0.018 (0.022)
<i>Firm Age</i>	-0.000 (0.001)	0.000 (0.000)	-0.000 (0.002)	-0.002*** (0.001)	-0.005*** (0.001)	-0.003*** (0.001)
<i>logLeverage</i>	-0.341*** (0.065)	-0.450*** (0.082)	-0.074 (0.151)	-0.003 (0.221)	0.476*** (0.125)	0.218 (0.261)
<i>GDP</i>	-0.220** (0.104)	-0.040 (0.035)	0.517** (0.242)	-0.121 (0.091)	0.314 (0.200)	-0.281** (0.113)
<i>Inflation</i>	-0.009 (0.039)	-0.024 (0.030)	0.005 (0.093)	0.111 (0.077)	-0.178** (0.075)	0.073 (0.096)
<i>RegQuality</i>	0.341** (0.146)	-0.050 (0.046)	-0.580* (0.337)	-0.175 (0.119)	-1.034*** (0.279)	-0.256* (0.148)
Constant	1.950*** (0.709)	0.632** (0.292)	-2.545 (1.637)	1.272* (0.754)	2.411* (1.359)	2.014** (0.932)
Observations	258	119	258	119	258	119
R-squared	0.231	0.318	0.129	0.240	0.475	0.330

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, SINDU is Holding company indulgence, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

The results reveal that when holding companies originate from cultures with low indulgence, green reporting positively impacts ROE and Tobin's Q. This outcome supports our hypothesis that green reporting has a more pronounced effect on firm performance for holding companies rooted in low indulgence cultures. Specifically, the coefficients for ROE and Tobin's Q are higher under low indulgence conditions compared to high indulgence conditions. Conversely, for ROA, the impact is notably stronger when holding companies come from high indulgence backgrounds, contradicting our hypothesis in this context. These findings highlight the significant moderating role of holding company's cultural background while reinforcing the notion that green reporting remains beneficial regardless of the holding company's cultural origin.

These results contradict prior studies by Disli, Ng, and Askari, 2016 and Sun et al., 2018 but align with institutional theory, cultural capital theory, stakeholder theory, legitimacy theory, and signaling theory. Thus, the cultural background of parent companies serves as a form of capital influencing subsidiary green reporting, thereby enhancing overall firm performance.

The Role of Holding Company Uncertainty Avoidance

The results of this analysis are presented in Panel A of Table 41.

**TABLE 41: GREEN REPORTING AND PERFORMANCE
CONDITIONED ON HOLDING COMPANY UNCERTAINTY
AVOIDANCE**

	High (1)	Low (2)	High (3)	Low (4)	High (5)	Low (6)
VARIABLES	<i>logROA</i>	<i>logROA</i>	<i>logROE</i>	<i>logROE</i>	<i>logTobinsQ</i>	<i>logTobinsQ</i>
<i>GreenReport</i>	0.175*** (0.048)	-0.043 (0.076)	0.418*** (0.102)	-0.078 (0.288)	0.448*** (0.130)	0.382** (0.171)
<i>SUNA</i>	0.756* (0.435)	0.659* (0.363)	0.205 (0.935)	1.520 (1.382)	2.907** (1.174)	1.296 (0.811)
<i>CEO TEN</i>	0.004 (0.003)	-0.003 (0.003)	0.005 (0.007)	-0.004 (0.013)	-0.014 (0.009)	-0.014* (0.007)
<i>CEO GEN DIVER</i>	0.095** (0.044)	0.004 (0.036)	0.063 (0.093)	0.387*** (0.135)	-0.084 (0.118)	0.040 (0.080)
<i>BSIZE</i>	-0.014*** (0.005)	0.008 (0.006)	-0.014 (0.010)	0.013 (0.021)	0.014 (0.012)	0.033*** (0.012)
<i>BIND</i>	-0.148* (0.079)	-0.186* (0.107)	-0.328* (0.169)	-0.325 (0.409)	-0.486** (0.214)	0.229 (0.238)
<i>FIRM AUD</i>	-0.065** (0.033)	0.125*** (0.031)	0.063 (0.071)	0.114 (0.120)	0.171* (0.089)	0.132* (0.070)
<i>Firm Size (Log)</i>	0.003 (0.006)	-0.006 (0.008)	-0.048*** (0.014)	0.028 (0.029)	-0.028 (0.017)	-0.103*** (0.017)
<i>Firm Age</i>	0.000 (0.000)	0.000 (0.000)	-0.001* (0.001)	0.002 (0.002)	-0.003** (0.001)	-0.000 (0.001)
<i>logLeverage</i>	-0.400*** (0.066)	-0.238*** (0.044)	0.059 (0.143)	-0.665*** (0.169)	0.513*** (0.177)	0.150 (0.099)
<i>GDP</i>	-0.018 (0.031)	0.074* (0.039)	-0.051 (0.066)	0.213 (0.148)	-0.440*** (0.083)	0.224** (0.087)
<i>Inflation</i>	-0.052* (0.031)	0.064** (0.030)	0.044 (0.067)	0.119 (0.116)	-0.203** (0.083)	-0.094 (0.067)
<i>RegQuality</i>	-0.083* (0.046)	0.150*** (0.035)	-0.211** (0.097)	-0.001 (0.131)	0.011 (0.123)	0.073 (0.077)
Constant	0.208 (0.359)	-0.758** (0.329)	1.325* (0.771)	-2.987** (1.251)	3.613*** (0.968)	-0.304 (0.735)
Observations	207	170	207	170	207	170
R-squared	0.255	0.398	0.181	0.192	0.315	0.320

Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, SUNA is subsidiary company uncertainty avoidance, CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

Here, when holding companies originate from cultures with high uncertainty avoidance cultural origin, green reporting positively impacts ROA, ROE, and Tobin's Q. This outcome supports the hypothesis that green reporting has a more pronounced effect on firm performance for holding companies rooted in high uncertainty avoidance cultures. Specifically, the coefficients for ROA,

ROE, and Tobin's Q are higher under high uncertainty avoidance cultures compared to low uncertainty avoidance cultures. These results are consistent with prior studies by Williams, 1999, Kumar and Prakash, 2019 and Peng et al., 2014 which align with institutional theory, cultural capital theory, stakeholder theory, legitimacy theory, and signaling theory. They suggest that the cultural background of parent companies can serve as a form of capital influencing subsidiary green reporting, thereby enhancing overall firm performance. The significant findings align with institutional theory, cultural capital theory, stakeholder theory, legitimacy theory, and signaling theory. However, the non-significant results support Reitz et al. (1979) that organizations are influenced not only by institutional pressures but also by the need to acquire external resources for survival and success.

The Role of Holding Company Long Term Orientation

The results of this analysis are presented in Panel A of Table 42.

**TABLE 42: GREEN REPORTING AND PERFORMANCE
CONDITIONED ON HOLDING COMPANY LONG-TERM
ORIENTATION**

	High (1)	Low (2)	High (3)	Low (4)	High (5)	Low (6)
VARIABLES	<i>logROA</i>	<i>logROA</i>	<i>logROE</i>	<i>logROE</i>	<i>logTobinsQ</i>	<i>logTobinsQ</i>
<i>GreenReport</i>	0.068 (0.054)	0.125* (0.076)	0.248* (0.150)	0.235 (0.145)	0.635*** (0.155)	0.228 (0.149)
<i>SLTO</i>	-0.218 (0.157)	-1.574 (1.217)	-0.079 (0.450)	-0.992 (2.402)	-1.445*** (0.450)	-1.646 (2.394)
<i>CEO TEN</i>	0.006** (0.003)	-0.013* (0.007)	0.008 (0.008)	-0.040*** (0.013)	-0.012 (0.008)	-0.040*** (0.013)
<i>CEO GEN DIVER</i>	0.079* (0.042)	0.214*** (0.075)	0.183 (0.119)	0.150 (0.145)	-0.343*** (0.122)	0.468*** (0.147)
<i>BSIZE</i>	0.005 (0.005)	-0.029*** (0.008)	0.017 (0.013)	-0.050*** (0.015)	0.024* (0.014)	0.023 (0.015)
<i>BIND</i>	-0.066 (0.081)	-0.055 (0.114)	-0.131 (0.232)	-0.149 (0.219)	-0.287 (0.233)	-0.765*** (0.225)
<i>FIRM AUD</i>	0.029 (0.030)	-0.025 (0.046)	0.079 (0.086)	0.064 (0.090)	-0.015 (0.086)	0.258*** (0.090)
<i>Firm Size (Log)</i>	0.002 (0.006)	0.027** (0.013)	-0.004 (0.017)	-0.011 (0.027)	-0.010 (0.017)	-0.066** (0.026)
<i>Firm Age</i>	-0.000 (0.000)	0.002 (0.002)	-0.002* (0.001)	0.002 (0.003)	-0.002** (0.001)	-0.002 (0.003)
<i>logLeverage</i>	-0.273*** (0.047)	-0.132 (0.093)	-0.321** (0.136)	0.377** (0.179)	0.015 (0.136)	0.873*** (0.184)
<i>GDP</i>	-0.124*** (0.026)	0.201 (0.149)	-0.134* (0.072)	0.494* (0.286)	-0.459*** (0.074)	0.119 (0.294)
<i>Inflation</i>	-0.027 (0.028)	-0.032 (0.048)	0.013 (0.079)	0.080 (0.094)	-0.230*** (0.080)	-0.106 (0.095)
<i>RegQuality</i>	0.139*** (0.035)	0.160 (0.338)	-0.011 (0.099)	0.252 (0.655)	0.129 (0.101)	0.584 (0.664)
Constant	1.264*** (0.243)	-1.212 (1.554)	1.198* (0.691)	-2.857 (2.977)	5.404*** (0.699)	2.029 (3.055)
Observations	247	130	247	130	247	130
R-squared	0.299	0.302	0.120	0.254	0.293	0.474

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. LogROA is log of return on assets, LogROE is log of return on equity, logTobinsQ is TobinsQ, *GreenReport* is green reporting, SLTO is subsidiary company long term orientation, CEO TEN represents CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

Finally, when holding companies originate from cultures with high long term orientation cultural origin, green reporting positively impacts ROE and Tobin's Q. This outcome supports the hypothesis that green reporting has a more pronounced effect on firm performance for holding companies rooted in

high long term orientation cultures. Conversely, for ROA, the impact is notably stronger when holding companies come from low long term orientation backgrounds, contradicting our hypothesis in this context. These findings highlight the significant moderating role of holding companies' cultural background while reinforcing the notion that green reporting remains beneficial regardless of the holding company's cultural origin.

These results are consistent with prior studies by Halkos and Skouloudis, 2017, Kim and Kim, 2010 and Gallego-Álvarez and Ortas, 2017 which align with institutional theory, cultural capital theory, stakeholder theory, legitimacy theory, and signaling theory. Thus, the cultural background of parent companies can serve as a form of capital influencing subsidiary green reporting, thereby enhancing overall firm performance.

Robustness (Alternative Measure of Holding Company Cultural Origin)

To validate the findings, the study substitutes the Hofstede culture model with schwartz culture model. Each dimension bears conceptual similarities to one of Hofstede's (1980) original dimensions. However, the expected signs between the two models are substantially similar, except in a few instances. This is not surprising because Imm Ng et al., (2007) found that the two were found to be non-congruent. Also, there there exist differences concerning theoretical reasoning, methods, respondents, and time periods (Schwartz, 1994). Schwartz (1992) defines values based on needs, encompassing "individuals' requirements as biological organisms, society's need for coordinated social interaction, and groups' need for survival and support." In contrast, Hofstede's (2001) framework was developed using macroeconomic variables and was shaped based on norms.

CONCLUSION AND POLICY RECOMMENDATIONS

The study presented an analysis of the presence of holding company cultural origin on the green reporting and firm performance of listed manufacturing firms in SSA Anglophone countries. The IV-GMM estimation technique was employed to achieve the purpose of the study due to endogeneity challenge between green reporting and firm performance. This study sought to find out whether holding company's power distance, holding company's individuality, holding company's masculinity, holding company's uncertainty avoidance, holding company's long-term orientation, and holding company's indulgence affect the relationship between green reporting and firm performance of listed manufacturing firms in SSA. The study is the first to assess the nexus between these variables in SSA, where voluntary green reporting still lags that of developed countries. The study finds that green reporting positively affects ROA and ROE but has no relationship with TobinsQ.

The impact of green reporting on firm performance varies depending on the cultural dimensions of holding companies. Green reporting shows a positive influence on firm performance when holding companies originate from cultures characterized by power distance, individualism, and indulgence. Conversely, cultures with low masculinity demonstrate a stronger positive effect of green reporting on ROA and ROE, while high masculinity cultures show a more significant impact on TobinsQ. Additionally, CEOs from cultures with high uncertainty avoidance experience a more pronounced positive influence of green reporting on firm performance. Cultures with high long-term orientation exhibit positive impacts on ROE and TobinsQ through green

reporting, whereas cultures with low long-term orientation show a more notable effect on ROA. These findings are consistent with various theoretical frameworks including institutional theory, cultural capital theory, stakeholder theory, legitimacy theory, and signaling theory.

Since green reporting has been shown to positively impact ROA and ROE while exhibiting no relationship with Tobin's Q, firms should prioritize sustainability investments that improve operational efficiency rather than focusing solely on short-term market valuation strategies. Holding companies from power distance, individualism, and indulgence cultures should develop structured environmental sustainability goals aligned with corporate financial strategies to bolster firm performance. Subsidiaries under low masculinity holding companies should integrate sustainability-driven performance metrics into their operations, as these cultures demonstrate stronger ROA and ROE improvements from green reporting. High masculinity holding companies should align their green reporting efforts with competitive market positioning, as their subsidiaries experience greater Tobin's Q effects from sustainability initiatives.

Subsidiaries operating under holding companies characterized by high uncertainty avoidance should implement risk management frameworks that integrate sustainability into their regulatory compliance and corporate governance strategies. For subsidiaries under high long-term orientation holding companies, there should be a focus on long-term sustainability investments, as these can lead to stronger ROE and Tobin's Q improvements through effective green reporting. Conversely, firms with low long-term orientation holding companies should emphasize the role of green reporting in

enhancing short-term profitability (ROA) to align sustainability with immediate financial performance.

Institutional investors, policymakers, and regulatory bodies should enforce stricter compliance with environmental disclosure requirements for holding companies from individualistic and long-term oriented cultures, as these firms often prioritize financial goals over sustainability initiatives. Market-driven sustainability incentives, such as green bonds, ESG-linked financial products, and carbon credit benefits, should be offered to holding companies that actively promote sustainability across their subsidiaries. Furthermore, corporate boards should embed green reporting metrics into the executive compensation structures of holding companies, ensuring that sustainability remains a priority in decision-making at both the parent and subsidiary levels.

CHAPTER EIGHT

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter combines findings from four empirical studies focusing on cultural origin, green reporting, and firm performance. It begins by summarizing the key findings, followed by conclusions drawn from these studies. In addition, practical implications for this research are outlined, shedding light on how these findings can be applied. The chapter also highlights the contributions made to both theory and empirical understanding. Finally, it offers recommendations for policy and practice, emphasizing actionable steps derived from the research.

Summary of the work

The focus of this study was to investigate how cultural origin, such as CEO cultural origin, and holding company cultural origin, influence the relationship between green reporting and firm performance of listed manufacturing firms in Sub-Saharan Africa. The study aimed to achieve this by delineating specific objectives:

1. To assess the relationship between CEO cultural origin and green reporting of listed manufacturing firms in Sub-Saharan Africa.
2. To evaluate the relationship between holding companies' cultural origin and green reporting of listed manufacturing firms in Sub-Saharan Africa.
3. To analyse the role of CEOs' cultural origin in the relationship between green reporting and firm performance of listed manufacturing firms in Sub-Saharan Africa.

4. To investigate the role played by holding companies' cultural origin on the relationship between green reporting and firm performance of listed manufacturing firms in Sub-Saharan Africa.

To meet the research objectives, the study presented an empirical paper for each of the four objectives. A concise overview of all four papers is provided in the subsequent four paragraphs:

The first objective (empirical paper) as presented in chapter four examined the effect of CEO cultural origin on green reporting of listed manufacturing firms in SSA Anglophone countries. Due to different levels of green reporting over a given period among African economies, the paper adopts the fixed effect panel quantile regression to establish the extent of heterogeneity in green reporting. The research revealed that CEOs from power distance and uncertainty avoidance cultural origin have a negative impact on green reporting, particularly at the higher quantiles indicating a prioritization of individual goals over sustainability. In contrast, those from masculine, individualistic, and indulgent cultural backgrounds show a positive relationship. However, CEOs from Long-term orientation cultural origins have no association with green reporting.

