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The symbolic use of ESG assurance and its implications for corporate

accountability: A Study of earnings management and tax avoidance.

by

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Thesis for the degree of Doctor of Philosophy

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<u>Abstract</u>

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Zeyu Yang

This doctoral thesis examines the complex relationship between corporate ESG practices—particularly sustainability assurance (SA)—and core accounting behaviours within the increasingly integrated global ESG context. Comprising three interrelated studies, the research first employs a systematic literature review and bibliometric analysis to map the knowledge structure of ESG accounting research, followed by two empirical investigations based on data from European listed companies. The findings indicate that sustainability assurance is often utilised as a tool for symbolic legitimisation rather than substantive commitment, demonstrating significant associations with more concealed real earnings management and aggressive tax avoidance. The research underscores the critical moderating roles of national governance quality and Hofstede's cultural dimensions. By providing an explanatory framework that integrates multiple theoretical perspectives, including impression management, legitimacy, agency, and neo-institutional theory, the study contributes to academic discourse. It also offers practical insights for regulators and investors in identifying greenwashing and assessing genuine ESG commitment. Limitations, such as the exclusive focus on European markets, indicate avenues for future research to cultivate broader understanding.

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Declaration of Authorship

Print name: Zeyu Yang

Title of thesis: The symbolic use of ESG Assurance and its implications for corporate accountability: A Study of earnings management and tax avoidance

I declare that this thesis and the work presented in it is my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;

2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;

3. Where I have consulted the published work of others, this is always clearly attributed;

4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;

5. I have acknowledged all main sources of help;

6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;

7. None of this work has been published before submission;

Signature: Zeyu Yang   Date: 27/2/2026

X

Acknowledgements

Definitions, abbreviations

Abbreviation	Definition or explanation
AEM	Accrual earnings management
BTD	Book tax difference
CSEM	Classification shifting earnings management
CSR	Corporate social responsibility
CSRD	Corporate sustainability reporting directive
DA	Discretionary accrual
DDBTD,	Desai-Dharmapala modified BTD. That is, DDBTD refers to the portion of BTD remaining after deducting the impact of accruals. This represents the part of the difference between the company's accounting profit and taxable income that cannot be explained by total accruals.
EM	Earnings management
ESG	Environmental, social, governance
ETR	Effective tax rate
ISAE	International Standard on Assurance Engagements
ISSB	International Sustainability Standards Board
REM	Real earnings management
SA	The assurance of sustainability report
SFDR	Sustainable Finance Disclosure Regulation
TCFD	Task Force on Climate-related Financial Disclosures
NFRD	Non-Financial Reporting Directive

Chapter 1 Introduction

1. Global Background

Humanity stands at a historic crossroads in the 21st century. The linear economic model of "resource-to-product-to-waste" established since the Industrial Revolution, while creating unprecedented material prosperity, has pushed global ecosystems to the brink of their carrying capacity. The successive assessment reports from the Intergovernmental Panel on Climate Change consistently warn of rapid transformations occurring within the global climate system. Concurrently, the 2019 global assessment report by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services placed the finitude and fragility of ecosystems at the centre of the global agenda. It unequivocally stated that approximately one million species face the threat of extinction. Biodiversity loss on this scale signifies not only an irreversible loss of natural heritage but also poses a direct threat to agricultural-based economic systems worldwide. Major agricultural economies such as China, the United States, India, and Brazil are particularly vulnerable, with supply chains in industries highly dependent on natural capital, including agriculture, fisheries, and pharmaceuticals, facing severe stability challenges. This undermines the stability of the ecosystem services upon which the global economy relies. Simultaneously, carbon emissions and climate risks, manifested through increased frequency and intensity of extreme weather events such as floods, droughts, and heatwaves, are inflicting substantial direct economic losses on global physical assets, infrastructure, and agricultural production. The transition towards "carbon neutrality" itself, with its shifts in policy, technology, and market preferences, also places numerous fossil fuel-based reserve assets at risk of rapid depreciation or value instability. Environmental governance risks, including soil contamination, water scarcity, and improper handling of toxic waste, directly lead to substantial remediation costs, legal liabilities, reputational damage, and even loss of operating licenses for relevant corporations.

These interconnected global risks are no longer hypothetical scenarios of a distant future but pressing realities directly impacting the stability of the current economic system and the sustainable operation of businesses. Collectively, they constitute a systemic threat to corporate survival and development, and indeed to the continuity of human civilisation. This fundamental shift in perception has catalysed a reconfiguration of the development paradigm, from a singular pursuit of short-term economic growth towards achieving long-term, inclusive well-being. This evolution has gradually crystallised into the core concept of "sustainable development," subsequently giving rise to the "corporate social responsibility" framework. This framework posits that companies are accountable not only to shareholders but also to a broader range of stakeholders, including employees, consumers, communities, and the environment. Within this macro context, the consideration of sustainability risks has become deeply embedded throughout the entire process of commercial value creation.

Entering the 21st century, this conceptual framework has materialised into a measurable, comparable, and investable system of Environmental, Social, and Governance (ESG) indicators. It has rapidly evolved from an ethical initiative into a mainstream trend sweeping through global business and finance. According to Bloomberg Intelligence estimates, global ESG assets are projected to exceed $53 trillion by 2025. Concurrently, a substantial body of empirical research demonstrates that ESG performance is directly correlated with a firm's cost of capital, financing capacity, and long-term competitive advantage, thereby driving a fundamental reshaping of risk pricing models (Borio et al., 2023). For instance, ESG performance is closely linked to the cost of capital (El Ghoul et al., 2011; Risalvato et al., 2019; Daugaard, 2020), credit ratings (Cheng et al., 2014), corporate valuation (Eccles et al., 2014; Bartov et al., 2021; Hoang and Phang, 2020), and litigation risk (Beatty and Shimshack, 2010; Bae et al., 2020). It is no longer merely a demand for verbal corporate commitment but has become essential conduct concerning a firm's financing ability, brand reputation, supply chain resilience, and even its license to operate. Corporations need to reposition their roles and responsibilities within this new paradigm, fully integrating ESG factors into corporate governance, strategic planning, and risk

management systems to build a sustainable competitive advantage in an increasingly complex and uncertain business environment. This transition represents more than just a response to compliance requirements; it embodies strategic foresight for the future. It demands that companies look beyond short-term financial performance and redefine their purpose and developmental trajectory within a broader value creation perspective (Asante-Appiah, 2020a; Lombardi et al., 2022).

On the social and cultural dimension, a widespread awakening of rights consciousness and environmental awareness among civil society, consumers, and employees constitutes a grassroots driving force for ESG development (DesJardine et al., 2021; Ryou et al., 2022; Herremans and Nazari, 2016). The rise of social media has significantly amplified the capacity for public oversight of corporate misconduct, compelling firms to adopt more responsible and transparent stances on social issues such as human rights protection, labour standards, community relations, and data ethics (Anis and Hermawan, 2017; Aguilera-Caracuel et al., 2015). This bottom-up pressure and top-down policy regulation reinforce each other, creating a multi-faceted driving model that propels corporate ESG practices.

2. Introduction to Paper 1

The current knowledge system of ESG research demonstrates unprecedented interdisciplinary breadth and complexity. This vast and rapidly expanding body of knowledge has contributed significantly to the social sciences, providing rich empirical evidence for understanding corporate behaviour in the era of sustainable development. However, its explosive growth also presents notable challenges. On one hand, researchers struggle to quickly identify cutting-edge trends or recognise neglected research gaps. Thousands of ESG-related papers are published annually across journals in different disciplines, exhibiting high heterogeneity in research methods, theoretical frameworks, variable measurement, and even conclusions. This makes conducting comprehensive,

systematic knowledge synthesis exceptionally difficult. On the other hand, despite the prolific output, existing research is far from complete.

To address the challenges researchers face in distilling essential knowledge from vast amounts of literature (Massaro et al., 2016), to provide a foundational basis for testing prior theories and summarising specific issues (Massaro et al., 2016), and to enable scholars to review and evaluate significant contributions and debates within the field while identifying breakthroughs across selected themes (Costa et al., 2022), the first research component of this thesis undertakes a rigorous systematic literature review to fill this gap. This endeavour is motivated by several considerations. First, the current output of literature reviews on the ESG-business sector is relatively limited. As of April 2024, only 230 review articles related to the ESG-business sector were identified through database searches, a small number compared to the vast body of empirical research. Second, the application of Systematic Literature Review methodologies and visualisation bibliometric techniques in existing reviews is infrequent. Third, there is a scarcity of review articles conducted specifically from an accounting perspective. Therefore, this SLR incorporates bibliometric visualisation analysis and is grounded in an accounting lens. Its purpose is to enable users to understand and scrutinise the financial and non-financial impacts of ESG evolution on contemporary firms, thereby making the dynamics of change more measurable and comparable.

This SLR establishes the latest dynamics and developmental trends within the current ESG research domain through a systematic literature search and screening process, encompassing geographical distribution characteristics, the evolution of hot topics, and patterns in method and theory application. Adhering to the systematic review approach proposed by Tranfield et al. (2003), we strictly followed transparent and reproducible literature inclusion criteria to ensure the reliability and validity of the conclusions. Through this SLR, this paper extensively critiques core themes within the ESG-accounting literature and strives to integrate theoretical connections across different topics, overcoming the limitations inherent in previous reviews that adopted a singular focus (Gillan et al., 2021; Eccles and Viviers, 2011), for instance, concentrating solely on economic or financial

performance. This comprehensive perspective helps reveal the cross-cutting influences of ESG factors across multiple dimensions, providing a basis for subsequent interdisciplinary dialogue. Furthermore, this study pays particular attention to the theoretical progress and evolution of the knowledge structure within ESG research in the accounting discipline. By systematically searching all 27 top-tier accounting journals listed at levels 3, 4, and 4* in the 2021 Academic Journal Guide and restricting the publication period from 2013 to 2023, we constructed a high-quality and representative literature sample. This screening strategy not only ensures the scholarly authority of the reviewed literature but also reflects the growing importance of ESG topics within the accounting field (Dhaliwal et al., 2011; Matisoff et al., 2013).

This SLR reveals several key findings that subsequently provide more precise research directions for this dissertation. First, we observe that while research on ESG disclosure is already a prominent topic, investigations into ESG reporting integrity remain relatively scarce and fragmented, particularly regarding its connection to specific accounting behaviours such as earnings quality and tax avoidance. From this perspective, ESG assurance, which constitutes a service provided by independent third parties to enhance the credibility of corporate ESG information, has developed alongside ESG disclosure but amidst even greater standardisation chaos. Evolving from early voluntary practices based on standards like AA1000 or ISAE 3000 to its impending mandatory status under the EU's CSRD directive, its adoption rate has increased annually. However, a consensus in the current academic literature indicates that the quality and credibility of assurance vary significantly (Perego and Kolk, 2012b). This variation creates a unique research context. On one hand, obtaining assurance, particularly high-quality assurance, may signal integrity to the market, enhance information transparency, and confer what has been termed a moral halo upon the firm (Moroney and Trotman, 2016). On the other hand, low quality and symbolic assurance might be used by firms as a tool for symbolic legitimisation to mask substantive ESG shortcomings, potentially exacerbating information asymmetry and providing cover for corporate hypocrisy and impression management (Boiral et al., 2019). Consequently, assurance as a key instrument in sustainable disclosure, combined with the

need for continued investigation of accounting conservatism, has shaped our research interest.

Second, we found that the use of theoretical frameworks for constructing explanations is not widespread among the included literature, with only 30 percent of the studies employing theory. Furthermore, we observed that the application frequency of specific theoretical types is relatively concentrated. For instance, socio political theories such as legitimacy theory and stakeholder theory are notably prevalent. In contrast, most other theories appear only once. This finding indicates that while the frequent appearance of certain theories might suggest they are perceived as more universally applicable for explaining phenomena within specific contexts and institutions, a significant imbalance in theoretical application persists. The implication for our subsequent research is clear. Given that corporate decisions to seek sustainability assurance are unlikely to be driven by a single motive, managerial behaviour in this context cannot be fully explained by any single theoretical lens. To illustrate, agency theory predicts that management might use sustainability assurance to maximise its own utility rather than shareholder value. Institutional theory emphasises isomorphic pressures from governments and industry norms. Resource dependence theory focuses on how firms manage dependencies on key resources, such as capital and reputation, through assurance. Meanwhile, Signalling theory views assurance as a costly signal to convey private information in environments characterised by information asymmetry. Therefore, future research should strive to integrate potentially relevant theories to provide richer explanations for constructing the research context and interpreting findings. This approach would help reveal potential theoretical boundary conditions and competing hypotheses, thereby significantly enhancing the depth and insight of the study.

Finally, the SLR emphasises the limitations arising from excessive focus on single geographical regions. Specifically, current research rarely considers how different national and institutional contexts affect the explanatory power of discovered economic relationships or their moderating effects, making it difficult to generalise findings from developed countries or regions to explain phenomena in developing contexts (Adegbite et

al., 2019). In response to this insight, we assign macro-level national factors a central role in our subsequent research, treating them as moderating variables to examine how formal and informal institutions across different regions shape managerial behaviour. This approach is grounded in the recognition that corporate actions do not occur in isolation; elements such as national governance quality, rule of law, cultural values like Hofstede's uncertainty avoidance, and he strength of investor protection can significantly influence firms' incentives and capacities for opportunistic conduct. Incorporating country-level variables into the analytical framework is crucial for understanding the heterogeneous effects of sustainability assurance across diverse institutional contexts, which also constitutes a notable gap in the existing literature

Based on these SLR findings, the research direction linking sustainability assurance and accounting conservatism is refined into two specific research questions in this study. First, the relationship between sustainability assurance and earnings management, along with the moderating effect of national governance dimensions on this relationship. Second, the relationship between sustainability assurance and corporate tax avoidance, together with the moderating effect of national cultural dimensions on this relationship.

3. Introduction to Paper 2

A substantial body of literature has examined the relationship between ESG performance and earnings management, yet the conclusions remain inconsistent. Most studies find that high-quality ESG performance is associated with lower levels of earnings management, interpreting this as evidence that ESG reflects higher ethical standards and a more transparent corporate culture (Kim et al., 2012). However, other research suggests that ESG might be utilised as a diversionary tactic. Specifically, firms with poor financial performance or those engaging in aggressive earnings management may showcase their ESG performance to obtain "moral licensing," thereby masking their financial opportunism (Prior et al., 2008).

A critical examination of the extant literature reveals two primary limitations. First, existing research has seldom considered sustainability assurance as an independent governance mechanism that may influence or shape managerial behaviour. The current mainstream literature largely focuses on the relationship between ESG performance or disclosure and financial reporting quality, but has not yet integrated sustainability assurance, an increasingly prevalent form of external monitoring, into its analytical framework (Martínez-Ferrero and García-Sánchez, 2017; Venter and Van Eck, 2021). For instance, Gerged et al. (2023a) examined the association between corporate environmental responsibility and earnings management, finding that stronger environmental responsibility, proxied by environmental disclosure indices, was negatively associated with earnings management among non-financial listed firms in Jordan. Similarly, Rezaee and Tuo (2019) concentrated on the impact of the quality and quantity of sustainability disclosure on earnings quality; Bozzolan et al. (2015) explored how enforcement strength moderates the relationship between corporate social responsibility performance and earnings management strategies. While these studies provide an important foundation for understanding the link between non-financial information and financial reporting behaviour, they share a common characteristic: their analytical focus rests at the level of disclosure or performance, and consequently fails to address the critical element of sustainability assurance. Assurance is not merely a verification of disclosed information; by introducing external monitoring and enhancing information credibility, it may exert a more direct and complex twofold effect on managerial financial reporting decisions. That is, while potentially curbing opportunistic behaviour, it might simultaneously induce new motivations for earnings management.

Second, existing research is largely confined to examining corporate sustainability-related behaviour through a single theoretical lens, or at best a combination of a few perspectives. The absence of a multi-theoretical analytical framework limits a deeper understanding of managers' complex motivations (Cho and Patten, 2013). A review of the relevant literature indicates that although scholars occasionally draw upon different theories to frame their research, the predominant analytical tools remain centred on the application of legitimacy theory, stakeholder theory, or agency theory. For example, numerous studies investigating

the ethical motivations behind corporate disclosure have employed legitimacy theory, for instance: Briem and Wald (2018), Weerathunga et al. (2020), Martínez-Ferrero et al. (2015), and Parsa et al. (2021); others have utilised agency theory (e.g., Meqbel et al. (2023)). While each of these theories possesses its own explanatory power, the reliance on a limited set of perspectives inevitably creates analytical blind spots. Crucially, the underlying managerial motivations captured by different theories are fundamentally distinct. Signalling theory largely explains managers' propensity to proactively release positive signals, whereas legitimacy theory or institutional theory focuses on corporate responses to external pressures. For a mechanism such as sustainability assurance, which carries both a moral aura and the potential for opportunism, managerial motivations are often multi-dimensional and intertwined. A restricted theoretical lens cannot simultaneously accommodate these seemingly contradictory motivations, thereby limiting a full discussion of the complexity underlying the phenomenon.

A third limitation is that existing research has largely focused on firm-level variables, failing to adequately incorporate cross-country governance factors as important macro-level contextual elements. A review of the relevant literature reveals that scholars have predominantly locked onto the relationships between firm characteristics and behaviour. For example, Gerged et al. (2020) used Kuwait as a sample to examine the association between corporate environmental disclosure and earnings management practices in an emerging market; Meqbel et al. (2023) found that firms engaged in earnings management tend to obtain sustainability assurance reports to gain, repair, or maintain their legitimacy. While these studies offer important insights into the motivations underlying firm-level behaviour, their analytical frameworks have generally not systematically incorporated the moderating role of national-level institutional factors. However, as institutional theory discussed by North (1990) elucidates, the strength of the institutional environment fundamentally alters managers' strategic choices and behavioural logic. In the intersecting domain of sustainability and financial reporting behaviour, the heterogeneity of geographic and institutional influences has not yet become a core focus of scholarly inquiry. Although Bozzolan et al. (2015) addressed this to some extent by examining how enforcement

strength moderates the relationship between corporate social responsibility and earnings management in the United States and Japan, such cross-country institutional comparative studies remain scarce. Moreover, they have failed to systematically examine the specific mechanism of assurance within a macro-level governance context. This absence of a macro-level perspective is particularly salient for understanding the economic consequences of sustainability assurance. In countries with robust legal systems and well-developed institutions, the constraining function and accountability effect of assurance, as an external governance mechanism, are more likely to be effective. Conversely, in countries with weak legal systems and pervasive corruption, the governance efficacy of assurance may be substantially diminished. It could prove ineffective due to poor enforcement, might even become collusive with corporate misconduct to some degree, or paradoxically, precisely because of institutional deficiencies, it could serve as a differentiating signal of corporate transparency and credibility. For instance, within a signalling theory framework, a firm's decision to purchase assurance could be interpreted as proactively demonstrating its core competitiveness. This divergence in effects across different institutional contexts is precisely the key to understanding the true role of assurance.

A fourth limitation is that some studies have employed only a single earnings management metric, such as focusing solely on accrual earnings management, and have consequently failed to comprehensively examine multiple earnings management methods. This limits the ability to capture the full picture of managerial behaviour. Different earnings management methods, such as accrual earnings management (AEM), real earnings management (REM), or classification shifting earnings management (CSEM), each entail different degrees of concealment, operational difficulty, and underlying managerial motivations. If a study focuses on only one or two of these methods, it may yield biased conclusions and fail to fully reveal managers' behavioural choices when facing specific incentives or pressures. As Chen and Hung (2021) astutely noted, early earnings management research predominantly focused on testing AEM, with relatively limited exploration of REM. For example, Prior et al. (2008) used only AEM metrics; Martínez‐Ferrero et al. (2015) also

relied solely on the modified Jones model and the Kothari model to measure AEM. Although more recent studies have begun to incorporate both AEM and REM, attention to CSEM remains limited. For instance, within the intersecting area of sustainability assurance and earnings management, the study by Meqbel et al. (2023) did not include CSEM.

In response to the preceding review, conducting a rigorous study on the relationship between assurance and earnings management is not only necessary but also holds substantial potential for contribution. Specifically, our research employs impression management theory as the primary explanatory framework and integrates multiple theoretical perspectives to collectively construct the study's background. Analysing a sample of STOXX Europe 600 listed European companies from 2003 to 2019, we provide significant empirical findings. The results indicate that corporate adoption of sustainability assurance (SA) is negatively associated with accrual-based earnings management (AEM), but positively associated with more concealed forms of manipulation, namely real earnings management (REM) and classification shifting earnings management (CSEM). Concurrently, our subgroup regression results demonstrate that national governance factors exert a significant moderating effect on these relationships. These findings suggest that SA may be utilised as a symbolic compliance tool to address external regulatory pressures, while management remains inclined to adopt more covert manipulation methods to meet earnings targets, thereby mitigating the risk of detection and penalties.

Compared with prior research, the main contributions of this study are threefold. First, in terms of research design, we employ a comprehensive set of earnings management metrics, encompassing AEM, REM, and CSEM, to more fully capture managerial behavioural tendencies in response to sustainability assurance. This design responds to the call by Chen and Hung (2021) for earnings management research to adopt multi-dimensional measurements. It also helps to avoid biased conclusions stemming from the use of a single metric, thereby enabling a more accurate identification of the potential associations between sustainability assurance and different earnings management methods. Second, regarding the theoretical framework, we construct a multi-theoretical

analytical framework that integrates legitimacy theory, agency theory, and signalling theory. By developing competing hypotheses, we seek to deepen the explanation of managerial motivations. This endeavour extends beyond the relatively narrow theoretical application observed in prior non-financial disclosure or corporate social responsibility research, which has often focused predominantly on legitimacy theory or stakeholder theory. More specifically, we draw upon insights from impression management theory and combine them with signalling theory, which explains proactive corporate behaviour, to complement the existing literature's focus on external pressures, as seen in studies such as Briem and Wald (2018), Weerathunga et al. (2020) and Martínez-Ferrero et al. (2015). This multi-theoretical integration allows us to construct, consider, and explain from multiple angles the complex motivations underlying corporate decisions to purchase sustainability assurance services. Third, in terms of contextual extension, and in marked contrast to prior research, we incorporate national governance quality as a key moderating variable within our analytical framework. This enables us to test, at a more macro level, the boundary conditions that the institutional environment imposes on the economic consequences of sustainability assurance. This perspective introduces insights from North (1990), namely that the strength of the institutional environment fundamentally alters managerial strategic choices. It also helps to explain why, across different institutional contexts, sustainability assurance may exhibit divergent governance effects and opportunistic effects.

In summary, this study offers substantive implications for academics, policymakers, firms, and assurance providers. For regulators and oversight bodies, the findings suggest that corporate adoption of sustainability assurance should not be simplistically equated with a high level of accountability or financial transparency. Instead, caution is warranted regarding the potential opportunistic motives that may underlie such decisions, particularly the possibility of financial manipulation through more covert techniques of earnings management. For auditing and assurance practitioners, this study responds to calls in the extant literature for auditors to develop a deeper understanding of corporate motives for obtaining assurance (Cheng et al., 2015; Jensen and Berg, 2012). It suggests that auditors should carefully adjust the content of their assurance services and their client acceptance

decisions based on an assessment of client intent, thereby effectively identifying and responding to potential reputational and litigation risks.

4. Introduction to Paper 3

Corporate tax avoidance refers to corporate practices that exploit loopholes and disparities in tax legislation through a series of complex transactional arrangements to reduce tax liabilities. This behaviour is both globally prevalent and widely condemned, as aggressive tax avoidance undermines national tax bases, weakens the state's capacity to provide public goods, and directly impacts national sovereignty, social inequality, and public fiscal sustainability. Concurrently, it elevates the firm's own exposure to financial reporting risks, tax audit risks, and reputational damage (Hanlon and Heitzman, 2010). Within this context, the aggressiveness of corporate tax avoidance has consistently been a key focus for governments worldwide.

In light of this, scholars have begun to explore the relationship between ESG factors and corporate tax avoidance. Existing research presents conflicting findings: some studies find that firms with stronger ESG performance exhibit lower levels of tax avoidance, attributed to their greater ethical awareness and sense of corporate citizenship (Watson, 2012). However, other research proposes a moral licensing effect, suggesting that strong ESG performance may lead managers to feel entitled to engage in aggressive tax avoidance (Hoi et al., 2013a). Informed by the insights from the systematic literature review and adopting a critical perspective, we identify two principal limitations or gaps in the existing research. First, in line with the motivation for Paper 2, the extant literature has focused more on corporate sustainability performance or disclosure behaviour, while overlooking whether firms purchase sustainability assurance to acquire symbolic legitimacy (Davis et al., 2016). For example, Chandrasena et al. (2025) examined the association between ESG disclosure propensity and tax avoidance; Davis et al. (2016) explored the directional relationship between corporate social responsibility and tax avoidance; Lanis and Richardson (2012) analysed the relationship between social responsibility disclosure and

tax avoidance. A common characteristic of these studies is that their analytical focus rests on disclosure itself. Consequently, their research findings were not addressed due to differing priorities, despite sustainability assurance becoming increasingly prevalent in recent years as a tool for legitimacy and gaining greater external symbolic significance.

A hypothesis worth testing is that firms may obtain a low-cost, symbolic ESG assurance report to cultivate an image of responsible citizenship, thereby diverting the attention of regulators and the public and providing cover for covert and aggressive tax avoidance practices.

Second, consistent with the motivation for Paper 2, existing research has generally lacked an examination of the moderating role of macro-level variables on the ESG-tax avoidance relationship. This gap pertains not only to institutional and national governance dimensions but also, and more fundamentally, to national cultural dimensions, which represent a deeper layer of societal mindset. Hofstede's national cultural dimensions, such as individualism, uncertainty avoidance, and power distance, have been shown to be stable, deep-seated macro-level factors influencing corporate ethical decision-making and risk-taking preferences (Hope et al., 2013). For instance, in cultures characterised by high individualism and low uncertainty avoidance, corporate management may be more inclined to take risks and engage in aggressive tax avoidance. However, prior ESG-tax avoidance research has rarely incorporated national culture into its analytical models, focusing almost exclusively on internal firm-level financial or governance characteristics, such as profitability or board structure. Two recent studies illustrate this point. Chandrasena et al. (2025), while including a sample of North American firms, examined the moderating role of sustainability committees, an internal governance mechanism, when investigating the ESG disclosure-tax avoidance relationship, but did not consider higher-level national influences. Similarly, Gerged et al. (2025), drawing on a sample from Sub-Saharan Africa, investigated the relationship between social responsibility disclosure and tax avoidance, with a particular emphasis on the moderating effect of national governance. Yet, they likewise did not incorporate national cultural dimensions. Culture, as a deeper and more stable form of mental programming, constitutes an informal institution that fundamentally shapes

managers' ethical cognition, decision-making frameworks, and risk preferences. Overlooking this macro-level contextual variable limits a deep understanding of the cross-country heterogeneity in the ESG-tax avoidance relationship.

Therefore, this study aims to address the aforementioned gaps by utilising the advantages of a multi-theoretical framework to investigate the relationship between ESG assurance and corporate tax avoidance. Specifically, using a sample of listed companies covered by the STOXX Europe 600 index over the period 2013 to 2019, this study systematically examines the association between sustainability report assurance (SA) and corporate tax avoidance behaviour. Tax avoidance is measured using three metrics: the effective tax rate (ETR), the book-tax difference (BTD), and the book-tax difference after deducting the effect of accruals (DDBTD). Furthermore, we introduce Hofstede's cultural dimensions theory to empirically analyse the moderating effect of national cultural characteristics on this relationship. The regression results indicate a significant positive association between a firm's procurement of sustainability assurance and its level of tax avoidance. Moreover, different cultural dimensions significantly moderate this relationship. To enhance the reliability of the findings, this study employs an instrumental variable approach and a series of robustness tests, all of which consistently support the research hypotheses. This finding suggests that firms may engage in symbolic compliance within their ESG practices; that is, they create moral legitimacy by obtaining external assurance to conceal aggressive tax avoidance activities. This behaviour essentially represents a form of decoupling.

Based on these conclusions, the findings of this paper offer the following academic and practical implications. For regulatory bodies, this study treats sustainability assurance as a key variable representing symbolic behaviour and directly tests its association with corporate tax aggressiveness. It provides direct evidence on whether a moral halo may serve to conceal tax avoidance. The findings suggest that regulators should be vigilant regarding the risk that sustainability assurance could be used as a greenwashing tool. Firms might obtain a symbolic assurance report to cultivate an image of responsibility, thereby providing cover for aggressive tax practices. Consequently, we recommend that regulatory bodies establish a cross-verification mechanism between ESG indicators and

tax information. Furthermore, they should strengthen the substantive scrutiny of assurance quality, rather than focusing solely on formal compliance.

In terms of theoretical contribution, this study complements prior research focused on internal governance mechanisms by introducing national cultural dimensions from the perspective of external informal institutions. Existing literature has largely concentrated on the moderating role of internal firm characteristics, such as sustainability committees, on the ESG-tax avoidance relationship, for example, Chandrasena et al. (2025) and (Davis et al., 2016), or has examined the moderating effects of formal institutions such as national governance. By employing a sample of European companies, pioneers in sustainability, our study provides a cross-country perspective on the influence of national culture, as an informal institution, on the relationship between corporate sustainability behaviour and tax avoidance. This extends the discussion on the moderating role of national governance found in studies such as Zeng (2019), Lin et al. (2017)and Gerged et al. (2025), by adding another dimension of country-level moderation rooted in informal institutions. Compared with formal institutions, cultural change is more gradual, thus offering a more fundamental perspective for understanding cross-country differences. Tax avoidance, as a long-term behavioural habitus and opportunistic strategy, varies significantly in its acceptability across different cultural contexts. When calculating the costs and benefits of tax avoidance, firms are not only constrained by formal institutions but are also driven by cultural legitimacy, considering the justifiability of their actions.

It is important to note that the two empirical studies in this thesis (Paper 2 and Paper 3) select different country-level variables, governance quality and cultural dimensions, based on a careful consideration of the differing drivers of these accounting manipulation behaviours. Earnings management is subject to explicit accounting standards and audit scrutiny. In contrast, tax avoidance can be viewed as a firm's long-term behavioural habit and opportunistic strategy; it lacks the clear accounting standards that govern earnings management, and the acceptance of tax aggressiveness may vary across cultures. Given that a firm's operating environment is simultaneously shaped by both formal and informal institutions, their combination offers more complete insights for regulatory practice.

Explaining cross-country differences from the deep-seated perspective of cultural psychology represents an important supplement to existing research.

In summary, the findings of this study help tax authorities, investors, and scholars to more clearly identify firms' complex tax strategies, offering valuable insights for understanding the intricate relationship between managerial tax avoidance tendencies and active engagement in sustainability practices. For corporate management, the findings suggest that internal control and risk management systems need to respond more sensitively to the influence of national cultural traits on financial decision-making. This would enable more responsive and responsible behavioural choices within the context of institutional pressures and competitive environments.

5. Summary and structure of the entire dissertation

This thesis comprises three systematically interrelated studies that collectively construct a comprehensive research framework, progressing from a synthesis of prior knowledge and theories to empirical investigation. It delves into the complex motivations and economic consequences underlying corporate sustainability assurance practices, with a specific focus on accounting conservatism. Overall, this thesis not only expands our understanding of the roles of assurance but also critically highlights its double-edged International journal of accountingeffect in practice: it can serve as a mechanism for governance enhancement, yet it may also be appropriated as a legitimising tool for opportunistic behaviour. These findings hold substantive implications for regulators, standard setters, the auditing profession, and corporate internal controls. They call for a more integrated oversight framework that strengthens the linkage between sustainability report assurance and substantive operational and behavioural accountability, thereby advancing sustainable governance from formal compliance towards genuine accountability. This research provides new analytical dimensions and empirical evidence for future studies on the interactions between non-financial information disclosure, corporate governance, and

institutional theory. It also offers theoretical support and policy insights for fostering a more resilient and ethically conscious business system.

The structure of this thesis is as follows: Chapter 2 presents a systematic literature review; Chapter 3 examines the relationship between sustainability assurance and earnings management; Chapter 4 investigates the relationship between sustainability assurance and tax avoidance; and Chapter 5 provides the conclusion.

Chapter 2 _ Accounting and ESG: A systematic literature review and agenda for future research

1. Introduction

1.1 Global background of ESG

Due to a series of risks, such as growing climate risk, biodiversity collapse, and social inequality, global attention directed at *environmental, social, and governance* (ESG), sustainability, and related issues has rapidly increased over the past 30 years. To address these urgent risks, global supra-national bodies, such as the UN and the EU, have committed to strengthening climate change responses and initiatives (Bansal, 2005; Bebbington and Larrinaga-Gonzalez, 2008), including developing and implementing a series of global sustainable development strategies and environmental management policies (Haque and Ntim, 2020) to mitigate the negative impacts of climate change.

At the 1992 Rio Earth Summit, the UN Framework Convention on Climate Change (UNFCCC) was launched to facilitate cooperation among international communities (Ascui and Lovell, 2011). Promulgated in December 1997, the Kyoto Protocol began requiring 37 industrialised countries to legally commit to reducing greenhouse gas emissions (GHG/carbon) (Freedman and Jaggi, 2011). Since 2015, the frequency of updates to these related ESG agreements has significantly increased. For example, the legally binding multilateral Paris Agreement has increased the number of national signatories to 200 countries (Commission, 2015). In September of the same year, the UN General Assembly adopted the 2030 Agenda to launch the 17 Sustainable Development Goals (SDGs) (Charnock and Hoskin, 2020), which are conducive to strengthening the concept of maintaining a sustainable global future. At the end of 2015, the Financial Stability Board (FSB) established the Task Force on Climate-Related Financial Disclosure (TCFD) (Benyon, 2015). In 2017, the committee issued recommendations on climate risks and opportunities disclosure framework for companies based on the four main themes of (i) *Governance, (ii) Strategy, (iii) Risk Management, and (iv) Metrics and Targets*, which were

primarily promoted as mandatory disclosures (Braasch and Velte, 2023).[1] In 2017, the Principles for Responsible Investment released by the UN also required that corporate actions should positively impact society and the world. These global sustainability initiatives preceded the Millenium Development Goals (MDGs), which were launched by the UN in 2000 (Asante-Appiah, 2020b; Daugaard, 2020).

Consequently, These increasingly standardised, legal, and mandatory agreements have placed extra pressures on businesses, including costs, financial and reporting demands (Lombardi et al., 2022; Risalvato et al., 2019). Modern corporations, therefore, must be sufficiently agile and robust to face new risk exposures by rapidly changing their current operating environment or strategy, such as financing risks brought about by ESG risk changes (Tan et al., 2020; Anis and Hermawan, 2017; Burke et al., 2020; Bae et al., 2020) or mandatory disclosure of compliance risks (Adams and Abhayawansa, 2022).

1.2 Related academic background and motivation for this study

With the globalisation of ESG, has also brought complex contradictions and opportunities to corporate business behaviour. To clarify and respond to this situation, scholars have pushed research in the relevant ESG field to the forefront of academic work(Champagne et al., 2022). As of April 2024, data from a range search in the Web of Science core database showed that there were 47,386 studies in this field alone, covering multiple disciplines such as business, management, economics, finance, marketing and accounting, verifying that scholars' research interests and actions span multiple business perspectives (Fiandrino et al., 2022). However, even so, there is still a lot of room for improvement in

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[1]Meanwhile, the International Sustainability Standards Board (ISSB) was set up in 2021 by the IFRS Foundation through a merger of a number of sustainability related bodies, including the Climate Disclosure Standards Board (CDSB)/Carbon Disclosure Project (CDP), International Integrated Reporting Council (IIRC)/Value Reporting Foundation's Integrated Reporting Framework, Tripel Bottom Line (TBL) Reporting, Sustainability Accounting Standards Board (SASB), and the World Economic Forum to create and develop international sustainability standards to meet sustainability reporting needs of investors/financial markets. In 2023, the TCFD handed its work over to the ISSB, resulting in the adoption of the TCFD standard by the ISSB as its second sustainability standard (S2) for implementation.

current research. For example, financial scholars have criticised that current research focuses too much on performance measurement (Bollenn, 2007; Benson and Humphrey, 2008; Capelle-Blancard and Monjon, 2012). In terms of corporate governance, Buallay et al. (2022) believe that current research lacks discussion on management-drivenness, and Christensen et al. (2021) also pointed out that some studies focusing on external reporting of companies confuse the ESG disclosure effect with the ESG activity effect. In terms of research perspectives and techniques, scholars point out that current research still lacks case studies in developing countries and cross-national cases (Norbit et al., 2017; Pratoomsuwan and Chiaravutthi, 2023; Gulluscio et al., 2020), and the application of theories is limited (Nguyen et al., 2020). In addition, these huge volumes of academic outputs also bring about another issue worthy of attention, that is, while it is easier for researchers to acquire knowledge and develop new research than 50 years ago, they also face the dilemma of difficulty in screening the "essence" (Massaro et al., 2016). In this context, literature review as a research method is more important than ever in breaking the limited boundaries of ESG research because it can review and evaluate significant research results and controversies in the field and find breakthroughs in multiple selected topics (Costa et al., 2022). At the same time, it has the ability to provide a basis for researchers to test previous theories and summarise a particular issue (Massaro et al., 2016).

Figure 1：Trends in ESG Literature Review Publication
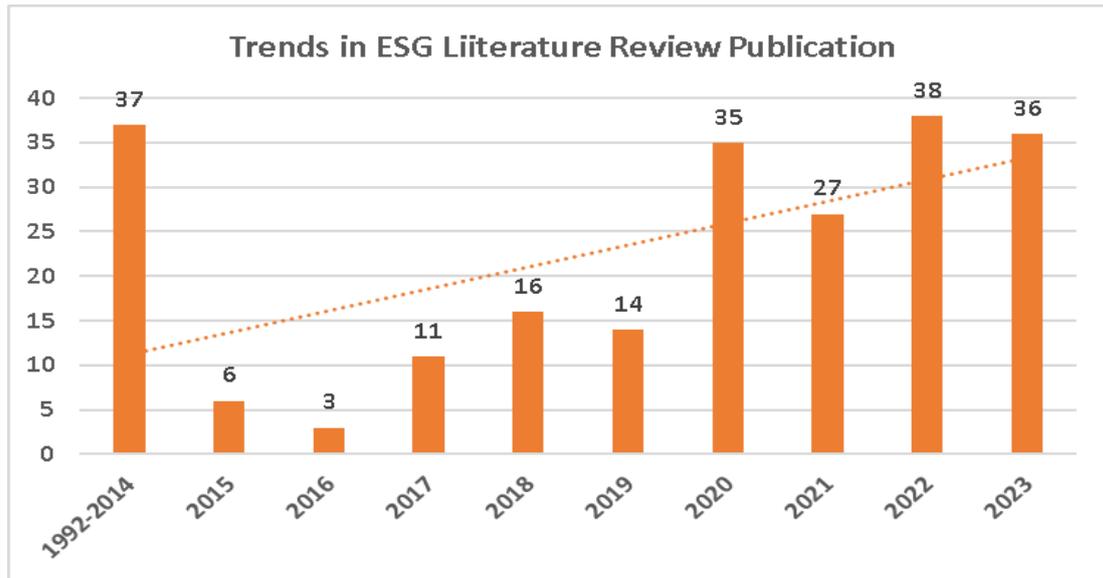
Compared with a large number of empirical studies, the output of literature reviews is relatively small. Range search evidence up to the same period, that is, April 2024, only 230 review articles on ESG-business were retrieved in the Web of Science core database, covering the fields of accounting, business, economics, finance, marketing and management. As shown in Figure 1, the first review article included in this database began in 1992, so the first axis in Figure 1 represents the cumulative collection from 1992 to 2014, a total of 37 articles. After 2017, the annual publication volume exceeded 10 for the first time. And after 2020, the publication volume doubled, indicating that scholars in recent years have noticed the research contradictions and deficiencies in this field and tried to explore undeveloped areas (Singh et al., 2023).

Admittedly, these review articles that have exploded in recent years also have many aspects to be improved. First, it is worth affirming that the existing ESG-business review research covers multiple areas of ESG. For example, Ziolo et al. (2023) reviewed ESG risk management of energy companies; Steblianskaia et al. (2023) reviewed the development of ESG terminology; Ellili (2022), Christensen et al. (2021), and Tsang et al. (2023) showed great interest in ESG disclosure in their reviews; scholars also reviewed the financial consequences of ESG disclosure, such as the economic impact of ESG disclosure (Hassani and Bahini, 2022), the effect of sustainable investment (Cunha et al., 2021), and the impact of ESG on debt financing, cost and performance (Bax and Paterlini, 2022).

Although these reviews focus on a single field, they can allow users to have a deeper understanding of specific topics. However, more ambitious users cannot understand the antecedents of ESG development and the intertwined effects between multiple ESG fields through reviews of a single field. Second, few reviews organise the application of theories and lack discussion of them (Bosi et al., 2022; Beloskar et al., 2023; Savio et al., 2023; Ellili, 2023). Third, reviews mainly use traditional narrative or normative literature review methods to evaluate existing research (Brooks and Oikonomou, 2018). Even though the proportion of systematic review output has begun to increase in recent years (Costa et al., 2022; Fiandrino et al., 2022; Savio et al., 2023; Gallucci et al., 2022; Velte, 2023), it is still relatively small compared to the overall review articles (Aldowaish et al., 2022). Our scoping evidence also shows that only 75 of the 230 reviews are systematic, and the low percentage of this review method is one of the motivations for this paper. This is because adopting a systematic approach to ESG review will be an effective means to improve the quality of discussion because, under this approach, the review of the literature sample is more objective and logical, the coverage of research topics is higher, and the review presents a neutral and comprehensive perspective. Fourth, among the 75 systematic reviews, only 15 belong to accounting journals, which confirms that as previously advocated by scholars, there are relatively few SLRs from an accounting perspective (Gerged et al., 2023b; Tsang et al., 2023). Considering that the number of ESG articles published in the accounting field in recent years is enormous, the knowledge system is complex, and the limitations of related research urgently need to be broken. Therefore, the necessity of conducting research from an accounting perspective and the scarcity of literature reviews in the current field has also become one of the motivations for this SLR. From the standpoint of potential contributions, approaching the review from this perspective can not only show the financial and non-financial changes brought about by the evolution of ESG to the internal and external stakeholders of the enterprise, making the dynamics of change more measurable and comparable but also enable us to expand/build on the few existing ESG review studies in the accounting field (for example, using a larger, newer and more recent sample of articles extracted from larger top

accounting journals), such as referring to Tsang et al. (2023), thereby providing a unique opportunity to expand the existing ESG in the accounting literature and make many new contributions.

It is worth noting that our scoping search evidence shows that 21 out of 230 reviews used bibliometric analysis. This method has become increasingly popular among review scholars because it can report descriptive research trends by field and period, and highlight the dynamics in data extraction by making vague and unclear relationships more transparent (Bosi et al., 2022; Ziolo et al., 2023). In addition, it helps to transform qualitative data into quantitative data, infer the work and scale that often occurs in specific research directions and topics (Baraibar-Diez et al., 2020), and identify future research directions (Ellili, 2022). This is also an advantage that the SLR method cannot achieve, and it can serve as a supplement to traditional literature reviews. However, the search evidence shows that in the accounting field, only one review on corporate environmental disclosure used this method (Gerged et al., 2023b), indicating that accounting scholars have not yet widely adopted this method. Therefore, this review attempts to seize the unique opportunities offered by this emerging bibliometric analysis tool, for example, by using visual analysis techniques to establish a rigorous and appropriate analytical framework to classify topics in the areas covered.

1.3 Research question development

After clarifying the review field, the subsequent task of a rigorously structured literature review study is to identify the research question. According to Massaro et al. (2016), in a proposal for structured systematic reviews, there should be at least three research questions to guide the development of a literature review in order to understand knowledge in a specific field and provide critical insights. The first research question should be to examine the history of the selected field, combined with statistical analysis to answer how the literature flow has developed over time. In detail, in this process, researchers adopt standard analysis units such as studying geographical distribution, the distribution and

trends of publications over time, and research methods. And this research question has also been adopted by multiple review studies, such as Broadbent and Guthrie (2008) in reviewing accounting research in the public sector, and Guthrie and Parker (2011) in conducting an accounting review related reflective and retrospective study, both emphasising the importance of documenting the research process to date. The second research question should examine the hot topics in the existing research field to promote the establishment of the third question. In doing so, researchers need to avoid lengthy and irrelevant descriptive sections and provide critical and targeted comments on the focus of the literature. Therefore, Silverman (2013) and Massaro et al. (2016) similarly advocate that establishing a clear and organised analytical framework would be an effective strategy for observing and identifying hot topics. The third research question should be to find future research developments, which is the last and most crucial part of any literature review article (Massaro et al., 2016). Because the purpose of conducting literature reviews by researchers is to provide potential arguments for practice, education, policy, or regulation and to apply these insightful understandings to drive future development paths in specific literature fields (Tranfield et al., 2003).

Given this, in this SLR, we follow the suggestions of these previous scholars on establishing research questions and designing the following three questions. We expect the answers to the three questions will be linked to avoid short-sightedness in the observation and review process.

(1)   How the ESG and accounting stream of literature has progressed over time?

(2)   What are the developments within the ESG and accounting research field?

(3)   What are new directions for future research within the ESG and accounting
        literature?

In summary, this paper uniquely conducts a systematic literature review and combines it with a bibliometric analysis method to comprehensively discuss the development trends and hot topics in the past ESG knowledge flow from an accounting perspective so that review users, accounting scholars, and ESG stakeholders can understand the latest

interactive status, evolution trends, research hotspots, and potential research opportunities in the ESG research field. The contributions of this study are reflected in three aspects. First, this study uses a rigorous method to collect literature and identify the latest research trends, including geographical distribution, hot topic distribution, and distribution of methodologies and theories. Second, this study extensively discusses hot topics in the ESG-accounting literature flow and integrates the connections between different topics, avoiding the limitations of previous reviews from a single field, such as the economic impact review. Third, this review examines the research progress and knowledge scope of the discipline by collecting literature from accounting journals in a targeted manner, thereby providing reasonable and objective insights for future research in the discipline and even across disciplines. For example, this literature review uses the latest (2013 to 2023) paper samples from a larger set of top accounting journals (i.e., all 27 accounting journals ranked 3, 4, and 4* in the 2021 ABS Journal Quality Guide). As a comprehensive SLR with specificity and multiple theoretical reviews, this SLR is likely to attract the interest of various stakeholders, including scholars, researchers, policymakers, practitioners, and academia.

This paper is organised as follows. Section 2 describes the methodology, Section 3 explores the research patterns and trends in the whole collection, Section 4 explores hot topics in current research, Section 5 discusses the limitations of the existing literature and future research agenda, and Section 6 is a conclusion.

2. Research Methodology

As previous scholars have emphasised, a literature review must have a logical structure and should be based on a precise plan (Hart, 1998). In such a process, researchers need to consider the necessity and reliability of the literature when including it to reduce analytical bias (Massaro et al., 2016). More importantly, when determining the analytical framework, researchers must first decide what to observe, how to record the observations and determine the analysis units. Units cannot be regarded as established facts, but they

should exist in the process of reading and gradually be generated (Krippendorff, 2018). Given this, to achieve the purpose of scientific and rigorous review quality, this paper selected a systematic literature review as the primary review framework and combined the manual coding strategy and computer technology (bibliometric visualisation software) that can be used to mine and integrate topics to build an analytical framework. A systematic approach was chosen because although SLRs are somewhat subjective compared to narratives (Pittaway and Cope, 2007), researchers can improve the quality of the review by following a variety of replicable and transparent techniques and scientific procedures (Cook et al., 1997; Denyer and Tranfield, 2009), which provide a foundation for the review process and have the ability to offset the impact of potential bias in the research (Cook, 2009; McLean et al., 2017). In addition, we followed the research of Moher et al. (2009) to demonstrate the process of recording observations and results, that is, tracking and reviewing the rationale of each inclusion or exclusion decision through the PRISMA flow chart (Denyer and Neely, 2004). Based on the well-cited guidelines and recommendations (Aldowaish et al., 2022) developed by previous scholars, the SLR is divided into three stages: planning, implementation, and reporting (Tranfield et al., 2003). The rest of this section will introduce the work of each stage to demonstrate a reasonable and rigorous review process and analysis framework.

2.1 Stage 1

The first stage was the planning stage. In this stage, we used scope search to define the initial scope of the sample literature (Davies and Crombie, 1998) and determined the selection criteria for the database and keywords.

2.1.1 Database

The included sample's breadth and quality are the first control levels for the quality of this review. Therefore, this paper selected Scopus, Web of Science (WoS) core database, and

Business Source Complete (EBSCO). The use of these three databases is justified by their reputation for scale (i.e., extensive coverage of journals in social science research) and their ability to cover high-quality peer-reviewed publications (Nguyen et al., 2020), which laid the foundation for a comprehensive review.

2.1.2   Keywords

Considering the complexity of the definition of ESG, identifying keywords is a priority for this paper, which will directly affect the scope of the literature collection. In 2004, the United Nations Global Compact gave a specific definition of environment, social and governance (ESG) (Buallay et al., 2022). However, in recent studies, researchers still use a large number of alternative terms with similar connotations to ESG, such as "CSR", "sustainable", "green", "ecological", and "environmental" to refer to the relevant elements of ESG. Although this can be explained as adapting to the research context, these complex, diverse, and even time-changing terms will also bring a certain degree of confusion to readers in the industry and academia (Capelle-Blancard et al., 2021). After noticing this phenomenon, we only selected the terms corporate social responsibility (CSR) and sustainability and their variants as alternatives to ESG. This is because corporate social responsibility (CSR) emphasises how companies can improve social welfare or aim for sustainable business activities. Sustainability, in a broad sense, can be defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs, while business sustainability is usually defined as triple bottom line management, i.e., the process by which a company manages its financial, social, and environmental risks. Therefore, even though their concepts differ in interpretation and emphasis, the two terms are consistent with the concept of ESG. That is, both focus on the impact of corporate activities on society and the environment (Gillan et al., 2021). Unlike other terms, such as "green" or "ecological", which are likely to be included in biological or agricultural research, this review will add additional screening work, contrary to Massaro et al. (2016)'s call for reviewers to be more targeted to avoid irrelevant space. Undoubtedly, the rationality of the

identification of these two alternative terms has also been verified by several previous well-known reviews, such as Tsang et al. (2023), Christensen et al. (2021) and Janah and Sassi (2021), etc. In addition, other variants of the selected keywords refer to previous ESG academic reviews (Drempetic et al., 2020; Friede et al., 2015; Margolis et al., 2009), and the term "Accounting" is based on a series of empirical articles on the relationship between accounting and ESG (Alareeni and Hamdan, 2020; Buallay, 2019; Sassen et al., 2016), and after referring to the broader terms of multiple levels of business fields in the EBSCO thesaurus, it was determined to be the most representative and most consistent with the accounting field selected in this paper after multiple actual search attempts. The final keyword strings and search formula are shown in Table 1.

Table 1：Retrieve strategy.

Topics	Substitutes /Including condition/ Retrieve formula
Accounting	Accounting
ESG	ESG or Environment* social governance or CSR or Corporate social responsib* or sustainab*
Accounting journal listed in ABS Ranking	4* Tier Accounting Review Accounting, Organizations and Society Journal of Accounting and Economics Journal of Accounting Research 4 journals 4 Tier Contemporary Accounting Research Review of Accounting Studies 2 journals 3 Tier

	Abacus
	Accounting and Business Research
	Accounting Forum
	Accounting Horizons
	Accounting, Auditing and Accountability Journal
	Auditing
	Behavioral Research in Accounting
	British Accounting Review
	British Tax Review
	Critical Perspectives on Accounting
	European Accounting Review
	Financial Accountability and Management
	Foundations and Trends in Accounting
	International Journal of Accounting
	Journal of Accounting and Public Policy
	Journal of Accounting Literature
	Journal of Accounting, Auditing and Finance
	Journal of Business Finance and Accounting
	Journal of International Accounting, Auditing and Taxation
	Journal of the American Taxation Association
	Management Accounting Research
	21 journals
	27 journals in total
Integrated resource title	"Accounting Review" or "Accounting, Organizations and Society" or "Journal of Accounting and Economics" or "Journal of Accounting Research" or "Contemporary Accounting Research" or "Review of Accounting Studies" or

	"Abacus" or "Accounting and Business Research" or "Accounting Forum" or "Accounting Horizons" or "Accounting, Auditing and Accountability Journal" or "Auditing" or "Behavioral Research in Accounting" or "British Accounting Review" or "British Tax Review" or "Critical Perspectives on Accounting" or "European Accounting Review" or "Financial Accountability and Management" or "Foundations and Trends in Accounting" or "International Journal of Accounting" or "Journal of Accounting and Public Policy" or "Journal of Accounting Literature" or "Journal of Accounting, Auditing and Finance" or "Journal of Business Finance and Accounting" or "Journal of International Accounting, Auditing and Taxation" or "Journal of the American Taxation Association" or "Management Accounting Research"

NOTE: This study uses a Boolean search operator. For example, the asterisk (*) is used to retrieve all the variables of a word to expand the search scope, "or" is used to integrate journal sources, and "and" is used to combine the final search formula.

2.2 Stage 2

The second stage is the conducting stage. In this stage, we established quality assessment and reliability criteria, while also developing a series of eligibility criteria (inclusion and exclusion criteria) to obtain the final sample results.

2.2.1 Quality assessment

Tranfield et al. (2003) pointed out that specifying and conducting quality assessments in the SLR of management disciplines is a real challenge in developing review methods. Therefore, researchers typically use academic rating rankings to assess literature quality and authority rather than quality evaluation criteria for each sampled literature (Tranfield et al., 2003). According to previous research identification, the rating rankings of well-known business management journals include the Financial Times list (FT50), the University of Texas at Dallas list (UTD 24), the Australian Business Deans Council (ABDC) and the UK's Association of Business Schools (ABS). In this case, the UTD contains only three accounting journals (Journal of Accounting Research, Journal of Accounting and

Economics, and The Accounting Review), whilst the FT50 contains only six high quality accounting journals (Accounting, Organizations and Society, Contemporary Accounting Research, Journal of Accounting and Economics, Journal of Accounting Research, Review of Accounting Studies, and The Accounting Review). In addition, Apart the Accounting, Organizations and Society journal, most of the remaining 5 top-tier accounting journals only started publishing papers on ESG more recently or have a relatively shorter history of ESG research. This means that limiting our sample to the UTD24/FT50 accounting journals only will be too exclusive and therefore very limited sample of papers to be reviewed. On the other hand, the ABDC contains relatively too many lower tier accounting journals compared with the ABS such that including them will result in including too many relatively weak articles such that the relevance and reliability of our review/SLR will be limited. By contrast, the ABS lists contain sufficiently larger number of high-quality accounting journals than the FT50, but not as many as the ABDC, which is more expansive and thus have relatively many lower-tier accounting journals. In short, the ABS rankings represent a fine balance between capturing sufficient high-quality articles from accounting journals and avoiding capturing lower quality articles from accounting journals. This approach has ensured that we have been able to capture sufficiently large (27 top-tier accounting journals) high quality articles in our review. Consequently and after applying this screening approach (3*, 4 and 4* accounting journals by the 2021 ABS journal quality guide), 27 journals meet the review objectives, which are included in the search formula, as shown in Table 1.

A point of reflection is warranted: while selecting the ABS list is a justifiable approach to ensuring academic quality and authority, this screening strategy inherently defines the cognitive boundaries of this review.

First, by limiting the search to leading journals within the accounting discipline, this study primarily presents the evolutionary landscape and knowledge accumulation of ESG issues as framed within accounting scholarship. Consequently, it objectively excludes significant discussions on ESG found in fields such as finance, management, and business law. The literature from these areas, for instance, examinations of ESG investment performance in

finance or analyses of ESG strategy and organisational behaviour in management, constitutes another important dimension of business research on ESG. Therefore, this SLR intentionally reflects a perspective situated at the intersection of ESG and accounting, rather than capturing the full scope of ESG's engagement with the entire business research field.

Second, relying exclusively on journals rated 3 and above on the ABS list may introduce a geographical representation bias. The publication preferences and review cycles of high-ranked journals may mean they do not adequately or promptly capture empirical research emerging from emerging markets or developing countries. Such studies are often rooted in unique geopolitical, regulatory, and cultural contexts, and their findings are crucial for testing the applicability of mainstream theories across different institutional environments and for revealing the diversity of ESG practices. While the sample composition of this review is based on high-quality research, it may, to some extent, sacrifice the cutting-edge and unique of this geographically specific knowledge, thereby limiting the generalisability of the findings across global contexts.

Finally, we must acknowledge that journals not included in the ABS list may carry valuable localised knowledge, policy debates, or insights into industry practices. These sources can offer supplementary value for understanding how ESG is implemented in specific contexts. Their absence means this review may have omitted some illuminating perspectives and evidence that remain outside the mainstream academic purview.

Notwithstanding these limitations, the knowledge framework constructed and the core themes identified in this review can still provide a reference point that is open to dialogue, testing, and extension for subsequent researchers, including those from the aforementioned geographical regions.

Based on the work in this step, we incorporated the keyword string and the 27 journal titles into a fixed search formula and obtained 75 articles in Scopus, 376 articles in WoS, and 309 articles in EBSCO after the initial search in the three databases. See Table 2 for details.

2.2.2 Eligibility criteria

Drawing on the insights of previous scholars on review articles, we developed a two-stage screening process to respond to the essential requirement that a high-quality review needs to consider the necessity and reliability of each article (Massaro et al., 2016).

The first stage is to conduct a preliminary scope search using the filter of the online database. The detailed process is shown in Table 2. First, non-English articles are excluded.

Second, the sample period of the literature is limited to 2013-2023. This is because Costa et al. (2022) and Gallucci et al. (2022) pointed out that an excessively long sample selection period will result in a large sample of articles that cannot be effectively analysed. Similarly, as mentioned above, since this study attempts to build/extend existing research, we limit the sample period to 10 years so that this study can build on the samples of previous ESG and accounting review research, such as Tsang et al. (2023), whose sample period covers 1978 to 2021.

Third, review and conference articles are removed, and only articles are retained. We completed the above steps by applying the screen function provided by the three databases. Then, we obtained 42 articles in Scopus, 259 in WoS, and 204 in EBSCO, for a total of 505 articles.

Fourth, to enrich the areas covered by the literature collection of this review so that we can observe the antecedents and development of each hot topic more comprehensively and in detail to prevent the occurrence of short-sightedness and bias, we used the cross-reference technique. In this process, we referred to articles in previous famous reviews, such as Tsang et al. (2023), and included 52 frequently cross-referenced articles that could contribute to comprehensiveness.

Fifth, to integrate the literature obtained from the aforementioned steps and to effectively manage the issue of overlapping records across the three databases, we employed Endnote 20 for deduplication. The bibliographic information of 557 articles, exported separately from each of the three databases, was imported into a single Endnote Library.

Subsequently, the software's built-in Find Duplicates function was used to automatically identify and list potential duplicate entries based on key fields such as title, author, and publication year. Following this, we manually reviewed each duplicate record flagged by the software. Based on the completeness of the source, the accuracy of publication details, and the consistency of the record format, we carefully selected the most complete or accurate record to retain, deleting the remaining duplicates. This process not only systematically resolved the issue of literature overlap among the three databases but also ensured the reliability of the deduplication results through manual verification. This procedure ultimately yielded a final sample of 423 unique articles after deduplication.

In the second stage, to ensure that all articles in the final collection meet the objectives of this review, we screened and identified 423 articles one by one to confirm whether the selected keywords appeared in the titles, abstracts, or introductions of the selected articles (Tranfield et al., 2003). Studies that deviate from the topic were manually excluded from the sample set, such as review topics, historical philosophy, and agricultural topics. Two people complete this process to demonstrate quality control. Finally, 273 articles formed our literature collection. Specifically, we developed a detailed list of exclusion and inclusion criteria (see Table 2) and a PRISMA flowchart to demonstrate the exclusion process (see Appendix).

Table 2: Applying inclusion/exclusion criteria to the population.

First stage: Initial establishment of literature collection			
Database	Number of studies after applying the criteria		
	Scopus	WoS	EBSCO
Initial search number	75	376	309
Total number	760		
Exclusion criteria:			
--Non-English text	0		
--Numbers not from 2013-2023	225		
--Non-articles text	30		
Total numbers from 3 database	505		
Inclusion criteria:	Number of studies in inclusion criterion		

--Cross-reference technique	52
Total input to endnote	557
Removing duplicates by Endnote	134
Subtotal	423
Second stage: Detailed screening process	
Exclusion criteria:	Number of studies in each exclusion criteria
--Manual deduplication	8
--Reviewed studies and Responses to previous comments	48
--Not including both topics(accounting and ESG) simultaneously	53
--Educational/academic topics and topic of Journal Project	22
--History Topic	3
--Philosophy topic	5
--Political topic	6
--Biological and agricultural topics	5
Subtotal (Number of studies after applying the exclusion criteria)	273
Total sample in this study	273

2.3 Stage 3

The third stage is the reporting stage. In this stage, we establish a reporting framework based on the research question and perform analysis。

The report's first goal will be to summarise the units of past knowledge trends descriptively. Those standard units of analysis are geographical location of research focus, methodology, theory, publication time trend, and journal Matthew effect (i.e., which groups have created most contributions to current knowledge) (Massaro et al., 2016; Ascani et al., 2021; Dumay et al., 2016). To this end, we manually coded the units of each article, which was completed by two people. This is because when the classification goal is clear, the advantage of manual coding is that it is more convenient and accurate than computers to distinguish between "text" and "words" with similar meanings (Guthrie et al., 2012).

Specifically, we developed a table when recording these classifications to provide detailed traceability and replication clues, and when determining these units of analysis, two people in the research group sorted, coded and added labels to reduce bias (Tranfield et al., 2003). Detailed information on the 273 literatures is provided in the Appendix.

The second review goal was to answer research questions 2 and 3, that is, to identify and critically discuss hot topics in the selected field by reviewing the entire collection and to bring insights to explore future research avenues. Considering the workload of interpreting and classifying a large number of words when using manual methods for content judgment and the potential risk of personal subjectivity in the context of a large number of readings and the collaborative operation of multiple people, which will lead to disputes when summarising and deciding the focus topics. Therefore, we took advantage of the efficiency of data analysis by computers, using bibliometric software (VOSviewer) to make up for the shortcomings of manual manipulation. The process is as follows: the first step is the data import stage. After importing 273 documents into VOSviewer, we used the full counting calculation method and four as the minimum number of keyword occurrences. We chose the more reliable "fractional counting" calculation method of occurrence (Perianes-Rodriguez et al., 2016). Finally, 143 keywords met the threshold and were automatically identified as the most critical connections. The second step is the hot topic identification stage. We used the Network Visualization function (which automatically clusters the knowledge points of the current collection according to the co-occurrence analysis of keywords) to divide the hot topics in this collection. This is because the advantage of this function is that it can reduce the reading workload of researchers and the risk of subjective judgment, which we can only use the check function provided by the software to remove high-frequency words that do not refer to specific meanings, such as "country", "theory" and "business", etc., and retain words with high recognition characteristics, such as "social accounting", "firm value" and "impression management", etc. In the specific analysis, we regard each generated hot topic as a first-level cluster and perform secondary classification of the focus topic based on the secondary nodes in the first-level cluster (determined by the size in the figure because the larger the node, the higher the centrality of the research.

The more nodes that are connected, the greater the scope of keyword expansion) and our understanding. By doing so, we can clearly show the hierarchy of knowledge in each hot topic and their relationship, thereby establishing a reasonable analysis framework for critical discussion and review. The third step is the stage of identifying future research opportunities. In addition to our understanding and organisation of the focus topics, we also used "Overlay Visualization" to display the time trend of the hot topics.

3. Reporting stage 1_ Patterns and Trend Analysis of Current Studies

3.1 Trend of publication time

Figure 2：Number of literature publications per year
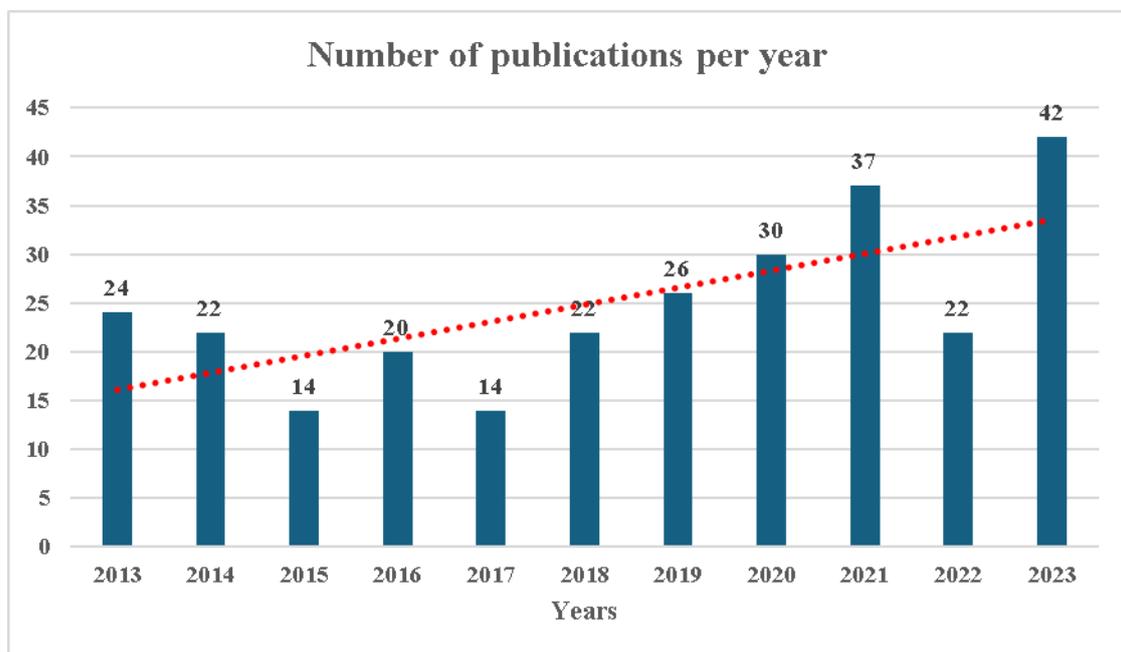
Figure 2 uses Endnote statistics, which shows this collection's number of publications and evolution trends from 2013 to 2023. The figure's automatically generated red dotted trend line shows that the overall publication trend is rising. Even though only 14 articles were included in this collection in 2015 and 2017, the number peaked at 42 in 2023. This trend

shows that the enthusiasm for research in accounting and ESG has fluctuated in recent years, but it has attracted more and more attention from scholars.

In the empirical research from 2013 to 2015, more attention was paid to the subsequent impact of "environmental accounting" or related ESG disclosure frameworks, such as the differences in the implementation of mandatory disclosure in different countries (Barbu et al., 2014), the inefficiency of the mandatory disclosure policy in the United States (Peters and Romi, 2013), the discussion on the ineffectiveness of IR (Flower, 2015), and the lagging development of ESG in developing countries. For example, Momin (2013) and Belal et al. (2015) pointed out that Bangladesh lacks an ESG ecological culture and regulatory system, and company executives are not enthusiastic about ESG reporting, especially showing resistance to mandatory reporting. In contrast, it shows that the research in this period is more enthusiastic about ESG disclosure. Of course, there are also studies on other topics, such as ESG and related financial impacts, such as Boesso et al. (2013) focusing on the promotion of economic performance by the three dimensions of corporate social responsibility, Hoi et al. (2013b) demonstrating that companies with low levels of social responsibility are more likely to engage in tax avoidance activities.

From 2016 to 2019, a few scholars have still researched disclosures and frameworks. For example, de Villiers and Marques (2016) studied the role of national environmental culture in disclosure, and Parsa et al. (2018) argued against the effectiveness of GRI in enhancing disclosure accountability. Most scholars have begun to pay attention to the financial consequences of ESG on enterprises, such as material disclosure content and firm value (Khan et al., 2016), environmental accounting and firm value (Ntim, 2016), financial impact of IR reporting (Barth et al., 2017), impact of disclosure on capital allocation efficiency (Lu et al., 2017), impact of ESG information on investor decision-making (Elliott et al., 2017), and the relationship between executive features and profitability (Davidson et al., 2019).

Since 2020, except for 2022, the number of publications has reached a relatively high growth rate. In terms of the proportion, the total number of publications in the four years from 2020 to 2023 accounts for nearly 50% of this collection. This also makes us more

convinced of the necessity of conducting this review， as it can identify the latest highlighted research trends and patterns and build on/extend the time dimension of the previous review (e.g., Tsang et al., 2023). In this stage, scholars have significantly expanded their research scope and found that the relationship between research variables is diverse, emphasising testing the moderated factors between certain relationships, such as governance or country factors. At the same time, research is not limited to the consequences of ESG, nor is it solely focused on disclosure or financial consequences. Still, it is moving towards more diverse themes/developments. For example, the examination of the relationship between ESG and financial reporting stance (Garanina and Kim, 2023； Anagnostopoulou et al., 2021； Cho et al., 2020a； Burke et al., 2020), questioned the motivation of companies to participate in ESG (Roszkowska-Menkes et al., 2023； Lauwo et al., 2020), the examination of the relationship between governance factors and ESG (Muniandy et al., 2023； Michaelides and Vafeas, 2023； Elbardan et al., 2023； Li et al., 2022； Xi and Xiao, 2023), or explored the relationship between ESG and internal management and control in companies (Shrestha et al., 2023； Zhang et al., 2021； Jorgensen et al., 2023).

3.2 Literature distribution in different journals

Table 3: The distribution of the 273 final sampled studies across the 27 top-tier accounting journals (The Appendix provides full details of each paper)

Tier in ABS	Journal title	Numbers of studies	Percentage in collection
4*	Accounting Organizations and Society	18	7%
	Accounting Review	13	5%
	Journal of Accounting and Economics	7	3%
	Journal of Accounting Research	2	< 1%

Sub-total		40	15%
4	Contemporary Accounting Research	13	5%
	Review of Accounting Studies	9	3%
Sub-total		22	8%
3	Abacus	2	< 1%
	Accounting and Business Research	8	3%
	Accounting Forum	30	11%
	Accounting Horizons	5	2%
	Accounting, Auditing and Accountability Journal	59	22%
	Auditing	1	< 1%
	Behavioral Research in Accounting	2	< 1%
	British Accounting Review	28	10%
	Critical Perspectives on Accounting	31	11%
	European Accounting Review	11	4%
	International Journal of Accounting	9	3%
	Journal of Accounting and Public Policy	8	3%
	Journal of Accounting, Auditing and Finance	3	1%
	Journal of Accounting Literature	3	1%
	Journal of Business Finance and Accounting	1	< 1%
	Journal of International Accounting Auditing and Taxation	3	1%
	Journal of the American Taxation Association	1	< 1%
	Management Accounting Research	6	2%
Subtotal		211	77%

Total		273	100%

Figure 3 Distribution quantity in different journals

Literature distribution in different journals
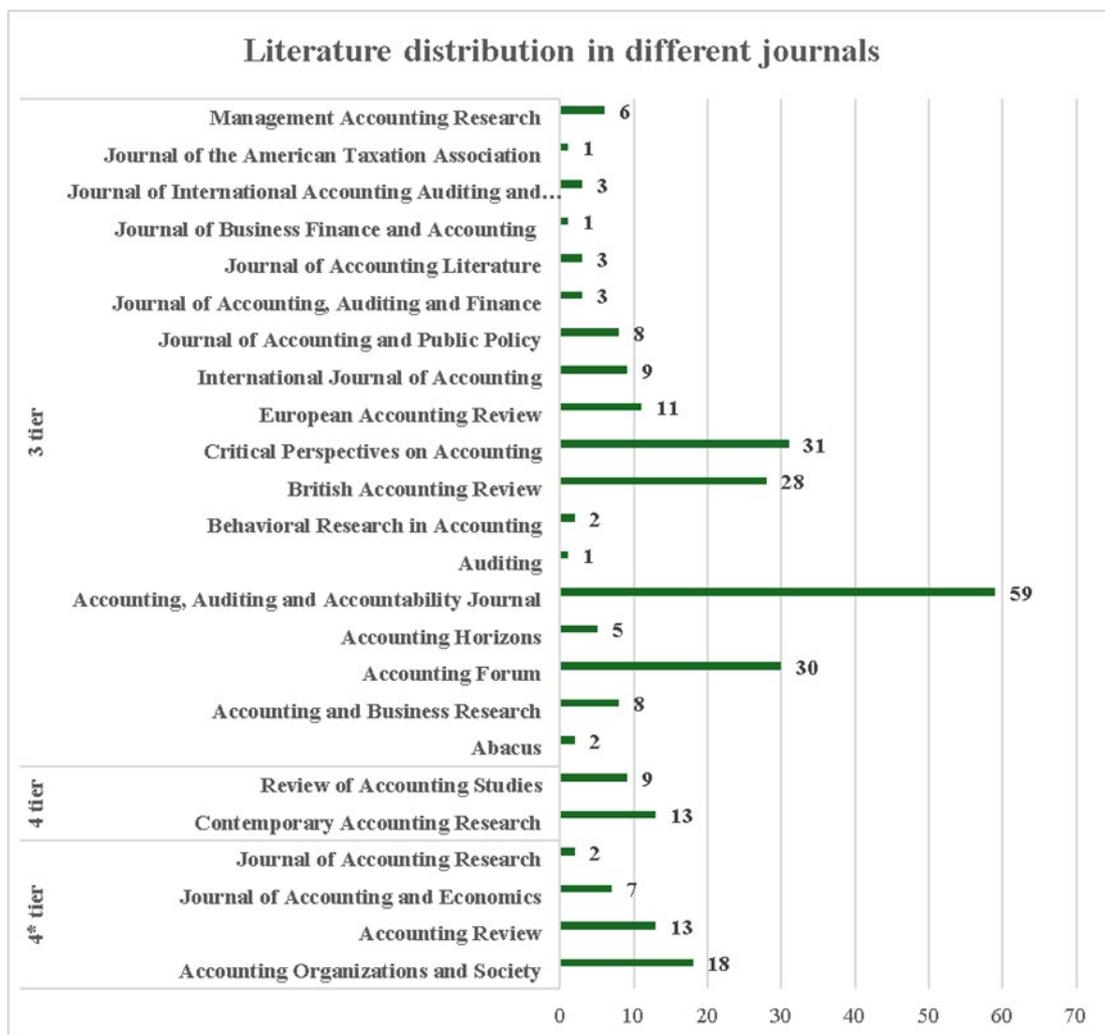
Figure 4 Distribution ratio in different journals

Literature distribution percentage

Figure 3 and Figure 4 extract the data in Table 3 and count the number and proportion of journals, respectively. As shown in Figure 3, the journal with the most Matthew effect is "Accounting, Auditing and Accountability Journal" because this journal has the highest knowledge diversity and inclusiveness compared with other journals. Among them, the second and third places of the star effect are "Critical Perspectives on Accounting" and "Accounting Forum", respectively. It is worth mentioning that "British Accounting Review" ranks fourth with only two articles difference from the third place, while the inclusion performance of other journals shows a relatively scattered trend. The inner and outer circles of the double-layer pie chart in Figure 4 show the distribution information of journals at different levels. The inner circle is the distribution ratio of the total number of documents in the three tiers. The grey part is the 4* tier with a proportion of 15%, the blue part is the 4 tier with a proportion of 8%, and the orange part is the largest proportion of 77% of the 3 tier. The outer circle is the proportion of the number of documents in each journal to the total number, and each journal belongs to each tier category and is divided by the colour of the same category. Obviously, journals belonging to tier 3 contribute the most to the knowledge in this field, which means that researchers in this field need to not only pay

attention to journals in tier 4* tier and 4 tier when preparing for research but also place their reading work on a broader basis to face the current situation of diversified and widely distributed knowledge in the field, to make a solid defence for their research entry point.