The second objective as presented in chapter five examined whether holding company cultural origin affects green reporting of listed manufacturing firms in SSA Anglophone countries. The study finds that Holding companies from power distance, indulgence, and uncertainty avoidance cultures exhibit a positive association with green reporting of their subsidiary's companies, particularly at the higher quantiles. In contrast, those with individualistic and Long-term orientation cultural backgrounds show a

negative relationship, indicating a prioritization of individual goals over sustainability. However, holding companies from masculine cultures have no association with green reporting.

The third objective (empirical paper) as presented in chapter six assessed whether CEO cultural origin conditions the relationship between green reporting and firm performance. The results indicate that green reporting positively influences Return on Assets and Return on Equity, in line with legitimacy, stakeholder, and signaling theories. Nonetheless, the study challenges the notion that cultural factors uniformly influence this relationship.

The fourth objective (empirical paper) examines how holding company's cultural origin affects the relationship between green reporting and firm performance in a sample of SSA manufacturing firms. The results from the study show that green reporting positively affects ROA and ROE. However, the impact of green reporting on firm performance varies depending on the cultural dimensions of holding companies.

Conclusion of the Hypothesis and Practical Implication of Findings

The conclusion on the hypothesis for each objective and the practical implications for their respective findings are presented in Table 43

Table 43: Conclusion on the hypothesizes and Practical Implication

Chapter	Hypothesizes	Decision	Practical implications
4	H₁: CEOs from power distance cultural origin negatively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.	Accepted at the higher quantiles	The findings demonstrate that firms with CEOs from power distance cultural backgrounds are less likely to produce green reports at the highest quantities of green reporting. This implies that CEOs from power distance cultural backgrounds are more secretive, they tend to restrict the amount of green discourse to preserve power inequality.
4	H₂: CEOs from individualistic cultural origin negatively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.	Accepted at 35% quantile	The findings indicate that firms with CEOs from individualist cultural backgrounds are not likely to produce green reports at the 35% quantile.
4	H₃: CEOs from masculinity cultural origin negatively influence green reporting of listed manufacturing firms in Sub-Saharan Africa.	Rejected	This finding is indicative of their personal commitment to sustainability and their understanding of the positive impact of sustainability on employee engagement and morale. Moreover, this finding further affirms the proactive role played by CEOs of listed manufacturing firms in SSA towards advancing the implementation of the Sustainable Development Goals (SDGs) and contributing to the realization of the Africa We Want agenda.
4	H₄: CEOs from indulgence cultural origin negatively influence green reporting.	Rejected	The findings show that companies led by CEOs from indulgent cultural backgrounds do produce green reports at the 5% quantile.
4	H₅: CEOs from uncertainty avoidance cultural origin positively influence green reporting	Rejected	This indicates that firms with CEOs from uncertainty avoidance cultural backgrounds are less likely to produce green reports at the higher quantiles.
4	H₆: CEOs from long-term orientation cultural origin positively influence green reporting.	Rejected	This shows that firms with CEOs from long-term orientation cultural backgrounds do not have any relationship with green reporting.
5	H₁: Holding companies from power distance cultural origin negatively influences green reporting.	Rejected	The findings show that firms with HC from power distance cultural origin are more likely to produce green reports at higher quantiles. HC from PD cultural origin realized that people are unequal, and this

			promotes ethical practice of giving back to the needy which makes them pressure their subsidiaries in SSA manufacturing firms to produce green reports.
5	H₂: Holding companies from an individualistic cultural origin negatively influences green reporting.	Accepted at the higher quantiles	The results suggest that subsidiary companies with parent companies in individualistic countries are less likely to produce green reports at higher quantiles. That is HIND prioritizes individual goals and achievements over collective concerns so might pressure their subsidiaries not to produce green reports.
5	H₃: Holding companies from masculinity cultural origin negatively influences green reporting.	Rejected	The finding shows an insignificant association between HMAS and Green report. The insignificant result at all quantiles suggests that holding companies from masculinity backgrounds do not influence green reporting of their subsidiaries in any way.
5	H₅: Holding companies from indulgence cultural origin negatively influences green reporting.	Rejected	The finding suggests that subsidiary companies with holding companies from indulgence cultural backgrounds are more likely to disclose their environmental activities in their annual report.
5	H₄: Holding companies from uncertainty cultural origin positively influences green reporting.	Accepted at the higher quantiles	The result suggests that subsidiaries with parent companies operating in uncertainty avoidance societies characterized by fear of unknown or ambiguous situations are more likely to disclose green information in their annual reports.
5	H₆: Holding companies from long-term orientation cultural origin positively influences green reporting.	Rejected	The findings show that subsidiaries with parent companies operating in long-term orientation societies are less likely to disclose green information in their annual reports.
6	H₁: Green reporting positively influences firm performance.	Accepted (ROA & ROE)	This finding substantiates that firms producing green information outperform those without green reports in terms of ROA and ROE, implying that greater green report enhances performance.
6	H₂: Green reporting has a positive impact on firm performance when conditioned on CEOs from low power distance cultural origin.	Accepted (TobinsQ)	The finding shows that green reporting's impact on firm performance is more pronounced in the presence of CEOs from low power distance cultural backgrounds.
6	H₃: Green reporting has	Accepted (ROA	CEOs from low individualism

	a positive impact on firm performance when conditioned on CEOs from low individualism cultural origin.	& ROE)	cultural backgrounds positively moderate the relationship between green reporting and firm performance.
6	H₄: Green reporting has a positive impact on firm performance when conditioned on CEOs from low masculinity cultural origin.	Rejected	The findings show that the adverse effect of green reporting on firm performance is more pronounced in companies led by CEOs from cultures characterized by low masculinity.
6	H₅: Green reporting has a positive impact on firm performance when conditioned on CEOs from low indulgence cultural origin.	Rejected	The findings show that there is no relationship between green reporting and firm performance when the firm CEO comes from an indulgent cultural background.
6	H₆: Green reporting has a positive impact on firm performance when conditioned on CEOs from high uncertainty avoidance cultural origin.	Accepted (ROA&ROE)	The findings show that the influence of green reporting on firm performance is amplified within organizations having a CEO with high uncertainty avoidance cultural origin.
6	H₇: Green reporting has a more positive impact on firm performance when conditioned on CEOs from high long-term orientation cultural origin.	Rejected	The findings show that green reporting's impact on firm performance is more pronounced in the presence of CEO from low long-term orientation cultural backgrounds.
7	H₁: Green reporting positively influences firm performance.	Accepted (ROA&ROE)	This finding substantiates that firms producing green information outperform those without green reports in terms of ROA, ROE, and TobinsQ implying that a greater green report enhances performance.
7	H₂: Green reporting has a positive impact on firm performance when conditioned on Holding companies from low power distance cultural origin.	Accepted (TobinsQ)	This implies that holding companies from low power distance cultural origin cultural background act as a form of resource that influences subsidiary green reporting, thereby enhancing TobinsQ.
7	H₃: Green reporting has a positive impact on firm performance when conditioned on Holding companies from low individualism cultural origin.	Accepted (ROA & ROE)	This indicates that subsidiaries under such holding companies, by aligning their green reporting efforts with the collective values of their parent low individualism culture, may experience enhanced ROA and ROE.

7	H₄: Green reporting has a positive impact on firm performance when conditioned on Holding companies from low masculinity cultural origin.	Accepted (ROA)	This shows that subsidiaries with their holding companies from low masculinity cultural orientation, experience enhanced ROA than those from high masculinity cultural background.
7	H₅: Green reporting has a positive impact on firm performance when conditioned on Holding companies from low indulgence cultural origin.	Accepted (ROE&TobinsQ)	The influence of green reporting on firm performance is amplified within organizations having a holding company from a low indulgence cultural background.
7	H₆: Green reporting has a positive impact on firm performance when conditioned on Holding companies from high uncertainty avoidance cultural origin.	Accepted	This suggests that the HC from uncertainty avoidance cultural background positively affects how green reporting influences the financial performance of listed manufacturing firms in Sub-Saharan Africa. This could mean that the organisation places a high priority on green reporting.
7	H₇: Green reporting has a positive impact on firm performance when conditioned on Holding companies from high long-term orientation cultural origin.	Accepted (ROE&TobinsQ)	Green reporting's impact on firm performance is more pronounced in the presence of HC from high long-term orientation cultural background.

Contribution to Theory and Empirics

The results in this thesis contribute to the existing literature in several ways. Specifically, to enrich the fledging literature on firm performance, this thesis took a holistic view of how green reporting and cultural origin are related to firm performance of listed manufacturing firms in SSA. By examining the CEO cultural origin and green reporting relationship, this thesis contributes to the upper echelon, cultural capital, and Hofstede's cultural value theories by demonstrating how CEO cultural origin affects the green reporting of manufacturing firms. Previous literature that examines the relationship between CEOs and green reporting has done so by employing predominantly

upper-echelon theory because most of these studies did not consider the cultural aspect of CEOs.

Some recent studies have looked at this nexus but have focused on more easily observable characteristics of CEOs, such as age, education, gender, dual roles, tenure, and political affiliations (Kang, 2016; Marquis & Qian, 2014; Mazutis, 2013; McGuinness et al., 2017; Reimer et al., 2017; Aabo & Giorici, 2023). This study is to the best of my knowledge the first to provide empirical evidence on the effect of CEO cultural origin on green reporting. Importantly, culture is key to the implementation of Agenda 2030 and Agenda 2063. Therefore, making this study more relevant for national policy.

The second objective examined the relationship between the holding company's cultural origin and green reporting. This objective provides empirical evidence on the Institutional Theory of Isomorphism and the emerging literature on the relationship between culture and corporate social responsibility. It is a well-known fact that most studies employing Institutional Theory of Isomorphism examine the relationship between other variables. Also, this study is to the best of my knowledge the first to provide empirical evidence on how holding company cultural origin affects the performance of listed manufacturing firms. Meanwhile, some attempts have been made in recent literature to examine the relationship between national culture and environmental reporting.

Thus, the second objective extends the argument of the institutional theory of isomorphism to explain that even though institutional structures are important in economic activities, such economic activities can occur in several

aspects of the economy, including parent-subsidary relationships and manufacturing firms. This study differentiates itself from that of Pinheiro et al. (2023) exploring how national culture shapes environmental disclosure in liberal economies, focusing on the influence of informal institutions (national culture) compared to formal institutional factors. Therefore, this study makes the point that holding companies exert coercive, normative, and mimetic pressures on subsidiaries, influencing their environmental activities (Cho et al., 2021; Othman et al., 2011).

The third objective examines the relationship between the presence of CEO cultural origin on the green reporting and firm performance nexus. Examining the relationship between CEO cultural origin, green reporting, and firm performance contributes to the upper echelon, legitimacy, stakeholder, and signaling theories in some ways. First, this paper introduces green reporting as a way of meeting stakeholders' expectations to maintain legitimacy and foster long-term stakeholder relationships. Similarly, green reporting can signal a company's commitment to sustainability, building trust, enhancing legitimacy, and potentially improving performance. Second, this study examines the moderating role of CEO characteristics in the relationship between green reporting and firm performance from the perspective of culture. Studies that have employed the upper echelon theory to explain this relationship have done so only from observable characteristics of CEOs. Thus, this objective introduces a new paradigm to the relationship between green reporting and firm performance.

Moreso, by examining the presence of CEO cultural origin in the relationship between green reporting and firm performance, this study

provides additional evidence that the potentially favorable effect of green reporting on firm performance could be reduced or strengthened by the presence of CEO culture. Finally, this objective provides additional empirical evidence that CEOs from Societies with low PD, high UNA, high LTO, low MAS, low IND, and low INDU enhanced the relationship between green reporting and firm performance.

The fourth objective examines how the presence of holding company's cultural origin affects the relationship between green reporting and firm performance. To the best of the author's knowledge, the effect of holding company's cultural background on green reporting and firm performance has received no attention. Moreover, this study differentiates itself from Shi and Veenstra (2020) and Wasiuzzaman et al. (2022) who examined the effect of national culture on the relationship between corporate social performance and disclosure, findings that the impact of CSP/R on FP depends on the culture of the country where the firm operates. We add to the significance of culture in understanding the effects of green reporting on firm outcomes.

Contribution to Methodology

The study contributes to methodology by employing the innovative fixed-effect panel quantile regression (PQR) technique. By utilizing the PQR model, this study investigates the varied impacts of CEOs' and holding companies' cultural origin on green reporting at different quantile levels. Importantly, this approach has not been previously applied in studies focusing on cultural origin and green reporting. The rationale behind adopting PQR lies in its capability to accommodate the heterogeneity present in panel data (Akram et al., 2020). Beyond its econometric merits, the fixed-effect PQR

approach allows for a thorough analysis by estimating the effects of cultural origin and other factors at various quantiles of green reporting.

The study also employs innovative IV-GMM techniques. This technique is effective in handling endogeneity concerns, making it a suitable choice for this study because of the persistent nature of firm performance and the possible existence of reverse causality between green reporting and firm performance.

Policy Recommendations

Policies for Firms Seeking to Increase Green Reporting

1. Mandatory Sustainability Disclosure

Firms should enforce environmental(green) disclosure regulations, particularly for CEOs from high power distance and uncertainty avoidance cultures, ensuring transparency and accountability.

2. CEO Selection for Sustainability Leadership

Companies should prioritize CEOs from masculine, individualistic, and indulgent cultures, as they are more inclined toward proactive green reporting. However, cultural traits alone should not determine CEO selection; experience, governance skills, and financial expertise must also be considered.

3. CEO Training and Awareness Programs

Sustainability training should be provided to CEOs from high power distance and high uncertainty avoidance cultures to enhance their commitment to environmental reporting.

4. Holding Company Oversight on Green Reporting

Holding companies from high power distance, indulgence, and uncertainty avoidance cultures should implement sustainability policies for subsidiaries.

5. Market and Stakeholder Pressure on Green Disclosure

Investors and regulators should pressure CEOs from high power distance and uncertainty avoidance cultures to enhance environmental disclosure.

6. Aligning with Sustainability-Oriented Holding Companies

Firms seeking strong sustainability commitments should partner with holding companies that prioritize green reporting. However, financial stability and governance structures should be equally assessed to ensure sustainability does not come at a business cost.

Policies for Firms Seeking to Improve Firm Performance (With Caveats)

1. Aligning CEO Cultural Traits with Financial Outcomes

Firms aiming to leverage sustainability for financial performance should hire CEOs from high power distance and uncertainty avoidance cultures, as they enhance operational efficiency. However, other leadership qualities should be factored into hiring decisions.

2. Performance-Based Sustainability Incentives

Firms should tie executive compensation to green reporting performance, encouraging long-term commitment. However, incentives should be carefully structured to prevent manipulation or short-term compliance behaviors.

3. Market-Driven Incentives for Sustainability Leadership

Offering green bonds, ESG-linked financial products, and carbon credit benefits can drive sustainability among holding companies. However, incentives must be designed to encourage genuine environmental responsibility, not mere compliance.

4. Training for CEO Performance Enhancement

Leadership programs should train CEOs from low individualism and low long-term orientation cultures to use green reporting as a tool for financial growth. However, training must also cover broader strategic management skills.

5. Sustainability as a Competitive Advantage

High-masculinity holding companies should integrate green reporting into competitive strategies to improve Tobin's Q. However, sustainability should be aligned with market trends to maximize competitive advantage.

6. Risk Management for Long-Term Growth

Subsidiaries of high uncertainty avoidance holding companies should incorporate sustainability into risk management. However, risk aversion should not hinder innovation in sustainability initiatives.

7. Regulatory Compliance and Financial Stability

Stricter disclosure requirements should be enforced for individualistic and long-term-oriented holding companies, as they often prioritize profits over sustainability. However, compliance should be manageable to prevent excessive financial strain.

8. Industry-Specific Sustainability Strategies

Firms under low long-term orientation holding companies should align green reporting with short-term financial performance. However, a gradual shift toward long-term sustainability is necessary for sustained profitability.