3.3 Geographical distribution based on research data sources.

Table 4: Country where the research is focused on (The Appendix provides full details of each paper)

The geographical scope of this collection					
	No of studies				
Developed countries or regions	**125**				
Asia and Pacific	**84**		**Europe**		**41**
Australia	22		Finland		3
South Korea	2		Netherlands		2
New Zealand	4		Italy		9
Taiwan	2		UK		19
Canada	3		Denmark		2
US	51		Norway		1
			Sweden		3
			Slovenian		1
			Other/Unmarked Europe Region		1
Developing countries or regions	**47**				
Africa	**20**	**Asia and Pacific**	**26**	**Europe**	**1**
Egypt	1	Bangladesh	6	Russia	1

South Africa	8	China	10		
Ghana	3	India	2		
Tanzania	3	Sri Lanka	3		
West African	2	Brazilian	2		
Nigeria	3	Pakistan	1		
		Malaysia	1		
		Peru	1		
Subtotal of studies focused on individual countries	**172**				
Cross-countries studies	*47*				
Studies that do not cover specific countries or regions	*54*				
Total	**273**				

Figure 5 Geographical distribution of studies

General geographical distribution

- Developed countries or regions
- Developing countries or regions
- Cross-countries studies
- Not involved countries

46%
20%
17%
17%

Studies focused on individual countries
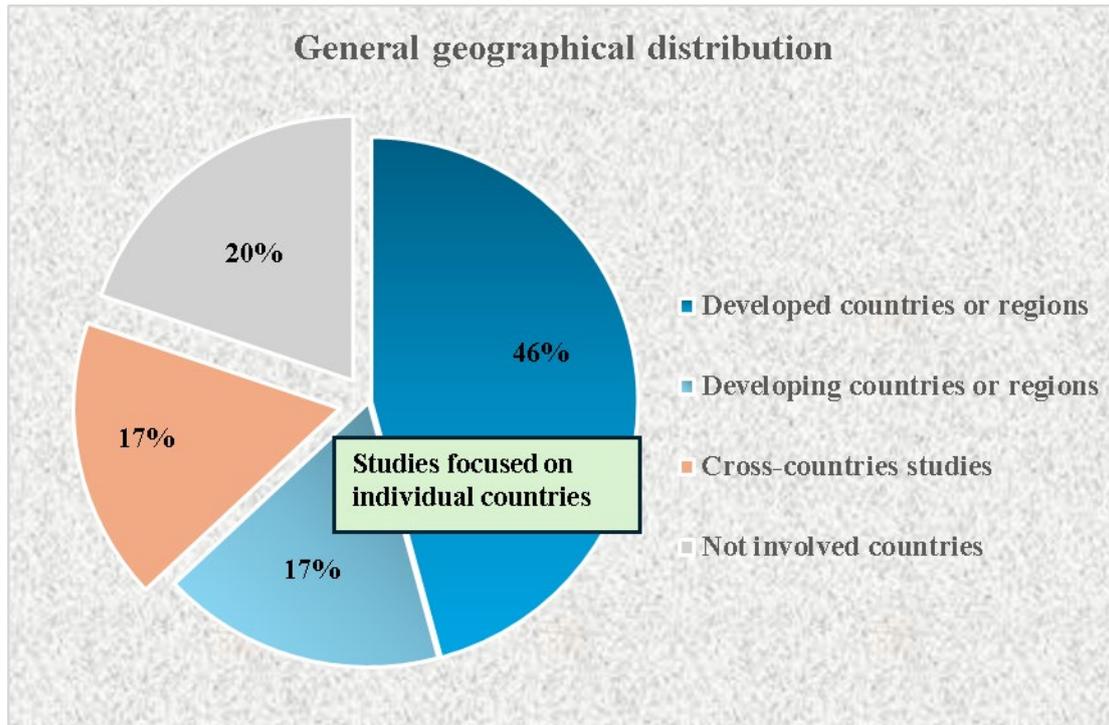
Figure 5 is extracted from Table 4 and shows the general geographical distribution of this collection. In detail, about 20% of the literature in this collection does not involve empirical data related to countries or regions. These studies can be briefly summarised as comments or inferences on a certain accounting and sustainability topic, such as Gallhofer (2018)expounding on the possibility of a new corporate nature reporting framework, Dillard and Vinnari (2019) commenting on the possibility of an accountability-oriented accounting system, etc. In the collection, the remaining 80% of the literature involves research data related to countries or regions, of which cross-national research accounts for only 17% of the total literature. In these studies, scholars selected multiple countries or regions as data sources. For example, Barbu et al. (2014) chose data sources from the United Kingdom and France as the research background, and Bini et al. (2023) collected data from countries such as the United Kingdom, Germany, the Netherlands and Austria. In contrast, the combination of the dark blue and light blue parts of the figure shows the proportion of studies that use a single country or region as a data source, which is 63%, including developed and developing countries.

Figure 6 Detailed percentage of developed countries or regions
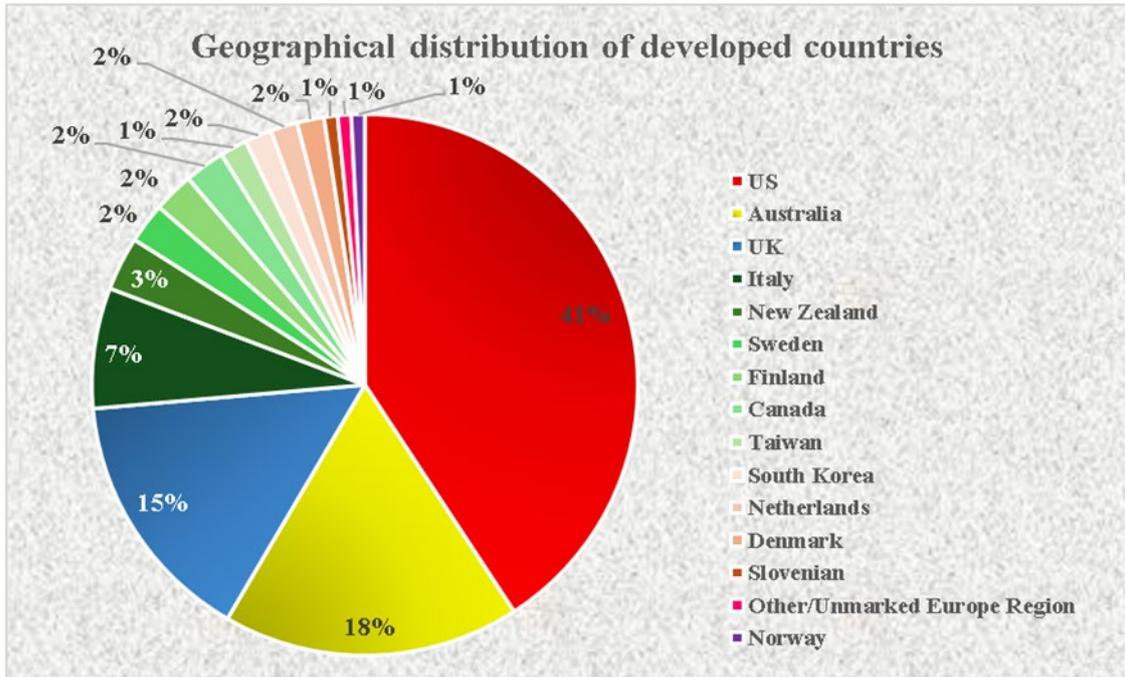
Figure 7 Detailed percentage of developing countries or regions
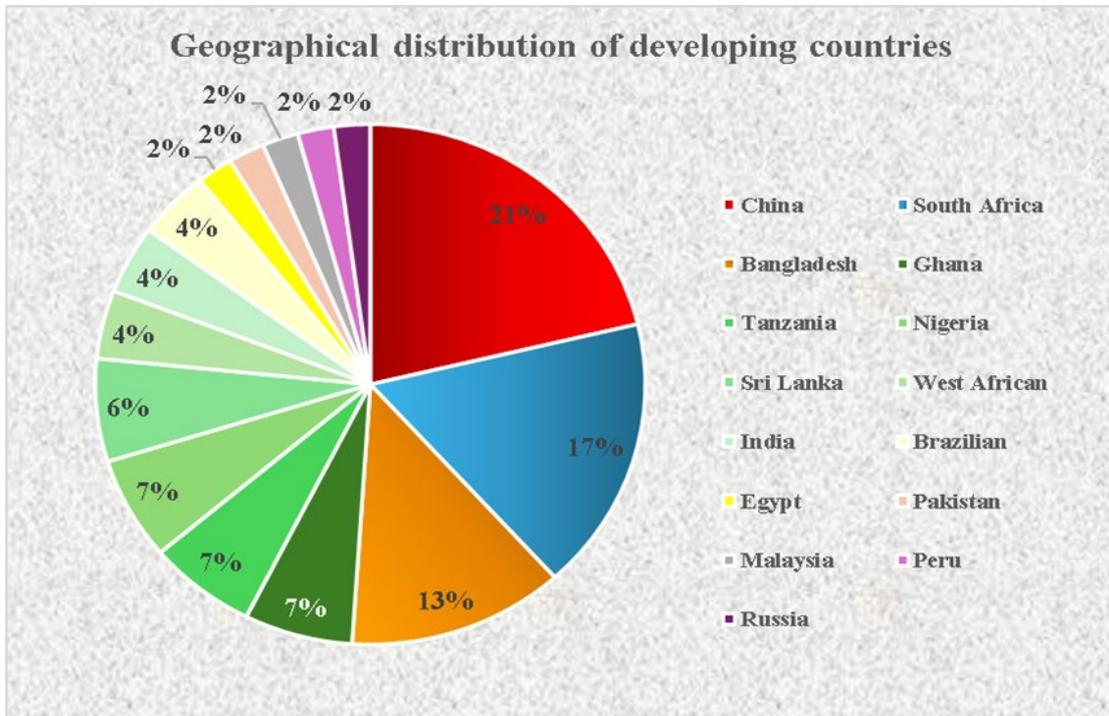
Figure 6 and Figure 7 show the distribution of research data sources from developed countries (referred to as developed countries research) and the distribution of research data sources from developing countries (referred to as developing countries research).

Obviously, regardless of the type of country or region, the distribution of research data sources is highly uneven. Among the number of studies in developed countries, studies focusing only on the US accounted for 41%, followed by Australia at 18%, and the third was the UK at 15%. These three countries accounted for almost three-quarters of all developed countries' research, while the remaining developed countries accounted for a very small proportion in Figure 6. Similarly, in Figure 7, the top three, China, South Africa and Bangladesh, also accounted for almost 50% of the developing countries' research. Therefore, we can say that in the study of a single type of country, the primary regional sources come from only a few countries, and this regional imbalance has little to do with country or region type.

In general, the lack of cross-national research and the high attention paid to a single country are similar to the findings of previous reviews, that is, this phenomenon has always been a concern for scholars (Norbit et al., 2017; Pratoomsuwan and Chiaravutthi, 2023; Gulluscio et al., 2020). This is because too much focus on a single country will lead to the loss of a global perspective on the development and evolution of knowledge in this field. For example, the lack of research on the interaction between emerging markets (developing countries) and mature markets (developed countries) may make it difficult for us to fully understand the latest status of competition and cooperation in developing and evolving ESG in different regions. The evidence in this collection explains this phenomenon; that is, from the insights of Figure 6 and Figure 7, the phenomenon of more attention paid to a single country can be described as scholars putting most of their research efforts into a few hot countries, regardless of the country type. This may mean that under the current trend of ESG development, the political economy, humanistic system and historical practice dimensions in these few countries are more representative or contradictory, and scholars using research data from a particular country will be more in line with the specific research scenario. However, a potential disadvantage of this type of research being scaled up is that the research findings or conclusions are subject to regional limitations. The evidence provided can only be drawn from countries with similar systems or cultures and cannot be generalised to other regions.

3.4 Distribution of Methodology

Table 5: Number of studies by research type and data collection method

Research themes/methodologies		Determinant	Consequence		Total
		Descriptive	Instrumental	Normative	
Quantitative	*Content analysis*	2	3	3	**8**
	Textual analysis	2	3	1	**6**
	Empirical analysis	39	66	2	**107**
Subtotal		43	72	6	**121**
Qualitative	*Narrative/commentary analysis*	39	6	30	**75**
	Normative analysis	4		22	**26**
	Content analysis	1			**1**
	Case study/ field study	20	12	15	**47**
Subtotal		64	18	67	**149**
Mixed method		2	1		**3**
Total		**109**	**91**	**73**	**273**

Figure 8. Methodology distribution

Methodologies distribution

- Content analysis_Quantitative
- Textual analysis
- Empirical analysis
- Narrative / commentary analysis
- Normative analysis
- Content analysis_Qualitative
- Case study/ field study
- Mixed method
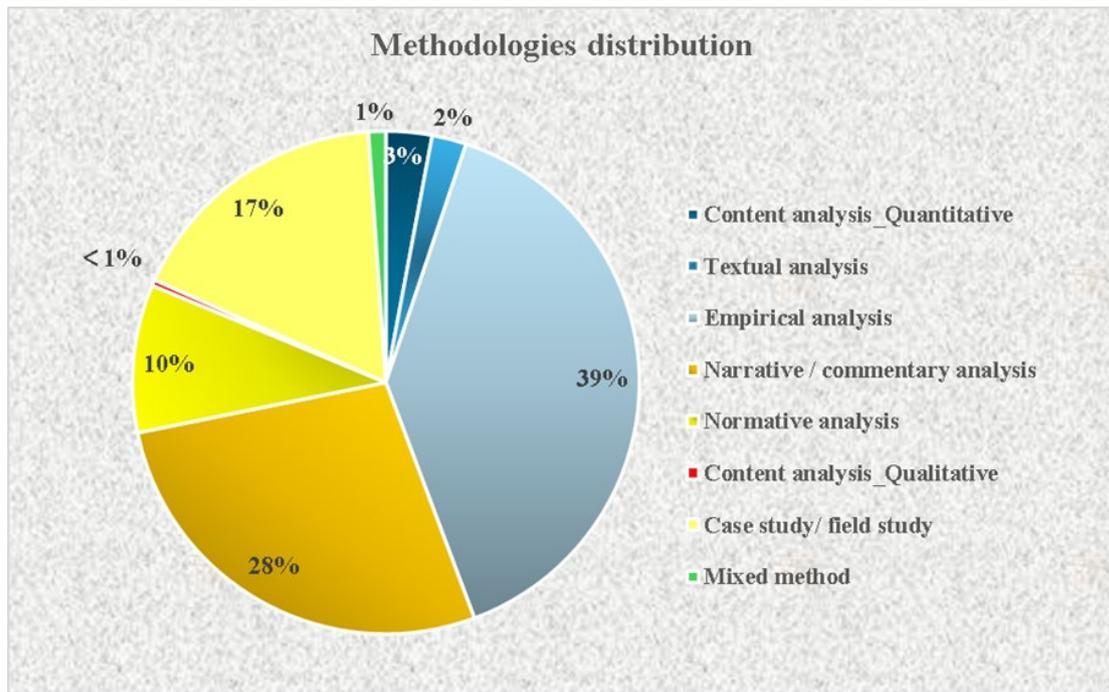
Table 5 shows the statistics of the methodology in this collection. At the same time, in order to observe the universality and commonality of scholars' application of methods under different research themes, we also draw on the classification experience of studies from Andrew and Baker (2020) and classify the literature in this collection into three categories, namely, descriptive research (usually these studies discuss various factors and backgrounds that significantly promote ESG practice and development, called prior research), instrumental research (usually discuss the business and economic impact of ESG development on organisations, called consequence research) and normative research (these studies typically examine the development of accountability and how it should develop, which can also be classified as ESG consequence research). Two people in the research team coded this process to reflect quality control. For details, see the Appendix. Figure 8 shows the percentage of more information on the methodology category. For example, in the quantitative category, empirical analysis is the most widely used, accounting for 39% of the total number of documents. This indicates that scholars are committed to using quantitative methods to detect the causal relationship between different elements in this field. In the qualitative category, narrative or commentary analysis is the most widely used, accounting for 28% of the total number of documents, because scholars are committed to critically discussing the revolutions or major contradictions in

this field. It is worth mentioning that very few studies use the mixed method type in this field, accounting for only 1%.

In combining the three research themes, it was found that the number of quantitative and qualitative methods used by scholars in descriptive research, that is, those who focus on examining the factors that promote ESG practices and development, is not very different, 43 and 64 respectively, which shows that both methods are suitable for studying antecedents. Scholars engaged in instrumental research in this field, that is, studies examining the economic impact of ESG development, use more quantitative methods, reaching 72 articles. In comparison, only 18 articles use qualitative methods, which shows that quantitative methods are more suitable for testing the consequences of economic relationships. In contrast, in normative research, which is also a type of consequence research, scholars' preferences for the methodology category are pretty opposite; there are only six quantitative studies, while qualitative studies reach 67. This means that the use of methods does not entirely depend on scholars' interest in examining antecedents or consequences, but comes from different research themes.

3.5 Distribution of theory

Table 6 The number of theories appearing in the whole population.

Category and name of theory	No. of studies		
The total number of studies using the theory in the collection	81		
The total number of theories used in the collection	124		
The total number of theory types in the collection	36		
Socio-political theories _14 types	**Determinant**	**Consequence**	
	Descriptive	**Instrumental**	**Normative**
Legitimacy theory _24	12	7	5

	Descriptive	Instrumental	Normative
Stakeholder theory _15	8	4	3
Institutional theory _ 21	9	7	5
Neo-institutional theory _ 1			1
Social movement theory _ 5	3		2
Social identity theory _1		1	
Political theory _ 1	1		
Self-regulation theory _ 1	1		
Strong structuration theory _ 1	1		
Equity theory _2	1	1	
Deprivation theory _1		1	
Risk society theory _ 1			1
Practice theory _ 1	1		
Impression management theory _ 3	2	1	
Subtotal of usage in each research theme	39	22	17
Subtotal (number of used Socio-political theories in the collection)	**78**		

	Determinant	Consequence	
Economic-based theories_ 14 types	**Descriptive**	**Instrumental**	**Normative**
Agency theory _ 10	3	6	1
Resource-based theory _ 5		5	
Signalling/ Voluntary disclosure theory _ 5	1	3	1
Collaboration theory _ 1	1		
Efficiency wage theory _1		1	
Stewardship theory _ 1			1

Instrumental theory _ 1	1		
Firm theory _1		1	
Trade-off theory _ 1		1	
Contingency theory _ 3	2	1	
Actor network theory _ 2	1		1
Worker engagement theory _ 1		1	
Prospect Theory _ 1		1	
Spectacle theory _1	1		
Subtotal of usage in each research theme	10	20	4
Subtotal (number of used economic-based theories in the collection)	34		

Market-based theories _ 2 types	Determinant	Consequence	
	Descriptive	Instrumental	Normative
Resource dependence theory _ 4	2	1	1
Information asymmetry theory _ 1	1		
Subtotal of usage in each research theme	3	1	1
Subtotal (number of used market-based theories in the collection)	5		

Others _ 6 types	Determinant	Consequence	
	Descriptive	Instrumental	Normative
Ethical theories _ 1	1		
Affect-as-information theory _ 2		2	
Expectancy theory _ 1	1		

Intrinsic motivation theory _1	1		
Professions theory _ 1	1		
Retrodictive theory _1		1	
Subtotal of usage in each research theme	4	3	
Subtotal (number of used other theories in the collection)	**7**		

Figure 9 The proportion of theories appearing in the whole population.
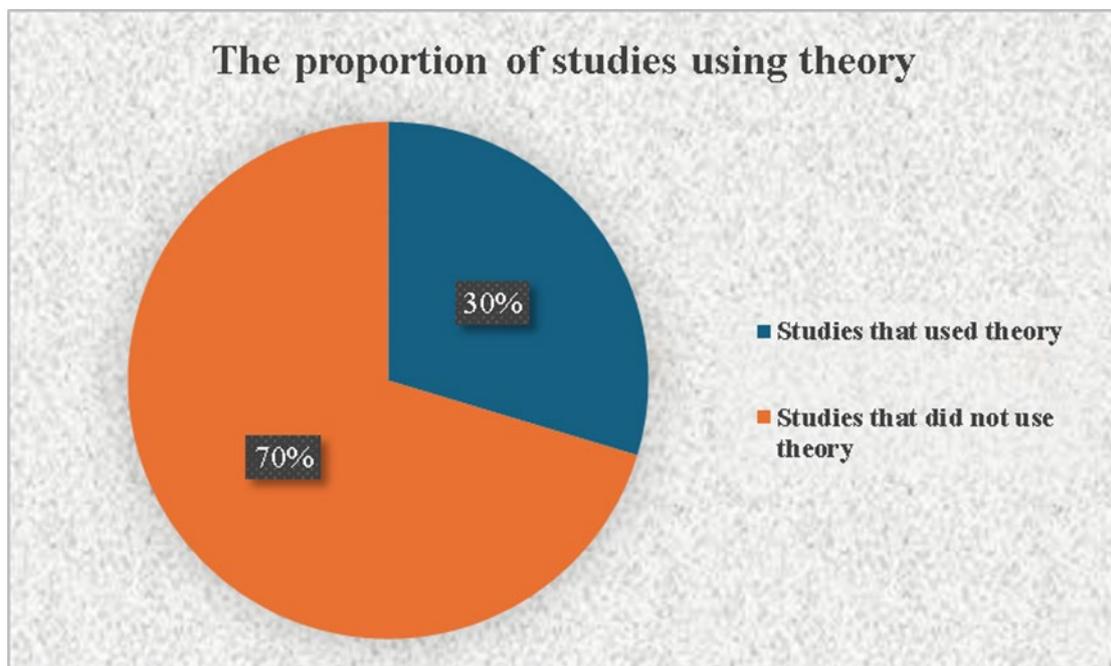
Figure 10 Distribution of theory types and research theme

The percentage of theory usage times in the collection
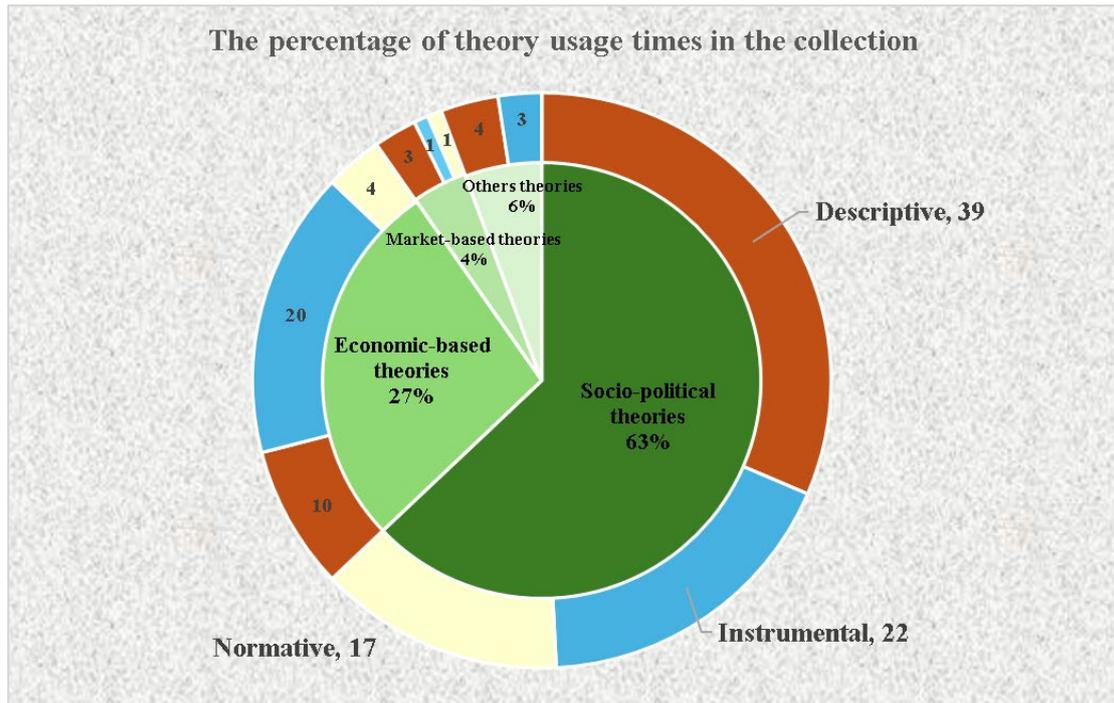
Table 6 shows the statistics of the theories used in the literature in this collection. The labelling step was completed by two people in the research team during the detailed reading to reflect the quality control of the coding process. In general, 81 articles in this collection applied 36 theories to construct the research background or explain the findings, and the total number of theories used reached 124 times. This shows that scholars are committed to combining different theoretical perspectives to investigate a particular field to cope with the complexity of phenomena in the accounting and ESG fields. The subsequent content in the table shows our classification of theories: social and political, economic, market, and other disciplines. We followed the identification and classification of theories in the scholars' articles. We conducted additional clarification work for theories that were not clearly classified, such as online searches. At the same time, when discussing the classification of theories, we continued the strategy in the discussion of methodology; that is when recording the use of each theory, we included it in the classification of three themes to capture the fit and breadth of different theories in different themes. From a data perspective, the pie chart in Figure 9 shows the ratio of the number of studies that use theory and those that do not use theory in this collection. It can be seen that 70% of the

studies do not involve the application of theory. This phenomenon is consistent with what previous scholars have found; scholars in this field rarely use theory when conducting research. The double-layer pie chart in Figure 10 is generated based on the total number of times the theory is used to show the proportion of theoretical categories and the distribution trend of research topics in each theoretical category.

Combining the information in Table 6 and Figure 10, we have the following findings. From a macro perspective of theoretical categories, the socio-political category has the largest application ratio, 63%. In this category, the use of legitimacy, stakeholder, and institutional theories is particularly popular. The second is the economic-based category, which is 26%. In this category, agency theory is the most popular. The third is the market-based category, which accounts for only 4%, among which resource dependence theory is used more frequently. Using theories in other categories accounts for 6% of the total. Specifically, scholars use socio-political theory more in the study of descriptive topics; that is, it is suitable for examining factors that promote the development of ESG practices. At the same time, this theory is also suitable for laying the research background and explaining corporate motivations in instrumental research. This is because scholars attribute the motivation of companies to engage in ESG-related practices to external pressures, such as maintaining their legitimacy in cross-border business cooperation (Parsa et al., 2021; Jeroh, 2020; Weerathunga et al., 2020), meeting the desire of diverse stakeholders to hold companies accountable for their social and environmental behaviour, that is, to "do the right thing" to demonstrate morality (Davidson et al., 2019), and following socially induced norms (Dimaggio and Powell, 1983a; Meyer and Rowan, 1977a) to optimise the interests of companies in a specific environmental context (de Villiers and Alexander, 2014a). Given that this theory considers the impact of external pressure on companies, it is also the most widely used in normative research, reaching 17 articles, because it is also applicable to explaining how companies should consider external requirements in pursuit of accountability. Scholars often use economic-based theories for instrumental research; they can be regarded as more suitable for background construction in research categories that examine economic consequences. For example, agency theory explains why corporate

managers take the initiative to engage in ESG activities from the internal governance perspective (Anagnostopoulou et al., 2021). The resource-based view explains why companies tend to disclose their superior economic information to gain a reputation for social responsibility in pursuit of differentiated competitive advantages (Shrestha et al., 2023). In general, theoretical categories usually explain the antecedents of pursuing economic interests from an internal perspective of the company. Market-based theory and socio-political theory have similar approaches. That is, they both emphasise the impact of external factors on companies. Therefore, although this category theory was used less in total, it was more suitable for descriptive research and reached the maximum percentage when using this theoretical category. In application, this theory is different from socio-political theory in that it emphasises less the pressure and impact of external factors on enterprises but emphasises how enterprises can actively use external factors to benefit themselves. For example, Haque and Jones (2020) use resource dependence theory to point out that enterprises need to pay attention to the social relationship capital brought by female members and use it to shape the strategic performance of enterprises. Fan et al. (2021) use information asymmetry theory to explain the antecedents of enterprises seeking external guarantees. That is, when enterprises find that the content they disclose is not enough to eliminate information asymmetry, they will use external assurance to improve the credibility of information. Li et al. (2023) pointed out that the disclosure strategy adopted by enterprises is an attempt to influence others' views on things by regulating and controlling information in social interactions and explained this phenomenon with impression management theory. In addition to the above three theories, others present an interdisciplinary state. For example, psychology-related expectation theory (Kumarasiri and Gunasekarage, 2017) and affect-as-information theory (Elliott et al., 2014) are used when discussing management decision-making behaviour.

In summary, the purpose of using theories is mostly to construct a research context for one or more phenomena to gain insight into or explain the driving factors of the phenomena. From the theoretical data in this collection, it can be seen that some theories dominate the

use. In contrast, other theories have a high cumulative total and many categories but very low repeated use.

4. Reporting stage 2_ Hot Topics in Recent Years

4.1 Description of four cluster

Figure 11：Full view of Network visualisation

Figure 11 is obtained from VOSviewer after counting the high-frequency hot knowledge in this collection. The purpose is to help us organise and divide different topics in the review field to form an objective reporting framework. As shown in Figure 11, the software generates four main different colour areas (four first-level clusters): red, yellow, blue and green. In the software algorithm, the various elements most often combined by scholars in discussion will be placed under a certain first-level cluster, such as "Performance" and "Disclosure" in the red area. After obtaining this figure, we had a full discussion, named each cluster, and marked each study with a research topic. For details, see the appendix. For example, the red cluster is "Performance". This is because even though there are larger secondary nodes such as "disclosure" or "integrated reporting", in combination with all the nodes in this cluster and our understanding after reading the entire collection, this

cluster is more concerned with the economic impact before and after the company engages in ESG practices, which includes diversified factors. Similarly, the yellow cluster was named "Governance" instead of "Accountability", the blue cluster was named "ESG accounting", and the green cluster was named "Disclosure". Below is a detailed discussion of the hot topics in each cluster.

4.2"Performance" cluster

Figure 12: detailed information of "Performance" cluster- extract from Figure 11

Figure 12 shows the details under "Performance". This cluster is located on the left side of the overall picture and borders the "Governance" cluster and the "Disclosure" cluster above, indicating that the three clusters are closely related. In the research in this field, scholars have focused most of their research interests on the relationship between the various elements in ESG disclosure and corporate economic benefits, and scholars' test of the relationship between the two is not one-way but replaces the two with the other's determinant according to different scenarios. For example, in the context of economic benefits as a driving factor, scholars have examined the driving role of expected economic

benefits (Stolowy and Paugam, 2018; Cannon et al., 2020; Qiu et al., 2016; DesJardine et al., 2021) and potential litigation costs in disclosure (Chi et al., 2020; Ryou et al., 2022). In contrast, scholars have more extensively discussed the driving role of ESG disclosure on economic benefits, which, to a certain extent, reflects that economic value is still the consequence that people are most concerned about when engaging in ESG disclosure. Relevant disclosure indicators include voluntary disclosure or selective disclosure (Pattena and Zhao, 2014), material and non-material information (Khan et al., 2016), scope, transparency and readability (Barth et al., 2017; Caglio et al., 2020), and restatement behaviour (Bartov et al., 2021; Wans, 2020), etc. Relevant economic indicators include enterprise valuation (Elliott et al., 2014), firm value (Ntim, 2016), the stock price (de Villiers and Marques, 2016), capital efficiency (Lu et al., 2017), and capital structure (Ho et al., 2021; Dhaliwal et al., 2011; Baloria et al., 2019; Truong et al., 2021), etc. In addition to focusing on what companies say, scholars have examined the relationship between carbon emission indicators, which are more representative of ESG practice behaviours, and economic benefits, and introduced the impact of regional differences in this scenario. For example, in countries without climate policy regulation, low emissions will weaken corporate value (He et al., 2022; Han et al., 2023). This means that multiple factors mediate the relationship between economic benefits and ESG-oriented practices.

In general, research on "Performance," i.e., financial consequence type, has remained hot in recent years, but scholars are no longer limited to taking economic consequences as the main test target. Instead, they pay more attention to the factors that dominate the economic consequences and continue to extend their explanations.

4.3 "Governance" cluster

Figure 13： detailed information of "Governance" cluster- extract from Figure 11
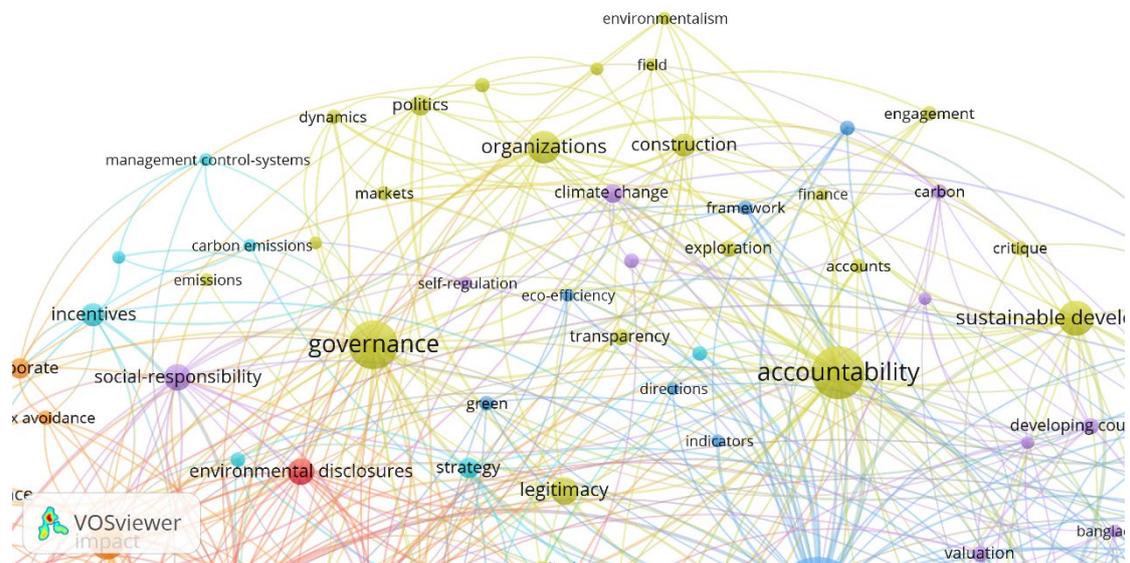
Figure 13 shows the detailed information under the "Governance" cluster. This cluster is located just above the overall picture, bordering "Performance" and "ESG accounting", indicating that it is closely related to these two clusters. This is because scholars often use governance factors as mediating variables to regulate ESG and financial performance (Davidson et al., 2019; Li et al., 2022), or discuss how management implements environmental management strategies under the pressure of accountability (Parsa et al., 2018), and promotes disclosure (Haque and Jones, 2020). The latter, in particular, can almost summarise the main research interests of scholars in "Governance". At the same time, most of the internal nodes in this cluster can also verify the hot spots in this field. For example, "climate change", "transparency", "legitimacy", and "sustainable development" mostly reflect the pressure brought to corporate management by external supervision or stakeholders.

In detailed research contexts, scholars have also examined managers' role in promoting ESG practices from multiple governance dimensions, including comprehensive governance strategies and the personal characteristics of directors. The former's evaluation indicators include the "green" incentive mechanism adopted within the enterprise (Derchi et al., 2023; Narayanan et al., 2021); the driving force of management

role categories on corresponding practices, for example, HR managers will promote human capital disclosure (Michaelides and Vafeas, 2023); the gender structure of the board of directors (Muniandy et al., 2023; Haque and Jones, 2020), etc. The latter's evaluation indicators involve materialism and non-materialism in personal attributes (Davidson et al., 2019); democratic ideology of management (Michaelides and Vafeas, 2023); environmental awareness of management (Narayanan et al., 2021); personal social responsibility preferences of management (Martin, 2021); age of board members (Muniandy et al., 2023), and economic or financial knowledge and experience of management (Li et al., 2022), etc.

In general, research in the field of governance focuses on examining the driving effects of internal corporate governance, and discusses in detail and diversity how overall governance strategies and personnel attributes can take active or passive strategy to respond to external demands (Bui and de Villiers, 2017), supplementing the internal perspective on the antecedents of companies engaging in ESG practices.

4.4 "ESG accounting" cluster

Figure 14: detailed information of "ESG accounting" cluster- extract from Figure 11
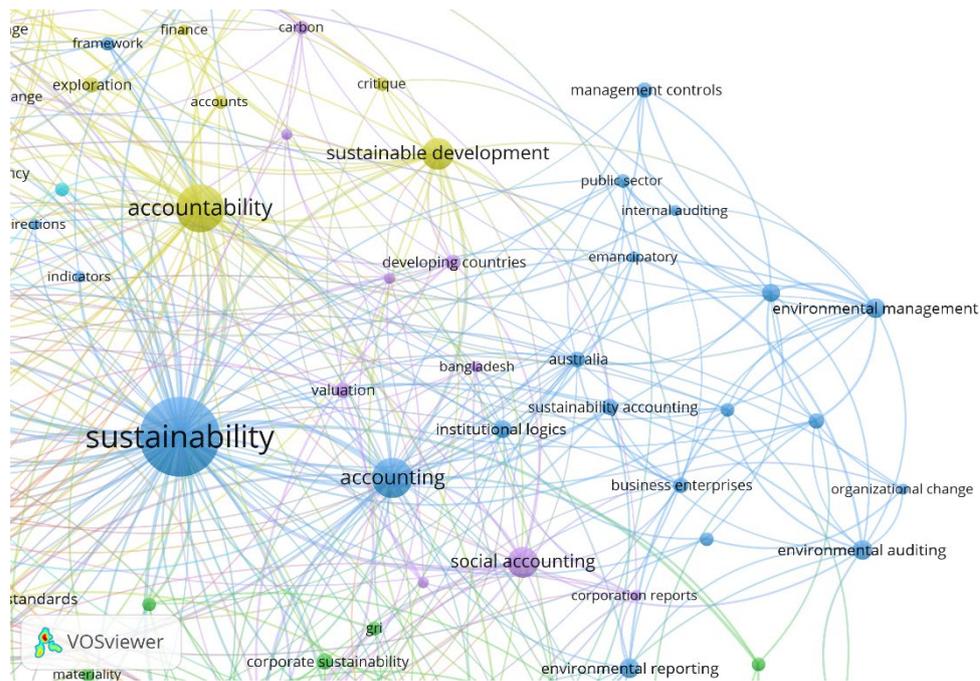
Figure 14 shows the detailed information in "ESG accounting". This cluster is on the right side of the overall picture, bordering "Governance" and "Disclosure". If we only understand it based on the position relationship in the picture, this cluster should be closely related to these two clusters. However, after reading and understanding the entire collection, we realise that even though the nodes in this cluster include, for example, "environmental reporting" which is closer to the "Disclosure" cluster, the actual research scope represented by most of the nodes in this cluster is more accountability-oriented. In other words, the blue cluster can also be called "accountability", but because the naming is based on following the content in the picture to reduce reader confusion, this cluster is still retained with the original name.

Specifically, scholars in this field have widely discussed the establishment and evolution of institutions and accounting rules based on accountability, and most of the nodes in the figure also represent this trend, such as "environmental management", "environmental auditing", "sustainability accounting" and "emancipatory". In this context, the research types can be divided into two categories. The former is that scholars comment on the impact of policies and measures issued by different institutions, including mandatory regulatory organisations or social groups, to promote accountability and external risk

exposure in corporate scenarios (Cuomo et al., 2022; Buallay et al., 2022; Belal et al., 2015; Bini et al., 2023). In the latter, scholars have exhaustively evaluated or developed a series of ESG-related accounting reporting guidelines or frameworks, such as the application of sustainable accounting (Passetti et al., 2014); emphasised that traditional accounting needs to cooperate with other disciplines to develop sustainable accounting systems (Bebbington and Larrinaga, 2014); and developed reporting terminology (Burritt and Schaitegger, 2014). Ramanna (2013) proposed a conceptual framework for CSR reporting, which reduces information asymmetry by repositioning the reporting model; that is, stakeholders are principals, and shareholders are agents. Dillard and Layzell (2014) and Haslam et al. (2014) proposed a carbon disclosure framework to achieve consistency in corporate business models, replacing the previous reporting system. Lisi (2015) proposed an environmental performance measurement model for self-examination by enterprises to achieve consistency in corporate business models and combine stakeholders and ethical goals. Rezaee (2016) proposed a theoretical framework that can integrate sustainable performance risk management into the overall corporate structure to serve stakeholders. Radhakrishnan et al. (2018) pointed out that a CSR framework is needed to guide companies on how to allocate resources for ESG; Tregidga and Laine (2022) discussed the necessity of a short-term perspective in environmental accounting to respond to the urgency of the ecological crisis.

In summary, in the past decade, scholars in recent years have made outstanding contributions to the establishment and development of ESG accounting.

4.5 "Disclosure" cluster

Figure 15: detailed information of "Disclosure" cluster- extract from Figure 11

Figure 15 shows the detailed information in the "Disclosure" clustering. This cluster is located below the overall image and has the broadest range of knowledge points among the four clusters. Firstly, if commonalities are only sought from the nodes within this cluster, the surface expectation would be that this cluster will discuss the development of multiple report types and their respective impacts on users, i.e., only observing "integrated reporting," "sustainability reporting," "communication," "GRI," "disclosure," "material," and "CSR disclosure. However, after reading and encoding each article of the entire collection, we found that scholars in this field have explored and discussed more about the true motivations and authenticity behind disclosure, which also provides a more appropriate explanation for the commonalities among other nodes, "social responsibility of business", "stakeholder engagement", "organisational legitimacy" And 'assurance', etc.

Specifically, scholars have questioned the sincerity of companies in engaging in ESG practices and the pragmatism of relevant regulatory groups or agreements, such as the Kyoto Protocol's regulation of emissions (Haslam et al., 2018), or the exclusionary effect of GRI on information asymmetry and low transparency (Parsa et al., 2018; Roszkowska-Menkes et al., 2023), and pointed out that to conduct reputation management (Anantharaman et al., 2022), or impression management (Li et al., 2023), in front of multiple

stakeholders in the market, and strive to maintain their responsible and legitimate image (Parsa et al., 2018), there is a decoupling and symbolic green behaviour between corporate reporting content and their practices (Roszkowska-Menkes et al., 2023), thereby attempting to regulate and control information in social interactions to influence others' views on things. The manipulation methods in these disclosures can be summarised as "greenwashing" or beautifying the disclosure content (Pattena and Zhao, 2014), selective, ambiguous, evasive and hypocritical manipulation of disclosure content (Parsa et al., 2018; Roszkowska-Menkes et al., 2023), and the use of denial, refocusing, evasion of responsibility, excuses and separation strategies to offset stigma (Lauwo et al., 2020). In this context, scholars have also extended their research interest to a substantive measure that can inhibit impression management and enhance reporting transparency and external market credibility (Caglio et al., 2020; Cheng et al., 2015; Christensen et al., 2021; Chi et al., 2020; Kimbrough et al., 2022), that is, "assurance" on the left side of the figure.

Overall, scholars in this field have extensively discussed the authenticity and motivations behind corporate disclosures, providing a profound insight into critical thinking about the ESG behaviours currently engaged by organisations.

5. Reporting stage 3_ Gaps, Limitations and Future Research Suggestions

5.1 Emerging trends and potential research opportunities

Figure 16：Time trend of knowledge hotspot updates-transformed from Figure 11
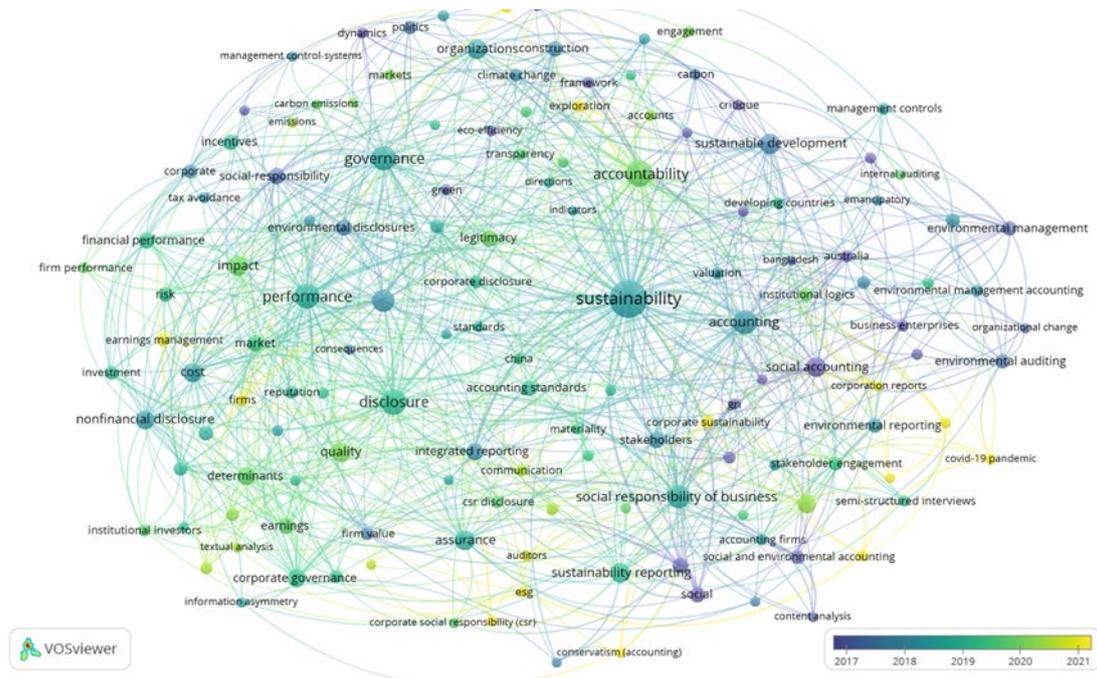
Figure 16 is a transformation of Figure 11 showing the time trend of different knowledge popularity in the four clusters. This helps us identify newer research hotspots and future research opportunities. The time axis in the lower right corner of this figure shows the appearance time of each node in the figure. The lighter the colour, the newer the research category. The following four figures list the detailed information in each cluster.

Figure 17："Performance" cluster- extract from Figure 16
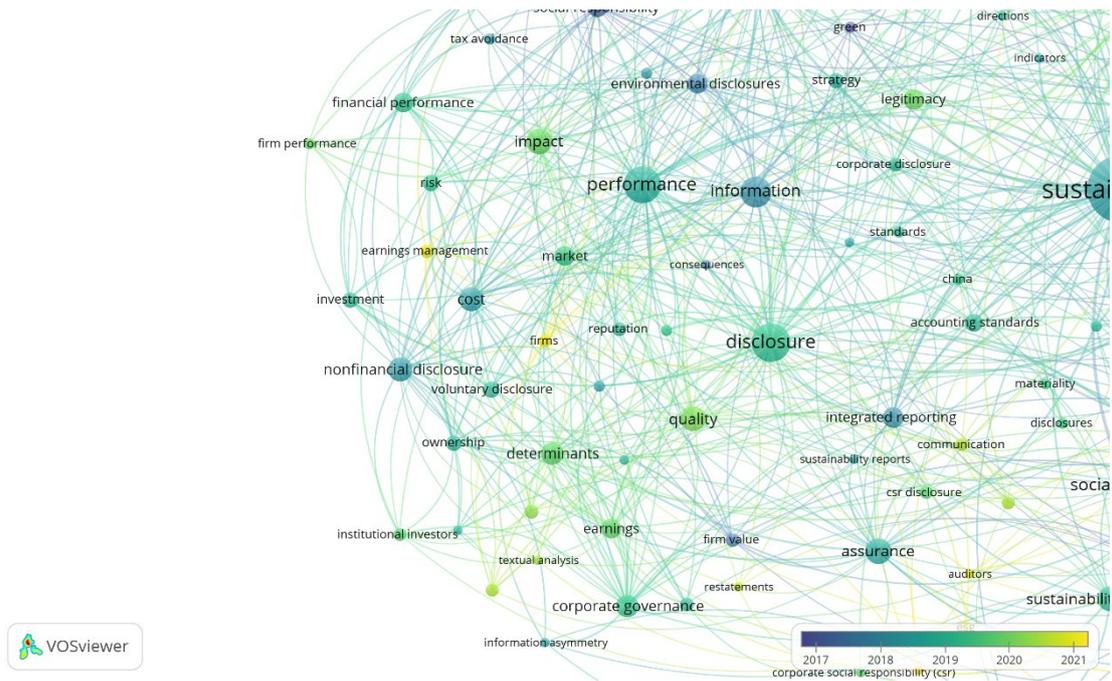
Figure 18："Governance" cluster- extract from Figure 16
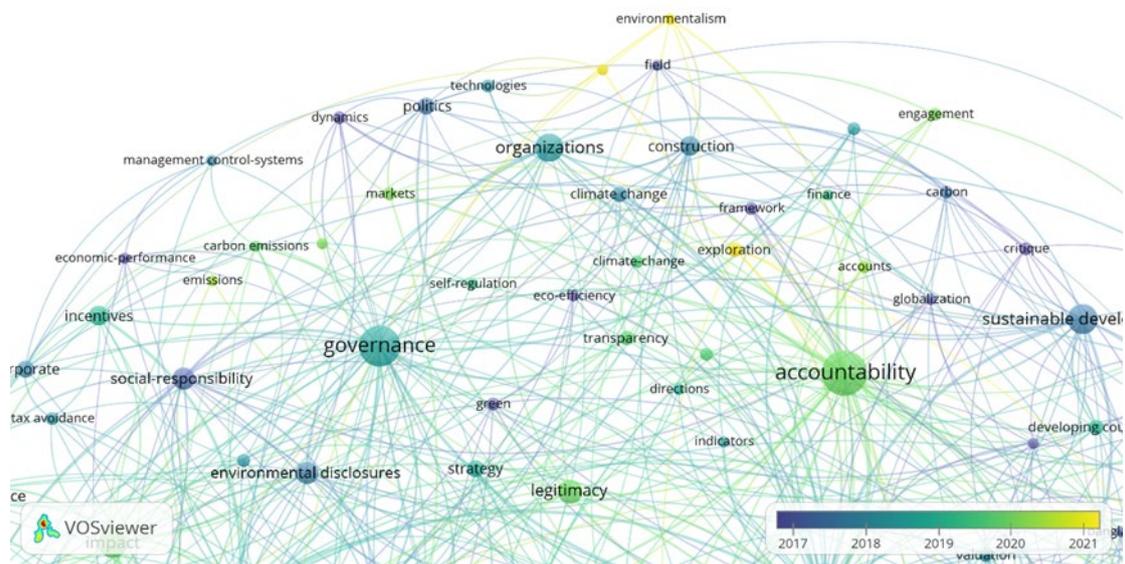
Figure 19："ESG accounting" cluster- extract from Figure 16

Figure 20："Disclosure" cluster- extract from Figure 16

In the process of identifying emerging knowledge points in the four clusters, we excluded words that do not represent specific categories or have overly broad meanings, such as "firms", "exploration" or "corporate sustainability", and combined with the inspiration from the work in the second reporting stage, we identified the following words that represent the

latest research hotspots and have potential significance, namely, "earnings management", "institutional logics", "accounting conservatism" and "assurance".

In the second reporting stage, we briefly introduce the current hot topics in the "Disclosure" cluster. That is, scholars have questioned the authenticity of corporate ESG disclosures, pointing out that disclosure can be seen as a tool for companies to pursue symbolic legitimacy, to manipulate the impression of external groups on the company, or to divert the attention of external stakeholders from their financial reporting quality. In this context, companies seek independent assurance to improve their disclosure transparency, reduce information asymmetry and prove that there is no so-called decoupling phenomenon (Caglio et al., 2020; Chi et al., 2020). This is because assurance can help companies counter the risks brought about by the mandatory, normative and imitative forces of law and culture, and is regarded by corporate managers as an effective legitimacy tool (Martínez-Ferrero and García-Sánchez, 2017; Maroun, 2019). In view of this, we have reason to suspect that companies that engage in "greenwashing" or "decoupling" may still use the role of assurance to relax the vigilance of external auditors when making disclosures to continue hypocritical or unethical behaviour. This is because the research in this collection found that the quality standards and audit methods of current assurance service providers are not balanced, and the expected high-quality assurance status cannot be guaranteed to be achieved (Moroney and Trotman, 2016), which allows corporate managers to manipulate. In terms of the possibility of future research, researchers can discuss more antecedents or potential consequences on this topic, such as identifying more reasonable "greenwashing signals" or examining managers' strategies when managing impressions, which may include financial or non-financial topics or consequences. However, after combing and reviewing the knowledge about assurance in the current collection, it was found that the latest research included in this collection did not involve this point but observed other extended topics of assurance, such as the characteristics of accounting and non-accounting assurance service providers (Ballou et al., 2018; Simpson et al., 2022), the impact of assurance on the relationship between disclosure and financial or non-financial factors (Caglio et al., 2020; Shrestha et al., 2023;

Elbardan et al., 2023), the role of assurance in alleviating external pressure (Chi et al., 2020), and the role of assurance in alleviating differences between ESG rating agencies (Kimbrough et al., 2022). In addition, a potential consequence study would be to discuss the latest research hotspots in this collection, "earnings management" and "accounting robustness", to discuss the relationship between corporate purchase of assurance and the quality of financial information. Although we found some evidence in this collection showing that companies pursuing corporate social responsibility showed a positive relationship with high levels of accounting conservatism, for example, Wans (2020) pointed out that social responsibility-oriented companies have a lower probability of restatement of financial reports, which promotes high-quality financial reporting control, and Garanina and Kim (2023) pointed out that companies with higher levels of corporate social responsibility disclosure tend to have more conservative financial reporting practices. However, the above assurance discussion introduces a new perspective on the relationship between the two. Future researchers can devote their work to the topic of the relationship between assurance purchase motivation and representative accounting information quality such as earnings management or tax avoidance.

5.2 Theories

A theoretical framework plays a vital role in researchers' understanding of complex worlds, helping them make meaningful explanations and predictions (Weick, 1989). The consistency and transparency attributes of established theories can help researchers reduce bias and increase the reliability of research viewpoints and conclusions (Alhossini et al., 2021). Given this, theory can assist scholars in ESG and accounting in developing research plans more reasonably and improving research quality.

However, only 30% of the articles in this collection use theories to construct the research background, indicating that the use of theories is relatively rare. Even considering that some research categories are unsuitable for introducing theories to build the background, many descriptive and instrumental studies in this collection still do not use theories.

Therefore, introducing theories to explain certain phenomena in applicable contexts should be considered in future research, which will help researchers improve the quality of their research and facilitate the understanding of readers or other users of the articles. In addition, the use of theories in this collection has the characteristics of single categories, such as socio-political theories, and single theories, such as stakeholder theory, legitimacy theory or institutional theory, which are frequently used. This, to some extent, illustrates the applicability and breadth of this type and some theories, but these theories still have apparent limitations. For example, both legitimacy theory and institutional theory assume that enterprises adopt passive strategies and ignore the active behaviour of enterprises. However, other theories, such as agency theory, have been criticised for their narrow internal perspective, that is, focusing only on the relationship between managers and shareholders and ignoring other necessary factors in the business environment of enterprises. The strategies they implement are not static because enterprises are likely to change according to the intensity of external pressures and changes in internal culture and policies. Assuming that only a single theory can explain a phenomenon will ignore the identification of its causes and consequences, thus providing a myopic perspective on a specific problem (Alhossini et al., 2021)

Referring to our discussion of the specific research agenda in 5.1, whether assurance can be regarded as a symbolic legitimate tool to divert external attention from the quality of corporate financial information, the current theoretical coverage does not seem to explain all the factors in this research context, even if we introduce legitimacy theory, institutional theory, stakeholder theory and agency theory, etc. at the same time. Because we found that under differentiated external institutions and policies, the internal driving factors of enterprises have changed accordingly, and the conclusions on the relationship between ESG practices and certain elements are not transferable between different environments, such as the findings of Chi et al. (2020) and Chi et al. (2020). Based on this, we have reason to assume that the different states of organisational hypocrisy, greenwashing or sincerity are not a constant trend, but are constantly changing, fluctuating and even reversing in the external and internal institutional and cultural systems. At this point, the

explanatory power of legitimacy theory or institutional theory and neo-institutional theory will be weakened because although these theories recognise the existence of multiple institutional logics in the organisational field, they still tend to use a single dominant logic to explain the research phenomenon, believing that it is a certain dominant logic that leads to the homogeneity of organisational forms or structures in society. Therefore, we identified in section 5.1 that scholars have adopted "institutional logics" in their latest research, and in particular, this node shows close connections with the nodes representing the above-mentioned discussion topics (generated automatically by the software), see Figure 21. This is because institutional logics believe that corporate behaviour patterns are not influenced by an absolutely overwhelming system but rather are simultaneously influenced by different systems within or outside the organisation, resulting in incompatibility, conflict, or coexistence with other organisations, leading to homogenisation or heterogeneity of organisational behaviour. Because considering the wide range of elements involved in the above topics, we recommend that future researchers consider using institutional logic as the basic framework for research background when researching this topic, and then supplement it with other theories for other specific perspectives.

Figure 21： "institutional logics"
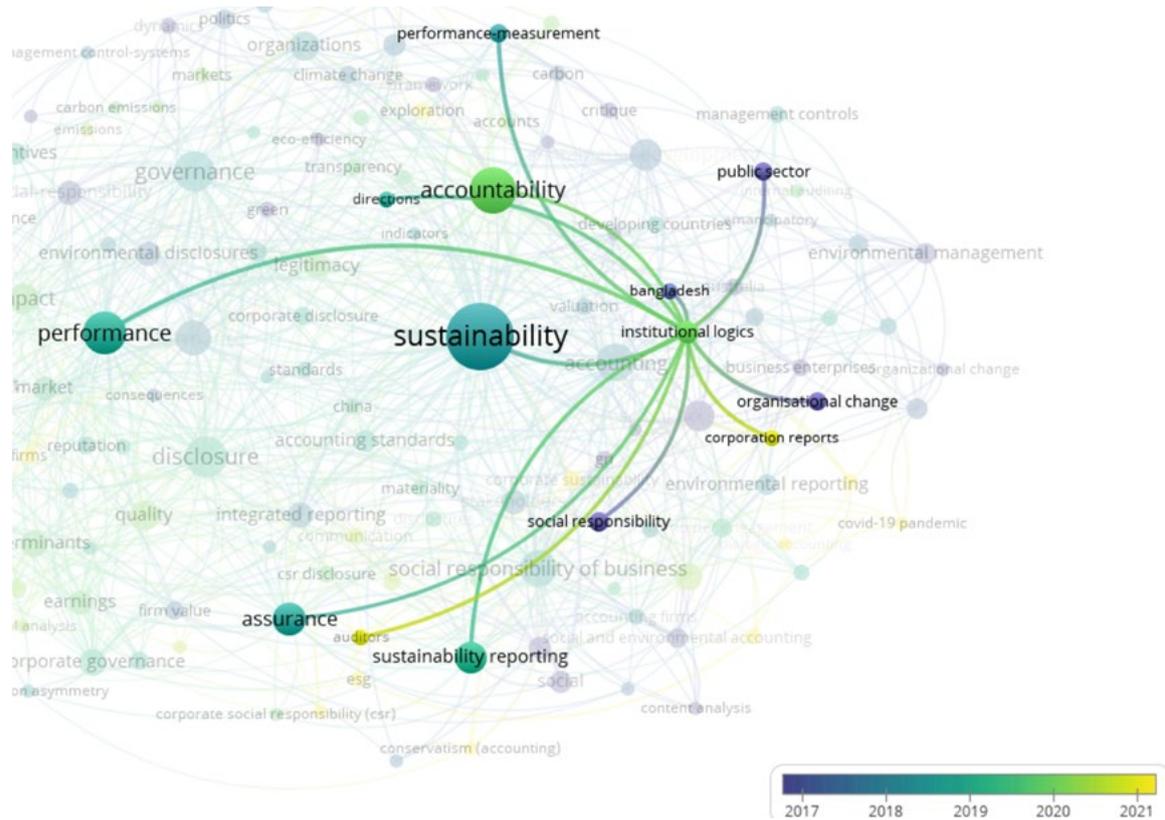
5.3 Research initiatives related to regional aspects

Referring to the impact of institutional logic on explaining research findings has been discussed in 5.2, and we recommend that researchers should consider incorporating discussions on different regions in future research, not only for the topic research we proposed to test the relationship between assurance and accounting information quality, but also in any empirical research in this field. There are two reasons for this proposal. The research evidence inspires the first in the collection. For example, Luo and Tang (2016) pointed out that the quality of corporate carbon management is related to the national legal environment; de Villiers and Marques (2016) pointed out that the amount of disclosure content is positively correlated with countries with better investor protection, higher democracy, more effective government services, higher regulatory quality, higher press freedom and lower commitment to environmental policies; Weerathunga et al. (2020) pointed out that the convergence effect brought about by international standards will positively affect local non-financial reporting positions. At the same time, countries with

different orientations will affect the tendency of enterprises to disclose information. For example, enterprises in shareholder-oriented countries will increase the level of social disclosure in annual reports, while enterprises in stakeholder-oriented countries will reduce social disclosure and increase the length of financial disclosure to meet new financial information requirements; Muniandy et al. (2023) found that government-controlled companies have more comprehensive ESG disclosures. Second, the distribution of research data sources is unbalanced (see discussion in 3.5); that is, the research data sources in this collection are primarily from a single country and developed countries, and cross-national research is scarce. According to our understanding of this collection, the potential reason is that developing economies have been slow to respond to ESG, and the ESG market and related corporate culture have not yet been established (Momin, 2013; Guo et al., 2022), resulting in few research opportunities. In terms of cross-national research, we found that there are minor institutional and cultural differences between the selected regions, and there is a lack of interactive research between emerging markets (developing countries) and mature markets (developed countries). This may make it difficult for us to fully understand the current trends of competition and cooperation among them, especially considering that the globalisation of ESG has long placed developing economies in an unequal position (Belal et al., 2015), and multinational companies in developing countries still face many ESG challenges brought about by mature regions or countries (Shirodkar and Shete, 2021; Zilja et al., 2022).

In general, scholars who are expected to conduct research based on a single regional data source should consider adding comparative findings in different institutional environments when conducting phenomenon investigations to provide comprehensive and deeper insights into a certain phenomenon or finding. At the same time, scholars who are expected to conduct research based on cross-national data sources should consider paying attention to the development of ESG in emerging markets and the interaction between markets of different natures to expand the identification of competition and cooperation phenomena and states of enterprises in different regions under the globalisation of ESG to fill the current gap.

6. Conclusion

In recent years, due to the rapidly changing nature of ESG policies and evolutionary trends, comprehensive coverage in various fields, and profound influence, it has attracted the attention of diverse stakeholders worldwide, especially in the academic community. Scholars have pushed research to the forefront of scholarly work and shown an explosive trend in recent years (Champagne et al., 2022). In this context, scholars are committed to using review methods to identify and explore the current scope of knowledge and potential development directions. After reviewing current review studies, we found that there is still room for further development in review studies, especially in the accounting field. Therefore, to further contribute to understanding the current scope of knowledge, this study conducted a systematic literature review along with bibliometric analysis. After implementing strict quality evaluation procedures, 273 articles from the 27 accounting journals rated 3*, 4 and 4* on the ABS journal quality guide list were reviewed to sort out the current scope of knowledge in accounting and ESG research and to develop a future research agenda.

We followed a series of analysis and reporting frameworks to provide an insightful summary of the scope of current research knowledge, including current substantive research hot topics, publication time trends of knowledge, distribution analysis of journal inclusion capacity, geographical distribution status of research, and distribution trends of methodologies and theories. At the same time, this paper summarises three current research gaps and suggestions for future research. This review is not without flaws. Like other SLRs, this paper only selected articles from early 2013 to December 2023. In addition, due to quality screening limitations, we did not obtain journals from other databases, ABS ranking journals, and other business fields, which may lead to the risk of biased conclusions. Future research should consider extending the literature review time, including more databases, and expanding the review to other types of journals, such as accounting and management, accounting, and business journals. Finally, we recommend that future scholars maintain a professional and cautious insight when conducting review

research, which can reduce reliance on superficial data, thereby establishing a critical and independent perspective and contributing to the quality of research.

7. Implications for the empirical studies in this thesis

The systematic findings of this review provide the direct theoretical motivation and research framework for the design of the two subsequent empirical studies. First, within the discussion of the disclosure knowledge cluster, we identified scholars' profound scepticism regarding corporate motives for ESG disclosure; namely, that disclosure behaviour may devolve into a tool for impression management and greenwashing, rather than reflecting substantive accountability. Building on this, the emerging research hotspots presented in Figures 16 to 20 explicitly point assurance and earnings management as keywords, revealing a potential tension between the two. This finding inspired us to consider: when firms enhance the credibility of their ESG disclosure by purchasing assurance services, might this behaviour be strategically used to divert attention from the quality of their financial reporting? In other words, are firms that seek ESG assurance more likely to engage in opportunistic behaviour in the financial domain, such as earnings management and tax avoidance? The research gap revealed by this review directly catalysed the two subsequent empirical chapters, which examine the relationships between sustainability assurance and earnings management, and between sustainability assurance and tax avoidance, respectively.

Second, our discussion of future research directions in the review profoundly shaped our choice of moderating variables and the construction of our theoretical framework. In the discussion of institutional logics, we noted that corporate ESG behaviour is not determined by a single dominant logic but evolves dynamically under multiple, and sometimes conflicting, internal and external institutional pressures. This insight suggested that, in a cross-country sample context, focusing solely on the moderating role of internal corporate governance mechanisms may be insufficient, because corporate behavioural choices are

also deeply shaped by the institutional environment and cultural characteristics of their home countries. Consequently, in the subsequent studies, we selected country-level governance quality and Hofstede's national cultural dimensions as moderating variables. This was intended to capture the heterogeneous manifestations of firms using assurance for impression management across different institutional logics and cultural contexts. This design does not negate the role of internal governance; rather, it builds on the review's reflection on geographical imbalance and the absence of cross-country research, striving to provide a more multidimensional explanation from the perspectives of institutional complementarity and cultural embeddedness.

Third, the review's analysis of methodological distributions reinforced our consideration of indicator diversity in the empirical design. Table 5 shows that quantitative research dominates this field, largely focusing on testing economic consequences. However, single proxies often fail to capture the complexity of corporate behaviour. Taking earnings management as an example, accrual earnings management, real activities manipulation, and classification shifting each reflect managerial manoeuvring under different constraints, and their relationships with ESG assurance may differ significantly. Similarly, measuring tax avoidance requires considering multiple dimensions, such as current versus long-term, and book versus cash effective tax rates. Therefore, to enhance the robustness and explanatory power of our findings, we systematically incorporated multiple earnings management and tax avoidance metrics in the subsequent empirical work, aiming to more comprehensively reveal the complex associations between ESG assurance and corporate financial reporting behaviour.

Finally, the review's synthesis of theoretical applications provided insights for integrating multiple theories in the subsequent research. Table 6 indicates that while existing studies widely employ legitimacy theory, institutional theory, and agency theory, they are largely confined to a single theoretical perspective, which proves insufficient to fully explain corporate contradictory behaviour under multiple pressures. In light of this, we adopted impression management theory, which offers comprehensive explanatory power, as an overarching framework for the subsequent studies. Simultaneously, we integrated other

relevant theories to construct a multi-theoretical analytical framework. This framework incorporates legitimacy theory, to explain external pressures; institutional theory, to explain institutional isomorphism; agency theory, to explain internal agency conflicts; signalling theory, to explain information transmission; and stakeholder theory, to explain diverse stakeholder demands. This framework aims to examine the same research question from different angles, enabling more objective and comprehensive hypothesis development and avoiding interpretation bias that may arise from a single theoretical lens.

Chapter 3 _ Independent assurance of sustainability reports and earnings management: The moderating effect of national governance

1. Introduction

Corporate business strategies and financial accounting practices do not evolve in a vacuum, but within a dynamic external environment shaped by multiple stakeholders, including market participants, regulators, political forces, and social groups. These external forces drive strategic adjustments in corporate operations by altering incentive structures and risk profiles. To better ensure survival, firms intuitively adapt their business strategies; for instance, they may adjust product portfolios, invest in green technologies, or revise supply chain standards in response to external expectations. Accordingly, their financial accounting strategies also undergo changes, which are often more subtle and directly related to information quality. Specifically, firms may strengthen accountability and robustness in financial accounting to signal sound governance and transparency to the market. However, it is equally plausible that firms may employ more aggressive accounting practices, such as earnings management or tax avoidance, to mitigate short-term economic pressures and profit volatility resulting from adjustments in business strategies. The core motivation behind such adjustments in financial accounting strategies often lies in managing capital market expectations and controlling economic risks (Watts, 2003). For example, when companies face short-term profit declines due to investments in sustainable projects, management may have an incentive to manipulate accruals to smooth earnings, aiming to demonstrate to investors that "we have not only adapted to the times in our business practices, but we are also generating profits." Consequently, the interplay between external expectations and corporate business or financial strategies has long been a focal point among accounting scholars. In this context, earnings management serves as a key indicator for examining the impact of external environmental shocks on corporate governance quality, particularly accounting conservatism. That is, earnings

management behaviour not only directly reflects the quality and transparency of financial reporting but also provides a critical window into management's trade-offs when facing conflicting multiple objectives, such as balancing short-term financial performance with long-term sustainability. As Graham et al. (2005) seminal survey of financial executives revealed, management would not hesitate to sacrifice long-term economic value to smooth short-term earnings in order to meet market expectations. Similarly, Healy and Wahlen (1999) emphasised that earnings management can mislead investors regarding a firm's underlying economic performance, thereby leading to inefficient capital allocation. Therefore, it is particularly necessary to examine how the external environment influences firms' earnings management decisions.

In recent years, external society has shown growing concern regarding the integration of corporate activities with sustainable development practices. For instance, to achieve sustainability objectives successfully, a range of global supranational institutions and international governments have frequently introduced both mandatory regulatory policies and voluntary initiatives over the past four decades, encouraging firms to incorporate sustainability into their business operations (Gallardo-Vázquez and Juárez, 2022; Clune and O'Dwyer, 2020). From the United Nations Framework Convention on Climate Change launched at the 1992 Rio Earth Summit to foster international cooperation (Ascui and Lovell, 2011), to the 1997 Kyoto Protocol aimed at binding signatory nations' emissions (Freedman and Jaggi, 2011), and further to the 2015 Task Force on Climate-related Financial Disclosures recommendations issued by the Financial Stability Board, alongside the 17 Sustainable Development Goals introduced by the United Nations in the same year(Charnock and Hoskin, 2020) – these international policies and activities have not only formed a multi-level global governance network but have also directly driven sustainable business transformations worldwide (Cuomo et al., 2022; Buallay et al., 2022; Adams and Abhayawansa, 2022). Moreover, this series of top-down institutional forces, combined with bottom-up pressures from market participants, has promoted the evolution of corporate reporting mechanisms in the global context (Christensen et al., 2021; Ellili, 2022). The core of reporting practices has shifted from a past emphasis on retrospective financial

performance toward integrating forward-looking, non-financial information into a comprehensive value creation narrative. Consequently, firms must continuously update and adjust the weighting and structure of non-financial information in their reports to fulfil increasingly complex disclosure requirements and strategically communicate their commitment to long-term contributions to social sustainability. In summary, ESG, as a currently prominent and global development trend, has not only fundamentally reshaped corporate business values but also transformed sustainability reporting practices. These practices have evolved from initially marginal, voluntary corporate social responsibility communications into an indispensable component of contemporary core corporate disclosures.

Driven by these external demands, firms from different countries and institutional environments have inevitably become both the bearers and practitioners of this transformation. They have not only altered their established modes of operation but have also systematically changed the content and form of their external reporting. This dual adaptation aims to simultaneously satisfy investors' growing reliance on non-financial information for decision-making and to comply with external regulatory mandates (Thornton and Hsu, 2001; Elliott et al., 2014; Ryou et al., 2022). This fundamental shift has sparked a dual interest in academic scrutiny: on one hand, scholars are committed to investigating the economic consequences of these ESG practices and reporting changes; on the other, they probe more deeply into the internal corporate motivations driving these changes. Substantial research evidence on corporate reporting motivations indicates that the broad reason for firms voluntarily producing sustainability reports can be attributed to the pursuit of organisational legitimacy, or as an outcome of normative isomorphic pressures from institutional theory – that is, adopting normatively appropriate behaviour within a specific institutional framework to ensure corporate survival and the continuity of business operations (Nishitani et al., 2021). However, heterogeneity in motivations leads to divergence in response strategies. Under these conditions, some firms, facing compliance pressures and capability constraints, implement decoupling strategies and symbolic greenwashing, where their public ESG commitments are separated from their

internal operational realities, thus striving to maintain a veneer of legitimacy (Parsa et al., 2018). This directly leads to corporate hypocritical behaviour and low-trust non-financial reporting, undermining the credibility of the reports themselves (Christensen et al., 2021; Zilja et al., 2022; Chen et al., 2018b).