REFERENCES

- Aabo, T., & Giorici, I. C. (2023). Do female CEOs matter for ESG scores? *Global Finance Journal*, 56, 100722. <https://doi.org/10.1016/j.gfj.2022.100722>
- Abu Abdulai, I., & Osumanu, I. K. (2023). How urbanisation shapes availability of provisioning ecosystem services in peri-urban Ghana. *International Journal of Urban Sustainable Development*, 15(1), 282-298.
- Adams, J., Tackie, G., & Idun, A. A. A. (2025). Green reporting and firm performance of listed manufacturing firms in Sub-Saharan Africa (SSA): Does chief executive officer (CEO) cultural origin matter?. *Journal of Accounting in Emerging Economies*.
- Adela, V., Abeka, M. J., Tackie, G., Anipa, C. A., Mbir, D. E., & Adorm-Takyi, C. (2022). Institutional structures and strength of auditing and Financial Reporting Standards in Africa. *Journal of Accounting in Emerging Economies*, 13(5), 1000–1024. <https://doi.org/10.1108/jaee-02-2022-0066>
- Adu, D. A. (2022). Competition and bank risk-taking in Sub-Saharan Africa countries. *SN Business & Economics*, 2(7), 80.
- AFDB. (2022). African development Bank – Building today, a better Africa tomorrow. African Development Bank Group. Available at: <https://www.afdb.org/en/cop25/climate-change-africa> (Accessed 20 May 2022)

- Aguilera, R. V., Rupp, D. E., Williams, C. A., & Ganapathi, J. (2007). Putting the s back in Corporate Social Responsibility: A multilevel theory of social change in organizations. *Academy of Management Review*, 32(3), 836–863. <https://doi.org/10.5465/amr.2007.25275678>
- Ahmad, S., Wong, K. Y., & Rajoo, S. (2019). Sustainability indicators for manufacturing sectors. *Journal of Manufacturing Technology Management*, 30(2), 312–334. <https://doi.org/10.1108/jmtm-03-2018-0091>
- Akhter, F., Hossain, M. R., Elrehail, H., Rehman, S. U., & Almansour, B. (2022). Environmental disclosures and corporate attributes, from the lens of legitimacy theory: A longitudinal analysis on a developing country. *European Journal of Management and Business Economics*, 32(3), 342–369. <https://doi.org/10.1108/ejmbe-01-2021-0008>
- Akram, R., Chen, F., Khalid, F., Ye, Z., & Majeed, M. T. (2020). Heterogeneous effects of energy efficiency and renewable energy on carbon emissions: Evidence from developing countries. *Journal of Cleaner Production*, 247, 119122. <https://doi.org/10.1016/j.jclepro.2019.119122>
- Al Hawaj, A. Y., & Buallay, A. M. (2021). A worldwide sectorial analysis of sustainability reporting and its impact on firm performance. *Journal of Sustainable Finance & Investment*, 12(1), 62–86. <https://doi.org/10.1080/20430795.2021.1903792>

- Alareeni, B. A., & Hamdan, A. (2020). ESG impact on performance of US S&P 500-listed firms. *Corporate Governance: The International Journal of Business in Society*, 20(7), 1409–1428. <https://doi.org/10.1108/cg-06-2020-0258>
- Albitar, K., Hussainey, K., Kolade, N., & Gerged, A. M. (2020). ESG disclosure and Firm Performance Before and after ir. *International Journal of Accounting & Information Management*, 28(3), 429–444. <https://doi.org/10.1108/ijaim-09-2019-0108>
- Ali, S. T., Lau, Y. C., Shan, S., Ryu, S., Du, Z., Wang, L., Xu, X.-K., Chen, D., Xiong, J., Tae, J., Tsang, T. K., Wu, P., Lau, E. H., & Cowling, B. J. (2022). Prediction of upcoming global infection burden of influenza seasons after relaxation of public health and social measures during the covid-19 pandemic: A modelling study. *The Lancet Global Health*, 10(11). [https://doi.org/10.1016/s2214-109x\(22\)00358-8](https://doi.org/10.1016/s2214-109x(22)00358-8)
- Ali, W., & Frynas, J. G. (2017). The role of normative csr-promoting institutions in stimulating CSR disclosures in developing countries. *Corporate Social Responsibility and Environmental Management*, 25(4), 373–390. <https://doi.org/10.1002/csr.1466>
- Ali, W., Frynas, J. G., & Mahmood, Z. (2017). Determinants of Corporate Social Responsibility (CSR) disclosure in developed and developing countries: A literature review. *Corporate Social Responsibility and Environmental Management*, 24(4), 273–294. <https://doi.org/10.1002/csr.1410>

- Alotaibi, M. M. (2020). Determinants of sustainability disclosure of Saudi listed companies. *Journal of Economics and Sustainable Development*, 11((2)). <https://doi.org/10.7176/jesd/11-2-09>
- Alshbili, I., & Elamer, A. A. (2020). The influence of institutional context on corporate social responsibility disclosure: a case of a developing country. *Journal of Sustainable Finance & Investment*, 10(3), 269-293.
- Altarawneh, M., Shafie, R., & Ishak, R. (2020). Chief executive officer characteristics and financial restatements in Malaysia. *International Journal of Financial Research*, 11(2), 173. <https://doi.org/10.5430/ijfr.v11n2p173>
- Aluchna, M., Roszkowska-Menkes, M., & Khan, S. (2023). Corporate Governance Perspective on Environmental Reporting: Literature Review and future research agenda. *Corporate Social Responsibility and Environmental Management*, 31(3), 1550–1577. <https://doi.org/10.1002/csr.2643>
- Amin, A., Dogan, E., & Khan, Z. (2020). The impacts of different proxies for financialization on carbon emissions in top-ten emitter countries. *Science of The Total Environment*, 740, 140127. <https://doi.org/10.1016/j.scitotenv.2020.140127>
- Amran, A., & Susela Devi, S. (2008). The impact of government and foreign affiliate influence on Corporate Social Reporting. *Managerial Auditing Journal*, 23(4), 386–404. <https://doi.org/10.1108/02686900810864327>
- Anane, G. K., & Cobbinah, P. B. (2022). Everyday politics of land use planning in peri urbanisation. *Habitat International*, 120, 102497.

- Appiah, K., Worae, T. A., Yeboah, B., & Yeboah, M. (2022). The causal nexus between trade openness and environmental pollution in selected emerging economies. *Ecological Indicators*, 138, 108872. <https://doi.org/10.1016/j.ecolind.2022.108872>
- Appiah, M., Li, F., & Korankye, B. (2021). Modeling the linkages among CO2 emission, energy consumption, and industrialization in sub-Saharan African (SSA) countries. *Environmental Science and Pollution Research*, 28(29), 38506–38521. <https://doi.org/10.1007/s11356-021-12412-z>
- Arthur, C. L., Wu, J., Yago, M., & Zhang, J. (2017). Investigating performance indicators disclosure in sustainability reports of large mining companies in Ghana. *Corporate Governance: The International Journal of Business in Society*, 17(4), 643–660. <https://doi.org/10.1108/cg-05-2016-0124>
- Arvidsson, S. (2023). CEO talk of sustainability in CEO letters: Towards the inclusion of a sustainability embeddedness and value-creation perspective. *Sustainability Accounting, Management and Policy Journal*, 14(7), 26–61. <https://doi.org/10.1108/sampj-07-2021-0260>
- Asogwa, I. E. (2023). Uptake of sustainability reporting adoption by non-governmental organisations: An agenda for policy and practice. *Journal of Cleaner Production*, 388, 135842. <https://doi.org/10.1016/j.jclepro.2022.135842>
- AU. (2017). Sustainable environment, p. 517.

- Augier, M., & Teece, D. J. (2009). Dynamic capabilities and the role of managers in business strategy and Economic Performance. *Organization Science*, 20(2), 410–421. <https://doi.org/10.1287/orsc.1090.0424>
- Avi, M. S. (2022). The Relationship Between Financial Reporting and Sustainability Report. The Exposure Draft: IFRS S1 General Requirement for Disclosure of Sustainability-Related Financial Information (From International Sustainability Standard Board) Overcomes the Duality of External Corporate Disclosure. *Journal of Economics, Finance and Management Studies*, 5(04), 1008-1031.
- Babatunde, M. A., & Afolabi, J. A. (2024). Advancing sustainable industrial development in Africa: the role of institutional quality and renewable energy. *Environment, Development and Sustainability*, 1-27.
- Bahadori, N., Kaymak, T., & Seraj, M. (2021). Environmental, social, and governance factors in emerging markets: The impact on firm performance. *Business Strategy & Development*, 4(4), 411–422. <https://doi.org/10.1002/bsd2.167>
- Balcilar, M., Usman, O., & Ike, G. N. (2023). Operational behaviours of multinational corporations, Renewable Energy Transition, and Environmental Sustainability in Africa: Does the level of natural resource rents matter? *Resources Policy*, 81, 103344. <https://doi.org/10.1016/j.resourpol.2023.103344>

- Balluchi, F., Lazzini, A., & Torelli, R. (2020). CSR and greenwashing: A matter of perception in the search of legitimacy. *CSR, Sustainability, Ethics & Governance*, 151–166. https://doi.org/10.1007/978-3-030-41142-8_8
- Barbero, M. I., & Puig, N. (2015). Business groups around the world: An introduction. *Business History*, 58(1), 6–29. <https://doi.org/10.1080/00076791.2015.1051530>
- Baron, R. (2020). The evolution of corporate reporting for integrated performance. *Background Paper for the 30th Round Table on Sustainable Development*, 25(1-35.), 2013. https://doi.org/10.1007/978-3-030-56344-8_11
- Barth, A., & Radev, D. (2022). Integration culture of global banks and the transmission of lending shocks. *Journal of Banking & Finance*, 134, 106338. <https://doi.org/10.1016/j.jbankfin.2021.106338>
- Baum, C. F., Schaffer, M. E., & Stillman, S. (2003). Instrumental variables and GMM: Estimation and testing. *The Stata Journal: Promoting Communications on Statistics and Stata*, 3(1), 1–31. <https://doi.org/10.1177/1536867x0300300101>
- Baumüller, J., & Sopp, K. (2021). Double materiality and the shift from non-financial to European Sustainability Reporting: Review, Outlook and implications. *Journal of Applied Accounting Research*, 23(1), 8–28. <https://doi.org/10.1108/jaar-04-2021-0114>
- Bava, F., & Gromis di Trana, M. (2019). Big4 Versus Non-Big4 Opinion about the Going Concern Assessment: A Survey. *International Journal of Business and Management*, 14(2), 87.

- Bebbington, J., & Unerman, J. (2018). Achieving the United Nations Sustainable Development Goals. *Accounting, Auditing & Accountability Journal*, 31(1), 2–24. <https://doi.org/10.1108/aaaj-05-2017-2929>
- Behrens, I. (2010). *infraTECTURE: transforming infrastructure into architecture, a services building in Pretoria CBD* (Doctoral dissertation, University of Pretoria).
- Bertrand, M., & Schoar, A. (2003). Managing with style: The effect of managers on firm policies. *The Quarterly Journal of Economics*, 118(4), 1169–1208. <https://doi.org/10.1162/003355303322552775>
- Bhagat, R. S. (2002). Culture's consequences: Comparing values, behaviors, institutions, and organizations across Nations Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations (second edition), by Hofstedegeert. Thousand Oaks, CA: Sage, 2001. *Academy of Management Review*, 27(3), 460–462. <https://doi.org/10.5465/amr.2002.7389951>
- Bhatia, A., & Tuli, S. (2017). Corporate attributes affecting sustainability reporting: An Indian perspective. *International Journal of Law and Management*, 59(3), 322–340. <https://doi.org/10.1108/ijlma-11-2015-0057>
- Bird, R., D. Hall, A., Momentè, F., & Reggiani, F. (2007). What corporate social responsibility activities are valued by the market? *Journal of Business Ethics*, 76(2), 189–206. <https://doi.org/10.1007/s10551-006-9268-1>

- Bissoondoyal-Bheenick, E., Brooks, R., & Do, H. X. (2023). ESG and firm performance: The role of size and media channels. *Economic Modelling*, 121, 106203. <https://doi.org/10.1016/j.econmod.2023.106203>
- Bohn, L., Macagnan, C. B., & Kronbauer, C. A. (2025). Navigating legitimacy: diverse stakeholder perspectives on the IFRS Foundation's establishment of the ISSB. *Meditari Accountancy Research*, 33(1), 86–113.
- Boiral, O., Heras-Saizarbitoria, I., & Brotherton, M.-C. (2017). Assessing and improving the quality of sustainability reports: The Auditors' Perspective. *Journal of Business Ethics*, 155(3), 703–721. <https://doi.org/10.1007/s10551-017-3516-4>
- Borghesi, R., Houston, J. F., & Naranjo, A. (2014). Corporate socially responsible investments: CEO altruism, reputation, and shareholder interests. *Journal of Corporate Finance*, 26, 164–181. <https://doi.org/10.1016/j.jcorpfin.2014.03.008>
- Bourdieu, P. (1986). The force of law: Toward a sociology of the juridical field. *Hastings LJ*, 38, 805.
- Boxenbaum, E., & Jonsson, S. (2017). Isomorphism, diffusion and decoupling: Concept evolution and theoretical challenges. *The SAGE Handbook of Organizational Institutionalism*, 77–97. <https://doi.org/10.4135/9781446280669.n4>
- Brickley, J. A., Smith, C. W., & Zimmerman, J. L. (1997). Managerial economics and organizational architecture. (No Title).

- Brochet, F., Miller, G. S., Naranjo, P., & Yu, G. (2019). Managers' cultural background and disclosure attributes. *The Accounting Review*, 94(3), 57-86.
- Brooks, C., & Oikonomou, I. (2018). The effects of environmental, social and governance disclosures and performance on firm value: A review of the literature in Accounting and Finance. *The British Accounting Review*, 50(1), 1–15. <https://doi.org/10.1016/j.bar.2017.11.005>
- Buallay, A. (2019). Is sustainability reporting (ESG) associated with performance? evidence from the European Banking Sector. *Management of Environmental Quality: An International Journal*, 30(1), 98–115. <https://doi.org/10.1108/meq-12-2017-0149>
- Buallay, A., AlAjmi, J. Y., Fadhl, S., & Papoutsis, A. (2024). Beyond averages: Quantile regression explorations of sustainability practices and firm value. *International Journal of Innovation Science*. <https://doi.org/10.1108/ijis-07-2022-0125>
- Buallay, A., Kukreja, G., Aldhaen, E., Al Mubarak, M., & Hamdan, A. M. (2020). Corporate Social Responsibility Disclosure and firms' performance in Mediterranean countries: A stakeholders' perspective. *EuroMed Journal of Business*, 15(3), 361–375. <https://doi.org/10.1108/emjb-05-2019-0066>
- Buyl, T., Boone, C., & Wade, J. B. (2019). CEO narcissism, risk-taking, and resilience: An empirical analysis in US commercial banks. *Journal of Management*, 45(4), 1372-1400.