Beyond focusing on the authenticity and substantive nature of sustainability reporting itself, academia has further extended its critical focus to the quality of corporate financial reporting. Building on corporate behaviour where "words are not matched by deeds," scholars have meticulously examined how sustainability reporting practices – whether voluntary or mandatory – might affect financial reporting quality, whether positively, negatively, or not at all. This serves to identify whether firms, while pursuing legitimacy, also uphold their commitment to the quality of financial information. Related research even delves into examining the impact of the extent of a firm's adherence to specific reporting frameworks on financial reporting quality (Hong and Andersen, 2011; Kim et al., 2012; Bozzolan et al., 2015; Martínez-Ferrero et al., 2018; Rezaee and Tuo, 2019). An insightful finding from this stream of research is that opportunistic managers, driven by self-serving motives, might be more inclined to engage in corporate social responsibility activities and sustainability reporting as a form of "halo effect" or "smokescreen," aiming to divert stakeholder attention and reduce scrutiny and criticism of the firm's real earnings management activities (Chih et al., 2008; Prior et al., 2008). This suggests that ESG practices, in certain contexts, may not always complement high-quality financial reporting but could instead serve as a cover for managerial opportunism. This is partly because most sustainability reporting guidance frameworks are not mandatory legal forms, and corporate reports following these frameworks are largely voluntary. They comprise different themes, are presented in highly heterogeneous forms, and often contain substantial narrative and forward-looking information. Compared to financial reports, which are built on uniform, rigorous accounting standards and subjected to strict audit, voluntarily issued non-financial reports are generally perceived as varying in quality, lacking comparability, and possessing insufficient binding force and credibility regarding management (van Wyk and Els, 2023). Consequently, both industry and academia maintain a cautiously critical stance, giving rise

to a core doubt: whether the current mainstream voluntary sustainability reporting, in the absence of independent and effective verification, can truly deliver on its proclaimed accountability, or whether it might instead devolve into a carefully orchestrated exercise in "impression management" (Parsa et al., 2018; Roszkowska-Menkes et al., 2023).

This study builds upon the widespread scepticism regarding whether corporate ESG practices and disclosures constitute 'impression management'. To investigate this issue deeply, the study focuses on a more substantive link in this chain: sustainability assurance .

While sustainability assurance (SA) shares a similar overarching goal with mainstream sustainability disclosure frameworks, namely, to enhance the credibility of information, its nature and significance are fundamentally different. As an independent third-party verification service, SA is formally analogous to a financial audit and directly addresses stakeholders' inherent expectations for the truthfulness and reliability of non-financial information (Kolk and Perego, 2010). Precisely for this reason, SA is championed by practitioners, standard-setters, and many scholars as a superior governance mechanism, whose perceived benefits include signalling a firm's commitment to compliance, transparency, and the disclosure of high-quality information (Simnett et al., 2009). However, it is this very 'halo of morality' and credibility signal associated with SA that potentially makes it susceptible to strategic exploitation by opportunists. If a firm's primary motivation for seeking SA is not a genuine commitment to accountability but rather to obtain a compliance 'badge', then the act itself may represent a sophisticated form of impression management. It is reasonable to suspect that obtaining SA might serve the interests of opportunistic managers who could utilise this tool, perceived as a benchmark of morality, to craft an image of high responsibility, thereby diverting stakeholder scrutiny from issues in other areas, particularly financial reporting quality (Nishitani et al., 2021). In such scenarios, far from being an indicator of improved governance, SA could instead become a 'smokescreen' meticulously deployed by management to obscure aggressive financial accounting practices, such as earnings management.

Although scholars have extensively explored the relationship between sustainability reporting itself and financial reporting quality, academic discourse is relatively scarce

concerning whether sustainability assurance – a mechanism specifically designed to enhance reporting credibility – might similarly be co-opted as a tool for legitimation and how it influences financial reporting quality, for instance, via earnings management. This gap aligns with the observation by Venter and Van Eck (2021) that, unlike the mature and standardised practice of financial statement auditing, practical guidance and academic research on non-financial assurance remain limited. Consequently, given the increasing prevalence of non-financial assurance adoption by firms, the body of knowledge on whether and how SA is associated with financial reporting quality or earnings management requires further expansion.

The limited number of existing studies that directly examine the relationship between SA and earnings management preliminarily reveals a complex association, albeit with theoretical and methodological limitations. For instance, while the study by Perego and Kolk (2012b) confirms a correlation between the adoption of SA by multinational corporations and better environmental performance, it does not delve into the direct link with financial reporting strategies, such as earnings management, thus failing to uncover other potential effects of SA as a signalling tool. A more directly relevant study by Meqbel et al. (2023) finds that firms involved in earnings management, whether accrual-based or real activities manipulation, tend to obtain SA reports to acquire, repair, or maintain their legitimacy. A key limitation of this research is its failure to systematically incorporate the moderating role of country-level institutional factors, despite theory suggesting that the strength of the institutional environment fundamentally alters managerial strategic choices (North, 1990). These studies generally lack an integrated theoretical framework that explains why management might trade-off between a 'halo of morality' and opportunism. Further examination of literature closely related to this theme reveals that the study by Rezaee and Tuo (2019) focuses on the impact of the quality and quantity of sustainability disclosures on earnings quality. Its primary finding, based on US firm data from 1995–2015, is that disclosure quantity is positively associated with innate earnings quality but negatively associated with discretionary earnings quality, with disclosure quality playing a moderating role. A key limitation of this research is that it examines the intrinsic attributes

of information disclosure itself, rather than the external verification mechanism of independent third-party assurance. SA provides a signal about the credibility of information; its potential to enhance corporate reputation may far exceed that of the information itself, thereby creating different motivations and conditions for opportunistic behaviour. Consequently, the relationship between SA and earnings management might follow patterns distinctly different from those associated with mere information disclosure. Another relevant study by Bozzolan et al. (2015) does incorporate a country-level factor, examining how a specific country's enforcement conditions moderate the relationship between Corporate Social Responsibility (CSR) and the choice of earnings management method. Specifically, based on US and Japanese firm data, it finds that firms with high CSR engagement are more likely to engage in accruals-based earnings management rather than real earnings management; furthermore, in strong enforcement countries, firms shift towards using the more concealed real earnings management, although CSR-oriented firms reduce this practice. The value of this study lies in introducing a single dimension of national governance and distinguishing between earnings management methods. However, its limitations are, first, that it measures CSR performance rather than the specific, certifiable governance act of SA. Second, national governance is a complex, multi-dimensional construct, and using a single indicator like 'rule of law' is insufficient to comprehensively capture the combined pressures and inducements the institutional environment exerts on firm decision-making (Kaufmann et al., 2011). Therefore, it is necessary to employ a more comprehensive national governance index to robustly and holistically test the moderating role of national institutions in the relationship between SA and earnings management.

In summary, the limitations of existing research collectively point to several critical gaps. First, studies directly linking the specific governance mechanism of SA to earnings management remain insufficient. Second, there is a scarcity of research utilising large-scale multinational samples to test the generalisability of findings. Finally, regarding theoretical explanation, no study has systematically examined the moderating role of multi-

dimensional national governance indices in this relationship. It is these precise gaps that the present study intends to fill.

In light of this, we have undertaken a timely empirical study designed to bridge non-financial governance and financial reporting quality. Employing impression management theory as the core theoretical framework, and supplementing it with legitimacy theory, institutional theory, agency theory, stakeholder theory, and signalling theory, this study constructs a multi-dimensional explanatory framework to deeply analyse the complex motivations underlying a firm's decision to seek sustainability assurance. Using a large-scale multinational panel dataset covering STOXX 600 index constituent firms from 2003 to 2019, we empirically examine the relationship between SA and earnings management, with a specific focus on the moderating role of national governance quality in this relationship. The central objective of this research is to investigate whether the adoption of SA acts as a signal of a substantive commitment or, conversely, as part of an opportunistic impression management strategy, thereby serving as an inverse signal indicating potential earnings manipulation.

Our regression results indicate a negative association between seeking SA and accruals-based earnings management (AEM). This finding supports the view that SA can positively signal financial robustness. However, further analysis reveals that when engaging in earnings management, managers strategically opt for more concealed methods less easily detectable by external observers, namely by significantly increasing real earnings management and classification smoothing, rather than relying on the more readily identifiable accruals-based earnings management (Jones, 1991; Cohen et al., 2008). This implies that SA can be interpreted as a signal of opportunistic earnings manipulation by management, who may attempt to leverage the credibility conferred by SA to divert stakeholder scrutiny from their low-quality financial reporting(Prior et al., 2008). This study also finds that national governance factors significantly moderate the relationship between SA and the choice of different earnings management techniques. The reliability of these conclusions was verified through a series of robustness checks, including alternative variable measurements, model specifications, and considerations for endogeneity.

The contributions of this study are manifested at theoretical, methodological, and practical levels. First, on a theoretical level, we are the first to systematically examine, within a unified framework, the potential 'hypocritical' role that SA, a signal typically perceived as a positive governance mechanism, might play in the realm of financial robustness, specifically concerning earnings management. This deepens our understanding of ESG practices by revealing a potential substitutive, rather than complementary, relationship between non-financial commitments and financial reporting quality. Second, regarding theoretical application, we explicitly employ impression management theory as the dominant framework, providing a clear and powerful perspective for interpreting corporate assurance behaviour; simultaneously, we integrate multiple supplementary theories, such as agency theory and institutional theory, fostering a more explanatory multi-theoretical dialogue that avoids the limitations of a single-theoretical lens (Bansal and Clelland, 2004). Third, methodologically, our use of a large-scale multinational sample enables us to utilise a comprehensive, multi-dimensional national governance index to test its moderating effect. This design avoids potential biases inherent in conclusions drawn from single- or few-country samples, making the findings regarding the role of the institutional environment more robust and generalisable.

The structure of this paper is as follows: Section 2 discusses the relationship between SA and earnings management, Section 3 covers theory and hypothesis development, Section 4 covers details the methodology, Section 5 presents the empirical results, and Section 6 provides the conclusion.

2. SA and earnings management

2.1 SA

Over the past two decades, numerous governance bodies operating in non-legal regulatory forms have emerged globally, dedicated to guiding firms in voluntarily implementing and reporting their non-financial performance (Vigneau et al., 2015). Among these, the Global

Reporting Initiative (GRI) and the Integrated Reporting (IR) Framework have been the most influential. Since its introduction in 1997, the GRI framework has aimed to translate corporate social responsibility into measurable business practices by providing a set of standardised reporting norms and methods for materiality assessment, including reporting standards, materiality levels, and providing disclosure initiatives concerning report content and specific indicators, thereby helping firms address the information needs of diverse stakeholders (Vigneau et al., 2015). In contrast, the IR Framework, issued by the International Integrated Reporting Committee in 2015, emphasises that firms should integrate their financial and non-financial capitals to present a more comprehensive picture of their value creation process to investors and society (McNally et al., 2017). These two disclosure frameworks remain profoundly influential for global corporations today. In the past decade, IR has been adopted by over 2,500 organisations in more than 70 countries worldwide (de Villiers and Dimes, 2023); meanwhile, a KPMG 2020 survey indicated that GRI usage rates reached 77% and 84% among N100 and G250 companies respectively.

In response to strong investor calls for 'general purpose' sustainability information – demanding that information be consistent, complete, comparable and verifiable (Millar and Slack, 2024) – this field has recently witnessed more binding regulatory changes. The International Financial Reporting Standards Foundation established the International Sustainability Standards Board (ISSB) in 2021, which issued IFRS S1 and S2 in March 2022, requiring companies to disclose sustainability-related financial information. Concurrently, the Corporate Sustainability Reporting Directive (CSRD) introduced by the European Financial Reporting Advisory Group represents a landmark development. Beginning in 2024, it mandates that qualifying large and listed small and medium-sized EU companies report on their social and environmental performance (Odobaša and Marošević, 2023). This series of developments signals that sustainability reporting has evolved from a purely voluntary form of communication into an indispensable component of corporate compliance and capital market decision-making, its importance elevated to an unprecedented strategic level.

As the importance of sustainability reporting has grown, so has the scrutiny of its information quality and credibility. To alleviate stakeholder concerns regarding greenwashing and report reliability, seeking independent third-party assurance has become a key strategy for firms. Research indicates that SA can significantly enhance the perceived credibility and reliability of the reported information (Martínez-Ferrero and García-Sánchez, 2017; Perego and Kolk, 2012b; Al-Shaer and Zaman, 2018). This perception has directly contributed to a substantial increase in the volume of SA practice (O'Dwyer and Owen, 2005; Kolk and Perego, 2010; Briem and Wald, 2018). KPMG's 2020 survey data reveal that the proportion of the world's top 250 companies obtaining third-party assurance on their sustainability data has risen from 30% in 2005 to 71%, clearly reflecting the market's autonomous demand for high-quality non-financial assurance.

In this context, sustainability assurance is defined as an engagement where an independent practitioner performs procedures to evaluate the assertions and information within an organisation's sustainability report, expressing a conclusion designed to enhance the degree of confidence of intended users in that information. Its core function is to act as a signalling mechanism, communicating a firm's commitment to transparency and accountability to external parties, thus differentiating it from unverified disclosures (GRI, 2013b; IAASB, 2013). The two dominant and widely adopted frameworks are the revised International Standard on Assurance Engagements (ISAE) 3000 and AA1000 (Manetti and Becatti, 2009; Ackers and Eccles, 2015). ISAE 3000, revised and issued by the International Auditing and Assurance Standards Board in 2013, is based on the principles and procedures of financial auditing and provides non-mandatory guidance for various non-financial assurance engagements; it is consequently widely used by accounting firm providers (Manetti and Becatti, 2009; Ackers and Eccles, 2015). In contrast, the AA1000 Assurance Standard, launched by AccountAbility in 2003, is specifically designed for sustainability reporting assurance. It places greater emphasis on stakeholder engagement and adherence to principles, making it favoured more by specialist certification bodies without an accounting background (Kolk and Perego, 2010; Zaman et al., 2021). The coexistence of these two frameworks, whilst enriching practical options, has also led to

inconsistencies in the quality and comparability of assurance reports due to their differing focuses and levels of rigour.

The benefits of SA are evident. In theory, it not only enhances the decision-usefulness of the reports themselves but can also serve as an effective governance tool, curbing managerial disclosure opportunism and potentially fostering improvements in internal management control systems (Hazaea et al., 2022). However, its inherent limitations are equally significant. Objectively, the voluntary nature of assurance services and the flexibility in framework selection create operational space for corporate impression management. For instance, a firm might strategically opt for an assurance service with a lower level of assurance (such as 'limited' rather than 'reasonable'), a narrower scope, or a less rigorous standard, thereby acquiring a 'compliance stamp' for window-dressing without substantively enhancing its sustainability performance or overall information transparency. Consequently, external professionals question whether it necessarily drives the establishment of corporate accountability or leads to more disciplined financial or business practices (Smith et al., 2011; Donkor et al., 2021).

Regarding the role definition of the assurance provider, it remains ambiguous whether this role functions as a monitoring body for stakeholder groups (an independent verifier) or as an external commercial consultant to the company (Channuntapipat, 2018) . Critics thus argue that assurance is not a mandatory and compliance-based guarantee; it is merely assumed to be used by responsible firms but is, in reality, controlled by management and has evolved into a commercialised product (Boiral et al., 2019; Hummel et al., 2019; Meqbel et al., 2023). This has led to situations where many companies obtain assurance without fully meeting substantive standards, and the adoption levels of these voluntary and flexible assurance frameworks vary considerably across different countries(Vigneau et al., 2015). Beyond the debate on whether assurance frameworks can instill normative discipline, evidence from studies examining internal corporate motivations indicates that most management teams pursue assurance primarily to fulfil the pervasive expectation that certain information and processes ought to be assured. That is, management often views assurance more as a symbolic ritual – valuable as a prerequisite for external

legitimacy even in the absence of substantive improvement (Martínez-Ferrero and García-Sánchez, 2017; Maroun, 2020a). For these reasons, much like voluntary corporate disclosures, sustainability assurance has, over time, been criticised externally as a component of corporate greenwashing or a tactic to divert attention from low-quality financial reporting, particularly because it lacks the regulatory oversight characteristic of financial statement audits.

Given this context, even though recent regional developments have introduced mandatory requirements for SA, such as the CSRD mandating limited assurance for large public-interest entities from January 2025, signalling a critical transition for SA from a voluntary to a mandatory practice. However, this regional and phased implementation does not conclusively resolve SA's potential hidden role as an impression management tool. Conducting research focused on the voluntary period remains academically valuable and policy-relevant; its significance is not diminished but rather heightened by the advent of mandatory regimes for the following reasons.

First, mandatory regulation may induce 'symbolic compliance' rather than 'substantive change'. Historical evidence suggests that when external regulation intervenes, firms tend to adjust their behaviour strategically to meet minimum compliance requirements rather than fundamentally altering their operational logic (Meyer and Rowan, 1977a). In the context of SA, this implies that firms might gravitate towards the least costly and narrowest assurance services, or attempt to influence the detailed implementation of assurance standards through lobbying, thereby perpetuating their impression management strategies even within the new mandatory framework. Research investigating motivations during the voluntary period provides crucial analytical insights and early warnings for identifying and predicting such circumvention behaviours under mandatory regimes.

Second, understanding behavioural patterns in the voluntary context is a necessary baseline for evaluating the effectiveness of mandatory policies. If we lack a clear understanding of the pure motivations for SA adoption in the absence of mandates – for instance, whether it stems from a genuine commitment to accountability or serves as a cover for earnings management – we cannot properly assess the true impact of mandatory

policies like the CSRD. Therefore, research from the voluntary era establishes a critical 'control group' for future studies. Only through rigorous comparison with this 'pre-mandatory' baseline can subsequent research accurately isolate the net effect of the mandatory policy itself and determine whether it successfully steers SA towards a substantive governance role or merely alters the manifestation of opportunism.

Finally, the jurisdictional reach of the CSRD is limited to the EU, while the vast majority of global economies will likely remain in voluntary or semi-voluntary SA institutional environments for the foreseeable future. For regulators, investors, and standard-setters in these other regions, research from the voluntary period serves as a crucial, forward-looking risk alert. It highlights the governance risks potentially associated with relying solely on market forces to promote SA in the absence of robust institutional constraints, thereby warning other regions to simultaneously develop supporting regulatory frameworks capable of curbing opportunistic motives when formulating similar policies. Consequently, examining SA data from the pre-mandatory era is essential, as it provides an indispensable theoretical foundation for understanding, evaluating, and refining the impending era of mandatory SA.

2.2 Earnings management

The exercise of managerial discretion to manipulate company earnings, often proxied by discretionary accruals (DA), is a common practice in firms worldwide (Lewellyn, 2017). However, this practice is consistently criticised externally as opportunistic (Hong and Andersen, 2011) and unethical (Kaplan, 2001), given that it diminishes the quality of financial reports, reduces trust, and distorts the portrayal of future financial performance (Meqbel et al., 2023). Furthermore, when earnings management is exposed, it can lead to severe economic and non-economic consequences. For instance, managers may face penalties (Prior et al., 2008), lose public credibility (Fombrun et al., 2000), and ultimately undermine organisational legitimacy (Grougiou et al., 2014) and damage firm value (Sun et al., 2010; Meqbel et al., 2023). Anticipating concerns about these potential repercussions, managers employ various tactics to mitigate conflicts with shareholders and

other stakeholders, diverting their attention from financial reporting quality to other, more peripheral issues (Sun et al., 2010; Grougiou et al., 2014). One prevalent tactic involves managers using sustainability disclosures or SA as a façade to manage stakeholder perceptions and divert attention from accountability for financial reporting quality (Prior et al., 2008; Sun et al., 2010; Meqbel et al., 2023; Martínez‑Ferrero et al., 2015).

Scholars have consistently sought to examine the relationship between various sustainability practices and financial reporting quality, yielding divergent and often contradictory results (Scholtens and Kang, 2013;   Bozzolan et al., 2015). This lack of consensus precisely underscores the complexity of corporate motivations, which are not a simple binary but exist on a spectrum ranging from "substantive commitment" to "opportunistic impression management." Consequently, perspectives that view all ESG practices either as mere "greenwashing" or as unequivocal "ethical" are oversimplified.

A substantial body of research provides compelling evidence supporting a negative relationship between sustainability practices and lower financial reporting quality. Scholars advancing this view propose that firms with a strong sustainability commitment develop an internal "moral constraint" mechanism. Fearing irreversible damage to their ethical standards and hard-earned reputation, and because engagement in sustainability practices is itself perceived as a confirmation and reward of management's own ethical standards (Coldwell et al., 2008), managers in these firms are less likely to manipulate earnings through discretionary accruals and real earnings activities (Kim et al., 2012; Lim and Choi, 2013; Hong and Andersen, 2011; Bozzolan et al., 2015). Earnings management, particularly aggressive manipulation, is viewed as a betrayal of this moral contract and long-term reputational capital, with potential negative consequences far outweighing any short-term financial gains.

A series of empirical studies lend support to this theoretical reasoning. For instance, Scholtens and Kang (2013), using a measure of accruals-based earnings management, argue that sound corporate social performance can indeed curb a firm's motivation for earnings management, suggesting that a social responsibility orientation may promote more robust financial reporting practices. Although the study by Kim et al. (2012) reports

an insignificant relationship between corporate social performance and financial reporting quality, this "non-finding" is itself instructive. It indicates that, within their sample, engagement in sustainability practices did not signal lower financial reporting quality, thereby refuting the simplistic assertion that "ESG necessarily accompanies financial manipulation." The findings of Timbate and Park (2018) align with the earlier conclusion of Laksmana and Yang (2009), both reporting a stable negative correlation between corporate social responsibility and earnings management. This implies that firms more committed to sustainability practices genuinely exhibit higher financial reporting quality. This relationship may also vary across different types of earnings management. The multinational study by Bozzolan et al. (2015) found that even firms with good CSR performance might engage in earnings management, but they strategically weigh the reputational costs of different methods. For example, they found that high-CSR firms might prefer accruals-based earnings management over real earnings management, which genuinely damages long-term firm value, as the latter causes more direct and substantial harm to stakeholders. In summary, this stream of research reveals that, for at least a subset of firms, sustainability practices are not a mask for impression management but a genuine extension of their core business philosophy and governance culture. This intrinsic ethical orientation and the value placed on long-term reputational capital constitute an effective self-monitoring mechanism, thereby curbing management's short-term opportunism and ultimately manifesting in higher quality, more reliable financial reports.

In contrast, scholars have also presented evidence claiming a positive association between the two. For instance, Prior et al. (2008), using a DA metric, found a positive relationship between corporate social responsibility performance and EM. Chih et al. (2008), employing measures of earnings smoothing, earnings aggressiveness, and loss avoidance, indicated that firms with high levels of social responsibility practices exhibited a greater degree of earnings aggressiveness. Grougiou et al. (2014), investigating using a DA measure, demonstrated a positive link between EM and corporate engagement in social responsibility. Buertey et al. (2020), using a sample of South African firms and a DA measure, reported that corporate engagement in social responsibility practices is positively

associated with EM. Meqbel et al. (2023), examining a sample of European companies, found a positive relationship between earnings management and the pursuit of assurance. While these studies provide extensive evidence and logical explanations for the current relationship, the inconsistency in these results is puzzling. This has prompted scholars to reconsider EM from another angle: the strategy of EM. In terms of classification, Schipper (1989) divided EM into two primary methods: discretionary accruals/accrual earnings management (AEM) and real earnings management (REM). DeFond and Park (1997) subsequently pointed out that AEM manipulation is easily detected by external auditors and regulators, leading to significant financial consequences and financial restatements. This is because, although REM generally entails greater economic costs than AEM, REM can be more easily concealed within ordinary business transactions, making it a more covert method compared to the latter (Graham et al., 2005; Gunny, 2010; Badertscher, 2011). REM is more difficult for auditors or regulators to track and scrutinise (Cohen et al., 2008; Anagnostopoulou and Tsekrekos, 2017), and consequently faces less extensive societal control and external oversight, including scrutiny from media, government, and political parties (Roychowdhury, 2006; Kim and Sohn, 2013). In contrast, the AEM form, which involves accounting policies and methods, is more easily traced and unravelled by external parties. Therefore, Cohen et al. (2008) noted that, given the ease with which AEM can be detected by auditors and institutions, many firms have shifted from AEM towards REM to evade scrutiny. Wang et al. (2020) also argue that firms valuing their corporate image are more concerned about the costs associated with having their EM or low financial reporting quality exposed. Thus, they prefer using REM, despite its higher cost but lower detectability, over employing AEM. Similarly, Duong (2023), using a sample of 27 countries, found that the substitution of REM for AEM becomes stronger amidst increasingly stringent external regulation and during periods of macroeconomic recession. Managers tend to rely more on REM to avoid stricter regulatory scrutiny, attract investors, or stabilise company earnings.

Beyond relying exclusively on a single method of earnings management, firms often employ strategic combinations of techniques when engaging in EM, particularly those

based on AEM and REM (Badertscher, 2011; Anagnostopoulou and Tsekrekos, 2017). On this point, prior research provides substantial evidence. For instance, Ewert and Wagenhofer (2005), Abernathy et al. (2014), and Badertscher (2011) report that managers utilise a portfolio of strategies, trading off and substituting between the common methods of AEM, REM, and classification shifting (CSEM). This substitution is particularly pronounced when one specific method becomes constrained, for example, by poor financial condition, high levels of institutional ownership, or low industry market share. Furthermore, even when strategic choices are less constrained, or when they are aware of imminently meeting or exceeding earnings targets, managers may still substitute between different methods rather than adhering to a single approach (Darrough and Rangan, 2005).

Building upon the comprehensive discussion above, the complexity characterising the relationship between sustainability practices and earnings management in the literature can be powerfully explained by the evolution of research perspectives and measurement approaches. The dispersion in empirical findings does not simply indicate that certain conclusions are biased; rather, it suggests that the results are likely jointly influenced by the heterogeneity of firms' intrinsic motivations and the evolving, increasing covert of earnings management strategies themselves.

The divergence in prior research can, to a large extent, be attributed to a key methodological limitation: many studies examining this relationship have overly focused on the single dimension of AEM, failing to incorporate the more concealed real activities manipulation increasingly relied upon by management into a unified analytical framework. As Chen and Hung (2021) astutely observed, early research provided insufficient discussion on the strategic reasons firms differentially employ AEM versus REM, with most scholars focusing predominantly on testing AEM, while exploration of REM remained relatively scarce. Consequently, we can hypothesise that studies finding a negative correlation might have captured, within their specific sample scope or regulatory context, a cohort of firms embodying a substantive commitment and valuing reputational capital. Conversely, those reporting a positive relationship may have identified another group of

opportunistic firms that utilise sustainability practices as an impression management tool, but whose financial manipulation behaviour was not fully captured by research models focused primarily on AEM, as they predominantly employed REM methods. Given that REM can be more effectively masked within routine operational decisions, evading scrutiny from external auditors, regulators, and the media (Roychowdhury, 2006; Cohen et al., 2008), it naturally becomes the preferred choice for managers intending to engage in financial embellishment while maintaining a 'responsible' external image. Furthermore, firms do not rigidly adhere to a single manipulation method. Instead, they dynamically trade off and combine AEM, REM, and even classification shifting based on internal and external constraints (Badertscher, 2011; Anagnostopoulou and Tsekrekos, 2017; Abernathy et al., 2014). This diversity and substitutability of earnings management strategies imply that examining only one method likely fails to capture the complete picture of a firm's earnings management, potentially leading to biased or even misleading conclusions.

In light of this, the research design of this paper aims to address this methodological gap. In our empirical tests, we will not examine individual types of earnings management in isolation. Instead, we will systematically investigate the differential impact of SA on accruals-based earnings management, real earnings management, and classification shifting. Through this multi-dimensional, parallel analysis, this study seeks to move beyond the contradictions of past research and reveal a more complete and authentic picture of the relationship between SA and earnings management. That is, SA could either align with comprehensive financial reporting robustness by signalling a substantive commitment or coexist with more concealed real activities manipulation by serving as an impression management tool.

3. Theory and Hypothesis development

3.1 Impression management theory

Impression management theory provides a highly pertinent lens for understanding strategic corporate behaviour in sustainability disclosures. Originating from social psychology, the theory refers to the process by which individuals or organisations deliberately control information to shape, maintain, or alter others' perceptions of themselves (Leary and Kowalski, 1990). In accounting, corporate governance, and disclosure research, impression management has evolved into a core concept, particularly apt for explaining the complex communication strategies firms adopt amid growing ESG pressures(Bansal and Clelland, 2004). When a discrepancy exists between a firm's actual operations and societal expectations – constituting a 'legitimacy threat' – management has a strong incentive to manage external perceptions through orchestrated disclosures rather than undertaking costly substantive changes. In the context of sustainability reporting, impression management behaviours are especially prevalent. This is because non-financial information often involves narrative, forward-looking content with varying verification standards, providing considerable scope for strategic presentation. Research indicates that firms may selectively disclose positive information, use ambiguous language to evade accountability, or mimic the reporting formats of industry leaders without altering underlying practices, all to craft a responsible environmental image (Cho et al., 2015b). Brennan and Merkl-Davies (2013) note that during periods of poor performance, management is more inclined to employ impression management tactics to obfuscate negative outcomes and maintain organisational legitimacy. Consequently, this theory can more directly predict 'hypocritical' corporate behaviour, as be a systematic divergence between public commitments and actual practices.

Within the specific context of SA, seeking external assurance can itself be viewed as a potent impression management strategy. By obtaining an authoritative 'credibility seal,' management not only enhances the perceived reliability of a specific report but, more significantly, cloaks the entire organisation in a 'halo of morality.' This halo can be strategically deployed to divert stakeholder attention from issues in other areas, particularly the scrutiny of complex and less observable financial reporting practices, such as earnings management.

However, impression management theory, as a sole framework, has limitations. It primarily explains defensive and opportunistic motivations but cannot adequately account for the logic driving firms genuinely committed to substantive sustainability. Therefore, to construct a more comprehensive and dialectical theoretical explanation, this study positions impression management theory as the dominant framework while integrating legitimacy theory, agency theory, stakeholder theory, and signalling theory to predict and discuss the complex motivations behind corporate adoption of SA.

3.2 Stakeholder theory and signalling Theory

Stakeholder theory posits that a firm's long-term success depends on its effective management of relationships with all its stakeholders, relationships built on trust, cooperation, and shared value (Freeman, 1984). Management adhering to this philosophy views sustainability as a core component of long-term value creation rather than a discrete public relations activity. In this 'substantive' mode of sustainability, high-quality, transparent financial reporting and high-quality non-financial reporting are mutually reinforcing, together forming the cornerstone for building and maintaining trust with stakeholders. Consequently, a firm genuinely committed to stakeholder value would inherently eschew earnings management, as such practices fundamentally constitute a betrayal of trust, damaging long-term relationships with key partners such as investors, creditors, employees, and regulators (Chih et al., 2008). From this perspective, seeking SA is a natural extension of its comprehensive commitment to transparency and accountability, aimed at cementing this trust through independent verification. Here, SA signals substantive governance improvement, not an impression management tool.

Signalling theory can be understood as explaining how, in markets characterised by information asymmetry, firms have an incentive to send signals to the external environment about their high quality or unique attributes to distinguish themselves from inferior competitors (Spence, 1978). Given that SA entails cost and a rigorous process, seeking high-standard SA can be construed as a strong signal indicating the firm's confidence in its sustainability performance and overall information quality (Simnett et al., 2009). It

announces to the market that the firm is willing to subject itself to independent scrutiny and that its disclosures are reliable. In this scenario, the firm is less likely to engage concurrently in earnings management, because if such manipulation were discovered, it would lead to a complete failure of the signalling mechanism, triggering a severe reputational collapse and crisis of confidence, the cost of which would far outweigh any short-term benefits from earnings management.

Therefore, our first hypothesis is as follows::

H1. There is a negative relationship between independent assurance of sustainability reports and earnings management.

However, the straightforward application of the aforementioned theories to real-world business practice is not entirely robust. First, stakeholder theory faces the challenge of 'stakeholder salience' in practice. Corporate management does not treat all stakeholders equally; they often strategically allocate attention and resources based on a group's power, legitimacy, and urgency (Mitchell et al., 1997). If management perceives the salience of shareholders – particularly those seeking short-term returns – as vastly exceeding that of regulators or other diffuse stakeholders, they may adopt strategies aimed at maximising short-term shareholder value, even if this entails engaging in aggressive earnings management complemented by SA as a cover. In this scenario, managers professing concern for stakeholders are not acting out of moral commitment but as part of a strategic calculus. Second, the signals firms transmit can themselves be 'noisy' or 'false'. Situating the observation within a market rife with suspicions of greenwashing, the signal provided by SA may not stem from genuine responsibility but from a response to social conformity pressures or imitation of industry leaders what institutional theory terms 'mimetic isomorphism'. A firm might seek SA merely to avoid falling behind in the ESG trend, its behaviour being reactive rather than proactive. Consequently, the authenticity of the signal is difficult to judge superficially and must be cross-verified with the firm's other behaviours, such as its financial reporting quality. A firm that obtains assurance on its sustainability

report but engages in manipulation within its financial reports is transmitting a potentially contradictory, even deceptive, signal. This implies that the explanatory power of SA as a signal is limited; it must be situated within the broader context of corporate conduct and integrated with impression management theory to discern whether it truly functions as a badge of 'substantive commitment' or a smokescreen for 'opportunism'.

3.3 Legitimacy theory and agency theory

Legitimacy theory provides a macro level institutional explanation for a potential positive relationship between SA and EM. The theory defines legitimacy as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (Suchman, 1995a). According to this view, a firm's survival and development depend not only on economic resources but also on the acceptance and approval it garners within the sociopolitical system (Ihlen, 2009). When corporate behaviour is perceived as dishonest, unlawful, or indifferent to societal welfare, its legitimacy becomes threatened, thereby endangering its very survival (Bellucci et al., 2021).

Within this theoretical framework, scholars argue that management's decision to purchase SA assurance, similar to other sustainability practices, constitutes a proactive legitimisation strategy. Large firms facing high legitimacy threats, such as those in polluting industries or under significant public scrutiny, are particularly inclined to adopt such practices. This serves to offset the negative externalities of their operations and demonstrate to society that their disclosures have been independently verified (Briem and Wald, 2018). The fundamental aim is to protect their legitimate image in domestic and international markets (Parsa et al., 2021; Jeroh, 2020). In this process, management attempts not only to manipulate stakeholder perceptions of their non-financial performance (Weerathunga et al., 2020) but may also seek to influence their views on the reliability of financial reporting procedures (Grougiou et al., 2014). A considerable number of scholars further contend that the corporate pursuit of SA is often more symbolic than substantive (De Villiers and Van Staden, 2011; Cho et al., 2015a; Van Zijl et al., 2017). It is viewed as a tool for pursuing

"symbolic legitimacy" (Gillet, 2012; Gray, 2000) and is an outcome of "expectations management" (Martínez-Ferrero et al., 2015). Maroun (2019), through interviews with managers, obtained key evidence: while adopting SA can somewhat foster an internal culture of accountability and integrity, the primary motivation for most management is to meet stakeholder expectations, rather than a deep understanding of SA's intrinsic value. Consequently, SA primarily serves to signal the organisation's commitment to securing legitimacy, with its actual benefits potentially being limited. As Ball et al. (2000) argued, corporate legitimacy is often maintained simply by the fact that "an audit has been conducted," rather than through the quality or depth of the audit process itself. This implies that, in certain contexts, SA may devolve into a ritualistic compliance act, providing legitimate cover and an impression management tool for the public, while the firm continues to engage in aggressive financial practices, such as earnings management.

Agency theory, from the perspective of internal corporate conflicts, provides a profound explanation for the motivations behind management's simultaneous engagement in sustainability practices and earnings management. The theory posits that the separation of ownership and control in companies leads to a misalignment of interests between shareholders (principals) and management (agents), thereby generating agency costs (Jensen and Meckling, 2019; Meqbel et al., 2023). Earnings management is precisely how managers exploit information asymmetries with external users of financial information to produce biased financial reports, obscuring true financial performance (Habbash and Haddad, 2020; Alshorman et al., 2024).

Substantial research indicates that the primary driver for management to engage in earnings management is personal self-interest. They may seek to maximise their own utility by influencing contractual outcomes (Healy and Wahlen, 1999), meeting budget targets (Merchant, 1990), or enhancing job security (Prior et al., 2008), even at the expense of shareholder value. This motivation is particularly strong when managerial compensation is closely tied to short-term financial performance and when career prospects are heavily influenced by near-term results (Chen and Hung, 2021). In this context, beyond pursuing organisational legitimacy, a deeper motivation for management's engagement in

sustainability practices, such as seeking SA, could be to circumvent risks to their personal interests and external scrutiny (Prior et al., 2008). They may strategically leverage the 'responsible' image cultivated by SA as a tool to divert stakeholder attention from potentially low-quality financial reporting (Habbash and Haddad, 2020; Sofian et al., 2022).

The prediction of agency theory aligns with impression management theory and further elucidates the calculus behind management's choice of earnings management methods. To reduce the probability of detection, opportunistic managers tend to favour more concealed manipulation methods that are harder for external parties to verify. Consequently, when deciding to manage earnings, they are more likely to strategically opt for real earnings management or classification shifting, rather than accruals based earnings management, which is more readily identified by auditors (Darrough and Rangan, 2005; Graham et al., 2005; Gunny, 2010; Badertscher, 2011). This suggests that the adoption of SA may be more strongly associated with more concealed forms of earnings management, a core inference within the agency theory framework.

Therefore, based on the above three theories, our second core hypothesis is as follows:

H2. There is a positive relationship between independent assurance of sustainability reports and real earnings management.

3.4 Institutional theory and the moderating role of national governance

Institutional theory provides an indispensable perspective for understanding the macro level drivers behind corporate adoption of sustainability assurance. The core premise of this theory is that organisational behaviour and structure are profoundly shaped by the formal and informal rules, norms, and beliefs embedded within their social, political, and legal environments (Dimaggio and Powell, 1983a; Meyer and Rowan, 1977a). Firms, either actively or passively, adhere to a logic of "social appropriateness" to conform to the "binding expectations" imposed by the external institutional environment, thereby securing legitimacy, resources, and survival guarantees.

Within this theoretical framework, scholars attribute the drivers for corporate engagement in sustainability practices to three isomorphic mechanisms: coercive isomorphism, stemming from pressures exerted by authoritative entities like governments and regulators; mimetic isomorphism, involving the imitation of successful peers' best practices under conditions of uncertainty; and normative isomorphism, adhering to industry norms and standards established by professional communities (Abdelfattah and Aboud, 2020). Research applying this theory to SA indicates that firms purchase SA precisely to demonstrate to external parties that their sustainability reporting conforms to the increasingly stringent "norms" imposed by international organisations, professional bodies, and capital markets. Furthermore, among these three isomorphic forces, the external institutional environment constituted by normative pressures and coercive forces outweighs mere mimetic motivation, serving as a prerequisite factor in a firm's decision to engage an assurance provider (Martínez-Ferrero and García-Sánchez, 2017; Briem and Wald, 2018).

Corporate behaviour exhibits systematic regional characteristics depending on the level of national governance (Kolk and Perego, 2010). In countries with high governance quality, sound institutions increase the costs and risks of opportunistic behaviour, thereby reducing the motivation and increasing the penalties for firms engaging in practices like aggressive earnings management. Conversely, in countries with weak governance, institutional voids create a breeding ground for managerial opportunism. Consequently, the scope of managerial discretion is largely determined by these contextual national factors (Hambrick and Finkelstein, 1987; Crossland and Hambrick, 2011). Firms strategically adapt their behaviour within specific institutional settings to optimise their own interests (de Villiers and Alexander, 2014b).

Consequently, within the broad field of earnings management research, scholars increasingly employ institutional theory as a crucial complement to agency theory to explain how country level governance mechanisms shape corporate financial reporting strategies. If agency theory focuses on dissecting internal corporate governance conflicts, such as ownership structure and board oversight, then institutional theory concentrates on

external corporate governance mechanisms – specifically, the national level legal, regulatory, and institutional environment – and how these macrolevel factors constrain managerial self-serving behaviour (Alghemary et al., 2023; Young et al., 2000).

Substantial empirical evidence supports this view. For instance, in early research, Leuz et al. (2003) found that firms in countries with strong legal systems protecting investors exhibited significantly lower levels of earnings management, as robust institutions restrict the ability of large shareholders and managers to extract private benefits. Haw et al. (2004) provided similar evidence, indicating that earnings management is more constrained in countries with rigorous legal environments and high disclosure requirements. Bushman and Piotroski (2006) found that high-quality judicial systems and political systems without concentrated power distance are associated with greater accounting conservatism.

In more recent studies, Scholtens and Kang (2013) argue that the negative correlation between corporate social responsibility and earnings management partly stems from high government vigilance regarding compliance, which pressures firms to constrain earnings manipulation while demonstrating social responsibility to meet government expectations. Research by Wang et al. (2020) based on a Chinese sample, and the findings of Abdou et al. (2021) comparing the UK and Egypt, both indicate that strong national governance is an effective mechanism for reducing corporate earnings management. The study by Alghemary et al. (2023) on the UAE also echoes this conclusion, calling for improvements in the national governance system to curb undesirable financial practices. Collectively, these studies point to one conclusion: national governance quality is a key contextual variable for understanding cross-country differences in corporate earnings management behaviour.

Based on the discussion above, the necessity of introducing national governance quality as a core moderating variable in this study is evident for at least three key reasons.

First, it provides a crucial contextual explanation for resolving the contradictory findings in the core research question. As previously outlined, existing empirical studies on the SA-EM relationship remain inconclusive, and national governance quality is likely the key to reconciling these contradictions. For instance, drawing on prior findings related to national

governance, in countries with low governance quality, weak external monitoring and ineffective penalty mechanisms make it more probable that SA is exploited by opportunists as an impression management tool, thus correlating with higher earnings management. Conversely, in high-governance countries, strong external institutional pressures. such as stringent financial regulation, efficient judicial systems, and active media scrutiny, constrain managerial opportunism, making the pursuit of SA more reflective of a genuine commitment to accountability and thus associated with lower earnings management. Therefore, national governance quality is highly likely to be the critical factor determining whether the primary motivation behind seeking SA is 'opportunism' or 'substantive,' thereby explaining the inconsistent conclusions in prior research.

Second, it tests the explanatory boundaries and efficacy of institutional theory within the ESG domain. By examining the moderating effect of national governance, this study can empirically verify whether the external institutional environment can effectively constrain firms from 'instrumentalising' ESG tools for self-serving purposes. If robust national governance is found to suppress a positive SA-EM relationship (or even reverse it), this would not only strongly support institutional theory but also provide evidence for global regulators advancing mandatory ESG disclosure and assurance. Conversely, null findings would highlight the complexities of institutional design.

Third, it carries profound policy implications and practical significance. For example, as inferred from prior scholarly findings, the quality and authenticity of ESG practices cannot be assessed in isolation; they must be evaluated within their macro-level governance ecosystem. For international investors, credit rating agencies, and global supply chain managers, this insight means that assessing a company's ESG risk must simultaneously consider the national governance quality of its domicile or primary operations.

In light of this, synthesising the preceding discussion, we preliminarily hypothesise that national governance quality significantly moderates the relationship between SA and EM. Furthermore, based on our reasoning from existing research findings, the nature and direction of this moderating effect are likely contingent on the specific earnings management technique employed. Consequently, we formulate the following hypotheses:

H3. National governance moderates the link between independent assurance of sustainability reports and earnings management.

H4. The moderating effect of national governance on both depends on different earnings management techniques.

Table 1 below briefly describes the process of establishing the theory and hypothesis in section 3.

Table 1 Theory and hypothesis			
Theories	**Core argument**	**Interpretation of motives for SA**	**Hypothesis**
Stakeholder Theory	Firms must balance the demands of multiple stakeholders; long-term success depends on building trust-based relationships.	Seeking SA represents a substantive commitment to transparency and accountability, a natural extension of high governance quality.	H1 (Negative): SA is negatively associated with earnings management.
Signalling Theory	Under information asymmetry, high-quality firms have incentives to send credible signals to distinguish themselves from low-quality firms.	SA, as a costly and rigorous mechanism, signals management's confidence in information quality; the deterrent of signal failure constrains earnings manipulation.	
		In environments of mimetic isomorphism, SA may be strategically employed to transmit a greenwashing signal.	No hypothesis formulated.
Impression Management Theory	Management strategically controls information to shape, maintain, or alter external perceptions.	SA can be strategically used as a moral halo to divert stakeholder attention from core issues such as financial reporting quality.	No hypothesis formulated.
Stakeholder Salience Theory	Management strategically allocates corporate resources based on the power and urgency of different stakeholder groups.	SA may serve as a cover tool for earnings management, particularly when management perceives pressure from short-term-oriented shareholders to outweigh that from external regulators.	No hypothesis formulated.
Agency Theory	Separation of ownership and control creates conflicts of interest; management may pursue private gains at the expense of shareholder value.	Management may exploit the responsible image cultivated by SA to conceal more subtle manipulation of real earnings management and circumvent external monitoring.	H2 (Positive): SA is positively associated with real earnings management.
Legitimacy Theory	Corporate survival depends on conforming to societal norms and expectations; firms facing legitimacy threats must adopt strategies to repair their image.	SA functions as a symbolic compliance ritual aimed at acquiring symbolic legitimacy rather than effecting substantive improvement; the audit itself transmits a signal of conformity.	
Institutional Theory	Organisational behaviour is profoundly shaped by the external institutional environment; firms follow a logic of social appropriateness to gain legitimacy.	National governance quality determines the trade-off between the symbolic value and substantive constraint of SA: convergence under strong institutions; greater susceptibility to use as an impression management tool under weak institutions.	H3/H4 (Moderating effect): National governance moderates the SA-EM relationship, and this moderating effect varies by earnings management techniques.

4. Methodology

4.1 Data and sample

The sample for this study is primarily drawn from constituent firms of the STOXX Europe 600 index, which represents large and highly liquid listed companies across Europe. Firm level data, including sustainability assurance information, financial data, and corporate characteristic variables, are sourced from the LSEG Data & Analytics platform. The ESG and financial data provided by this platform, formerly Refinitiv Eikon, are widely used in academic research and are recognised for their authority and comprehensiveness. Data on national governance factors are obtained from the World Bank. The data collection period spans from 2003 to 2019.

This study follows established data processing procedures common in prior accounting research, particularly studies concerning earnings management. First, firms in the financial sector, such as banks, insurance companies, and other financial institutions, are excluded from the sample. This is due to their unique capital structures, regulatory environments, and accounting standards, which result in systematically different motivations and patterns for earnings management compared to non-financial firms. Second, to ensure the comparability of results from different earnings management measurement models across time, financial data are traced back to 2001. This step is crucial because the calculation of models for accruals based earnings management, for instance, requires data from the previous one or two periods to estimate normal accruals (Jones, 1991; Dechow et al., 1995). Finally, to ensure econometric precision, all observations with missing data for key variables, such as the calculated three types of earnings management metrics and SA, are removed, resulting in an unbalanced panel dataset. The final number of valid observations for each earnings management measure will be explicitly reported in the subsequent descriptive statistics and regression analyses.

The rationale for setting the sample's start year as 2003 lies in this year marking a significant milestone for sustainability assurance practice. AccountAbility formally launched the AA1000 Assurance Standard in 2003. As the first authoritative framework specifically designed for sustainability assurance, its introduction provided clear guidance for firms and assurance providers, substantially promoting the standardisation and institutionalisation of the SA market (Kolk and Perego, 2010). Consequently, 2003 can be regarded as a critical

turning point, both in Europe and globally, where SA practice evolved from fragmented exploration towards initial scaled development. Using this as the starting point effectively captures the trajectory of SA as an emerging governance mechanism.

Setting the sample's end year as 2019 is primarily based on two key considerations. First, it predates the mandatory SA environment introduced by the CSRD enacted in 2023, thereby helping to ensure this study focuses purely on the voluntary SA institutional context. Second, this choice effectively excludes the extreme exogenous shock of the COVID-19 global pandemic. From 2020 onwards, the pandemic caused unprecedented disruption to the global economy, subjecting firms to immense survival pressures and unique operational uncertainties. Extensive literature indicates that such macro shocks significantly alter firms' earnings management motivations and patterns (Lassoued and Khanchel, 2021; Lizińska and Czapiewski, 2023; Khanchel and Lassoued, 2024). Furthermore, corporate impression management strategies may also undergo substantial changes in such an environment; for instance, some firms might engage in more active impression management through increased disclosure, while others might shift towards information concealment due to uncertainty (Cheng, 2014; Dhaliwal, 2011). The underlying reason may be that firms perceive external economic shocks as critical variables; when a shock threatens the organisation's fundamental survival, the cost of maintaining a symbolic image might outweigh the benefits, prompting a reallocation of resources. Therefore, using 2019 as the endpoint avoids the potential immeasurable distortion that data from this anomalous period could inflict on the normal relationship between SA and earnings management, thereby safeguarding the robustness and generalisability of the research findings.

It is worth noting that the shock wrought by the COVID-19 pandemic differs fundamentally from that of the 2008 financial crisis. The former constituted a rapid, global public health exogenous shock whose consequences extended far beyond those of traditional economic crises. These consequences encompassed regional lockdowns, supply chain disruptions, government emergency interventions, and temporary changes to accounting rules. In some cases, firms may even have been unable to purchase SA due to business closures.

Such impacts were arguably unpredictable and uncontrollable, even by experts within large corporations. The latter, by contrast, was, to some extent, a patterned and foreseeable macroeconomic shock. Financial experts, particularly those in large multinational corporations, were likely able to anticipate and prepare corresponding strategies either before or after its occurrence. Therefore, it can be characterised as manageable and controllable.

Europe was selected as the research context because the region has consistently been the undisputed leader in global sustainability reporting and assurance practices. Academic research repeatedly confirms that the proportion of European companies adopting SA far exceeds that of other world regions (Simnett et al., 2009; Kolk and Perego, 2010), ensuring the European sample contains a sufficient number of SA adopters for analysis. Secondly, the European setting offers exceptionally high comparability of firm level financial data. Since 2005, all listed companies within the European Union have been mandated to prepare their consolidated financial statements in accordance with International Financial Reporting Standards (IFRS). This uniform accounting framework significantly reduces noise arising from differing accounting treatments across countries, thereby enhancing the comparability of earnings management metrics, such as those based on accruals, across firms from different nations and industries. This characteristic is crucial for a multinational analysis like this study, which involves a cross-country sample.

4.2 Dependent variable measurements

Earnings management is typically defined as the process whereby managers use judgement in financial reporting and structure transactions to alter financial reports, with the intent of misleading stakeholders about the underlying economic performance of the firm or influencing contractual outcomes that depend on reported accounting numbers (Schipper, 1989; Chen and Hung, 2021). Two primary methods of earnings manipulation are commonly identified: accruals-based earnings management (AEM) and real earnings management (REM).

Accruals-based management occurs after business activities have taken place. It involves managers exploiting the flexibility and choice afforded by accounting standards to adjust earnings, for instance, through judgements regarding provisions for irrecoverable debts or the depreciation rates of assets. This form of manipulation is relatively less complex to execute. In AEM, the numbers in the financial statements are altered, but the fundamental nature of the underlying business activities remains unchanged.

In contrast, real earnings management involves managers altering the timing or structure of actual business operations to manipulate earnings. Examples include offering unusually lenient credit terms to boost short-term sales, cutting discretionary expenditures such as research and development, or reclassifying non-operating or other comprehensive income into operating profit. Such actions often entail a departure from optimal business strategies and can incur significant economic costs (Prior et al., 2008). Unlike AEM, REM has direct cash flow consequences. Although generally more costly to implement than AEM, it is also considered more concealed and harder for external observers to detect (Alhadab et al., 2015). This study will employ measures for both AEM and REM as its primary objects of analysis.

4.2.1   AEM

The measurement of AEM in most studies follows two primary approaches. The first involves matching a firm with another of comparable performance (Kothari et al., 2005). The second employs a model to estimate and separate the normal level of accruals from the residual component, which represents discretionary accruals (Jones, 1991). This study adopts the latter approach, specifically utilising the modified Jones model to estimate the normal level of accruals (NDA), with the residual representing discretionary accruals (Dechow et al., 1995). Following the mainstream literature, we conduct cross-sectional regressions for each year and industry using Model 1.1. The resulting parameters, α_1, $\alpha2$, and $\alpha3$, are then applied in Model 1.1 to calculate $NDA_{i,t}$. Finally, the residual from Model 1.2, which signifies the abnormal profit subject to managerial manipulation, is designated as $AEM_{i,t}$. Both income-increasing and income-decreasing earnings manipulation diminish

earnings quality. Therefore, this study does not distinguish between the direction of AEM. After calculating discretionary accruals, we take their absolute value, which is treated as the extent of earnings management. A larger absolute value indicates a greater degree of earnings management and lower earnings quality. The models are specified as follows:

$$NDA_{i,t} = \alpha 1 \left[\frac{1}{A_{i,t-1}}\right] + \alpha 2 \left[\frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{A_{i,t-1}}\right] + \alpha 3 \left[\frac{PPE_{i,t}}{A_{i,t-1}}\right] + \varepsilon_{i,t} \qquad (1.1)$$

$$AEM_{i,t} = \frac{TA_{i,t}}{A_{i,t-1}} - NDA_{i,t} \qquad (1.2)$$

The decision to exclude a country dimension from the grouped regression analysis is based on the premise that firms within the same industry exhibit greater homogeneity in their accounting practices and business models. Research by Barth et al. (2008) and Daske et al. (2008) confirms that the adoption of International Financial Reporting Standards (IFRS) has substantially enhanced the comparability of accounting information across European nations, making country level accounting differences a less critical consideration. Moreover, Dechow et al. (2010) explicitly emphasise that in measuring earnings management, ensuring an adequate sample size for each grouping is far more important than excessive segmentation, and incorporating a country dimension risks significantly reducing the sample size. Therefore, this study strictly follows the prior research design without implementing further changes.

Table 2: Definition of variables in AEM	
Variables	Explanation
$TA_{i,t}$	The total accruals of company i in year t, (ΔCurrentAssetst - Δ Cash- Δ Current Liabilities - Depreciation and Amortization Expense), where Δ refers to the difference between the current year and the previous year.
$A_{i,t-1}$	The reciprocal of company i's total assets at the end of year t-1, used to eliminate economies of scale.
$\Delta REV_{i,t}$	The revenue of company i in year t minus its revenue in year t-1 is the revenue growth in year t compared to the previous year.

$\Delta REC_{i,t}$	The receivables of company i in year t minus its receivables in t-1 is the growth value of receivables in year t.
$PPE_{i,t}$	The ending gross account of fixed assets of company i in year t.
$\varepsilon_{i,t}$	error term in year t for firm i.
i	1,…,N firm index.
t	1, …,t year index for the years included in the selected period for firm i.

4.2.2 REM

The measurement of REM follows the approach established by Roychowdhury (2006), evaluating three components: abnormal operating cash flow (ABCFO), abnormal production cost (ABPROD), and the sum of abnormal discretionary expenses, which includes R&D expense, selling expenses, and administrative expenses (ABDISEXP). ABCFO captures situations where managers boost sales temporarily through price discounts or lenient credit terms, which can erode profit margins and increase the risk of future bad debts. ABPROD reflects overproduction to reduce the cost of goods sold per unit, thereby artificially inflating reported profit margins. ABDISEXP signifies the cutting of discretionary expenses to increase current profits at the expense of future profitability.

In practice, firms may employ a random combination of one, two, or all three of these methods when engaging in REM. Therefore, following prior research (Cohen et al., 2008; Badertscher, 2011), this study combines the estimated residuals from these three proxies to construct a comprehensive REM measure. A larger value of this aggregate REM measure indicates a greater extent of real earnings management. Mirroring the treatment of AEM, this study does not distinguish the direction of earnings management. The absolute value of the composite REM measure is taken to represent the degree of a firm's real earnings management activities. The specific models applied are as follows:

In terms of the ABCFO

$$\frac{CFO_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \left[\frac{1}{A_{i,t-1}}\right] + \alpha_2 \left[\frac{S_{i,t}}{A_{i,t-1}}\right] + \alpha_3 \left[\frac{\Delta S_{i,t}}{A_{i,t-1}}\right] + \varepsilon_{i,t} \qquad (2.1)$$

When detecting ABPROD, we first estimate the normal cost level of goods sold and the normal change in inventory.

In terms of the normal cost level of goods sold （COGS）

$$\frac{COGS_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \left[\frac{1}{A_{i,t-1}}\right] + \alpha_2 \left[\frac{S_{i,t}}{A_{i,t-1}}\right] + \varepsilon_{i,t} \qquad (2.2a)$$

In terms of the inventory change(INV):

$$\frac{\Delta INV_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \left[\frac{1}{A_{i,t-1}}\right] + \alpha_2 \left[\frac{\Delta S_{i,t}}{A_{i,t-1}}\right] + \alpha_3 \left[\frac{\Delta S_{i,t-1}}{A_{i,t-1}}\right] + \varepsilon_{i,t} \qquad (2.2b)$$

Then, combining the two results, the production costs are calculated using formula 2.2c:

$$PROD_{it} = COGS_{it} + \Delta INV_{it} \qquad (2.2c)$$

In terms of the ABPROD:

$$\frac{PROD_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \left[\frac{1}{A_{i,t-1}}\right] + \alpha_2 \left[\frac{S_{i,t}}{A_{i,t-1}}\right] + \alpha_3 \left[\frac{\Delta S_{i,t}}{A_{i,t-1}}\right] + \alpha_4 \left[\frac{\Delta S_{i,t-1}}{A_{i,t-1}}\right] + \varepsilon_{i,t} \quad (2.2d)$$

In terms of the ABDISEXP:

$$\frac{DISEXP_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \left[\frac{1}{A_{i,t-1}}\right] + \alpha_2 \left[\frac{S_{i,t-1}}{A_{i,t-1}}\right] + \varepsilon_{i,t} \qquad (2.3)$$

In terms of the final REM

$$\text{REM}_{i,t} = \text{ABPROD}_{i,t} - \text{ABCFO}_{i,t} - \text{ABDISXP}_{i,t} \qquad (2.4)$$

Table 3: Definition of variables in REM	
Variables	Explanation
$A_{i,t-1}$	The book value of total assets of company i at the end of year t-1 is used to eliminate economies of scale.
$CFO_{i,t}$	The cash flow of company i's operating activities in year t.
$S_{i,t}$	Sales of company i in year t.

$\Delta S_{i,t}$	The difference in sales of company i between year t and year t-1.
$\Delta S_{i,t-1}$	The difference in sales of company i between year t-1 and year t-2.
$PROD_{i,t}$	The sum of cost of goods sold (COGS) and inventory changes for company i in year t.
$DISEXP_{i,t}$	The sum of company i's R&D expenses, advertising expenses, and SG&A in year t.
$\varepsilon_{i,t}$	error term in year t for firm i.
i	1,…,N firm index.
t	1, …,ti year index for the years included in the selected period for firm i.

4.2.3 CSEM

Classification shifting has long played a significant role in corporate earnings management. Typically, managers utilise CSEM to inflate reported core earnings (Abernathy et al., 2014). The objective is to meet investor and analyst forecasts by opportunistically classifying recurring expenses as special items, thereby boosting core earnings to satisfy investors who focus primarily on this metric (McVay, 2006). The key economic consequence differentiating CSEM from AEM and REM is that CSEM does not alter the total bottom-line earnings for the period, whereas both AEM and REM do. In the robustness checks, CSEM, which shares the characteristic of being concealed, will be used as an alternative variable for REM.

This study adopts the model from McVay (2006) to estimate core earnings for measuring CSEM. Similar to the modified Jones model, this estimation method also decomposes core earnings into an expected component and an unexpected component. The residual from the cross-sectional regression of Model 3 for each industry and year represents the abnormal portion, the difference between actual core earnings and expected core earnings, and is denoted as CSEM. The calculation is specified in Model 3 as follows:

$$CE_t = B_0 + B_1 CE_{t-1} + B_2 ATO_t + B_3 Accruals_t + B_4 Accruals_{t-1} +$$

$$B_5 \Delta Sales_t + B_6 Neg\Delta Sales_t + \varepsilon_{,t} \hspace{4cm} (3)$$

Here, CE_t represents core earnings, calculated as (Sales - Cost of Goods Sold - SG&A Expense) / Sales. CE_{t-1} denotes the one-period lagged CE, included as an independent variable because core earnings exhibit persistence. ATO_t represents the asset turnover ratio, included because of its negative correlation with the profit margin on sales (Nissim and Penman, 2001). $Accruals_t$ represents the firm's total accruals. Given Sloan (1996) finding that accruals have implications for future performance, both $Accruals_t$ and its one-period lag, $Accruals_{t-1}$, are included in the model. $\Delta Sales_t$ represents the growth rate of sales revenue, included because, as sales increase, the fixed cost component per unit sold decreases (McVay, 2006). $Neg\Delta Sales_t$ is a variable that takes the value of $\Delta Sales_t$ when $\Delta Sales_t < 0$ is negative, and 0 otherwise. This variable captures the asymmetric effect that cost behaviour during sales increases differs from that during sales decreases of the same magnitude (McVay, 2006).

It is important to note that in measuring classification shifting, this study adheres to the original method of McVay (2006) by using the raw value of CSEM rather than its absolute value. This is because the economic substance of CSEM is that management systematically overstates core earnings by reclassifying core expenses into line items such as 'special items.' This is a directional form of earnings manipulation, where a larger (positive) CSEM value indicates a greater magnitude of upward manipulation of core profit. Therefore, taking the absolute value would obscure and lose this crucial directional information. Consequently, this study uses the raw CSEM value to measure the extent and motivational strength of a firm's upward classification shifting.

4.2.4 Reflection on measurement errors of earnings management indicators

In empirical research, the measurement of earnings management inevitably contains some degree of error. This section briefly discusses the potential sources of measurement error

for the three-earnings management metrics employed in this study, their possible impact on the research conclusions, and explains why these metrics remain reasonable and acceptable within the current research context.

AEM is estimated using the revised Jones model. However, the specification of this model relies on certain economic assumptions and may not fully capture the heterogeneity across different firms, potentially leading to bias in the estimation of non-discretionary accruals (Dechow et al., 2010). Furthermore, accrual models can be influenced by firm performance (Kothari et al., 2005). Although this study does not incorporate performance matching, the inclusion of control variables for performance, such as ROA and LOSS, partially mitigates this issue. The presence of measurement error typically weakens the significance of explanatory variables, an attenuation bias. Consequently, the significant negative association observed in this study between SA and AEM may actually understate the strength of the true relationship.

REM is measured following the approach of Roychowdhury (2006). The core challenge in its measurement lies in the fact that the normal levels defined by the model depend on economic variables such as sales. In practice, however, firms may deviate from these normal levels due to unobservable factors like business cycles or competitive environments, leading to estimation errors (Roychowdhury, 2006; Gunny, 2010). Additionally, the three manipulation methods comprising REM differ in their direction and economic consequences; simply aggregating them may obscure the heterogeneity across these different pathways. To mitigate this issue, Section 5.5 of this study examines the three REM components separately. The analysis reveals that SA is primarily significantly positively associated with ABDISEXP and negatively associated with ABPROD, thereby identifying the specific channels through which the relationship between SA and REM operates.

CSEM is measured using the model developed by McVay (2006). This approach estimates expected core earnings, and the residual is used to capture the extent to which management shifts core expenses to special items to inflate core earnings. The model assumes that core earnings follow an autoregressive process and relies on predictor

variables such as asset turnover and accruals. If there are omitted variables or biases in the definition of core earnings, the CSEM estimates may contain noise (McVay, 2006). However, as CSEM represents another hidden earnings management, its measurement error may also lead to coefficients attenuated towards zero. In robustness tests, this study includes CSEM as a supplementary/alternative variable to REM, and the results continue to support a positive association between SA and hidden earnings management, thereby reinforcing the stability of the conclusions.

In summary, although each of the three-earnings management metrics discussed possesses inherent measurement error, they represent widely accepted and applied methodologies within their respective domains. The core conclusions of this study do not rely on any single metric. Instead, they are supported by cross-validation using multiple earnings management dimensions, combined with a series of robustness tests, including instrumental variable analysis, propensity score matching, and subsample analyses. These approaches minimise, to the greatest extent possible, the interference of measurement error in causal inference. Therefore, the earnings management measures employed in the current study are considered reasonable and acceptable, and their limitations do not undermine the reliability of the core findings.

4.3 Independent variable

This study employs a binary variable to measure sustainability assurance. It takes the value of 1 if a company obtained third-party SA in a given fiscal year, and 0 otherwise.

The rationale for using a binary variable for the independent variable, rather than an assurance index, is grounded in the foundational premise of this research. The study's objective is to investigate whether the act of a firm seeking SA itself constitutes a positive and ethical governance signal or a potential impression management strategy. Our theoretical framework predicts that management may strategically utilise the very fact of "obtaining SA" to craft an ethical image, rather than being driven by the depth or quality of the assurance process. Therefore, from a theoretical perspective, the "to do or not to do" decision is the most fundamental and core behaviour for signalling and impression

management. A complex index could obscure this fundamental theoretical distinction, as it conflates information from two different dimensions: the "motivation for the act" and the "quality of its execution." Secondly, although more nuanced operationalisations of SA dimensions exist—such as assurance level, scope, or provider type—obtaining detailed data for a consistent and comparable index across dozens of countries and a seventeen-year sample period is highly challenging. Using a binary variable ensures clarity, objectivity, and consistency in measurement, avoiding additional measurement errors that could arise from the subjectivity of index construction and data unavailability.

Consequently, employing a binary variable is not a methodological simplification but a choice highly congruent with the research question. It allows us to test the most fundamental link between the act of SA adoption and earnings management directly and powerfully.

4.4 Moderating variables

According to Kaufmann et al. (2011), national governance is defined as the traditions and institutions by which authority in a country is exercised. This includes (a) the process by which governments are selected, monitored, and replaced, (b) the capacity of the government to effectively formulate and implement sound policies, and (c) the respect of citizens and the state for the institutions that govern economic and social interactions among them. These three areas are each represented by two dimensions to reflect governance fully. In area (a), the Voice and Accountability (VA) indicator measures the extent of citizen participation, while the Political Stability and Absence of Violence/Terrorism (PS) indicator measures the state's stability against external and internal risks. In area (b), the Government Effectiveness (GE) indicator assesses the quality of public services, the quality of the civil service and its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. The Regulatory Quality (RQ) indicator observes the government's ability to formulate and implement sound policies and regulations. In area (c), the Rule of Law (RL) indicator observes the extent to which agents

have confidence in and abide by the rules of society, and the Control of Corruption (CC) indicator captures perceptions of the extent to which public power is exercised for private gain. In the Worldwide Governance Indicators database, these six indicators are reported in standardized units ranging from approximately -2.5 to 2.5, where higher values correspond to better governance quality (Kaufmann et al., 2011).

When testing the moderating effects of these six indicators, this study does not employ principal component analysis to combine them into a single composite index, despite concerns regarding the high correlation between the indicators (Kaufmann et al., 2011; Globerman and Shapiro, 2002). Instead, we conduct separate median-split group regressions for each of the six indicators. The rationale for this approach is as follows: it allows us to clearly observe the unique theoretical implications and policy insights associated with each individual governance dimension. National governance is a complex, multi-dimensional construct, and its different aspects may have distinct mechanisms and varying intensities of influence on corporate behaviour. For instance, the strength of the 'Rule of Law' directly affects contract enforcement and the cost of violations, while 'Regulatory Quality' pertains to the clarity and effectiveness of rule-making. Forcing the six indicators into a single composite index would obscure these distinct causal mechanisms. Testing them separately enables a more straightforward identification of which specific institutional factors moderate corporate earnings management behaviour, thereby providing policymakers with more actionable guidance for reform.

4.5 Control variables

Control variables are included to account for potential confounding effects that might influence the relationship between the main independent and dependent variables. Therefore, drawing on prior research evidence in the field of earnings management, this study selects a series of variables with substantive influence as controls.

First, this study controls for firm size (SIZE), a primary driver of EM (Castelo Branco et al., 2014). The influence of this factor in previous EM research has been mixed. Some evidence suggests that SIZE increases managerial engagement in EM, arguing that larger

firms, motivated to protect their reputation, are more inclined to use EM to maintain reported financial figures (Nalarreason et al., 2019; Fadlli and Khairunnisa, 2020). Conversely, other scholars like Mahrani and Soewarno (2018), Kliestik et al. (2020), and Barth (2018) contend that larger firms face greater compliance pressures regarding financial reporting quality and need to demonstrate more reliable financial accountability, thereby reducing the likelihood of EM behaviour. Consequently, regardless of the direction of SIZE's influence, this study includes this explanatory variable.

This study selects financial ratios related to firm profitability and performance as explanatory variables, namely return on assets (ROA), loss (LOSS), and growth (GROWTH). This is because managers of firms with low profitability are more inclined to use earnings management to improve financial numbers to meet, achieve, or exceed the expectations of analysts and investors (Iatridis and Kadorinis, 2009; Jiraporn et al., 2008; Xie, 2001).

This study controls for the leverage (LEV) variable, which has a similarly debated dual moderating effect in prior research. Some studies indicate that higher leverage increases managerial EM behaviour (Nalarreason et al., 2019). For instance, Beatty and Weber (2003) and Dichev and Skinner (2002) found that higher financial leverage can lead to increased accruals-based earnings management and other income-increasing accounting choices. However, Jensen (1986) and Anagnostopoulou and Tsekrekos (2017) found that firms with higher leverage face stricter scrutiny from external creditors, potentially leading them to adjust their earnings strategies, for example, by reducing or using more concealed forms of EM to avoid severe exposure risk. Therefore, regardless of the direction of LEV's influence, this study includes this explanatory variable.

We control for the presence of a CSR committee, or a committee with a similar mandate. This is because such a committee represents a common formal governance mechanism for the oversight and accountability of ESG practices within a firm's governance structure. Theoretically, the existence of this committee could influence the relationship between SA and EM through two potential pathways. On the one hand, grounded in stakeholder theory, a CSR committee symbolises a firm's substantive commitment to sustainable development.

It provides specialised oversight intended to ensure the genuineness of ESG practices, thereby potentially curbing the motivation to use SA as an impression management tool and advocating for higher financial reporting quality (Haque and Jones, 2020; Meqbel et al., 2023). On the other hand, drawing on legitimacy theory, the establishment of the committee could itself be a symbolic gesture, aimed at signalling compliance to external parties, while its actual supervisory effectiveness might be limited (Peters and Romi, 2015). In this scenario, it could form part of an impression management strategy alongside SA. We treat this as a binary variable, set to 1 if the firm had a CSR committee in the observation year, and 0 if it did not. Missing values are also coded as 0. This treatment is justified because, in mainstream commercial databases, the absence of corporate governance structure data, such as committee establishment, most frequently indicates the non-existence of that structure rather than the information simply not being recorded. Establishing a CSR committee is a significant governance initiative that is typically actively disclosed. Firms, especially publicly listed ones, have a strong incentive to disclose a well-developed governance structure to attract investors. Therefore, if no record exists in the database, it very likely corresponds to a 'non-established' status (Dixon-Fowler et al., 2017). We control for the proportion of institutional ownership (INST). This is because institutional investors, as professional and often influential shareholders, represent a key proxy for a firm's ownership structure and the intensity of external monitoring. Their influence on the relationship between SA and EM is explained by two competing theories. According to the effective monitoring hypothesis, institutional investors have the motivation and capability to scrutinise management closely. They may encourage firms to adopt SA to enhance transparency and deter opportunistic earnings management (Dyck et al., 2019). Conversely, the short-termism hypothesis suggests that some institutional investors, overly focused on short-term stock performance, may exert pressure on management for earnings. This could incentivise managers to use SA to project a long-term responsible image to placate certain investors while simultaneously engaging in earnings management to meet short-term expectations (Bushee, 1998). In data processing, missing values for INST are treated as 0. This is justified because missing INST data typically points to one

of two firm types: those with highly fragmented ownership where no single institution holds a significant stake, or smaller, less transparent firms not covered by institutional investors. In both cases, the substantive influence of institutional investors approaches zero. Furthermore, institutional shareholding is typically subject to public disclosure requirements. If a firm has no recorded institutional holdings in a major database, it most frequently indicates an absence of significant institutional investors rather than missing data. Therefore, coding missing values as 0 is economically equivalent to assuming these firms lack substantial institutional monitoring, a common and justified approach in empirical finance research (e.g., Aggarwal et al. (2011), Ferreira and Matos (2008) and McCahery et al. (2016)).

This study controls for the external auditor's opinion (OP) due to the auditor's crucial role in ensuring and certifying high-quality financial reports (Johl et al., 2007). Auditors are particularly sensitive to high accruals, and firms reporting positive and high accruals receive modified opinions more frequently than those with lower accruals (Francis and Krishnan, 1999; Bradshaw et al., 2001). In this study, a firm receiving an unqualified opinion is coded as 0, while other types of opinions are coded as 1.

We also control for GDP as a measure of the macroeconomic environment. This is because an economic boom can influence firm behaviour through two channels. On one hand, it might weaken the motivation for impression management, reducing the need for both earnings management and symbolic SA. On the other hand, a prosperous economy might also provide cover, making earnings management less detectable, potentially fostering opportunistic behaviour. Conversely, during economic recessions, firms face greater performance pressure and survival risks, significantly increasing their motivation for earnings management while also potentially seeking any tool that can enhance their legitimacy and credibility more actively. Therefore, controlling for GDP effectively captures the common influence of macroeconomic shocks on both corporate financial and disclosure strategies, preventing the misattribution of spurious correlation driven by the economic cycle to a causal relationship between SA and EM.

Table 4 shows the explanations of all indicators included in the regression models in this study.

Table 4: Definition of variables	
Variables	Explanation
Dependent variables	
AEM	Discretionary accurals of the firm according to the revised Jones model.
REM	The real earnings management of the enterprise is obtained based on the sum of ABCFO, ABPROD and ABDISEXP.
CSEM	Based on the classification shifting earnings management indicators of enterprises derived from McVay (2006).
Independent variable	
SA	Dummy variable equal 1 if the company had assurance on its sustainability report in a given year and 0 otherwise.
Moderating variables (from the World Bank database)	
VA	Used to measure citizen participation.
PV	Used to measure a country's stability in resisting external and internal risks.
GE	Used to identify the level of government governance services, policy quality, and the credibility of government commitments.
RQ	Used to observe the government's ability to formulate and implement sound policies and regulations.
RL	Used to observe people's respect and compliance with social rules.
CC	Used to capture people's views on the misappropriation of public power for private gain.
Control variables	
SIZE	Calculated as the natural logarithm of a company's total assets. Previous research has shown that this is correlated with a company's EM performance.
ROA	The ratio of net income to total assets
GROWTH	It is calculated as $(Sales_t - Sales_{t-1})/Sales_t$, which measures the growth level of the observed company in the current year.
LOSS	Dummy variable equal 1 if the company had a net loss in a given year and 0 otherwise
LEV	The ratio of long-term debt to total assets
Committee	Dummy variable equal to 1 if the firm has a CSR committee (or other equivalent committee) and 0 otherwise.