- Campbell, J. L. (2007). Why would corporations behave in socially responsible ways? an institutional theory of Corporate Social Responsibility. *Academy of Management Review*, 32(3), 946–967. <https://doi.org/10.5465/amr.2007.25275684>
- Cantele, S., Tsalis, T., & Nikolaou, I. (2018). A new framework for assessing the sustainability reporting disclosure of Water Utilities. *Sustainability*, 10(2), 433. <https://doi.org/10.3390/su10020433>
- Carpenter, M. A., Geletkanycz, M. A., & Sanders, Wm. G. (2004). Upper Echelons Research Revisited: Antecedents, elements, and consequences of top management team composition. *Journal of Management*, 30(6), 749–778. <https://doi.org/10.1016/j.jm.2004.06.001>
- Cerciello, M., Busato, F., & Taddeo, S. (2022). The effect of sustainable business practices on profitability. accounting for strategic disclosure. *Corporate Social Responsibility and Environmental Management*, 30(2), 802–819. <https://doi.org/10.1002/csr.2389>
- Cevik, S., & Miryugin, F. (2022). Rogue waves: Climate change and firm performance. *Comparative Economic Studies*, 65(1), 29–59. <https://doi.org/10.1057/s41294-022-00189-0>
- Charles, M., & Benson Ochieng, S. (2023). Strategic outsourcing and firm performance: A review of literature. *International Journal of Social Science and Humanities Research (IJSSHR) ISSN 2959-7056 (o); 2959-7048 (p)*, 1(1), 20–29. <https://doi.org/10.61108/ijsshr.v1i1.5>

- Chaudhary, R. (2019). Green Human Resource Management and employee green behavior: An empirical analysis. *Corporate Social Responsibility and Environmental Management*, 27(2), 630–641. <https://doi.org/10.1002/csr.1827>
- Chaudhri, V., & Hein, J. E. (2021). NGO–Business Partnerships. *Global Perspectives on NGO Communication for Social Change*, 9–28. <https://doi.org/10.4324/9781003188636-3>
- Chen, H., An, M., Wang, Q., Ruan, W., & Xiang, E. (2021). Military executives and Corporate Environmental Information Disclosure: Evidence from China. *Journal of Cleaner Production*, 278, 123404. <https://doi.org/10.1016/j.jclepro.2020.123404>
- Chen, J., & Nadkarni, S. (2016). It’s about time! CEOS’ temporal dispositions, temporal leadership, and corporate entrepreneurship. *Administrative Science Quarterly*, 62(1), 31–66. <https://doi.org/10.1177/0001839216663504>
- Chen, L., Feldmann, A., & Tang, O. (2015). The relationship between disclosures of corporate social performance and financial performance: Evidences from GRI reports in manufacturing industry. *International Journal of Production Economics*, 170, 445–456. <https://doi.org/10.1016/j.ijpe.2015.04.004>
- Chen, Y., Ofosu, E., Veeraraghavan, M., & Zolotoy, L. (2023). Does CEO overconfidence affect workplace safety? *Journal of Corporate Finance*, 82, 102430. <https://doi.org/10.1016/j.jcorpfin.2023.102430>

- Cheng, C., Ren, X., Wang, Z., & Yan, C. (2019). Heterogeneous impacts of renewable energy and environmental patents on CO2 emission - evidence from the BRIICS. *Science of The Total Environment*, 668, 1328–1338. <https://doi.org/10.1016/j.scitotenv.2019.02.063>
- Chijoke-Mgbame, A. M., Mgbame, C. O., Akintoye, S., & Ohalehi, P. (2019). The role of corporate governance on CSR disclosure and firm performance in a voluntary environment. *Corporate Governance: The International Journal of Business in Society*, 20(2), 294–306. <https://doi.org/10.1108/cg-06-2019-0184>
- Chin, M. K., Hambrick, D. C., & Treviño, L. K. (2013). Political ideologies of Ceos. *Administrative Science Quarterly*, 58(2), 197–232. <https://doi.org/10.1177/0001839213486984>
- Cho, C. H., & Patten, D. M. (2007). The role of environmental disclosures as tools of legitimacy: A research note. *Accounting, Organizations and Society*, 32(7–8), 639–647. <https://doi.org/10.1016/j.aos.2006.09.009>
- Cho, C. H., Krasodomska, J., Ratliff-Miller, P., & Godawska, J. (2021). Internationalization and CSR reporting: Evidence from US companies and their Polish subsidiaries. *Meditari Accountancy Research*, 29(7), 135–162. <https://doi.org/10.1108/medar-06-2020-0922>
- CHUI, A. C. W., TITMAN, S., & WEI, K. C. J. (2010). Individualism and momentum around the world. *The Journal of Finance*, 65(1), 361–392. <https://doi.org/10.1111/j.1540-6261.2009.01532.x>

- Chvileva, T. A., & Golovina, E. I. (2017). Publication of reporting of metallurgical companies in context of the concept of corporate sustainable development. *Journal of Industrial Pollution Control*, 33(1), 926-930.
- Chwialkowska, A., Bhatti, W. A., & Glowik, M. (2020). The influence of cultural values on pro-environmental behavior. *Journal of Cleaner Production*, 268, 122305. <https://doi.org/10.1016/j.jclepro.2020.122305>
- Clarkson, M. E. (1995). A stakeholder framework for analyzing and evaluating corporate social performance. *Academy of Management Review*, 20(1), 92–117. <https://doi.org/10.5465/amr.1995.9503271994>
- Contacts | african development bank - building today, a better Africa Tomorrow. (n.d.). <https://www.afdb.org/en/cop25/contacts>
- Coulmont, M., Loomis, S., Berthelot, S., & Gangi, F. (2015). Determinants and impacts of sustainability disclosure. *Sustainability Disclosure: State of the Art and New Directions*, 25–79. <https://doi.org/10.1108/s1479-351220150000030002>
- Damodar N, G. (2004). Basic econometrics.
- DasGupta, R., & Roy, A. (2023). Moderation impact of national culture on international firm's environmental, social, governance and financial performance. *International Journal of Intercultural Relations*, 92, 101749. <https://doi.org/10.1016/j.ijintrel.2022.101749>

- Deswanto, R. B., & Siregar, S. V. (2018). The associations between environmental disclosures with financial performance, environmental performance, and firm value. *Social Responsibility Journal*, 14(1), 180–193. <https://doi.org/10.1108/srj-01-2017-0005>
- Diamastuti, E., Nastiti, T. A., & Khoirina, M. M. (2020). The influence of Hofstede Cultural Dimensions on corporate social responsibility implementation: A study on state-owned companies in Java, Indonesia. *The Indonesian Accounting Review*, 10(2), 117–133. <https://doi.org/10.14414/tiar.v10i2.1843>
- DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2), 147. <https://doi.org/10.2307/2095101>
- Ding, D., del Pozo Cruz, B., Green, M. A., & Bauman, A. E. (2020). Is the COVID-19 lockdown nudging people to be more active: A big data analysis. *British Journal of Sports Medicine*, 54(20), 1183–1184. <https://doi.org/10.1136/bjsports-2020-102575>
- Disli, M., Ng, A., & Askari, H. (2016). Culture, income, and CO2 Emission. *Renewable and Sustainable Energy Reviews*, 62, 418–428. <https://doi.org/10.1016/j.rser.2016.04.053>
- Dobers, P., & Halme, M. (2009). Corporate Social Responsibility and developing countries. *Corporate Social Responsibility and Environmental Management*, 16(5), 237–249. <https://doi.org/10.1002/csr.212>

- Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review*, 20(1), 65–91. <https://doi.org/10.5465/amr.1995.9503271992>
- Dong, L., & Huang, Z. (2023). Some evidence and new insights for feedback loops of human-nature interactions from a holistic Earth perspective. *Journal of Cleaner Production*, 432, 139667. <https://doi.org/10.1016/j.jclepro.2023.139667>
- Dowling, J., & Pfeffer, J. (1975). Organizational legitimacy: Social values and organizational behavior. *The Pacific Sociological Review*, 18(1), 122–136. <https://doi.org/10.2307/1388226>
- Doytch, N., & Uctum, M. (2011). Does the worldwide shift of FDI from manufacturing to services accelerate economic growth? A GMM estimation study. *Journal of International Money and Finance*, 30(3), 410–427. <https://doi.org/10.1016/j.jimonfin.2011.01.001>
- Du, X. (2014). How the market values greenwashing? evidence from China. *Journal of Business Ethics*, 128(3), 547–574. <https://doi.org/10.1007/s10551-014-2122-y>
- Du, X. (2015). How the market values greenwashing? Evidence from China. *Journal of Business Ethics*, 128, 547–574.
- Du, X., Jian, W., Zeng, Q., & Du, Y. (2013). Corporate Environmental Responsibility in polluting industries: Does religion matter? *Journal of Business Ethics*, 124(3), 485–507. <https://doi.org/10.1007/s10551-013-1888-7>

- Du, X., Jian, W., Zeng, Q., & Du, Y. (2014). Corporate environmental responsibility in polluting industries: Does religion matter?. *Journal of Business Ethics*, 124, 485-507.
- Dubey, U. K., & Kothari, D. P. (2022). *Research Methodology*. <https://doi.org/10.1201/9781315167138>
- Durach, C. F., & Wiengarten, F. (2017). Environmental management: The impact of national and organisational long-term orientation on plants' environmental practices and performance efficacy. *Journal of Cleaner Production*, 167, 749–758. <https://doi.org/10.1016/j.jclepro.2017.08.183>
- Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes and performance. *Management Science*, 60(11), 2835–2857. <https://doi.org/10.1287/mnsc.2014.1984>
- Eisenhardt, K. M. (1989). Building theories from Case Study Research. *Academy of Management Review*, 14(4), 532–550. <https://doi.org/10.5465/amr.1989.4308385>
- Eloire, F. (2015). Qui Se ressemble s'assemble ? *Actes de La Recherche En Sciences Sociales*, N° 205(5), 104–119. <https://doi.org/10.3917/arss.205.0104>
- Environment, A. (2023, January 11). *Sustainability Fund*. <https://www.environment.vic.gov.au/sustainability/sustainability-fund>
- European Commission. (2001). Second Report on Economic and Social Cohesion, Brussels: Commission of the European Communities.

- European Commission. (2022). *Culture for Sustainable Development: The Role of Culture in EU Actions*. Retrieved from <https://culture.ec.europa.eu/news/commission-publishes-new-report-on-culture-for-sustainable-development-in-eu-actions>.
- European Union Agency (EUA). (2023). *Climate Action and Emission Reduction Commitments*. Retrieved from <https://www.eea.europa.eu/publications/climate-action-and-emission-reduction-commitments>.
- Eversheds Sutherland and KPMG IMPACT. (2021). *Climate change and corporate value: What companies really think*. Retrieved from <https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2021/03/climate-change-and-corporate-value.pdf>
- Fang, K., Wei, Q., & Logan, K. K. (2017). Protecting the public's environmental right-to-know: Developments and challenges in China's legislative system for EEID, 2007-2015. *Journal of Environmental Law*, 29(2), 285–315. <https://doi.org/10.1093/jel/eqx014>
- Felix, R., Hinsch, C., Rauschnabel, P. A., & Schlegelmilch, B. B. (2018). Religiousness and Environmental Concern: A multilevel and multi-country analysis of the role of life satisfaction and indulgence. *Journal of Business Research*, 91, 304–312. <https://doi.org/10.1016/j.jbusres.2018.06.017>
- Finkelstein, S., Hambrick, D., & Cannella, A. (1996). *Strategic leadership*. Minneapolis, MN.

- Fonseca, L., & Carvalho, F. (2019). The reporting of sdgs by quality, environmental, and Occupational Health and safety-certified organizations. *Sustainability*, 11(20), 5797. <https://doi.org/10.3390/su11205797>
- Freeman, R. B. (2007). Searching for the EU Social Dialogue Model. *AIEL Series in Labour Economics*, 221–238. https://doi.org/10.1007/978-3-7908-1923-6_11
- FREEMAN, R. B. (2010). It's financialization! *International Labour Review*, 149(2), 163–183. <https://doi.org/10.1111/j.1564-913x.2010.00082.x>
- Freeman, R. E. (1984). Corporate views of the public interest corporate views of the public interest, by Sonnenfeld jeffrey A. Boston, Mass.: Auburn Publishing Co., 1981, 285 pp., cloth. *Academy of Management Review*, 9(2), 366–368. <https://doi.org/10.5465/amr.1984.4277733>
- Freeman, R. E., & Reed, D. L. (1983). Stockholders and stakeholders: A new perspective on corporate governance. *California Management Review*, 25(3), 88–106. <https://doi.org/10.2307/41165018>
- Frías-Aceituno, J. V., Rodríguez-Ariza, L., & García-Sánchez, I. M. (2013). Is integrated reporting determined by a country's legal system? an exploratory study. *Journal of Cleaner Production*, 44, 45–55. <https://doi.org/10.1016/j.jclepro.2012.12.006>
- Friedman, M. (1970). A theoretical framework for monetary analysis. *Journal of Political Economy*, 78(2), 193–238. <https://doi.org/10.1086/259623>
- Furlotti, K., Mazza, T., Tibiletti, V., & Triani, S. (2018). Women in top positions on boards of directors: Gender policies disclosed in Italian Sustainability Reporting. *Corporate Social Responsibility and*

Environmental Management, 26(1), 57–70. <https://doi.org/10.1002/csr.1657>

Gallego-Álvarez, Prof. I., & Ortas, Prof. E. (2017). Corporate Environmental Sustainability Reporting in the context of national cultures: A quantile regression approach. *International Business Review*, 26(2), 337–353. <https://doi.org/10.1016/j.ibusrev.2016.09.003>

Gallén, M. L., & Peraita, C. (2017). The effects of national culture on Corporate Social Responsibility Disclosure: A cross-country comparison. *Applied Economics*, 50(27), 2967–2979. <https://doi.org/10.1080/00036846.2017.1412082>

Gamerschlag, R., Möller, K., & Verbeeten, F. (2010). Determinants of voluntary CSR disclosure: Empirical evidence from Germany. *Review of Managerial Science*, 5(2–3), 233–262. <https://doi.org/10.1007/s11846-010-0052-3>

Gao, Z.-K., Cai, Q., Yang, Y.-X., Dong, N., & Zhang, S.-S. (2017). Visibility graph from adaptive optimal kernel time-frequency representation for classification of epileptiform EEG. *International Journal of Neural Systems*, 27(04), 1750005. <https://doi.org/10.1142/s0129065717500058>

Garcia-Sanchez, I.-M., Cuadrado-Ballesteros, B., & Frias-Aceituno, J.-V. (2016). Impact of the institutional macro context on the voluntary disclosure of CSR information. *Long Range Planning*, 49(1), 15–35. <https://doi.org/10.1016/j.lrp.2015.02.004>

- García-Sánchez, I.-M., Hussain, N., Khan, S.-A., & Martínez-Ferrero, J. (2020). Do markets punish or reward corporate social responsibility decoupling? *Business & Society*, 60(6), 1431–1467. <https://doi.org/10.1177/0007650319898839>
- García-Sánchez, I.-M., Rodríguez-Ariza, L., & Frías-Aceituno, J.-V. (2013). The cultural system and Integrated Reporting. *International Business Review*, 22(5), 828–838. <https://doi.org/10.1016/j.ibusrev.2013.01.007>
- Garel, A., & Petit-Romec, A. (2020). Investor rewards to environmental responsibility in the COVID-19 crisis. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3620109>
- Garriga, E., & Melé, D. (2004). Corporate Social Responsibility Theories: Mapping the territory. *Journal of Business Ethics*, 53(1/2), 51–71. <https://doi.org/10.1023/b:busi.0000039399.90587.34>
- Gerged, A. M., Albitar, K., & Al-Haddad, L. (2021). Corporate Environmental Disclosure and earnings management—the moderating role of corporate governance structures. *International Journal of Finance & Economics*, 28(3), 2789–2810. <https://doi.org/10.1002/ijfe.2564>
- Gerged, A. M., Beddewela, E., & Cowton, C. J. (2020). Is corporate environmental disclosure associated with firm value? A multicountry study of gulf cooperation council firms. *Business Strategy and the Environment*, 30(1), 185–203. <https://doi.org/10.1002/bse.2616>

- Ghadge, A., Er Kara, M., Moradlou, H., & Goswami, M. (2020). The impact of industry 4.0 implementation on supply chains. *Journal of Manufacturing Technology Management*, 31(4), 669–686. <https://doi.org/10.1108/jmtm-10-2019-0368>
- Gompers, P. A., Mukharlyamov, V., & Xuan, Y. (2016). The cost of friendship. *Journal of Financial Economics*, 119(3), 626–644. <https://doi.org/10.1016/j.jfineco.2016.01.013>
- Gray, R., Javad, M., Power, D. M., & Sinclair, C. D. (2001). Social and environmental disclosure and corporate characteristics: A research note and extension. *Journal of Business Finance & Accounting*, 28(3–4), 327–356. <https://doi.org/10.1111/1468-5957.00376>
- GRAY, S. J. (1988). Towards a theory of cultural influence on the development of accounting systems internationally. *Abacus*, 24(1), 1–15. <https://doi.org/10.1111/j.1467-6281.1988.tb00200.x>
- Gray, S. J., & Vint, H. M. (1995). The impact of culture on accounting disclosures: Some international evidence. *Asia-Pacific Journal of Accounting*, 2(1), 33–43. <https://doi.org/10.1080/10293574.1995.10510476>
- Griffin, J. J., & Mahon, J. F. (1997). The Corporate Social Performance and Corporate Financial Performance Debate. *Business & Society*, 36(1), 5–31. <https://doi.org/10.1177/000765039703600102>
- Grippa, P., & Demekas, D. (2021). Financial Regulation, climate change, and the transition to a low-carbon economy: A survey of the issues. *IMF Working Papers*, 2021(296), 1. <https://doi.org/10.5089/9781616356521.001>

- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of qualitative research*, 2(163-194), 105.
- Guidry, R. P., & Patten, D. M. (2012). Voluntary disclosure theory and financial control variables: An assessment of recent Environmental Disclosure Research. *Accounting Forum*, 36(2), 81–90. <https://doi.org/10.1016/j.accfor.2012.03.002>
- Gul, R., & Ellahi, N. (2021). The Nexus Between Data Analytics and firm performance. *Cogent Business & Management*, 8(1). <https://doi.org/10.1080/23311975.2021.1923360>
- Gull, A. A., Hussain, N., Khan, S. A., Khan, Z., & Saeed, A. (2022). Governing Corporate Social Responsibility Decoupling: The effect of the governance committee on corporate social responsibility decoupling. *Journal of Business Ethics*, 185(2), 349–374. <https://doi.org/10.1007/s10551-022-05181-3>
- Guryay, E., Safakli, O. V., & Tuzel, B. (2007). Financial development and economic growth: Evidence from Northern Cyprus. *International research journal of finance and economics*, 8(2), 57-62.
- Guthrie, J., & Parker, L. D. (1989). Corporate social reporting: A rebuttal of legitimacy theory. *Accounting and Business Research*, 19(76), 343–352. <https://doi.org/10.1080/00014788.1989.9728863>
- Gyamfi, B. A., Onifade, S. T., Nwani, C., & Bekun, F. V. (2021). Accounting for the combined impacts of natural resources rent, income level, and energy consumption on environmental quality of G7 economies: A panel quantile regression approach. *Environmental Science and*

- Pollution Research*, 29(2), 2806–2818. <https://doi.org/10.1007/s11356-021-15756-8>
- Halkos, G., & Skouloudis, A. (2017). Revisiting the relationship between Corporate Social Responsibility and national culture. *Management Decision*, 55(3), 595–613. <https://doi.org/10.1108/md-12-2016-0868>
- Hall, R. E. (2005). Employment fluctuations with equilibrium wage stickiness. *American Economic Review*, 95(1), 50–65. <https://doi.org/10.1257/0002828053828482>
- Hambrick, D. C. (2007). Upper Echelons Theory: An update. *Academy of Management Review*, 32(2), 334–343. <https://doi.org/10.5465/amr.2007.24345254>
- Hambrick, D. C., & Mason, P. A. (1984). Upper Echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193–206. <https://doi.org/10.5465/amr.1984.4277628>
- Hamdan Zyadat, A. A. (2016). The impact of sustainability on the financial performance of Jordanian Islamic Banks. *International Journal of Economics and Finance*, 9(1), 55. <https://doi.org/10.5539/ijef.v9n1p55>
- Hannan, M. T., & Freeman, J. (1977). The population ecology of organizations. *American Journal of Sociology*, 82(5), 929–964. <https://doi.org/10.1086/226424>
- Hansen, L. P. (1982). Large sample properties of generalized method of moments estimators. *Econometrica*, 50(4), 1029. <https://doi.org/10.2307/1912775>

- Haryanto, S., Chandrarin, G., & Bachtiar, Y. (2019). Bank Size, Risk and Market Discipline with A Deposit Insurance: Evidence of Banking in Indonesia. *AFRE Accounting and Financial Review*, 2(2), 81-90.
- Hasan, Iftekhhar, Jackowicz, K., Kowalewski, O., & Kozłowski, Ł. (2023). Cultural values of parent bank board members and lending by foreign subsidiaries: The moderating role of personal traits. *Journal of International Financial Markets, Institutions and Money*, 83, 101736. <https://doi.org/10.1016/j.intfin.2023.101736>
- Hasan, Iram, Singh, S., & Kashiramka, S. (2021). Does Corporate Social Responsibility Disclosure Impact firm performance? an industry-wise analysis of Indian firms. *Environment, Development and Sustainability*, 24(8), 10141–10181. <https://doi.org/10.1007/s10668-021-01859-2>
- He, H., & Harris, L. (2020). The impact of covid-19 pandemic on Corporate Social Responsibility and marketing philosophy. *Journal of Business Research*, 116, 176–182. <https://doi.org/10.1016/j.jbusres.2020.05.030>
- Hichri, A. (2023). Integrated reporting, audit quality: Presence of environmental auditing in an international context. *European Business Review*, 35(3), 397–425. <https://doi.org/10.1108/eb-03-2022-0044>
- Ho, F. N., Wang, H.-M. D., & Vitell, S. J. (2011). A global analysis of corporate social performance: The effects of cultural and geographic environments. *Journal of Business Ethics*, 107(4), 423–433. <https://doi.org/10.1007/s10551-011-1047-y>

- Hofstede, G. (1980). Culture and organizations. *International Studies of Management & Organization*, 10(4), 15–41. <https://doi.org/10.1080/00208825.1980.11656300>
- Hofstede, G. (1983). The cultural relativity of organizational practices and theories. *Journal of International Business Studies*, 14(2), 75–89. <https://doi.org/10.1057/palgrave.jibs.8490867>
- Hofstede, G. (1991). Book reviews. *Journal of Cross-Cultural Psychology*, 22(3), 429–431. <https://doi.org/10.1177/0022022191223008>
- Hofstede, G. (1994). The business of International Business is culture. *International Business Review*, 3(1), 1–14. [https://doi.org/10.1016/0969-5931\(94\)90011-6](https://doi.org/10.1016/0969-5931(94)90011-6)
- Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. *Online Readings in Psychology and Culture*, 2(1). <https://doi.org/10.9707/2307-0919.1014>
- Hofstede, G., Hofstede, G. J., & Minkov, M. (2005). *Cultures and organizations: Software of the mind* (Vol. 2). New York: Mcgraw-hill.
- Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures et organisations: Nos programmations mentales*. Pearson Education France.
- Hofstede. (2016). Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations. *Collegiate Aviation Review International*, 34(1). <https://doi.org/10.22488/okstate.18.100464>

- Hsiao, H.-F., Zhong, T., & Wang, J. (2024). Does National Culture Influence Corporate Social Responsibility on firm performance? *Humanities and Social Sciences Communications*, 11(1). <https://doi.org/10.1057/s41599-023-02538-5>
- Huang, J., Hu, W., & Zhu, G. (2018). The effect of corporate social responsibility on cost of corporate bond: Evidence from China. *Emerging Markets Finance and Trade*, 54(2), 255–268. <https://doi.org/10.1080/1540496x.2017.1332591>
- Huang, S. K. (2012). The impact of CEO characteristics on corporate sustainable development. *Corporate Social Responsibility and Environmental Management*, 20(4), 234–244. <https://doi.org/10.1002/csr.1295>
- Hung, L.-Y., Wang, S.-M., & Yeh, T.-K. (2022). Collaboration between the government and environmental non-governmental organisations for marine debris policy development: The Taiwan experience. *Marine Policy*, 135, 104849. <https://doi.org/10.1016/j.marpol.2021.104849>
- Hur, W., & Kim, Y. (2017). How does culture improve consumer engagement in CSR initiatives? the mediating role of motivational attributions. *Corporate Social Responsibility and Environmental Management*, 24(6), 620–633. <https://doi.org/10.1002/csr.1432>
- Igwe, M. N., Khatib, S. F., & Bazhair, A. H. (2023). Sustainability Reporting in Africa: A systematic review and Agenda for Future Research. *Corporate Social Responsibility and Environmental Management*, 30(5), 2081–2100. <https://doi.org/10.1002/csr.2494>

- Imm Ng, S., Anne Lee, J., & Soutar, G. N. (2007). Are hofstede's and Schwartz's value frameworks congruent? *International Marketing Review*, 24(2), 164–180. <https://doi.org/10.1108/02651330710741802>
- Ingram, R. W., & Frazier, K. B. (1983). Narrative disclosures in annual reports. *Journal of Business Research*, 11(1), 49-60.
- Intergovernmental Panel on Climate Change (IPCC). (2021). *Climate Change 2021: The Physical Science Basis*. Retrieved from <https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/>.
- ISSB (2024), “ISSB consultation on agenda priorities”, Feedback Summary - Cover paper, available at: www.ifrs.org.
- Jaisinghani, D., & Sekhon, A. K. (2020). CSR disclosures and profit persistence: Evidence from India. *International Journal of Emerging Markets*, 17(3), 705–724. <https://doi.org/10.1108/ijoem-03-2020-0246>
- Jan, A. A., Lai, F.-W., Asif, M., Akhtar, S., & Ullah, S. (2022). Embedding Sustainability Into Bank strategy: Implications for sustainable development goals reporting. *International Journal of Sustainable Development & World Ecology*, 30(3), 229–243. <https://doi.org/10.1080/13504509.2022.2134230>
- Jan, A., Marimuthu, M., Hassan, R., & Mehreen. (2019). Sustainable business practices and firm's financial performance in Islamic Banking: Under the moderating role of Islamic Corporate Governance. *Sustainability*, 11(23), 6606. <https://doi.org/10.3390/su11236606>
- Jayaram, K., Kendall, A., Somers, K., & Bouchene, L. (2021). Africa's green manufacturing crossroads: Choices for a low-carbon industrial future. *Mckinsey Sustainability*.

- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial Behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360. [https://doi.org/10.1016/0304-405x\(76\)90026-x](https://doi.org/10.1016/0304-405x(76)90026-x)
- Jensen, M. C., & Murphy, K. J. (1990). Performance pay and top-management incentives. *Journal of Political Economy*, 98(2), 225–264. <https://doi.org/10.1086/261677>
- Kaasa, A. (2021). Merging hofstede, Schwartz, and Inglehart into a single system. *Journal of Cross-Cultural Psychology*, 52(4), 339–353. <https://doi.org/10.1177/00220221211011244>
- Kang, J. (2016). Unobservable CEO characteristics and CEO compensation as correlated determinants of CSP. *Business & Society*, 56(3), 419–453. <https://doi.org/10.1177/0007650314568862>
- Khan, M. A. (2022). ESG disclosure and Firm Performance: A bibliometric and meta analysis. *Research in International Business and Finance*, 61, 101668. <https://doi.org/10.1016/j.ribaf.2022.101668>
- Khan, P. A., Johl, S. K., & Akhtar, S. (2021). Firm sustainable development goals and firm financial performance through the lens of Green Innovation Practices and Reporting: A Proactive Approach. *Journal of Risk and Financial Management*, 14(12), 605. <https://doi.org/10.3390/jrfm14120605>
- Khlif, H., Hussainey, K., & Achek, I. (2015). The effect of national culture on the association between profitability and Corporate Social and Environmental disclosure. *Meditari Accountancy Research*, 23(3), 296–321. <https://doi.org/10.1108/medar-12-2014-0064>

- Kim, Y., & Kim, S.-Y. (2009). The influence of cultural values on perceptions of corporate social responsibility: Application of Hofstede's dimensions to Korean public relations practitioners. *Journal of Business Ethics*, 91(4), 485–500. <https://doi.org/10.1007/s10551-009-0095-z>
- Koenker, R. (2004). Quantile regression for longitudinal data. *Journal of Multivariate Analysis*, 91(1), 74–89. <https://doi.org/10.1016/j.jmva.2004.05.006>
- Kostova, T., & Roth, K. (2002). Adoption of an organizational practice by subsidiaries of Multinational Corporations: Institutional and Relational Effects. *Academy of Management Journal*, 45(1), 215–233. <https://doi.org/10.5465/3069293>
- Krivogorsky, V. (2024). Sustainability reporting with two different voices: The European Union and the International Sustainability Standards Board. *Journal of International Accounting, Auditing and Taxation*, 100635.
- Krippendorff, K. (2019). *Content Analysis: An Introduction to Its Methodology*. <https://doi.org/10.4135/9781071878781>
- Kumar, K., & Prakash, A. (2019). Developing a framework for assessing sustainable banking performance of the Indian Banking Sector. *Social Responsibility Journal*, 15(5), 689–709. <https://doi.org/10.1108/srj-07-2018-0162>
- Laskar, N., & Maji, S. G. (2017). Corporate Sustainability Performance and firm performance: Evidence from India and South Korea. *International Journal of Corporate Strategy and Social Responsibility*, 1(2), 118. <https://doi.org/10.1504/ijcssr.2017.084289>

- Lee, C.-C., Wang, C.-W., & Ho, S.-J. (2022). The dimension of Green Economy: Culture viewpoint. *Economic Analysis and Policy*, 74, 122–138. <https://doi.org/10.1016/j.eap.2022.01.015>
- Lee, J., & Jungbae Roh, J. (2012). Revisiting corporate reputation and firm performance link. *Benchmarking: An International Journal*, 19(4/5), 649–664. <https://doi.org/10.1108/14635771211258061>
- Lee, T. M., & Hutchison, P. D. (2005). The decision to disclose environmental information: A research review and Agenda. *Advances in Accounting*, 21, 83–111. [https://doi.org/10.1016/s0882-6110\(05\)21004-0](https://doi.org/10.1016/s0882-6110(05)21004-0)
- Lei, Q., & Chen, H. (2018). Corporate governance boundary, debt constraint, and Investment Efficiency. *Emerging Markets Finance and Trade*, 55(5), 1091–1108. <https://doi.org/10.1080/1540496x.2018.1526078>
- Lewbel, A. (2012). Using heteroscedasticity to identify and estimate mismeasured and endogenous regressor models. *Journal of Business & Economic Statistics*, 30(1), 67–80. <https://doi.org/10.1080/07350015.2012.643126>
- Li, J., Zhang, Q., & Etienne, X. L. (2024). Optimal Carbon Emission Reduction Path of the building sector: Evidence from China. *Science of The Total Environment*, 919, 170553. <https://doi.org/10.1016/j.scitotenv.2024.170553>
- Li, Y., Ye, F., Dai, J., Zhao, X., & Sheu, C. (2019). The adoption of green practices by Chinese firms. *International Journal of Operations & Production Management*, 39(4), 550–572. <https://doi.org/10.1108/ijopm-12-2017-0753>

- López, M. V., Garcia, A., & Rodriguez, L. (2007). Sustainable Development and corporate performance: A study based on the dow jones sustainability index. *Journal of Business Ethics*, 75(3), 285–300. <https://doi.org/10.1007/s10551-006-9253-8>
- Loukil, N., & Yousfi, O. (2022). Do CEO's traits matter in innovation outcomes? *Journal of International Entrepreneurship*, 20(3), 375–403. <https://doi.org/10.1007/s10843-022-00309-y>
- Lu, J., & Wang, J. (2021). Corporate governance, law, culture, Environmental Performance and CSR disclosure: A global perspective. *Journal of International Financial Markets, Institutions and Money*, 70, 101264. <https://doi.org/10.1016/j.intfin.2020.101264>
- Lu, L. W., & Taylor, M. E. (2018). A study of the relationships among environmental performance, environmental disclosure, and financial performance. *Asian Review of Accounting*, 26(1), 107–130. <https://doi.org/10.1108/ara-01-2016-0010>
- Luo, L., Tang, Q., & Lan, Y. (2013). Comparison of propensity for carbon disclosure between developing and developed countries. *Accounting Research Journal*, 26(1), 6–34. <https://doi.org/10.1108/arj-04-2012-0024>
- Maama, H., & Marimuthu, F. (2021). Integrated reporting and cost of capital in sub-Saharan African countries. *Journal of Applied Accounting Research*, 23(2), 381–401. <https://doi.org/10.1108/jaar-10-2020-0214>
- Maleki, A., & de Jong, M. (2013). A proposal for clustering the dimensions of national culture. *Cross-Cultural Research*, 48(2), 107–143. <https://doi.org/10.1177/1069397113510268>

- Malik, F., Wang, F., Li, J., & Naseem, M. A. (2023). Impact of environmental disclosure on firm performance: The mediating role of green innovation. *Revista de Contabilidad*, 26(1), 14–26. <https://doi.org/10.6018/rcsar.407921>
- Maroun, W. (2015). Culture, profitability, non-financial reporting and a meta-analysis. *Meditari Accountancy Research*, 23(3), 322–330. <https://doi.org/10.1108/medar-04-2015-0020>
- Marquis, C., & Qian, C. (2014). Corporate Social Responsibility Reporting in China: Symbol or substance? *Organization Science*, 25(1), 127–148. <https://doi.org/10.1287/orsc.2013.0837>
- Mashi, S. A., Inkani, A. I., Obaro, O., & Asanarimam, A. S. (2020). Community perception, response and adaptation strategies towards flood risk in a traditional African city. *Natural Hazards*, 103(2), 1727–1759. <https://doi.org/10.1007/s11069-020-04052-2>
- Mas-Tur, A., & Ribeiro Soriano, D. (2013). The level of innovation among young innovative companies: The impacts of knowledge-intensive services use, firm characteristics and the Entrepreneur attributes. *Service Business*, 8(1), 51–63. <https://doi.org/10.1007/s11628-013-0186-x>
- Mathews, M. R. (1997). Twenty-five years of Social and Environmental Accounting Research. *Accounting, Auditing & Accountability Journal*, 10(4), 481–531. <https://doi.org/10.1108/eum0000000004417>