INST	This indicator is taken from the Datastream database and is the proportion of company shares held by investment institutions to the total number of company shares.
OP	Dummy variable equal to 0 if the firm has unqualified opinion and 1 if the firm has other opinion.
GDP	Gross Domestic Product (2015 constant US$), from the World Bank database
IND	Industry dummy variables
Year	Year dummy variable
$\varepsilon_{i,t}$	error term in year t for firm i
i	1,...,N firm index
t	1, ...,ti year index for the years included in the selected period for firm i (ti ranges between 6 years)

4.6 Regression models

To detect HI and H2, we constructed the following models:

$$AEM = \alpha_0 + \alpha_1 SA_{i,t} + \sum_{j=1}^{k=9} \alpha_j CONTROL_{j,i,t} + [IND, Year, indictors] + \varepsilon_{i,t} \quad (4)$$

$$REM = \alpha_0 + \alpha_1 SA_{i,t} + \sum_{j=1}^{k=9} \alpha_j CONTROL_{j,i,t} + [IND, Year, indictors] + \varepsilon_{i,t} \quad (5)$$

To test H3, we conducted separate median-split group regressions for the two models mentioned above based on each of the six national governance indicators.

In the aforementioned model specification, this study incorporates industry and year fixed effects and clusters standard errors at the country level. This approach was adopted based on the following considerations.

First, the inclusion of industry and year fixed effects represents standard practice in accounting and corporate finance research. Earnings management behaviour is often strongly influenced by industry-level factors; extant literature has indicated that industry competition intensity, industry-specific accounting practices, or regulatory requirements can systematically affect corporate incentives for earnings management (Roychowdhury, 2006; Dechow et al., 2010). Furthermore, business models across different industries may lead to variations in real earnings management or classification shifting strategies. For instance, manufacturing firms may be more prone to manipulation through production costs,

whereas technology firms may be more inclined to manipulate through research and development expenditures. Therefore, to adhere to established research paradigms and to account for the convergence of earnings management practices within industries, which can be understood as a manifestation of institutional isomorphism, this study includes industry fixed effects. Year fixed effects absorb time-trend factors common to all firms, such as macroeconomic shocks and policy changes. This combination maximises control over unobservable industry-level and time-level confounding factors (Khanchel El Mehdi and Seboui, 2011; Rodríguez-Pérez and Van Hemmen, 2010). Moreover, from the perspective of the accounting metrics themselves, the dependent variables AEM and REM are residuals derived from regressions conducted by industry and by year. This means they are conceptually already abnormal values, having stripped out industry and year benchmarks. Consequently, to ensure consistency, it is necessary to again control for industry and year fixed effects in the regression. This ensures that the core independent variable in this study explains this purified component of variance, thereby satisfying the assumption that the model error term is uncorrelated with the independent variables.

Second, this study does not include country fixed effects. This is a deliberate design choice. Country fixed effects are essentially a set of dummy variables that assign a unique intercept to each country, controlling for all time-invariant country-specific characteristics, such as institutional culture, governance standards, and historical traditions. In common research scenarios where the focus is on relationships between firm-level variables and country-level factors are considered nuisance variables to be excluded, country fixed effects should be included. However, one of the core objectives of this study is to test the moderating role of national governance, a macro-level institutional variable. Including country fixed effects would completely absorb all cross-sectional variation in this variable, rendering the core moderating variable unidentifiable. Specifically, the grouped regression design in this study aims to partition the sample into different subsamples based on national governance levels, such that each subsample comprises countries with varying institutional strength. This allows regression coefficients to vary with country-level characteristics. The effectiveness of this approach depends precisely on the existence of governance differences across

countries, which country fixed effects would systematically eliminate. Therefore, following the practice in cross-country research that tests the moderating effects of macro-level factors (Ioannou and Serafeim, 2012), this study adopts a grouped regression approach without fixing country effects.

It is important to further clarify that this study also does not employ firm fixed effects. Firm fixed effects would absorb all firm-specific, time-invariant characteristics. Using firm fixed effects could potentially over-control for industry-level variation, thereby underestimating the influence of industry and even national governance. Moreover, SA is highly persistent at the firm level; including firm fixed effects would absorb much of the variation in SA. The identification strategy in this study relies primarily on changes in a firm's SA status, such as a switch from 0 to 1 or vice versa, and on differences in the timing of these changes across firms. The instrumental variable method and propensity score matching subsequently employed in this study are also intended to address robustness concerns, complementing the current model specification.

Finally, to account for potential serial correlation and heteroskedasticity within countries, standard errors are clustered at the country level, consistent with prior research (Dhaliwal et al., 2011; Christensen et al., 2021).

5. Results and findings

5.1 Descriptive analysis

5.1.1 Country distribution of observations in different regression models

Table 5 Country distribution of observations

Country Name	AEM group		REM group	
	Freq.	Percent	Freq.	Percent
UNITED KINGDOM	956	22.69	643	20.64
FRANCE	687	16.30	432	13.87
GERMANY	516	12.24	487	15.63
SWITZERLAND	364	8.64	336	10.79
SWEDEN	319	7.57	281	9.02
NETHERLANDS	235	5.58	190	6.10

FINLAND	208	4.94	108	3.47
SPAIN	208	4.94	67	2.15
ITALY	197	4.67	196	6.29
DENMARK	159	3.77	117	3.76
NORWAY|	110	2.61	65	2.09
IRELAND	68	1.61	39	1.25
AUSTRIA	62	1.47	62	1.99
PORTUGAL	39	0.93	--	--
BELGIUM|	33	0.78	32	1.03
LUXEMBOURG	22	0.52	22	0.71
POLAND	16	0.38	16	0.51
MEXICO	11	0.26	11	0.35
CYPRUS	4	0.09	11	0.35
Total	4214	100.00	3115	100.00

Table 5 reports the distribution of sample observations across countries for the different regression models. Due to differing data requirements for measuring accruals-based and real earnings management, we separately cleaned and calculated the metrics for AEM and REM to ensure computational precision for each measure. These were subsequently merged with the other datasets, resulting in two partially overlapping sub-samples of different sizes. For the AEM regressions, the final sample comprises 4,214 firm-year observations from 19 countries. The sample distribution is dominated by developed Western European economies, with the United Kingdom, France, and Germany being the top three contributing countries, accounting for 22.69%, 16.30%, and 12.24% of observations respectively. Combined, these three countries contribute over half of the total sample. Switzerland, Sweden, and the Netherlands follow. For the REM regressions, the effective sample size decreases to 3,115 observations covering 18 countries. The country distribution structure of this sample is similar to the AEM sample, with the UK, Germany, and France remaining the countries with the highest concentration of observations. Compared to the AEM sample, the number and proportion of observations from some countries, such as Spain and Finland, decreased, reflecting a higher rate of missing data for the cash flow items related to production and sales necessary for calculating real earnings management. The compositional differences between the two sub-samples confirm the necessity of handling the different earnings management measures separately. While the separate cleaning and measurement of the two dependent variables led to inconsistent sample sizes, it ensured that each measure was regressed on its most

complete and reliable data foundation, thereby safeguarding the robustness of the subsequent conclusions.

5.1.2 Descriptive analysis of AEM and REM subsets

Table 6 Descriptive statistics in AEM

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
AEM	4,214.000	0.036	0.034	0.000	0.178
SA	4,214.000	0.690	0.462	0.000	1.000
SIZE	4,214.000	16.435	1.484	12.883	19.620
ROA	4,214.000	0.062	0.059	-0.085	0.285
GROWTH	4,214.000	0.062	0.143	-0.348	0.651
LOSS	4,214.000	0.074	0.262	0.000	1.000
LEV	4,214.000	0.203	0.131	0.000	0.576
Committee	4,214.000	0.714	0.452	0.000	1.000
INST	4,214.000	10.871	16.029	0.000	97.000
Opinion	4,214.000	0.005	0.072	0.000	1.000
GDP	4,214.000	1.765e+12	1.136e+12	2.022e+11	3.673e+12
Corruption	4,214.000	1.681	0.498	0.071	2.410
Effectiveness	4,214.000	1.584	0.373	0.403	2.229
Stability	4,214.000	0.694	0.425	-0.318	1.489
Regulatory	4,214.000	1.530	0.311	0.698	1.965
Law	4,214.000	1.597	0.370	0.272	2.034
Accountability	4,214.000	1.372	0.187	0.905	1.738

Table 6 presents the descriptive statistics for the key variables based on the AEM regression sample (N=4,214), which covers non-financial firms from the STOXX Europe 600 index between 2003 and 2019. Regarding the dependent variable, the mean of accruals-based earnings management is 0.036 with a standard deviation of 0.034, ranging from 0 to 0.178. This indicates the presence of observable earnings management behaviour among the sample firms, with varying degrees of manipulation across companies.

The mean of the core independent variable, sustainability assurance, is 0.690. This signifies that approximately 69% of the firm-year observations in the sample sought external assurance services, a notably high proportion consistent with Europe's leading global position in SA practice.

Regarding firm characteristics, the sample firms exhibit characteristics typical of large European listed companies, with a large average size (SIZE mean: 16.435) and generally sound profitability (ROA mean: 0.062). Concurrently, 7.4% of the observations reported financial losses. In terms of governance structure, over 71% of the sample firms had established a dedicated CSR committee, while the proportion of institutional ownership displayed considerable variability (standard deviation: 16.029), reflecting significant differences in ownership structures across firms.

Among the country-level variables, the mean values for all governance indicators are positive, but their standard deviations indicate substantial heterogeneity among the sample countries across dimensions such as control of corruption, government effectiveness, and rule of law. This cross-national variation in the quality of national governance provides the necessary foundation for subsequently testing its moderating effects.

Overall, the descriptive statistics show that the sample data possess good variability, the distributions of the key variables are within reasonable ranges, and no extreme outliers were detected, thus satisfying the basic requirements for proceeding with the regression analysis.

Table 7 Descriptive statistics in REM

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
ABSREM	3,115.000	0.284	0.266	0.004	1.404
SA	3,115.000	0.679	0.467	0.000	1.000
SIZE	3,115.000	16.437	1.534	12.800	19.609
ROA	3,115.000	0.065	0.064	-0.097	0.306
GROWTH	3,115.000	0.059	0.137	-0.349	0.596
LOSS	3,115.000	0.078	0.269	0.000	1.000
LEV	3,115.000	0.185	0.117	0.000	0.513
Committee	3,115.000	0.722	0.448	0.000	1.000
INST	3,115.000	11.119	15.903	0.000	97.000
Opinion	3,115.000	0.005	0.071	0.000	1.000
GDP	3,115.000	1.781e+12	1.157e+12	2.087e+11	3.673e+12
Corruption	3,115.000	1.696	0.516	0.027	2.407
Effectiveness	3,115.000	1.587	0.390	0.356	2.229
Stability	3,115.000	0.735	0.401	-0.106	1.424
Regulatory	3,115.000	1.544	0.307	0.691	1.965

Law	3,115.000	1.602	0.393	0.241	2.034
Accountability	3,115.000	1.384	0.187	0.905	1.738

Table 7 presents the descriptive statistics for the key variables based on the REM regression sample (N=3,115). Compared to the AEM sample, the REM sample size is smaller, primarily due to the higher rate of missing data for the cash flow items required to calculate real earnings management, a common occurrence in this type of multinational empirical research. The dependent variable in this study, real earnings management measured in absolute value, has a mean of 0.284 and a standard deviation of 0.266. This presents a sharp contrast to the statistical characteristics of AEM (mean: 0.036, standard deviation: 0.034), as the magnitude and variability of REM are significantly higher. This difference aligns with theoretical expectations, as real activities manipulation typically involves deviations from optimal operational decisions, whose economic consequences and measurement scales are inherently different from those of accruals manipulation.

The mean of the core independent variable, sustainability assurance, in the REM sample is 0.679, highly consistent with the 0.690 observed in the AEM sample. This indicates that, despite differences in data availability between the two sub-samples, they maintain strong consistency regarding the key characteristic of SA adoption, ensuring the comparability of subsequent results.

Regarding firm characteristics and control variables, the REM sample demonstrates a high degree of similarity to the AEM sample. The means and distributions of variables such as firm size, ROA, LEV, and GROWTH are very close. For instance, the mean firm size is around 16.44 for both, the mean ROA is approximately 0.065, the proportion of loss-making firms is about 7.8%, and the proportion of firms with a CSR committee is around 72%. The mean and variability of institutional ownership are also largely consistent. This suggests that the two sub-samples are homogeneous in terms of firm fundamentals and governance structure, ruling out the possibility of results being biased by differences in sample composition. Similarly, the country-level variables, including GDP and the six national governance indicators, show no systematic shifts in their means and standard deviations compared to the AEM sample. The cross-national heterogeneity in the quality of national

governance is clearly evident in both samples, laying a foundation for robust subsequent testing of its moderating effects.

In summary, the descriptive statistics for the REM sample reveal its structural similarity to the AEM sample in terms of firm and country characteristics, while also highlighting the fundamental differences in the measurement scales of the two types of earnings management. This provides a basis for the subsequent separate examination of the differential impact of SA on the two types of earnings management.

5.1.3 Correlation analysis

Table 8 Correlation analysis in AEM

	AEM	SA	SIZE	GROWTH	ROA	LOSS	LEV	Opinion	INST	Committee	GDP	Corruption	Effectiveness	Stability	Regulatory	Law	Accountability
AEM	1																
SA	0.082***	1															
SIZE	0.044***	0.307***	1														
GROWTH	0.002	0.108***	0.085***	1													
ROA	0.066***	0.121***	0.248***	0.153***	1												
LOSS	0.289***	0.012	0.045***	0.164***	0.468***	1											
LEV	0.038**	0.111***	0.091***	0.037**	0.287***	0.042***	1										
Opinion	0.023	0.023	0.025	0.045***	0.004	0.008	0.030*	1									
INST	0.006	0.058***	0.072***	0.039*	0.067***	0.007	0.110***	0.023	1								
Committee	0.048***	0.482***	0.230***	0.149***	0.107***	0.043***	0.075***	0.042***	0.031*	1							
GDP	0.034*	0.112***	0.096***	0.016	0.092***	0.010	0.043***	0.004	0.068***	0.166**	1						
Corruption	0.061***	0.208***	0.005	0.015	0.165***	0.007	0.224***	0.049***	0.007	0.114**	0.261***	1					
Effectiveness	0.057***	0.254***	0.046***	0.019	0.153***	0.009	0.216***	0.062***	0.027*	0.164**	0.332***	0.910***	1				
Stability	0.024	0.209***	0.082***	0.028*	0.083***	0.021	0.175***	0.009	0.008	0.153**	0.626***	0.599***	0.614***	1			
Regulatory	0.060***	0.112***	0.087***	0.012	0.172***	0.019	0.143***	0.023	0.066***	0.007	0.072***	0.850***	0.749***	0.454***	1		
Law	0.049***	0.174***	0.013	0.028*	0.140***	0.004	0.205***	0.066***	0.007	0.062**	0.221***	0.945***	0.914***	0.567***	0.843***	1	

Accountab ility	0.068****	0.252****	0.043****	0.006	0.148****	0.009	0.215****	0.018	0.017	0.180***	0.438****	0.880****	0.854***	0.708****	0.749***	0.825****	1

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

Table 8 presents the Pearson correlation matrix based on the AEM sample. This analysis aims to provide a preliminary examination of the bivariate relationships between the variables. First, the core independent variable, sustainability assurance, shows a significant positive correlation with the dependent variable, accruals-based earnings management, at the 1% level. This initial finding aligns with the predictions derived from impression management theory and agency theory, offering preliminary support for the main hypothesis of this study. Second, the independent variable SA is significantly correlated with most control variables. For instance, SA is positively correlated with firm size, profitability, growth opportunities, and the presence of a CSR committee. This is consistent with existing literature, suggesting that larger, better-performing firms with stronger governance are more inclined to adopt SA. Simultaneously, SA shows significant positive correlations with various dimensions of national governance, providing initial confirmation for institutional theory, which posits that a better national governance environment fosters the adoption of SA.

Regarding the control variables, the correlation matrix reveals several relationships consistent with theoretical expectations. For example, the state of reporting a loss is highly positively correlated with earnings management, aligning with the literature finding that firms in financial distress are more likely to engage in earnings manipulation. It is noteworthy that the six dimensions of national governance exhibit high intercorrelations (coefficients ranging from 0.454 to 0.945), particularly with correlations between Control of Corruption and Rule of Law, and Government Effectiveness, exceeding 0.9. This result confirms the rationale for not including all national governance indicators simultaneously in the regression models, as extreme multicollinearity would lead to biased and unstable estimates. Therefore, we will proceed by using median-split group regressions to separately test the moderating effect of each dimension.

Overall, the correlation analysis results show that most correlation coefficients between variables are at low to moderate levels, preliminarily alleviating concerns about severe multicollinearity. The relationships between the core variables are largely consistent with theoretical expectations, establishing a reasonable foundation for the subsequent, more rigorous multivariate regression analysis. However, it must be emphasised that correlations represent only bivariate relationships, and their implications require further verification within multivariate regression models that control for other factors.

Table 9 Correlation analysis in REM

	REM	SA	SIZE	GROWTH	ROA	LOSS	LEV	Opinion	INST	Committee	GDP	Corruption	Effectiveness	Stability	Regulatory	Law	Accountability
REM	1																
SA	0.082***	1															
SIZE	0.221***	0.297***	1														
GROWTH	0.120***	0.087***	0.088***	1													
ROA	0.330***	0.134***	0.241***	0.167***	1												
LOSS	0.035*	0.016	0.038**	0.172***	0.480***	1											
LEV	0.291***	0.120***	0.130***	0.044**	0.297***	0.053***	1										
Opinion	0.012	0.018	0.021	0.027	0.002	0.004	0.019	1									
INST	0.137***	0.071***	0.073***	0.047**	0.053***	0.010	0.066***	0.032*	1								
Committee	0.056***	0.475***	0.215***	0.121***	0.101***	0.037**	0.085***	0.046**	0.046**	1							
GDP	0.029	0.113***	0.113***	0.020	0.113***	0.017	0.014	0.020	0.065***	0.140**	1						
Corruption	0.173***	0.199***	0.054***	0.012	0.170***	0.028	0.229***	0.084***	0.047***	0.125**	0.267***	1					
Effectiveness	0.165***	0.230***	0.001	0.019	0.167***	0.030*	0.217***	0.099***	0.057***	0.162**	0.343***	0.922**	1				
Stability	0.050***	0.192***	0.153***	0.015	0.076***	0.003	0.098***	0.036**	0.036**	0.150**	0.657***	0.579**	0.586***	1			
Regulatory	0.152***	0.102***	0.030*	0.004	0.161***	0.039**	0.153***	0.046**	0.035**	0.016	0.098***	0.860**	0.772***	0.437***	1		
Law	0.153***	0.167***	0.032*	0.024	0.145***	0.023	0.211***	0.100***	0.042**	0.073**	0.234***	0.949**	0.925***	0.547***	0.850**	1	
Accountability	0.123***	0.231***	0.104***	0.011	0.153***	0.032*	0.184***	0.054***	0.047***	0.186**	0.462***	0.883**	0.859***	0.702***	0.759**	0.826***	1

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

Table 9 presents the Pearson correlation matrix based on the REM sample. Echoing the correlation analysis from the AEM sample, the core independent variable SA in this sample also shows a significant positive correlation with the dependent variable REM at the 1% level (coefficient = 0.082). This finding preliminarily supports the universality of the research hypothesis, suggesting that the corporate decision to seek SA may be associated with different types of earnings management strategies, hinting at a potentially unified underlying motivational logic.

However, compared to the AEM sample, the relationships between REM and a range of firm characteristic variables demonstrate stronger association strengths, revealing the distinct nature of the two earnings management methods. REM shows significant positive correlations with both firm size and financial leverage, with coefficients as high as approximately 0.22 and 0.29 respectively, far exceeding their counterparts in the AEM sample. This indicates that larger firms and those with higher debt ratios, potentially possessing more complex operational structures, may have greater scope and motivation to manipulate earnings through real activities, such as adjusting production or cutting discretionary expenses. Furthermore, REM exhibits a stronger positive correlation with profitability, which might reflect that firms with superior performance have more ample resources to bear the potential economic costs associated with real activities manipulation.

Regarding governance and control variables, the correlation patterns between SA and variables like firm size and the presence of a CSR committee are highly consistent with the AEM sample, again demonstrating the stability of the sample structure. The various dimensions of national governance also generally show significant positive correlations with REM, but their coefficient patterns exhibit subtle differences compared to the AEM sample; for instance, the correlation with Political Stability and Absence of Violence/Terrorism (PS) is relatively weaker. This preliminarily suggests that different dimensions of national governance might have varying mechanisms and intensities of influence on the two types of earnings management. It is noteworthy that the high correlations among the six national governance dimensions persist, reaffirming the necessity of separately testing their moderating effects in the regression analysis to avoid severe multicollinearity issues.

Overall, the correlation analysis of the REM sample not only reiterates the basic pattern of a positive correlation between SA and earnings management but, more importantly, reveals the tighter link between real earnings management and fundamental firm characteristics. This finding provides strong preliminary evidence for subsequently delving deeper into the impact of SA on the more concealed real activities manipulation and highlights the significant value of distinguishing between different types of earnings management in the research.

5.1.4   Multicollinearity test

Table 10：Variance inflation factor test

Variables	AEM		REM	
	VIF	1/VIF	VIF	1/VIF
ROA	1.530	0.655	1.560	0.639
SA	1.390	0.719	1.380	0.724
Committee	1.360	0.735	1.330	0.752
LOSS	1.330	0.754	1.350	0.741
SIZE	1.220	0.820	1.210	0.823
LEV	1.120	0.893	1.120	0.891
GDP	1.080	0.930	1.080	0.926
GROWTH	1.060	0.943	1.060	0.946
INST	1.020	0.977	1.020	0.982
Opinion	1.010	0.995	1	0.995
MeanVIF	1.210		1.210	

To assess whether severe multicollinearity exists in the multivariate regression models, this study calculated the Variance Inflation Factor (VIF) for all independent variables. As shown in Table 10, for both the main AEM and REM regression models, the VIF values for all independent variables are well below the conventional threshold of 10, with the mean VIF being 1.21 for both models. This result indicates the absence of severe multicollinearity among the independent variables in the models, ensuring the stability of the subsequent regression coefficient estimates and the reliability of statistical inferences.

It is important to note that this test did not include the six national governance dimension indicators. This is because, in the subsequent moderation effect analysis, we will conduct separate median-split group regressions for each governance indicator, rather than including all indicators simultaneously. This stepwise testing strategy methodologically avoids the potential multicollinearity issues that could arise from the high correlations among these indicators. Therefore, the specification of the main regression models is robust.

5.2 Regression results

5.2.1   AEM results

Table 11：AEM results

	Main model	High GE group	Low GE group	High COC group	Low COC group	High PS group	Low PS group	High RQ group	Low RQ group	High Law group	Low Law group	High VA group	High VA group
SA	-0.00397*	-0.00210	-0.00551**	-0.00210	-0.00551**	-0.00100	-0.00775**	0.0000314	-0.00781**	-0.00150	-0.00637***	-0.00198	-0.00437*
	(0.00193)	(0.00283)	(0.00211)	(0.00283)	(0.00211)	(0.00284)	(0.00269)	(0.00222)	(0.00335)	(0.00286)	(0.00205)	(0.00313)	(0.00234)
SIZE	-0.000736	-0.000814	-0.000917	-0.000814	-0.000917	-0.000311	-0.00106	-0.00119	-0.000137	-0.000809	-0.000483	-0.000559	-0.00143
	(0.000775)	(0.00104)	(0.000938)	(0.00104)	(0.000938)	(0.00100)	(0.000895)	(0.000997)	(0.000863)	(0.00110)	(0.000819)	(0.00101)	(0.000889)
LEV	0.00604	-0.00152	0.0177	-0.00152	0.0177	0.00431	0.0115	-0.000917	0.0150	-0.00193	0.0180*	-0.000891	0.0155
	(0.00973)	(0.0137)	(0.0113)	(0.0137)	(0.0113)	(0.0162)	(0.0121)	(0.0116)	(0.0104)	(0.0153)	(0.00929)	(0.0149)	(0.0113)
ROA	0.0511**	0.0262	0.0715*	0.0262	0.0715*	0.0408	0.0606*	0.0299	0.0738**	0.0268	0.0774**	0.0319	0.0612*
	(0.0191)	(0.0204)	(0.0342)	(0.0204)	(0.0342)	(0.0243)	(0.0317)	(0.0245)	(0.0329)	(0.0206)	(0.0260)	(0.0223)	(0.0332)
GROWTH	0.0101*	0.0160	0.00469	0.0160	0.00469	0.00328	0.0184***	0.0144*	0.00858*	0.00332	0.0200***	0.0171	0.00661
	(0.00500)	(0.00915)	(0.00542)	(0.00915)	(0.00542)	(0.00789)	(0.00192)	(0.00758)	(0.00417)	(0.00760)	(0.00372)	(0.00986)	(0.00449)
LOSS	0.0434***	0.0391***	0.0459***	0.0391***	0.0459***	0.0356***	0.0509***	0.0417***	0.0442***	0.0356***	0.0508***	0.0373***	0.0480***
	(0.00374)	(0.00467)	(0.00328)	(0.00467)	(0.00328)	(0.00198)	(0.00404)	(0.00659)	(0.00268)	(0.00246)	(0.00530)	(0.00456)	(0.00370)
Opinion	-0.0114	-0.0173	-0.00302	-0.0173	-0.00302	-0.0224**	-0.00495	-0.0199**	-0.00401	-0.0261***	0.000181	-0.00779	-0.0145**
	(0.00795)	(0.0131)	(0.00579)	(0.0131)	(0.00579)	(0.00783)	(0.0109)	(0.00800)	(0.0112)	(0.00646)	(0.0110)	(0.0121)	(0.00605)
INST	0.0000260	0.00000288	0.0000637	0.00000288	0.0000637	0.0000305	0.0000220	0.0000432	0.0000238	0.0000292	0.0000393	0.0000401	0.0000211
	(0.0000347)	(0.0000568)	(0.0000378)	(0.0000568)	(0.0000378)	(0.0000671)	(0.0000352)	(0.0000617)	(0.0000344)	(0.0000713)	(0.0000347)	(0.0000576)	(0.0000344)
Committee	-0.000310	-0.000179	-0.00231	-0.000179	-0.00231	-0.0000435	-0.00197	0.00156	-0.00331*	0.000156	-0.00268	0.000912	-0.00194
	(0.00171)	(0.00239)	(0.00160)	(0.00239)	(0.00160)	(0.00275)	(0.00127)	(0.00383)	(0.00159)	(0.00280)	(0.00159)	(0.00274)	(0.00112)
GDP	-6.89e-16	-7.22e-16	1.56e-15	-7.22e-16	1.56e-15	-8.54e-16	7.89e-16	-1.64e-15	6.91e-16	-8.38e-16	1.68e-15	-6.20e-16	1.04e-15
	(8.86e-16)	(1.52e-15)	(9.21e-16)	(1.52e-15)	(9.21e-16)	(8.62e-16)	(1.54e-15)	(1.30e-15)	(7.80e-16)	(1.19e-15)	(1.12e-15)	(1.41e-15)	(1.14e-15)
Constant	0.0437***	0.0486**	0.0390**	0.0486**	0.0390**	0.0370**	0.0466**	0.0519**	0.0319**	0.0482**	0.0314*	0.0420**	0.0492***
	(0.0140)	(0.0184)	(0.0177)	(0.0184)	(0.0177)	(0.0170)	(0.0161)	(0.0190)	(0.0136)	(0.0191)	(0.0150)	(0.0180)	(0.0153)
N	4214	2103	2111	2103	2111	2092	2122	2106	2108	2066	2148	2083	2131

r2	0.120	0.105	0.157	0.105	0.157	0.102	0.168	0.121	0.143	0.099	0.170	0.111	0.162
FE_industry	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
FE_year	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Cluster	Country	Country	Country	Country	Country	Country	Country	Country	Country	Country	Country	Country	Country

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

In Table 11, the regression results for the baseline model show that, after controlling for industry and year fixed effects and clustering standard errors at the country level, SA exhibits a negative association with AEM, significant at the 10% level. Regarding the control variables, profitability (ROA), growth opportunities (GROWTH), and the incidence of loss (LOSS) are significant factors influencing AEM. This aligns with common findings in the existing earnings management literature, for instance, Dechow et al. (2010). Other variables, such as firm size, leverage, and the proportion of institutional ownership, did not show significant effects in this model. We interpret this as follows: the essence of multivariate regression lies in isolating the independent effect of a variable, whereas correlation analysis reflects simple bivariate associations. Therefore, when a variable is correlated with other control variables, the effect observed in a simple correlation might include the indirect influence of these related variables. After controlling for these variables in the regression model, its own independent effect may diminish or become non-significant, a common occurrence in econometrics (Chen et al., 2018a). Furthermore, the uniform distribution of the sample size across different groups and the model's R² value both indicate that the model specification is robust and the results are reliable.

The negative association between SA and AEM in the baseline model provides a finding that contradicts impression management theory but aligns with stakeholder theory and signalling theory. This suggests that, within the overall sample, seeking SA is more likely an expression of substantive commitment rather than purely opportunistic impression management. According to stakeholder theory, the firm is a nexus of contracts serving multiple stakeholders (Freeman, 1984). Firms genuinely committed to sustainable development internalise a broad sense of ethical responsibility and a long-

term perspective. They view high-quality financial reporting as an essential tool for building and maintaining trust with key stakeholders such as investors, creditors, and customers (Chih et al., 2008). In this context, seeking SA is a natural extension of their comprehensive commitment to transparency and accountability, as such firms have an inherent motivation to suppress short-term opportunistic behaviours, including accruals-based earnings management, that could damage this trust. Signalling theory provides a complementary explanation: in capital markets characterised by information asymmetry, firms have an incentive to send reliable signals about their high quality or unique attributes. Given that SA entails costs and a rigorous process, seeking high-standard SA can be construed as a strong signal indicating the firm's confidence in its sustainability performance and overall information quality (Simnett et al., 2009). It announces to the market that the firm is willing to subject itself to independent scrutiny and that its disclosures are reliable. In this scenario, the firm is less likely to engage concurrently in accruals-based earnings management because if such manipulation were discovered, it would lead to a complete failure of the signalling mechanism, triggering a severe reputational collapse and crisis of confidence, the cost of which would far outweigh any short-term benefits from earnings management (Bozzolan et al., 2015). Therefore, the negative relationship between SA and AEM can be preliminarily interpreted as firms practising consistently high standards in both non-financial and financial domains, aiming to send a reliable signal of their integrity to the market.

The results of the grouped regressions indicate that the strength of the negative relationship between SA and AEM significantly depends on the quality of national governance in the country and on the specific governance indicator. Specifically, in the low-group for all six dimensions—Government Effectiveness (GE), Control of Corruption (CC), Political Stability and Absence of Violence/Terrorism (PS), Regulatory Quality (RQ), Rule of Law (RL), and Voice and Accountability (VA)—the negative relationship between SA and AEM is significant at least at the 5% level, reaching the highest significance

level of 1% in countries with a low Rule of Law. In contrast, the coefficient for SA is insignificant in all high governance quality groups. This pattern strongly supports the predictions of institutional theory and reveals the boundary conditions for opportunistic behaviour.

Firstly, in countries with weak national governance, characterized by ineffective law enforcement, lax regulation, and prevalent corruption, the cost for firms to engage in opportunistic behaviour is lower (Leuz et al., 2003), potentially leading to fewer constraints on engaging in AEM. However, in such environments, the 'symbolic' value of seeking SA may far exceed its 'substantive' value. Crucially, if a firm in this low-governance context purchases SA as a potent tool for impression management, attempting to divert or numb stakeholder scrutiny of its misconduct in other areas (Maroun, 2019), then concurrently engaging in the more easily detectable 'low-level' manipulation of AEM would severely undermine the positive impression established by SA. Therefore, in this context, we observe that the adoption of SA is associated with lower AEM. We infer that this is not necessarily because firms are more responsible, but rather because SA here may more effectively play the role of a 'cover' for opportunism, leading management to deem it unnecessary to additionally risk using the easily detectable AEM—essentially, avoiding the use of crude tactics that could expose them.

In contrast, in strong institutional environments, such as countries with high government effectiveness and sound rule of law, external institutional pressures themselves impose strong constraints on all firms, significantly raising the cost of any form of opportunistic behaviour (Hope, 2003). In this environment, seeking SA likely becomes more of a 'standard practice' rather than a differentiating strategy. Whether driven by genuine ethical conviction or compelled by powerful institutional pressure, most firms' behaviours converge towards compliance, deterred from employing AEM with its high detection risk. Consequently, the ability of SA as a variable to distinguish between 'opportunists' and 'substantive committers' is diminished, resulting in its statistical insignificance in the regression models. High-quality national governance itself partially 'solves' the agency problem, making the additional governance effect of SA statistically difficult to detect.

In summary, the regression results demonstrate a negative correlation between SA and AEM, initially hinting at the possibility of substantive commitment. However, the in-depth national governance group analysis reveals that this seemingly 'responsible' behaviour is more likely a sophisticated impression management strategy in weak institutional environments. This indicates that the governance value of SA is not intrinsic but is assigned and shaped by the external institutional environment in which it operates.

5.2.2   REM results

Table 12：REM results

	Main model	High GE group	Low GE group	High COC group	Low COC group	High PS group	Low PS group	High RQ group	Low RQ group	High Law group	Low Law group	High VA group	High VA group
SA	0.0367**	0.0799**	0.00140	0.0799**	0.00140	0.0842**	0.0126*	0.0638**	0.0179	0.0849**	0.00364	0.0778**	0.00494
	(0.0168)	(0.0280)	(0.00905)	(0.0280)	(0.00905)	(0.0307)	(0.00560)	(0.0280)	(0.0162)	(0.0297)	(0.0102)	(0.0270)	(0.00728)
SIZE	-0.00850	-0.0101	-0.0254	-0.0101	-0.0254	-0.0129	-0.0169	-0.00636	-0.0116	-0.00599	-0.0243	-0.0101	-0.0227
	(0.0113)	(0.0167)	(0.0201)	(0.0167)	(0.0201)	(0.0224)	(0.0237)	(0.0135)	(0.0158)	(0.0174)	(0.0190)	(0.0154)	(0.0248)
ROA	0.981***	1.338***	0.148	1.338***	0.148	1.363***	0.539**	0.784**	1.193***	1.155**	0.380**	1.478***	0.294**
	(0.335)	(0.412)	(0.179)	(0.412)	(0.179)	(0.420)	(0.163)	(0.346)	(0.388)	(0.417)	(0.170)	(0.376)	(0.114)
GROWTH	0.150***	0.186**	0.0923***	0.186**	0.0923***	0.165**	0.123**	0.206**	0.0935***	0.215***	0.0583**	0.161**	0.133**
	(0.0349)	(0.0616)	(0.0154)	(0.0616)	(0.0154)	(0.0623)	(0.0452)	(0.0755)	(0.0290)	(0.0630)	(0.0222)	(0.0624)	(0.0474)
LOSS	0.0849**	0.146***	-0.0110	0.146***	-0.0110	0.143***	0.0324*	0.0836	0.0948**	0.120**	0.0207	0.147***	-0.00379
	(0.0371)	(0.0427)	(0.0195)	(0.0427)	(0.0195)	(0.0425)	(0.0162)	(0.0472)	(0.0354)	(0.0470)	(0.0175)	(0.0361)	(0.0157)
LEV	-0.174*	-0.0885	-0.142**	-0.0885	-0.142**	-0.121	-0.124*	-0.0860	-0.242**	-0.150	-0.157**	-0.102	-0.139*
	(0.0953)	(0.188)	(0.0636)	(0.188)	(0.0636)	(0.252)	(0.0594)	(0.158)	(0.0864)	(0.237)	(0.0567)	(0.202)	(0.0643)
Opinion	0.0426	-0.0439	0.118	-0.0439	0.118	-0.106**	0.0933	-0.0589**	0.129	-0.0722*	0.111	-0.0301	0.0829
	(0.0694)	(0.0536)	(0.0990)	(0.0536)	(0.0990)	(0.0362)	(0.107)	(0.0258)	(0.0921)	(0.0366)	(0.0909)	(0.0921)	(0.110)

INST	0.00100* (0.000487)	0.000958 (0.000738)	0.000757* (0.000386)	0.000958 (0.000738)	0.000757* (0.000386)	0.000697 (0.000828)	0.00200*** (0.000270)	0.000756 (0.000463)	0.00120* (0.000578)	0.000612 (0.000874)	0.00141** (0.000480)	0.00121* (0.000669)	0.000867 (0.000537)
Committee	0.00394 (0.0101)	0.0205 (0.0261)	-0.0121 (0.0190)	0.0205 (0.0261)	-0.0121 (0.0190)	0.0110 (0.0232)	0.00365 (0.0124)	0.0114 (0.0112)	-0.0110 (0.0132)	-0.0105 (0.0242)	0.0125 (0.0210)	0.0201 (0.0261)	-0.00276 (0.0150)
GDP	-1.88e-14* (9.51e-15)	-1.43e-14 (1.10e-14)	7.36e-15 (1.79e-14)	-1.43e-14 (1.10e-14)	7.36e-15 (1.79e-14)	-1.85e-14* (9.95e-15)	2.44e-14 (1.46e-14)	-2.41e-14* (1.09e-14)	-1.02e-14 (1.39e-14)	-2.29e-14** (7.75e-15)	8.07e-16 (1.60e-14)	-2.14e-14* (1.02e-14)	8.79e-15 (2.18e-14)
Constant	0.371* (0.183)	0.315 (0.281)	0.672* (0.324)	0.315 (0.281)	0.672* (0.324)	0.371 (0.375)	0.429 (0.385)	0.331 (0.208)	0.415 (0.255)	0.294 (0.283)	0.635* (0.299)	0.309 (0.266)	0.608 (0.397)
N	3113	1519	1589	1519	1589	1545	1565	1540	1570	1548	1562	1542	1561
r2	0.527	0.561	0.594	0.561	0.594	0.560	0.604	0.567	0.527	0.557	0.572	0.564	0.576
FE_industry	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
FE_year	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Cluster	Country	Country	Country	Country	Country	Country	Country	Country	Country	Country	Country	Country	Country

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

In stark contrast to the findings for AEM, the baseline model regression results for REM reveal a markedly different story. The core independent variable, SA, shows a positive association with REM, significant at the 5% level. This result strongly suggests that firms seeking SA are not curbing earnings manipulation but may instead be engaging in a higher degree of the more concealed real activities manipulation. Regarding the control variables, profitability (ROA), growth opportunities (GROWTH), and the incidence of loss (LOSS) are also significantly positively correlated with REM, and the coefficient sizes are generally larger than their counterparts in the AEM model. This aligns with existing literature on the motivations for REM (Roychowdhury, 2006; Zang, 2012). The proportion of institutional ownership (INST) also shows a weakly positive correlation, which may reflect short-term market performance pressures. The negative relationship between GDP and REM can be interpreted as a reduction in the level of real earnings management during periods of macroeconomic prosperity. This is primarily because in a favourable economic environment, firms have less need to

intervene with real activities that could damage long-term value. Alternatively, during economic downturns, firms face immense survival pressure and refinancing difficulties, which may prompt management to adopt more aggressive short-term strategies, including using REM to window-dress statements and maintain credibility to avoid bankruptcy. Finally, financial leverage (LEV) shows a significant negative correlation with REM. This can be explained by the fact that highly leveraged firms typically face stricter monitoring and covenant constraints from creditors such as banks (Jensen and Meckling, 1976), which limits management's latitude to engage in REM—which harms long-term firm value—to meet debt terms, thus resulting in lower levels of REM.