- Mathuva, D. M., & Kiweu, J. M. (2016). Cooperative Social and Environmental Disclosure and financial performance of Savings and Credit Cooperatives in Kenya. *Advances in Accounting*, 35, 197–206. <https://doi.org/10.1016/j.adiac.2016.09.002>
- Mazutis, D. D. (2013). The CEO effect. *Business & Society*, 52(4), 631–648. <https://doi.org/10.1177/0007650313490510>
- Mbaiwa, J. E., & Siphambe, G. B. (2023). Rural Heritage and Tourism in Africa. *Cultural Heritage and Tourism in Africa*, 116–136. <https://doi.org/10.4324/9781003153955-7>
- McCarthy, S., Oliver, B., & Song, S. (2017). Corporate Social Responsibility and CEO confidence. *Journal of Banking & Finance*, 75, 280–291. <https://doi.org/10.1016/j.jbankfin.2016.11.024>
- McGuinness, P. B., Vieito, J. P., & Wang, M. (2017). The role of board gender and foreign ownership in the CSR performance of Chinese listed firms. *Journal of Corporate Finance*, 42, 75–99. <https://doi.org/10.1016/j.jcorpfin.2016.11.001>
- Meech, D., & Bayliss, T. (2021). International developments in sustainability reporting.
- Menike, L. M. (2020). Impact of environmental disclosure on firm performance: An empirical analysis of food, beverage and tobacco sector companies listed in Colombo Stock Exchange, Sri Lanka. *International Journal of Academic Research in Business and Social Sciences*, 10(10). <https://doi.org/10.6007/ijarbss/v10-i10/7977>

- Mensah, L., & Bein, M. A. (2023). Sound corporate governance and financial performance: Is there a link? Evidence from manufacturing companies in South Africa, Nigeria, and Ghana. *Sustainability*, 15(12), 9263.
- Merkley, K., Michaely, R., & Pacelli, J. (2020). Cultural diversity on wall street: Evidence from consensus earnings forecasts. *Journal of Accounting and Economics*, 70(1), 101330. <https://doi.org/10.1016/j.jacceco.2020.101330>
- Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83(2), 340–363. <https://doi.org/10.1086/226550>
- Mihalciuc, C., & Apetri, A. N. (2019, May). Measuring and reporting non financial performance of socially responsible companies. In *2019 Basiq International Conference: New Trends in Sustainable Business and Consumption*, V. Dinu, Ed. Bucuresti: EdituraAse (pp. 507-514).
- Miller, D., & Shamsie, J. (2001). Learning across the life cycle: Experimentation and performance among the Hollywood studio heads. *Strategic Management Journal*, 22(8), 725–745. <https://doi.org/10.1002/smj.171>
- Minkov, M., & Kaasa, A. (2021). A test of the revised Minkov-Hofstede model of culture: Mirror images of subjective and objective culture across nations and the 50 US states. *Cross-Cultural Research*, 55(2–3), 230–281. <https://doi.org/10.1177/10693971211014468>

- Mohamed Adnan, S., Hay, D., & van Staden, C. J. (2018). The influence of culture and corporate governance on Corporate Social Responsibility Disclosure: A cross country analysis. *Journal of Cleaner Production*, 198, 820–832. <https://doi.org/10.1016/j.jclepro.2018.07.057>
- Mohammad, W. M., & Wasiuzzaman, S. (2021). Environmental, social and governance (ESG) disclosure, competitive advantage and performance of firms in Malaysia. *Cleaner Environmental Systems*, 2, 100015. <https://doi.org/10.1016/j.cesys.2021.100015>
- Nardon, L., & Steers, R. M. (2009). The culture theory jungle: Divergence and convergence in models of national culture. *Cambridge Handbook of Culture, Organizations, and Work*, 3–22. <https://doi.org/10.1017/cbo9780511581151.002>
- Narula, R., Rao, P., Kumar, S., & Matta, R. (2024). ESG scores and firm performance- evidence from emerging market. *International Review of Economics & Finance*, 89, 1170–1184. <https://doi.org/10.1016/j.iref.2023.08.024>
- Nguyen, T. H. H., Elmagrhi, M. H., Ntim, C. G., & Wu, Y. (2021). Environmental performance, sustainability, governance and financial performance: Evidence from heavily polluting industries in China. *Business Strategy and the Environment*, 30(5), 2313–2331. <https://doi.org/10.1002/bse.2748>
- Ntim, C., Moses, Y., Lassou, P., Jayasinghe, K. N., Laguecir, A., Mangena, M.,... & Mathuva, D. African Accounting and Finance Journal (AAFJ).

- Ntim, C. G., & Soobaroyen, T. (2013). Corporate governance and performance in Socially Responsible Corporations: New Empirical Insights from a Neo-institutional framework. *Corporate Governance: An International Review*, 21(5), 468–494. <https://doi.org/10.1111/corg.12026>
- Nzekwe, O. G., Okoye, P. V. C., & Amahalu, N. N. (2021). Effect of sustainability reporting on financial performance of quoted industrial goods companies in Nigeria. *International Journal of Management Studies and Social Science Research*, 3(5), 265-280.
- OECD. (2023). *Environmental Policy Stringency and CO2 Emissions*. Retrieved from https://www.oecdilibrary.org/environment/environmental-policy-stringency-and-co2-emissions_a5458d2c-en.
- Oehoedoe, M. S., Minanurohman, A., & Fitriani, N. (2023). CEOs accounting background and ESG disclosure: Empirical evidence of Indonesian listed companies. *Jurnal Dinamika Akuntansi Dan Bisnis*, 10(1), 81–98. <https://doi.org/10.24815/jdab.v10i1.28558>
- Ofoegbu, G. N., Odoemelam, N., & Okafor, R. G. (2018). Corporate Board characteristics and Environmental Disclosure Quantity: Evidence from South Africa (integrated reporting) and Nigeria (traditional reporting). *Cogent Business & Management*, 5(1), 1551510. <https://doi.org/10.1080/23311975.2018.1551510>
- Ofoezie, E. I., Eludoyin, A. O., Udeh, E. B., Onanuga, M. Y., Salami, O. O., & Adebayo, A. A. (2022). Climate, urbanization and environmental pollution in West Africa. *Sustainability*, 14(23), 15602. <https://doi.org/10.3390/su142315602>

- Ogundajo, G. O., Akintoye, R. I., Abiola, O., Ajibade, A., Olayinka, M. I., & Akintola, A. (2022). Influence of country governance factors and national culture on Corporate Sustainability Practice: An inter-country study. *Cogent Business & Management*, 9(1). <https://doi.org/10.1080/23311975.2022.2130149>
- Orazalin, N., & Mahmood, M. (2019). Determinants of GRI-based sustainability reporting: Evidence from an emerging economy. *Journal of Accounting in Emerging Economies*, 10(1), 140–164. <https://doi.org/10.1108/jaee-12-2018-0137>
- Ordonez-Ponce, E. (2022). The role of local cultural factors in the achievement of the Sustainable Development Goals. *Sustainable Development*, 31(2), 1122–1134. <https://doi.org/10.1002/sd.2445>
- Orij, R. (2010). Corporate Social Disclosures in the context of national cultures and stakeholder theory. *Accounting, Auditing & Accountability Journal*, 23(7), 868–889. <https://doi.org/10.1108/09513571011080162>
- Ortiz-de-Mandojana, N., Bansal, P., & Aragón-Correa, J. A. (2018). Older and wiser: How ceos' time perspective influences long-term investments in Environmentally Responsible Technologies. *British Journal of Management*, 30(1), 134–150. <https://doi.org/10.1111/1467-8551.12287>
- Othman, S., Darus, F., & Arshad, R. (2011). The influence of coercive isomorphism on corporate social responsibility reporting and reputation. *Social Responsibility Journal*, 7(1), 119–135. <https://doi.org/10.1108/17471111111114585>

- Oware, K. M., & Amoako, G. K. (2022). CEO characteristics and disability employment of listed firms. evidence from India. *Cogent Business & Management*, 9(1). <https://doi.org/10.1080/23311975.2022.2119826>
- Oware, K. M., & Mallikarjunappa, T. (2020). CSR expenditure, mandatory CSR reporting and financial performance of listed firms in India: An institutional theory perspective. *Meditari Accountancy Research*, 30(1), 1–21. <https://doi.org/10.1108/medar-05-2020-0896>
- Özbuğday, F. C., Findık, D., Metin Özcan, K., & Başçı, S. (2020). Resource Efficiency Investments and firm performance: Evidence from European Smes. *Journal of Cleaner Production*, 252, 119824. <https://doi.org/10.1016/j.jclepro.2019.119824>
- Ozkan, A., Temiz, H., & Yildiz, Y. (2022). Climate risk, corporate social responsibility, and firm performance. *British Journal of Management*, 34(4), 1791–1810. <https://doi.org/10.1111/1467-8551.12665>
- P., F., & Busru, S. A. (2021). CSR disclosure and firm performance: Evidence from an emerging market. *Corporate Governance: The International Journal of Business in Society*, 21(4), 553–568. <https://doi.org/10.1108/cg-05-2020-0201>
- Paleri, P. (2022). Environmental security (envirosec) (ES4). *Revisiting National Security*, 869–908. https://doi.org/10.1007/978-981-16-8293-3_21
- Pan, C., Abbas, J., Álvarez-Otero, S., Khan, H., & Cai, C. (2022). Interplay between corporate social responsibility and organizational green culture and their role in employees' responsible behavior towards the

- environment and Society. *Journal of Cleaner Production*, 366, 132878.
<https://doi.org/10.1016/j.jclepro.2022.132878>
- Pan, Y., Siegel, S., & Yue Wang, T. (2020). The cultural origin of CEOs' attitudes toward uncertainty: Evidence from corporate acquisitions. *The Review of Financial Studies*, 33(7), 2977-3030.
- Park, G. (2024). The impact of performance reporting on investment behavior: Evidence from disclosure reform in the U.K. *The Accounting Review*, 99(4), 427–453. <https://doi.org/10.2308/tar-2021-0863>
- Park, Y. J., Choe, Y. J., Park, O., Park, S. Y., Kim, Y.-M., Kim, J., Kweon, S., Woo, Y., Gwack, J., Kim, S. S., Lee, J., Hyun, J., Ryu, B., Jang, Y. S., Kim, H., Shin, S. H., Yi, S., Lee, S., Kim, H. K., ... Jeong, E. K. (2020). Contact tracing during coronavirus disease outbreak, South Korea, 2020. *Emerging Infectious Diseases*, 26(10), 2465–2468. <https://doi.org/10.3201/eid2610.201315>
- Pedersen, E. R., Neergaard, P., Pedersen, J. T., & Gwozdz, W. (2013). Conformance and deviance: Company responses to institutional pressures for Corporate Social Responsibility Reporting. *Business Strategy and the Environment*, 22(6), 357–373. <https://doi.org/10.1002/bse.1743>
- Peng, X., Qi, T., & Wang, G. (2022). Board gender diversity, corporate social disclosures, and national culture. *SAGE Open*, 12(4), 215824402211309. <https://doi.org/10.1177/21582440221130946>
- Peng, Y.-S., & Lin, S.-S. (2009). National culture, economic development, population growth and environmental performance: The mediating role

of education. *Journal of Business Ethics*, 90(2), 203–219.

<https://doi.org/10.1007/s10551-009-0036-x>

Peng, Y.-S., DASHDELEG, A.-U., & Chih, H.-L. (2014). Reexamining the impact of National Culture on Corporate Social Responsibility. *Academy of Management Proceedings*, 2014(1), 15178. <https://doi.org/10.5465/ambpp.2014.15178abstract>

Peterson, L. (2009). K-Nearest Neighbor. *Scholarpedia*, 4(2), 1883. <https://doi.org/10.4249/scholarpedia.1883>

Peterson, R. S., Smith, D. B., Martorana, P. V., & Owens, P. D. (2003). The impact of chief executive officer personality on top management team dynamics: One mechanism by which leadership affects organizational performance. *Journal of Applied Psychology*, 88(5), 795–808. <https://doi.org/10.1037/0021-9010.88.5.795>

Pham, H. S., & Tran, H. T. (2020). CSR disclosure and firm performance: The mediating role of corporate reputation and moderating role of CEO integrity. *Journal of Business Research*, 120, 127–136. <https://doi.org/10.1016/j.jbusres.2020.08.002>

Pinheiro, A. B., Oliveira, M. C., & Lozano, M. B. (2023). Os Efeitos da Cultura Nacional na Divulgação Ambiental: Uma análise entre países. *Revista Contabilidade & Finanças*, 34(91). <https://doi.org/10.1590/1808-057x20221636.pt>

Pinheiro, F., Warsi, O., Andersson, D. I., & Lässig, M. (2021). Metabolic fitness landscapes predict the evolution of antibiotic resistance. *Nature Ecology & Evolution*, 5(5), 677–687. <https://doi.org/10.1038/s41559-021-01397-0>

- Pizzi, S., Del Baldo, M., Caputo, F., & Venturelli, A. (2021). Voluntary disclosure of Sustainable Development Goals in mandatory non-financial reports: The moderating role of cultural dimension. *Journal of International Financial Management & Accounting*, 33(1), 83–106. <https://doi.org/10.1111/jifm.12139>
- Pucheta-Martínez, M. C., & Gallego-Álvarez, I. (2018). An international approach of the relationship between Board attributes and the disclosure of Corporate Social Responsibility Issues. *Corporate Social Responsibility and Environmental Management*, 26(3), 612–627. <https://doi.org/10.1002/csr.1707>
- Pucheta-Martínez, M. C., & Gallego-Álvarez, I. (2019). Do board characteristics drive firm performance? an international perspective. *Review of Managerial Science*, 14(6), 1251–1297. <https://doi.org/10.1007/s11846-019-00330-x>
- Punchihewa, R. P. (2021). The sustainability reporting of New Zealand manufacturing firms and compliance with gri sustainability reporting standards.
- Qiu, Y., Shaukat, A., & Tharyan, R. (2016). Environmental and social disclosures: Link with Corporate Financial Performance. *The British Accounting Review*, 48(1), 102–116. <https://doi.org/10.1016/j.bar.2014.10.007>
- Quigley, T. J., & Hambrick, D. C. (2014). Has the “CEO effect” increased in recent decades? A new explanation for the great rise in America’s attention to corporate leaders. *Strategic Management Journal*, 36(6), 821–830. <https://doi.org/10.1002/smj.2258>

- Rees, W. E. (2023). The human ecology of overshoot: Why a major 'population correction' is inevitable. *World*, 4(3), 509–527. <https://doi.org/10.3390/world4030032>
- Reimer, M., Van Doorn, S., & Heyden, M. L. (2017). Unpacking functional experience complementarities in senior leaders' influences on CSR strategy: A CEO–top management team approach. *Journal of Business Ethics*, 151(4), 977–995. <https://doi.org/10.1007/s10551-017-3657-5>
- Reitz, H. J., Pfeffer, J., & Salancik, G. R. (1979). The external control of organizations: A resource dependence perspective. *The Academy of Management Review*, 4(2), 309. <https://doi.org/10.2307/257794>
- Reverte, C. (2008). Determinants of corporate social responsibility disclosure ratings by Spanish listed firms. *Journal of Business Ethics*, 88(2), 351–366. <https://doi.org/10.1007/s10551-008-9968-9>
- Ringov, D., & Zollo, M. (2007). The impact of national culture on Corporate Social Performance. *Corporate Governance: The International Journal of Business in Society*, 7(4), 476–485. <https://doi.org/10.1108/14720700710820551>
- Roaldsnes, A. (2024). Social capital and the intergenerational transmission of cultural capital: How parents' social networks influence children's accumulation of cultural capital. *Poetics*, 102, 101873. <https://doi.org/10.1016/j.poetic.2024.101873>
- Rodgers, W., Guiral, A., & Gonzalo, J. A. (2019). Trusting/distrusting auditors' opinions. *Sustainability*, 11(6), 1666. <https://doi.org/10.3390/su11061666>

- Romm, N. R., & Lethole, P. V. (2021). Prospects for sustainable living with focus on interrelatedness, interdependence and mutuality: Some African perspectives. *From Polarisation to Multispecies Relationships*, 87–114. https://doi.org/10.1007/978-981-33-6884-2_6
- Rosamartina, S., Giustina, S., Domenico, D. F., Pasquale, D. V., & Angeloantonio, R. (2022). Digital reputation and firm performance: The moderating role of firm orientation towards Sustainable Development Goals (sdgs). *Journal of Business Research*, 152, 315–325. <https://doi.org/10.1016/j.jbusres.2022.07.025>
- Rosati, F., & Faria, L. G. D. (2019). Addressing the sdgs in sustainability reports: The relationship with institutional factors. *Journal of Cleaner Production*, 215, 1312–1326. <https://doi.org/10.1016/j.jclepro.2018.12.107>
- Roy, A., & Mukherjee, P. (2022). Does National Culture Influence Corporate ESG disclosures? evidence from cross-country study. *Vision: The Journal of Business Perspective*, 097226292210749. <https://doi.org/10.1177/09722629221074914>
- Samad, S. (2022). Unravelling factors influencing firm performance: Evidence from the smes in tourism industry. *International Journal of Financial Studies*, 10(3), 77. <https://doi.org/10.3390/ijfs10030077>
- Sannino, G., Lucchese, M., Zampone, G., & Lombardi, R. (2020). Cultural dimensions, global reporting initiatives commitment, and Corporate Social Responsibility Issues: New evidence from organisation for economic co-operation and development banks. *Corporate Social*

Responsibility and Environmental Management, 27(4), 1653–1663.

<https://doi.org/10.1002/csr.1914>

Sanusi, K. A., & Sanusi, O. (2019). Environmental sustainability reporting practices in Nigeria: Are clouds darker or fairer in the manufacturing industry?. *International Journal of Social Sciences and Humanity Studies*, 11(2), 39-60.

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H., & Jinks, C. (2017). Saturation in qualitative research: Exploring its conceptualization and Operationalization. *Quality & Quantity*, 52(4), 1893–1907. <https://doi.org/10.1007/s11135-017-0574-8>

Saygili, E., Arslan, S., & Birkan, A. O. (2022). ESG practices and Corporate Financial Performance: Evidence from Borsa Istanbul. *Borsa Istanbul Review*, 22(3), 525–533. <https://doi.org/10.1016/j.bir.2021.07.001>

Schilling, J., Hertig, E., Trambly, Y., & Scheffran, J. (2020). Climate change vulnerability, water resources and social implications in North Africa. *Regional Environmental Change*, 20(1). <https://doi.org/10.1007/s10113-020-01597-7>

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, 1–65. [https://doi.org/10.1016/s0065-2601\(08\)60281-6](https://doi.org/10.1016/s0065-2601(08)60281-6)

Schwartz, S. H. (1994). Are there universal aspects in the structure and contents of human values? *Journal of Social Issues*, 50(4), 19–45. <https://doi.org/10.1111/j.1540-4560.1994.tb01196.x>

- Scott, W. R. (1987). The adolescence of institutional theory. *Administrative Science Quarterly*, 32(4), 493. <https://doi.org/10.2307/2392880>
- Scott, W. R. (2008). Approaching adulthood: The maturing of institutional theory. *Theory and Society*, 37(5), 427–442. <https://doi.org/10.1007/s11186-008-9067-z>
- Sekhon, A. K., & Kathuria, L. M. (2019). Analyzing the Corporate Social Responsibility Disclosures of selected companies in India. *Corporate Communications: An International Journal*, 24(4), 686–701. <https://doi.org/10.1108/ccij-04-2019-0050>
- Selvam, M., Gayathri, J., Vasanth, V., Lingaraja, K., & Marxiaoli, S. (2016). Determinants of firm performance: A subjective model. *International Journal of Social Science Studies*, 4(7). <https://doi.org/10.11114/ijsss.v4i7.1662>
- Shahab, Y., Gull, A. A., Ahsan, T., & Mushtaq, R. (2021). CEO power and corporate social responsibility decoupling. *Applied Economics Letters*, 29(21), 1965–1969. <https://doi.org/10.1080/13504851.2021.1966368>
- Shahab, Y., Ntim, C. G., Chen, Y., Ullah, F., Li, H., & Ye, Z. (2019). Chief executive officer attributes, sustainable performance, environmental performance, and environmental reporting: New insights from Upper Echelons Perspective. *Business Strategy and the Environment*, 29(1), 1–16. <https://doi.org/10.1002/bse.2345>
- Shahab, Y., Ntim, C. G., Chengang, Y., Ullah, F., & Fosu, S. (2018). Environmental policy, environmental performance, and financial distress in China: DO top management team characteristics matter?

Business Strategy and the Environment, 27(8), 1635–1652.

<https://doi.org/10.1002/bse.2229>

Shaheen, R., Luo, Q., & Bala, H. (2022). Female CEO succession and Corporate Social Disclosure in China: Unveiling the significance of ownership status and firm performance. *Environmental Science and Pollution Research*, 30(6), 14223–14239. <https://doi.org/10.1007/s11356-022-23079-5>

Shaikh, I. (2022). Environmental, social, and governance (ESG) practice and Firm Performance: An international evidence. *Journal of Business Economics and Management*, 23(1), 218–237. <https://doi.org/10.3846/jbem.2022.16202>

Shao, L., Kwok, C. C., & Zhang, R. (2013). National Culture and Corporate Investment. *Journal of International Business Studies*, 44(7), 745–763. <https://doi.org/10.1057/jibs.2013.26>

Shi, W., & Veenstra, K. (2020). The moderating effect of cultural values on the relationship between corporate social performance and firm performance. *Journal of Business Ethics*, 174(1), 89–107. <https://doi.org/10.1007/s10551-020-04555-9>

Sial, M. S., Zheng, C., Khuong, N. V., Khan, T., & Usman, M. (2018). Does firm Performance Influence Corporate Social Responsibility Reporting of Chinese listed companies? *Sustainability*, 10(7), 2217. <https://doi.org/10.3390/su10072217>

- Simon, G., Lee, J. A., Cottrell, M., & Verleysen, M. (2007). Forecasting the cats benchmark with the double vector quantization method. *Neurocomputing*, 70(13–15), 2400–2409. <https://doi.org/10.1016/j.neucom.2005.12.137>
- Simsek, Z., Veiga, J. F., Lubatkin, M. H., & Dino, R. N. (2005). Modeling the multilevel determinants of Top Management Team Behavioral Integration. *Academy of Management Journal*, 48(1), 69–84. <https://doi.org/10.5465/amj.2005.15993139>
- Situ, H., Tilt, C., & Seet, P. S. (2021). The influence of the Chinese government's political ideology in the field of corporate environmental reporting. *Accounting, Auditing & Accountability Journal*, 34(9), 1–28.
- Song, B., Wen, J., & Ferguson, M. A. (2018). Toward effective CSR communication in controversial industry sectors. *Journal of Marketing Communications*, 26(3), 243–267. <https://doi.org/10.1080/13527266.2018.1536887>
- Stjepanović, S., Tomić, D., & Škare, M. (2017). A new approach to measuring green GDP: A cross-country analysis. *Entrepreneurship and Sustainability Issues*, 4(4), 574–590. [https://doi.org/10.9770/jesi.2017.4.4\(13\)](https://doi.org/10.9770/jesi.2017.4.4(13))
- Stock, J. H., & Watson, M. W. (2008). Heteroskedasticity-robust standard errors for fixed effects panel data regression. *Econometrica*, 76(1), 155–174. <https://doi.org/10.1111/j.0012-9682.2008.00821.x>
- Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 20(3), 571–610. <https://doi.org/10.5465/amr.1995.9508080331>

- Sun, J., Yoo, S., Park, J., & Hayati, B. (2018). Indulgence versus restraint: The moderating role of cultural differences on the relationship between corporate social performance and Corporate Financial Performance. *Journal of Global Marketing*, 32(2), 83–92. <https://doi.org/10.1080/08911762.2018.1464236>
- Szaboova, L. (2023). *Climate change, migration and rural adaptation in the Near East and North Africa region*. <https://doi.org/10.4060/cc3801en>
- Taouab, O., & Issor, Z. (2019). Firm performance: Definition and measurement models. *European Scientific Journal ESJ*, 15(1). <https://doi.org/10.19044/esj.2019.v15n1p93>
- Thanetsunthorn, N. (2015). The impact of national culture on Corporate Social Responsibility: Evidence from cross-regional comparison. *Asian Journal of Business Ethics*, 4(1), 35–56. <https://doi.org/10.1007/s13520-015-0042-2>
- Thanetsunthorn, N., & Wuthisatian, R. (2019). What Drives Corporate Social Performance? the role of espoused national cultural values. *Corporate Social Responsibility, Ethics and Sustainable Prosperity*, 3–45. https://doi.org/10.1142/9789811206887_0001
- Throsby, D. (1995). Culture, economics and Sustainability. *Journal of Cultural Economics*, 19(3), 199–206. <https://doi.org/10.1007/bf01074049>
- Tian, M., Xu, G., & Zhang, L. (2019). Does environmental inspection led by central government undermine Chinese heavy-polluting firms' stock value? the buffer role of political connection. *Journal of Cleaner Production*, 236, 117695. <https://doi.org/10.1016/j.jclepro.2019.117695>

- Tien, N. H., Anh, D. B., & Ngoc, N. M. (2019). Corporate Financial Performance due to sustainable development in Vietnam. *Corporate Social Responsibility and Environmental Management*, 27(2), 694–705. <https://doi.org/10.1002/csr.1836>
- Trumpp, C., Endrikat, J., Zopf, C., & Guenther, E. (2013). Definition, conceptualization, and measurement of corporate environmental performance: A critical examination of a multidimensional construct. *Journal of Business Ethics*, 126(2), 185–204. <https://doi.org/10.1007/s10551-013-1931-8>
- United Nations. (2021). *Emissions Gap Report 2021*. Retrieved from <https://www.unepccc.org/project/un-environment-emissions-gap-report/>
- Vachon, S. (2010). International Operations and Sustainable Development: Should national culture matter? *Sustainable Development*, 18(6), 350–361. <https://doi.org/10.1002/sd.398>
- Van Der Waal, J. W., Thijssens, T., & Maas, K. (2021). The innovative contribution of multinational enterprises to the Sustainable Development Goals. *Journal of Cleaner Production*, 285, 125319.
- Vitolla, F., Raimo, N., Rubino, M., & Garegnani, G. M. (2021). Do cultural differences impact ethical issues? exploring the relationship between national culture and quality of code of ethics. *Journal of International Management*, 27(1), 100823. <https://doi.org/10.1016/j.intman.2021.100823>

- Vitolla, F., Raimo, N., Rubino, M., & Garzoni, A. (2019). How pressure from stakeholders affects Integrated Reporting Quality. *Corporate Social Responsibility and Environmental Management*, 26(6), 1591–1606. <https://doi.org/10.1002/csr.1850>
- Wachira, M. M. The State of Environmental Reporting (ER) among sub Saharan companies: An Application of the Consolidated Narrative Interrogation (CONI) Method.
- Wachira, M. M., & Mathuva, D. M. (2022). Corporate Environmental Reporting in sub-saharan africa: A literature review and suggestions for further research. *Advances in Environmental Accounting & Management*, 159–182. <https://doi.org/10.1108/s1479-359820220000010008>
- Wahyuni, E. T., Sihotang, P., & Aryanto, Y. H. (2024). The Readiness of Indonesian Companies in Adopting IFRS Sustainability Standards (S2).
- Wan, C., & Roy, S. S. (2023). Geospatial characteristics of fire occurrences in southern hemispheric Africa and Madagascar during 2001–2020. *Journal of Forestry Research*, 34(2), 553-563.
- Wang, G., Holmes, R. M., Oh, I., & Zhu, W. (2016). Do CEOS matter to firm strategic actions and firm performance? A Meta-analytic investigation based on upper echelons theory. *Personnel Psychology*, 69(4), 775–862. <https://doi.org/10.1111/peps.12140>
- Wang, J., Cui, M., & Chang, L. (2023). Evaluating economic recovery by measuring the COVID-19 spillover impact on business practices: Evidence from Asian markets intermediaries. *Economic Change and*

- Restructuring*, 56(3), 1629–1650. <https://doi.org/10.1007/s10644-023-09482-z>
- Wang, Q., Dou, J., & Jia, S. (2016). A meta-analytic review of Corporate Social Responsibility and corporate financial performance. *Business & Society*, 55(8), 1083–1121. <https://doi.org/10.1177/0007650315584317>
- Wang, S., Li, J., & Zhao, D. (2017). Institutional pressures and environmental management practices: The moderating effects of environmental commitment and resource availability. *Business Strategy and the Environment*, 27(1), 52–69. <https://doi.org/10.1002/bse.1983>
- Wasiuzzaman, S., Ibrahim, S. A., & Kawi, F. (2022). Environmental, social and governance (ESG) disclosure and firm performance: Does national culture matter? *Meditari Accountancy Research*, 31(5), 1239–1265. <https://doi.org/10.1108/medar-06-2021-1356>
- Wathne, K. H., & Heide, J. B. (2000). Opportunism in interfirm relationships: Forms, outcomes, and solutions. *Journal of Marketing*, 64(4), 36–51. <https://doi.org/10.1509/jmkg.64.4.36.18070>
- Watts, J. (2020). Climate crisis: in coronavirus lockdown, nature bounces back—but for how long. *The Guardian*, 9.
- Williams, R. (1999). Cultural safety — what does it mean for our work practice? *Australian and New Zealand Journal of Public Health*, 23(2), 213–214. <https://doi.org/10.1111/j.1467-842x.1999.tb01240.x>
- World Bank. (2022). *Corporate responsibility: Sustainability reporting*. World Bank Sustainability Review. <https://www.worldbank.org/en/publication/world-bank-sustainability-review>

- Wu, F., Yenyurt, S., Kim, D., & Cavusgil, S. T. (2006). The impact of information technology on supply chain capabilities and firm performance: A Resource-based view. *Industrial Marketing Management*, 35(4), 493–504. <https://doi.org/10.1016/j.indmarman.2005.05.003>
- Xiao, X., & Shailer, G. (2022). Stakeholders' perceptions of factors affecting the credibility of sustainability reports. *The British Accounting Review*, 54(1), 101002. <https://doi.org/10.1016/j.bar.2021.101002>
- Yameogo, C. E. W., Omojolaibi, J. A., & Dauda, R. O. S. (2021). Economic globalisation, institutions and Environmental Quality in Sub-Saharan africa. *Research in Globalization*, 3, 100035. <https://doi.org/10.1016/j.resglo.2020.100035>
- Yang, Y., Yao, C., & Li, Y. (2020). The impact of the amount of environmental information disclosure on financial performance: The moderating effect of corporate internationalization. *Corporate Social Responsibility and Environmental Management*, 27(6), 2893–2907. <https://doi.org/10.1002/csr.2010>
- Ye, J., Moslehpour, M., Tu, Y.-T., Vinh, N. T., Ngo, T. Q., & Nguyen, S. V. (2022). Investment on environmental social and governance activities and its impact on achieving Sustainable Development Goals: Evidence from chinese manufacturing firms. *Economic Research-Ekonomska Istraživanja*, 36(1), 333–356. <https://doi.org/10.1080/1331677x.2022.2076145>

- Ye, M., Wang, H., & Lu, W. (2021). Opening the “black box” between Corporate Social Responsibility and financial performance: From a critical review on Moderators and mediators to an integrated framework. *Journal of Cleaner Production*, 313, 127919. <https://doi.org/10.1016/j.jclepro.2021.127919>
- Yin, Y., Lin, C., Kim, S. T., Roig, I., Chen, H., Liu, L., Veith, G. M., Jin, R. U., Keeney, S., Jasin, M., Moley, K., Zhou, P., & Ma, L. (2011). The E3 ubiquitin ligase Cullin 4A regulates meiotic progression in mouse spermatogenesis. *Developmental Biology*, 356(1), 51–62. <https://doi.org/10.1016/j.ydbio.2011.05.661>
- Yoon, B., Lee, J. H., & Byun, R. (2018). Does ESG performance enhance firm value? evidence from Korea. *Sustainability*, 10(10), 3635. <https://doi.org/10.3390/su10103635>
- Zahid, M., Rahman, H. U., Khan, M., Ali, W., & Shad, F. (2020). Addressing endogeneity by proposing novel instrumental variables in the nexus of sustainability reporting and firm Financial Performance: A Step-by-step procedure for non-experts. *Business Strategy and the Environment*, 29(8), 3086–3103. <https://doi.org/10.1002/bse.2559>
- Zhang, Z., Su, Z., Wang, K., & Zhang, Y. (2022). Corporate Environmental Information Disclosure and Stock Price Crash Risk: Evidence from Chinese listed heavily polluting companies. *Energy Economics*, 112, 106116. <https://doi.org/10.1016/j.eneco.2022.106116>

- Zheng, X., El Ghouli, S., Guedhami, O., & Kwok, C. C. Y. (2012). National culture and corporate debt maturity. *Journal of Banking & Finance*, 36(2), 468–488. <https://doi.org/10.1016/j.jbankfin.2011.08.004>
- Zhu, D. H., & Chen, G. (2015). CEO narcissism and the impact of prior board experience on corporate strategy. *Administrative science quarterly*, 60(1), 31-65.
- Zhu, N., Osei, A., & Agyemang, A. O. (2024). Do board attributes influence environmental sustainability disclosure in manufacturing firms? Evidence from sub-Saharan Africa. *Corporate Social Responsibility and Environmental Management*, 31(5), 4759-4771.
- Zucker, L. (1987). Institutional theories of organization. *Annual Review of Sociology*, 13(1), 443–464. <https://doi.org/10.1146/annurev.soc.13.1.443>

Appendix A: Variables, Definition, Measurement, and Literature Source

Variable	Definition and Measurement	Literature Source
Return on Assets	Profit before interest and tax over average total assets	Hamdan (2016); Jan, Marimuthu, Hassan and Mehreen (2019); and Buallay (2019)
Return on Equity	Profit after tax over average shareholders' equity	Hamdan (2016); Jan, Marimuthu, Hassan and Mehreen (2019); and Buallay (2019)
Tobin's Q	The market value of the company is divided by the company's assets' replacement cost.	Jan et al. (2019); and Buallay (2019)
Green reporting	The number of disclosures by the firm divided by the total number of disclosures in the GRI-G4 Framework	Arthur et al. (2017); Laskar & Maji (2017); and Kumar & Prakesh (2019).
CEOs Cultural Origin	Power distance, individualism, masculinity uncertainty avoidance, long-term orientation, and indulgence. All six dimensions are coded as continuous variables.	Hofstede et al., 2010
Holding company cultural origin	Six dimensions: power distance, individualism, masculinity uncertainty avoidance, long-term orientation, and indulgence. All six dimensions are coded as continuous variables.	Hofstede et al., 2010
National culture of the manufacturing company	Six dimensions: power distance, individualism, masculinity uncertainty avoidance, long-term orientation, and indulgence. All six dimensions are coded as continuous variables.	Hofstede et al., 2010
CEO's tenure	Number of years since the executive has been appointed to the CEO position	Loukil, & Yousfi, (2022).
CEO gender diversity	Is a dummy variable equal to 1 a male CEO, 0 otherwise	Loukil, & Yousfi, O. (2022).
Firm Size	Log of Total Assets	Bhatia & Tuli (2017); and Alotaibi (2020).
Firm audit	Dummy 1 if firms audited by BIG4, 0 otherwise	Oehoedoe et al. (2023)
Firm Age	The year since the company's founding date	Bhatia & Tuli (2017); and Alotaibi (2020).
Board Independence	The percentage of independent directors of the total number of directors on the board of a company.	Ofoegbu et al. (2018)
Board Size	Total number of directors on the board of a company.	Ofoegbu et al. (2018)
Leverage	The debts of the company divided by the company's total asset	Nzekwe et al. (2021); Lee and Roh (2012)
GDP per Capita	Measured by the GDP of an economy as a ratio of population	Guryay et al. (2007)
Inflation	"Reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly". Measured by changes in CPI.	Kim et al. (2010)
Regulatory quality	The index of Regulatory Quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	Yameogo et al., 2021

Appendix B: Summary of Manufacturing Firms on the Anglophone Stock Market in Africa that have produced Annual reports between 2015-2021.

Stock Exchange	Number of Firms
Ghana Stock Exchange	6
Johannesburg Stock Exchange (South Africa)	33
Lusaka Stock Exchange (Zambia)	7
Malawi Stock Exchange	1
Nairobi Securities Exchange (Kenya)	20
Namibian Stock Exchange	1
Nigerian Stock Exchange	44
Dar es Salaam Stock Exchange (Tanzania)	7
Total	115

Source: Field Survey, 2024

Appendix D: Environmental Reporting Indicators

Indicator Code	Indicator Name
G4-EN1	Materials used by weight or volume
G4-EN2	Percentage of materials used that are recycled input materials
G4-EN3	Energy consumption within the organization
G4-EN4	Energy consumption outside of the organization
G4-EN5	Energy intensity
G4-EN6	Reduction of energy consumption
G4-EN7	Reductions in energy requirements of products and services
G4-EN8	Total water withdrawal by source
G4-EN9	Water sources significantly affected by withdrawal of water
G4-EN10	Percentage and total volume of water recycled and reused
G4-EN11	Operational sites owned, leased, managed in, or adjacent to protected areas
G4-EN12	Description of significant impacts of activities, products, and services on biodiversity
G4-EN13	Habitats protected or restored
G4-EN14	Total number of IUCN Red List species and national conservation list species with habitats in areas affected by operations
G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1)
G4-EN16	Energy indirect greenhouse gas (GHG) emissions (Scope 2)
G4-EN17	Other indirect greenhouse gas (GHG) emissions (Scope 3)
G4-EN18	GHG emissions intensity
G4-EN19	Reduction of greenhouse gas (GHG) emissions
G4-EN20	Emissions of ozone-depleting substances (ODS)
G4-EN21	NO _x , SO _x , and other significant air emissions
G4-EN22	Total water discharge by quality and destination
G4-EN23	Total weight of waste by type and disposal method
G4-EN24	Total number and volume of significant spills
G4-EN25	Weight of transported, imported, exported, or treated waste deemed hazardous
G4-EN26	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff
G4-EN27	Extent of impact mitigation of environmental impacts of products and services
G4-EN28	Percentage of products sold and their packaging materials that are reclaimed by category
G4-EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce
G4-EN30	Total environmental protection expenditures and investments by type
G4-EN31	Total environmental protection expenditures and investments by type
G4-EN32	Percentage of new suppliers that were screened using environmental criteria
G4-EN33	Significant actual and potential negative environmental impacts in the supply chain and actions taken
G4-EN34	Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms

Source: GRI-G4

APPENDIX FOR CHAPTER SIX
Table 44: The Role of CEO Cultural Origin (Schwartz's Cultural Dimension) (IV GMM REGRESSIONS)

Conditioned on Harmony						
	High	Low	High	Low	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	logROA	logROA	logROE	logROE	logTobinsQ	logTobinsQ
<i>GreenReport</i>	0.632** (0.276) (0.043)	-0.921 (0.825) (0.053)	1.387** (0.576) (0.076)	-0.184 (3.052) (0.144)	-1.702** (0.850) (0.125)	4.339 (3.222) (0.242)
Constant	2.728*** (0.986)	-2.654 (4.269)	4.902** (2.123)	-0.649 (15.809)	-1.547 (3.040)	35.731** (16.809)
Control Variables	YES	YES	YES	YES	YES	YES
Observations	408	175	408	175	408	175
R-squared	0.232	0.123	0.321	0.150	0.231	0.321

Conditioned on Embeddedness						
	High	Low	High	Low	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	logROA	logROA	logROE	logROE	logTobinsQ	logTobinsQ
<i>GreenReport</i>	13.839 (52.947)	0.026 (0.162)	38.602 (147.090)	-0.481 (0.629)	13.361 (53.517)	0.147 (0.536)
Constant	-12.194 (50.712)	0.776 (0.502)	-36.993 (140.965)	2.808 (1.844)	-9.806 (51.284)	0.350 (1.516)
Control Variables	YES	YES	YES	YES	YES	250
Observations	333	250	333	250	333	
R-squared	0.125	0.329	0.231	0.143	0.231	0.239

Conditioned on Hierarchy						
	High	Low	High	Low	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	logROA	logROA	logROE	logROE	logTobinsQ	logTobinsQ
<i>GreenReport</i>	1.181** (0.528)	0.403 (0.313)	3.652** (1.429)	0.933 (0.756)	1.563 (1.103)	4.669 (3.288)
Constant	1.411 (1.510)	0.136 (1.924)	-2.704 (4.706)	-2.859 (4.443)	-4.496 (3.749)	-23.333 (18.180)
Control Variables	YES	YES	YES	YES	YES	YES
Observations	351	232	351	232	351	232
R-squared	0.101	0.025	0.202	0.124	0.123	0.245

Conditioned on Mastery						
	High	Low	High	Low	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	logROA	logROA	logROE	logROE	logTobinsQ	logTobinsQ
<i>GreenReport</i>	-1.536 (3.058)	1.351 (1.023)	-5.088 (11.557)	4.237* (2.535)	-2.106 (5.979)	-3.598 (2.807)
Constant	-3.863 (5.688)	9.145 (7.779)	-8.296 (21.540)	30.382 (19.977)	5.765 (10.322)	-13.867 (20.158)
Control Variables	YES	YES	YES	YES	YES	YES
Observations	269	314	269	314	269	314
R-squared	0.212	0.123	0.231	0.205	0.123	0.112

Conditioned on Affauton

	High	Low	High	Low	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	logROA	logROA	logROE	logROE	logTobinsQ	logTobinsQ
<i>GreenReport</i>	0.072 (0.097)	2.285* (1.350)	-0.003 (0.184)	6.044* (3.288)	0.022 (0.377)	-0.716 (1.856)
Constant	0.623** (0.292)	2.719* (1.579)	2.220*** (0.476)	5.429 (3.862)	6.371*** (0.931)	4.753** (2.256)
Control Variables	YES	YES	YES	YES	YES	YES
Observations	253	330	253	330	253	330
R-squared	0.316	0.221	0.166	0.125	0.236	0.211

Conditioned on Intelauton

	High	Low	High	Low	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	logROA	logROA	logROE	logROE	logTobinsQ	logTobinsQ
<i>GreenReport</i>	0.038 (0.321)	7.754 (16.873)	-1.198 (1.467)	23.073 (49.503)	0.612 (0.910)	9.105 (21.020)
Constant	-0.067 (1.684)	33.325 (72.773)	-4.683 (7.344)	101.058 (213.392)	15.186*** (4.250)	50.702 (90.975)
Control Variables	YES	YES	YES	YES	YES	YES
Observations	251	332	251	332	251	332
R-squared	0.333	0.132	0.101	0.123	0.154	0.125

Conditioned on Egalitar

	High	Low	High	Low	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	logROA	logROA	logROE	logROE	logTobinsQ	logTobinsQ
<i>GreenReport</i>	-4.128 (8.974)	-0.284 (0.216)	-12.204 (25.790)	-1.247 (0.764)	4.330 (9.131)	-2.092** (0.987)
Constant	10.948 (22.748)	1.384*** (0.332)	31.153 (65.506)	1.980 (1.270)	-7.191 (23.664)	2.029 (1.709)
Control Variables	YES	YES	YES	YES	YES	YES
Observations	373	210	373	210	373	210
R-squared	0.109	0.312	0.212	0.232	0.143	0.238

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All the variables are previously defined. Charmony is CEO harmony, Cembedded is CEO embeddedness, Chierarchy is CEO hierarchy, Cmastery is CEO mastery, Caff auton is CEO affection and autonomy, Cintel auton is CEO intel autonomy, Cegalitar is CEO egalitarianism. CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets, LogROE is log of return on equity, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.

APPENDIX FOR CHAPTER SEVEN

Table 45: The Role of Holding Company Cultural Origin (SCHWARTZ'S Cultural Dimension)

Conditioned on Harmony						
	High	Low	High	Low	High	Low
VARIABLES	(1) logROA	(2) logROA	(3) logROE	(4) logROE	(5) logTobinsQ	(6) logTobinsQ
<i>GreenReport</i>	0.060 (0.058) (0.037)	0.138* (0.071) (0.208)	0.231 (0.162) (0.103)	0.350*** (0.135) (0.399)	0.291 (0.178) (0.113)	0.247* (0.145) (0.423)
Constant	2.488*** (0.724)	1.924 (1.463)	0.798 (2.051)	3.588 (2.796)	4.520** (2.214)	1.226 (2.977)
Control Variables	YES	YES	YES	YES	YES	YES
Observations	211	153	207	151	211	153
R-squared	0.375	0.219	0.155	0.231	0.574	0.431

Conditioned on Embeddedness						
	High	Low	High	Low	High	Low
VARIABLES	(1) logROA	(2) logROA	(3) logROE	(4) logROE	(5) logTobinsQ	(6) logTobinsQ
<i>GreenReport</i>	0.185*** (0.051)	-0.153 (0.102)	0.450*** (0.110)	0.082 (0.283)	0.593*** (0.114)	0.245* (0.144)
Constant	-0.025 (0.793)	3.124*** (0.766)	-1.591 (1.727)	-0.023 (2.118)	-0.516 (1.783)	0.396 (2.052)
Control Variables	YES	YES	YES	YES	YES	YES
Observations	216	148	212	146	216	153
R-squared	0.241	0.429	0.257	0.132	0.424	0.437

Conditioned on Hierarchy						
	High	Low	High	Low	High	Low
VARIABLES	(1) logROA	(2) logROA	(3) logROE	(4) logROE	(5) logTobinsQ	(6) logTobinsQ
<i>GreenReport</i>	0.190*** (0.051)	-0.159 (0.104)	0.469*** (0.111)	0.156 (0.290)	0.596*** (0.112)	0.294 (0.321)
Constant	-1.608 (1.568)	6.321*** (1.726)	-8.435** (3.520)	-2.252 (4.782)	-15.337*** (3.471)	10.128* (5.322)
Control Variables	YES	YES	YES	YES	YES	YES
Observations	223	141	219	139	223	141
R-squared	0.233	0.434	0.244	0.126	0.427	0.620

Conditioned on Mastery						
	High	Low	High	Low	High	Low
VARIABLES	(1) logROA	(2) logROA	(3) logROE	(4) logROE	(5) logTobinsQ	(6) logTobinsQ
<i>GreenReport</i>	-0.014 (0.120)	0.153*** (0.048)	0.459 (0.334)	0.400*** (0.108)	0.851*** (0.252)	0.594*** (0.130)
Constant	-4.648*** (1.611)	3.460** (1.482)	2.512 (4.448)	11.128*** (3.497)	-4.775 (3.376)	24.197*** (4.013)
Control Variables	YES	YES	YES	YES	YES	YES
Observations	127	237	125	233	127	237
R-squared	0.480	0.221	0.170	0.219	0.819	0.332

Conditioned on Affauton

	High	Low	High	Low	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	logROA	logROA	logROE	logROE	logTobinsQ	logTobinsQ
<i>GreenReport</i>	-0.081 (0.100)	0.198*** (0.053)	0.144 (0.269)	0.461*** (0.117)	-0.012 (0.263)	0.651*** (0.116)
Constant	1.471*** (0.409)	0.847 (0.653)	0.663 (1.113)	1.755 (1.454)	14.142*** (1.080)	6.541*** (1.440)
Control Variables	YES	YES	YES	YES	YES	YES
Observations	148	216	146	212	148	216
R-squared	0.415	0.230	0.127	0.237	0.708	0.422

Conditioned on Intelauton

	High	Low	High	Low	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	logROA	logROA	logROE	logROE	logTobinsQ	logTobinsQ
<i>GreenReport</i>	-0.151 (0.100)	0.187*** (0.052)	0.170 (0.275)	0.435*** (0.114)	-0.011 (0.295)	0.630*** (0.117)
Constant	-2.485* (1.445)	2.751* (1.425)	4.277 (3.975)	11.327*** (3.276)	1.713 (4.279)	23.092*** (3.169)
Control Variables	YES	YES	YES	YES	YES	YES
Observations	155	209	153	205	155	209
R-squared	0.433	0.236	0.138	0.258	0.639	0.424

Conditioned on Egalitar

	High	Low	High	Low	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	logROA	logROA	logROE	logROE	logTobinsQ	logTobinsQ
<i>GreenReport</i>	0.104* (0.063)	0.186*** (0.064)	0.280* (0.151)	0.225* (0.136)	-0.055 (0.186)	0.711*** (0.098)
Constant	1.377** (0.586)	0.133 (1.039)	-0.281 (1.410)	-3.837* (2.213)	17.440*** (1.723)	-1.271 (1.595)
Observations	231	133	227	131	231	133
R-squared	0.258	0.361	0.106	0.377	0.409	0.480

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All the variables are previously defined. Pharmony is parent harmony, Pembedded is parent embeddedness, Phierarchy is parent hierarchy, Pmastery is parent mastery, Paffauton is parent affection and autonomy, Pintelauton is parent intel autonomy, Pegalitar is parent egalitarianism. CEO TEN represent CEO tenure, Firm Size is firm size, CEOGD is CEO gender diversity, FIRM AUD is firm audit, Firm Age is firm age, BIND is board independence, BSIZE is board size, LogROA is log of return on assets, LogROE is log of return on equity, and LogLeverage is firm leverage, GDP is gross domestic product, Inflation is inflation deflated by annual GDP, and RegQuality is an estimate of the regulation quality of a country.