Indeed, the positive relationship between SA and REM validates Hypothesis 2 of this study. This finding indicates that, for a substantial number of firms, seeking SA does not reflect a substantive commitment but is more likely a sophisticated opportunistic impression management strategy. According to impression management theory, management has a strong incentive to shape and maintain a positive, responsible organisational image to secure key resources and legitimacy (Leary and Kowalski, 1990). In this context, obtaining SA can be viewed as an efficient tool for securing 'symbolic legitimacy' (Maroun, 2019). Corporate management can not only effectively signal superior performance in environmental, social, and governance aspects to stakeholders but may also strategically use it to divert attention. That is, when management engages in activities detrimental to long-term firm value or the veracity of financial reporting, SA can lower external parties' vigilance regarding deeper scrutiny in other areas (Prior et al., 2008).

Concurrently, from an agency theory perspective, managers have particularly strong motivation to engage in earnings management when their compensation and job security are closely tied to short-term financial performance (Healy and Wahlen, 1999). However, they must also weigh the significant risk of such manipulation being detected. In this scenario, the adoption of SA presents a perfect strategy. On one hand, the responsible image fostered by SA can appease ESG-focused investors and stakeholders. On the other hand, management strategically opts for the more concealed REM,

making their misconduct harder to distinguish from normal operational decisions and less easily detected directly by auditors and regulators (Cohen et al., 2008; Graham et al., 2005). Therefore, the positive SA-REM relationship reveals a 'dual-track' strategy employed by management: flaunting compliance and responsibility prominently in the non-financial realm, while achieving short-term performance targets through covert channels in the financial realm.

The grouped regression results for REM present a pattern distinctly different from the AEM analysis. Specifically, in the high-group for GE, CC, PS, RQ, RL, and VA, the positive relationship between SA and REM is highly significant at the 5% level. In contrast, the coefficient for SA is insignificant in all low governance quality groups.

This finding can be explained by the interaction between institutional pressures and managerial strategy. In strong institutional environments characterized by high government effectiveness, sound rule of law, and stringent regulation, firms are highly cautious about using AEM, which is easily captured by auditors, due to the high risk and cost of exposure and punishment (Leuz et al., 2003). However, performance pressures from the capital market do not diminish accordingly, which prompts management to turn to the more concealed REM as their primary manipulation tool. Simultaneously, in strong-institution countries swept up by the ESG trend, firms face immense legitimacy pressure to demonstrate their actions in sustainability. Consequently, seeking SA becomes an almost necessary social license. Thus, we observe the implementation of an impression management strategy: in high-governance countries, firms simultaneously adopt SA at high frequency and engage in high levels of REM. The role of SA here is likely to use its strong non-financial credibility to compensate for or divert potential scrutiny arising from their aggressive earnings manipulation, which may damage long-term value. In contrast, the relationship between SA and REM becomes insignificant in the low governance groups. Since external monitoring and enforcement mechanisms are inherently weak in countries with poor governance, the constraints on firms engaging in any form of earnings management

are lower. Therefore, firms manipulating via REM do not require such an impression management tool for cover. Simply put, the lack of effective regulatory deterrence means firms might not need to employ the aforementioned impression management strategy, as the inherent risk of REM itself is not high. Hence, in these low-quality national governance environments, the strategic link between SA and REM is diluted. Furthermore, weak institutional environments might imply that capital market attention to and trust in SA is also lower, thereby diminishing its effectiveness as an impression management tool.

In summary, the corporate use of SA is highly strategic. Its relationship with earnings management is not fixed but changes systematically depending on the type of earnings management and the institutional environment of the home country. In strong-institution countries, SA may form a 'symbiotic relationship' with the more concealed REM, acting as an impression management tool. Conversely, the negative correlation between SA and AEM observed at the aggregate level and in weak-institution environments potentially reveals its other facet: as a signal of substantive commitment or a tool for legitimation. These findings ultimately answer H3 and H4 of this paper.

5.3 Robustness test

To mitigate potential endogeneity concerns, such as reverse causality or omitted variables, that might confound the observed relationship between SA and earnings management, a series of robustness checks were conducted. For instance, from a risk management perspective, it is possible that firms do not engage in earnings management because they seek SA, but rather adopt SA strategically to repair their image after aggressive financial practices have triggered reputational risks. To address such concerns and enhance the robustness of the findings, we re-examined the relationships using an instrumental variable approach, alternative dependent variable measures, and propensity score matching.

5.3.1   Tests using the instrumental variable approach

To address potential reverse causality between SA and earnings management, this study employs an instrumental variable (IV) approach, using the one-period lag of SA as an instrument for the current period's SA. The rationale for this choice is based on two points: First, it satisfies the relevance condition. A firm's sustainability practices, including the use of assurance services, typically exhibit strong persistence. This could be due to the continuity of assurance service contracts, the entrenchment of internal management routines, or the need to maintain an established reputation (DeFond and Zhang, 2014; Simnett et al., 2009). Therefore, we can reasonably infer that the SA decision from the previous period is significantly positively correlated with the propensity to adopt SA in the current period.

Second, it plausibly satisfies the exogeneity condition. Theoretically, the lagged value of SA represents a firm's past historical action. It is presumed to influence current earnings management only through its effect on the current SA decision and is unrelated to the current period's error term, which captures unobserved factors affecting current earnings management, such as sudden regulatory changes, management turnover, or unanticipated market shocks (Hoi et al., 2013a). Thus, using the lagged variable helps isolate the one-

way causal effect of SA on earnings management. The two-stage regression models are specified as follows:

$$SA_{i,t} = \alpha_0 + \alpha_1 SA_{i,t-1} + \sum_{j=1}^{k=9} \alpha_j CONTROL_{j,i,t} + [IND, Year, indictors] + \varepsilon_{i,t}$$

(6.1 - stage 1)

$$AEM/REM_{i,t} = \beta_0 + \beta_1 \widehat{SA_{\iota,t}} + + \sum_{j=1}^{k=9} \alpha_j CONTROL_{j,i,t} + [IND, Year, indictors] + \varepsilon_{i,t}$$

(6.2 - stage 2)

Table 13 AEM

Variables	Stage_1 SA	Stage_2 AEM
SA_L1	0.754***	
	(0.016)	
SA_hat		-0.005**
		(0.002)
SIZE	0.016***	-0.001
	(0.003)	(0.000)
ROA	-0.083	0.049***
	(0.083)	(0.015)
GROWTH	-0.007	0.007
	(0.026)	(0.006)
LOSS	-0.018	0.043***
	(0.016)	(0.003)
LEV	0.021	0.007
	(0.033)	(0.005)
Opinion	0.020	-0.012*
	(0.052)	(0.007)
INST	-0.000	0.000
	(0.000)	(0.000)
Committee	0.037***	-0.001
	(0.014)	(0.002)
GDP	0.000*	-0.000
	(0.000)	(0.000)
_cons	-0.086*	0.042***
	(0.047)	(0.008)
N	3654	3654
r2	0.765	0.118
FE_industry	YES	YES
FE_year	YES	YES
Cluster	Country	Country
F	316.7	20.0
*p<0.1,**p<0.05,***p<0.01		

Table 14 REM

	Stage_1 SA	Stage_2 REM
SA_L1	0.711***	
	(0.021)	
SA_hat		0.042***

		(0.015)
SIZE	0.018***	-0.010**
	(0.005)	(0.004)
ROA	-0.126	0.933***
	(0.103)	(0.125)
GROWTH	0.009	0.148***
	(0.032)	(0.035)
LOSS	-0.019	0.083***
	(0.020)	(0.018)
LEV	0.014	-0.184***
	(0.050)	(0.046)
Opinion	0.034	0.058
	(0.070)	(0.049)
INST	-0.000	0.001***
	(0.000)	(0.000)
Committee	0.054***	0.010
	(0.018)	(0.013)
GDP	0.000	-0.000***
	(0.000)	(0.000)
_cons	-0.112	0.398***
	(0.073)	(0.075)
N	2688	2688
r2	0.763	0.542
FE_industry	YES	YES
FE_year	YES	YES
Cluster	Country	Country
F	172.8	17.6
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$		

Tables 13 and 14 present the results of the two-stage least squares regressions using the one-period lag of SA as an instrumental variable. Firstly, the first-stage regression results strongly affirm the validity of our instrumental variable choice. For both the AEM and REM samples, the coefficient for the lagged SA is highly significant and positive at the 1% level (coefficients of 0.754 and 0.711, respectively), and the first-stage F-statistics are well above the conventional critical value of 10. This indicates a strong correlation between the instrumental variable and the endogenous variable, satisfying the first key condition for a valid instrument.

After accounting for the first stage, the regression results for the second stage exhibited a consistent trend with the main regression findings presented in Section 5.2.1. For AEM, the estimated coefficient for SA is significantly negative at the 5% level, showing an increase in significance compared to the main regression results. This suggests that after more cleanly isolating the interference of reverse causality, the suppressive effect of SA on AEM becomes clearer and more definitive. This finding aligns with the predictions of

stakeholder theory and signalling theory, supporting the 'substantive commitment' view (Kim et al., 2012).

For REM, the estimated coefficient for SA is significantly positive at the 1% level. Compared to the baseline model (significant at the 5%) in the section 5.2.2, both its significance level and coefficient value have increased. This provides stronger evidence that the adoption of SA systematically leads to higher levels of REM. This finding offers robust causal support for impression management theory and agency theory. It implies that management may indeed view SA as a strategic tool to cover up more concealed real activities manipulation, which could potentially cause greater damage to long-term value.

In summary, the enhanced significance in the IV regression results likely stems from the effective mitigation of estimation biases caused by measurement error and bidirectional causality. For instance, if certain temporary, unobserved factors simultaneously lead a firm to forgo SA and reduce earnings management, the baseline regression would underestimate the positive relationship between them. The 2SLS estimation, by focusing on the variation in SA driven by 'past behavioural inertia', provides us with an estimate of the causal effect that incorporates a temporal sequence (Roberts and Whited, 2013). Ultimately, the results of this test indicate that the negative relationship between SA and AEM, and the positive relationship between SA and REM, are not driven by endogeneity but reflect a stable causal linkage between them.

5.3.2   CSEM

Recognising the diversity and substitutability of earnings management strategies, this study introduces CSEM as a complementary and alternative measure to REM to test the robustness of the findings. CSEM is another highly opaque manipulation technique that involves inappropriately reclassifying core expenses to inflate the core profit margin (McVay, 2006). CSEM is similar in nature to REM; both achieve manipulation by distorting real economic activities or financial classifications and are more difficult for external stakeholders to detect than traditional accruals-based earnings management (Fan et al., 2010). The motivation for firms to choose CSEM often arises when facing pressure to meet

core earnings targets, particularly when AEM is constrained or the costs of REM are prohibitively high (Haw et al., 2012). Therefore, if firms seeking SA indeed have a propensity to employ opaque earnings management tools, then SA should also be positively associated with higher levels of CSEM. Incorporating this measure into the analytical framework tests the robustness of this study's core hypothesis: namely, that the pattern of the relationship with SA should remain consistent, regardless of whether REM or CSEM is used as the proxy for opaque manipulation.

Table 15 CSEM

	Main model	High GE group	Low GE group	High COC group	Low COC group	High PS group	Low PS group	High RQ group	Low RQ group	High Law group	Low Law group	High VA group	High VA group
SA	0.00884* (0.00497)	0.00551 (0.00918)	0.00720 (0.0129)	0.00551 (0.00918)	0.00720 (0.0129)	0.00993 (0.00799)	-0.00215 (0.00806)	-0.00623 (0.00466)	0.0257*** (0.00719)	0.00893 (0.00559)	0.00734 (0.0125)	0.00779 (0.0101)	-0.00122 (0.00743)
SIZE	0.0000673 (0.00216)	0.000355 (0.00225)	0.00221 (0.00518)	0.000355 (0.00225)	0.00221 (0.00518)	-0.00184 (0.00286)	0.00522 (0.00296)	0.00373 (0.00207)	-0.00412 (0.00437)	-0.000266 (0.00213)	0.00220 (0.00570)	-0.000602 (0.00340)	0.00488* (0.00249)
ROA	-0.0172 (0.0865)	-0.104 (0.139)	0.165 (0.110)	-0.104 (0.139)	0.165 (0.110)	-0.0747 (0.147)	0.0709 (0.122)	0.0672 (0.0372)	-0.125 (0.207)	-0.0430 (0.125)	0.0521 (0.130)	-0.174 (0.164)	0.232** (0.0934)
GROWTH	-0.183*** (0.0535)	-0.115 (0.107)	-0.259*** (0.0433)	-0.115 (0.107)	-0.259*** (0.0433)	-0.187* (0.0971)	-0.172** (0.0720)	-0.243*** (0.0666)	-0.114 (0.0832)	-0.170* (0.0879)	-0.195** (0.0776)	-0.188 (0.113)	-0.194*** (0.0396)
LOSS	0.0630* (0.0339)	0.109* (0.0533)	0.0319 (0.0269)	0.109* (0.0533)	0.0319 (0.0269)	0.0884* (0.0419)	0.0423 (0.0617)	0.0726 (0.0481)	0.0569 (0.0462)	0.0775 (0.0439)	0.0535 (0.0516)	0.110* (0.0566)	0.0269 (0.0269)
LEV	0.0273 (0.0185)	-0.0211 (0.0363)	0.0485* (0.0236)	-0.0211 (0.0363)	0.0485* (0.0236)	-0.0166 (0.0441)	0.0420* (0.0189)	0.0469 (0.0328)	0.0000730 (0.0380)	-0.0165 (0.0350)	0.0446** (0.0181)	-0.0308 (0.0374)	0.0506* (0.0263)
Opinion	-0.0160 (0.0140)	0.0114 (0.0172)	-0.0330** (0.0114)	0.0114 (0.0172)	-0.0330** (0.0114)	0.0351 (0.0337)	-0.0349* (0.0159)	0.0260 (0.0164)	-0.0489*** (0.0135)	0.0478* (0.0224)	-0.0417*** (0.00960)	-0.0171 (0.0255)	-0.0134 (0.0100)
INST	-0.000312 (0.000209)	-0.000422 (0.000469)	-0.000172 (0.000142)	-0.000422 (0.000469)	-0.000172 (0.000142)	-0.000301 (0.000446)	0.000355* (0.000186)	-0.000279 (0.000340)	-0.000329 (0.000276)	-0.000137 (0.000461)	0.000478** (0.000164)	-0.000377 (0.000487)	-0.000201 (0.000138)
Committee	0.00381 (0.00564)	0.00821 (0.0112)	-0.00499 (0.00635)	0.00821 (0.0112)	-0.00499 (0.00635)	0.00286 (0.0102)	-0.00557 (0.00939)	0.00618 (0.0110)	0.00308 (0.0103)	-0.00211 (0.00812)	0.00321 (0.00708)	0.00770 (0.0115)	-0.00662 (0.00467)
GDP	-7.14e-15*** (1.66e-15)	1.06e-16 (3.28e-15)	-1.78e-14** (6.49e-15)	1.06e-16 (3.28e-15)	-1.78e-14** (6.49e-15)	-1.44e-14*** (3.41e-15)	-1.84e-14 (9.96e-15)	-4.33e-15 (3.17e-15)	-1.02e-14*** (2.89e-15)	-5.07e-15** (1.83e-15)	-1.68e-14** (6.54e-15)	-8.17e-15** (3.54e-15)	-1.44e-14** (5.88e-15)
Constant	0.0153 (0.0403)	0.0110 (0.0424)	0.00542 (0.0797)	0.0110 (0.0424)	0.00542 (0.0797)	0.0605 (0.0398)	-0.0272 (0.0562)	-0.0496 (0.0315)	0.0895 (0.0880)	0.0254 (0.0344)	0.00495 (0.0973)	0.0451 (0.0612)	-0.0472 (0.0413)
N	3085	1503	1582	1503	1582	1533	1552	1526	1559	1533	1552	1529	1556

r2	0.031	0.043	0.050	0.043	0.050	0.046	0.031	0.050	0.032	0.055	0.035	0.044	0.040
FE_industry	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
FE_year	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Cluster	Country	Country	Country	Country	Country	Country	Country	Country	Country	Country	Country	Country	Country

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

Table 15 presents the regression results using CSEM as the dependent variable. The main model shows a positive correlation between SA and CSEM, significant at the 10% level. This finding is consistent in direction with the REM results, indicating that firms seeking SA are more likely to engage in opaque earnings manipulation. It is noteworthy that CSEM measures a directional manipulation behaviour that systematically aims to overstate core earnings (McVay, 2006). Therefore, the positive correlation between SA and CSEM suggests that assured firms are not simply increasing the overall volatility of earnings management but are strategically engaging in upward classification shifting that beautifies core performance. According to impression management theory, management uses SA to build a responsible non-financial image while simultaneously using CSEM to embellish key core financial performance, thereby signalling strong accountability to the market.

In the analysis of the moderating effect of national governance, the pattern of results differs from those observed for AEM and REM. We find that in the low RQ subsample, SA is significantly positively associated with CSEM at the 1% level, whereas no significant relationship is observed in the high RQ subsample. This finding reveals the differential sensitivity of various earnings management tools to the institutional environment. CSEM, as a manipulation method based on accounting classification, entails relatively low implementation costs but depends on the presentation of financial reports. In weak regulatory environments, where scrutiny by auditors and regulators is more lenient, firms can implement classification manipulation at low cost with a lower risk of detection. In such contexts, the responsible image cultivated by SA may further diminish the vigilance of external monitors. That is,

external monitors may underestimate the likelihood of financial statement beautification by these responsible firms (Abernathy et al., 2014), thereby allowing the symbiotic relationship between SA and CSEM to become pronounced.

By contrast, REM is significant in high-governance environments but insignificant in low-governance environments. This divergence can be explained as follows: in countries with high regulatory quality, auditors and external monitors are more professional and possess a greater capacity to detect accounting-based manipulations, such as CSEM. Consequently, the risk of exposure for such manipulations is higher. To meet short-term performance pressures, management may instead resort to REM, which, despite entailing higher economic costs, offers greater concealment, thereby evading auditor scrutiny. In low-regulatory environments, management can avoid the substantial economic costs associated with REM and instead utilise the lower-cost CSEM as a substitute for more easily detectable AEM to achieve earnings targets. The following flowchart illustrates this potential decision-making inference.
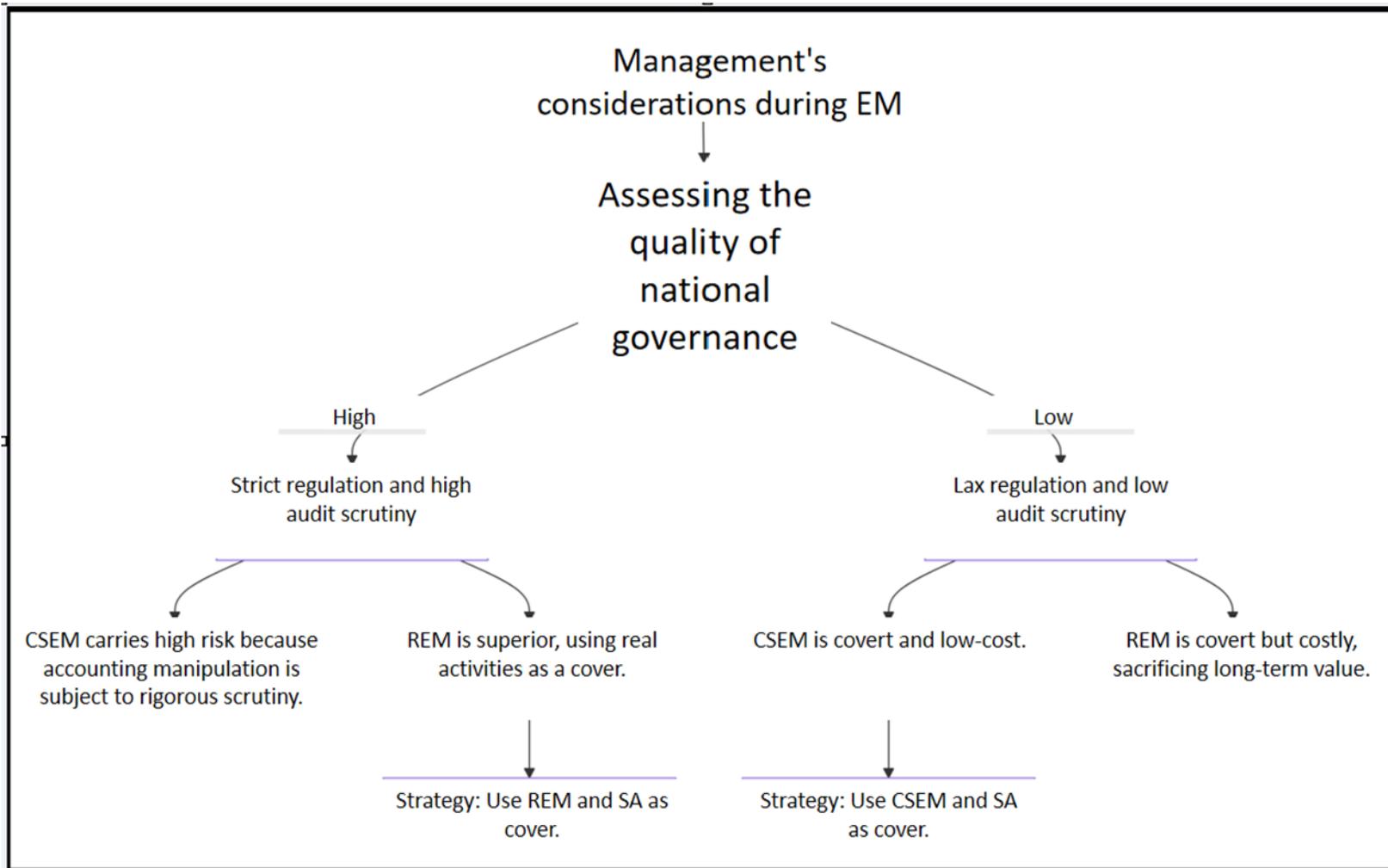
Figure 1 Impression management decision inference - Based on different EM techniques

It is worth noting that in the baseline model, the significance of the association between SA and CSEM is only at the ten per cent level, and the moderating effect is significant only for certain governance dimensions. This pattern of results may raise concerns regarding the robustness of the CSEM findings. However, this weak significance may precisely reflect the particularity of CSEM as a highly technical manipulation tool whose usage is contingent on specific conditions. The risk of CSEM exposure is highly dependent on regulatory quality and auditor expertise; therefore, on average, its relationship with SA is less stable than that observed for REM. Yet, under specific contexts, such as in countries with low regulatory quality, the relationship is highly significant, indicating that its economic significance should not be overlooked. From a policy perspective, even if the average effect is modest, the cumulative consequence of systematic, small effects could have a material impact on financial reporting quality.

In summary, the test results for CSEM corroborate those for REM, together revealing a robust association between SA and covert earnings management. These findings not only confirm that firms may use SA as an impression management tool but also, more precisely, indicate that the specific manifestations and enabling conditions of such opportunistic behaviour vary with the institutional environment. In weak regulatory environments, firms are more inclined to employ the lower-cost CSEM; in strong regulatory environments, they shift towards the more costly but more covert REM. This finding deepens our understanding of the complex relationship between SA and different earnings management tools.

5.3.3 Propensity matching score (PSM)

To control for selection bias arising from systematic differences in observable characteristics between the treatment group (firms seeking SA) and the control group (firms not seeking SA), this study employs Propensity score matching. The specific procedure is as follows: First, a Probit model is used, with all control variables as covariates, to estimate the propensity score for each firm-year observation to seek SA. Subsequently, based on this score, control group samples with similar characteristics are identified for each treatment group sample. Specifically, this study adopts two matching methods for mutual verification.

First, nearest-neighbour 1:3 matching. For each treatment group sample within the common support region, we identify the three most similar control group samples. This approach is used because SA-seeking firms constitute a high proportion (approximately 70%) of the sample, making the control group relatively scarce. Using 1:3 matching instead of 1:1 matching allows for more efficient use of the limited control group information. It increases the sample size and thus enhances the statistical power of the estimation, while avoiding a significant degradation in matching quality (Caliendo and Kopeinig, 2008).

Second, kernel matching. This method uses a weighting function to match each treatment group sample with all control group samples, where the weights are determined by the closeness of the propensity scores. Its advantage lies in utilising the entire control group information, which typically results in lower estimation variance, yielding smoother and more precise results (Heckman et al., 1998).

Table 16 PSM test

VARIABLES	AEM		REM	
	Proximity matching	Kernel matching	Proximity matching	Kernel matching
SA	-0.0038*	-0.0038*	0.0362**	0.0370**
	(-1.9582)	(-1.9636)	(2.2679)	(2.2546)
SIZE	-0.0010	-0.0010	-0.0081	-0.0091
	(-1.2929)	(-1.3535)	(-0.7247)	(-0.8070)
ROA	0.0536**	0.0503**	0.9668**	0.9798***
	(2.7380)	(2.7280)	(2.8679)	(2.9440)
GROWTH	0.0104*	0.0099*	0.1490***	0.1512***
	(1.9579)	(1.9289)	(3.9207)	(4.0933)
LOSS	0.0440***	0.0436***	0.0850**	0.0870**
	(11.9658)	(11.7078)	(2.2117)	(2.3232)

LEV	0.0052	0.0048	-0.1675	-0.1765*
	(0.5363)	(0.5070)	(-1.6224)	(-1.8093)
Opinion	-0.0116	-0.0115	0.0428	0.0422
	(-1.4596)	(-1.4479)	(0.6137)	(0.6086)
INST	0.0000	0.0000	0.0008*	0.0010*
	(0.3114)	(0.4877)	(1.7493)	(1.9575)
Committee	-0.0001	-0.0001	0.0056	0.0048
	(-0.0657)	(-0.0754)	(0.5426)	(0.4619)
GDP	-0.0000	-0.0000	-0.0000*	-0.0000**
	(-1.0223)	(-1.0394)	(-1.9806)	(-2.1177)
Constant	0.0478***	0.0486***	0.3644*	0.3821*
	(3.5129)	(3.6934)	(1.9976)	(2.0906)
N	4,146	4,157	3,046	3,056
R-squared	0.123	0.122	0.524	0.527
FE_industry	YES	YES	YES	YES
FE_year	YES	YES	YES	YES
Cluster	Country	Country	Country	Country
*** p<0.01, ** p<0.05, * p<0.1				

Table 16 presents the regression results after applying the two different PSM methods. The results from both the nearest-neighbour 1:3 matching and the kernel matching are highly consistent with the findings from the baseline regressions and the instrumental variable approach. This robustly confirms the core conclusions of this study and significantly alleviates concerns regarding selection bias caused by systematic differences in observable variables.

After controlling for observable characteristics such as firm size, profitability, and governance structure, the estimates from the PSM samples clearly replicate the distinct relationship patterns between SA and the two types of earnings management. For accruals-based earnings management (AEM), the coefficient for SA remains negative and significant at the 10% level under both matching methods. For real earnings management (REM), the coefficient for SA is significantly positive at the 5% level. This finding indicates that even when comparing groups of firms with highly similar characteristics, those seeking SA still exhibit significantly lower levels of AEM and significantly higher levels of REM.

The estimated values derived from the two matching methods are nearly identical, further strengthening our confidence in the research conclusions. Nearest-neighbour matching enhances estimation efficiency by retaining a larger sample size, while kernel matching achieves smoother and more precise estimates by utilizing the entire control group information. The consistency of their conclusions demonstrates that the findings are robust under different matching assumptions.

5.4 Additional analysis

5.4.1 Consider the impact of representative region and time nodes

To examine the generalizability and temporal validity of the research findings, this study conducted two additional robustness tests. The first test involved removing UK firms from the full sample. Given that UK firm observations constitute over 20% of the sample, this step aims to prevent potential bias arising from the over-representation of a single country. It ensures that the revealed relationship between SA and earnings management is a general phenomenon within the scope of our examination, rather than being driven predominantly by UK-specific institutional or market characteristics.

The second test introduced a 2013-time dummy variable and its interaction term with SA. This examines whether the revision of the ISAE 3000 standard altered the economic implications of SA. The issuance of the revised ISAE 3000 in 2013 was a key milestone in ESG practice, particularly in the field of non-financial assurance, as it enhanced the standardisation and consistency of assurance engagements. Testing for this policy shock helps us understand whether the relationship between SA and corporate financial behaviour evolved as SA transitioned from an emerging practice towards standardisation, thereby providing evidence for the theories within a dynamic context.

Table 17 Additional analysis

Variables	After isolating UK companies		Distinguishing before and after 2013	
	AEM	REM	AEM	REM
SA	-0.00418*	0.0403*	-0.005**	0.029
	(0.00229)	(0.0210)	(0.002)	(0.018)
post2013			0.000	0.000
			(.)	(.)
SA_post2013			0.003	0.029
			(0.004)	(0.034)
SIZE	-0.0000329	-0.0122	-0.001	-0.008
	(0.000845)	(0.0134)	(0.001)	(0.011)
ROA	0.0601**	1.219***	0.051**	0.982***
	(0.0239)	(0.383)	(0.019)	(0.334)

GROWTH	0.00725	0.131**	0.010*	0.151***
	(0.00581)	(0.0451)	(0.005)	(0.035)
LOSS	0.0394***	0.108**	0.043***	0.085**
	(0.00226)	(0.0370)	(0.004)	(0.037)
LEV	0.0133	-0.158	0.006	-0.173*
	(0.0103)	(0.130)	(0.010)	(0.095)
Opinion	-0.00840	0.0704	-0.011	0.043
	(0.00986)	(0.119)	(0.008)	(0.070)
INST	0.0000403	0.00112**	0.000	0.001*
	(0.0000355)	(0.000507)	(0.000)	(0.000)
Committee	0.000328	-0.00537	-0.000	0.004
	(0.00217)	(0.0141)	(0.002)	(0.010)
GDP	-1.27e-15	-2.49e-14***	-0.000	-0.000*
	(9.22e-16)	(8.22e-15)	(0.000)	(0.000)
Constant	0.0302**	0.412*	0.043***	0.361*
	(0.0139)	(0.227)	(0.014)	(0.184)
N	3258	2470	4214	3113
r2	0.113	0.512	0.114	0.509
FE_industry	YES	YES	YES	YES
FE_year	YES	YES	YES	YES
Cluster	Country	Country	Country	Country
*** p<0.01, ** p<0.05, * p<0.1				

Table 17 shows that after removing UK firms, the coefficient directions and significance levels of the core independent variable remain entirely consistent with the full-sample baseline model. SA maintains a significant negative correlation with AEM at the 10% level and a significant positive correlation with REM at the 10% level. This result carries important implications for robustness. It indicates that this study's primary finding—the heterogeneous relationship between SA and different types of earnings management—is not driven by the largest single country in the sample. The behavioural patterns of firms in other European countries are not fundamentally different from those of UK firms; the dual role played by SA is prevalent across the European market. This significantly enhances the external validity of the research conclusions, confirming that the revealed pattern is a robust characteristic among large European listed firms, not an anomaly specific to a particular country.

To examine the temporal stability of the research conclusions and the influence of the evolution of assurance standards, this study introduces a time dummy variable for the year

2013 (post2013) and its interaction term with SA (SA_post2013). Post2013 takes the value of 0 for years prior to 2013 and 1 for 2013 and thereafter. Its coefficient captures the average change in earnings management levels for all firms, regardless of SA adoption status, before and after 2013. The interaction term, SA_post2013, captures the differential change in earnings management behaviour between firms that adopted SA and those that did not in the post-2013 period.

The regression results are presented in Table 17. The coefficient for post2013 is insignificant in both the AEM and REM models, indicating the absence of a universal temporal trend in earnings management affecting all firms around 2013. The interaction term, SA_post2013, is also insignificant in both models, suggesting that 2013, the year of the ISAE 3000 revision, did not represent a sharp institutional discontinuity that significantly altered the relationship between SA and earnings management.

Notably, in the AEM model, the coefficient for SA remains significantly negative after including the time interaction. This finding implies that, regardless of firms' underlying motivations, the proliferation of SA has yielded a fundamental governance benefit: it systematically constrains the most detectable form of accounting manipulation, AEM. In other words, the constraining effect of SA on AEM exhibits relative stability and has not been diminished by the passage of time or the revision of standards.

By contrast, in the REM model, the coefficient for SA becomes insignificant after controlling for the time effect. Combined with the insignificant interaction term, it can be inferred that the association between SA and REM did not change abruptly in 2013 due to the ISAE 3000 revision. Rather, it appears to have been progressively weakened as SA practices became increasingly standardised. Prior to 2013, SA was a relatively cutting-edge voluntary practice. Early adopters may have included a larger proportion of opportunistically driven firms that used SA as an impression management tool to cover REM. Following the revision and promotion of ISAE 3000, SA practices gradually became more standardised and widespread. The motivations for adopting SA became increasingly diverse, encompassing substantive commitment, mimetic isomorphism driven by legitimacy pressures, and continued opportunism seeking impression management

benefits. This motivational heterogeneity diluted the strength of SA as a signal of impression management, rendering the statistical association between SA and REM insignificant in the overall sample.

In summary, this additional analysis reveals the dynamic nature of the relationship between SA and earnings management. The constraining effect of SA on AEM is relatively robust. However, its value as a signal for REM has weakened as the institutional environment has evolved. For regulators, while promoting the popularity of assurance is important, greater attention should be paid to this signal dilution effect. Sustaining the capacity of assurance to differentiate firms' true motivations requires continuously enhancing assurance quality and implementing differentiated requirements.

5.4.2 Three REM strategies

Real earnings management is not a homogeneous construct but comprises a series of heterogeneous strategies that manipulate specific operational activities (Zang, 2012). Decomposing REM for examination allows us to move beyond the ambiguity of aggregate measures and precisely identify the specific channels through which firms implement opportunistic behaviour, thereby providing more actionable insights. Following the classic framework of Roychowdhury (2006), this study decomposes REM into three core dimensions: abnormal operating cash flow (ABCFO), which primarily reflects actions to boost revenue short-term through sales manipulation, such as offering unusual price discounts or lenient credit terms; abnormal production costs (ABPROD), which represents the strategy of overproduction to artificially lower the cost of goods sold by spreading fixed costs over more units; and abnormal discretionary expenses (ABDISEXP), which refers to myopic practices of immediately beautifying profits by cutting expenditures aimed at long-term development, such as R&D and advertising. These three types of manipulation differ significantly in their executability, economic cost, and opaqueness. Analysing the impact of SA on each of them can profoundly reveal the specific manipulation pathways preferred by management after seeking assurance.

Table 18 three test in REM

Variables	(1) ABCFO	(2) ABPROD	(3) ABDISEXP
SA	0.003	-0.032**	0.038**
	(0.004)	(0.015)	(0.013)
SIZE	0.003	0.003	-0.004
	(0.002)	(0.010)	(0.010)
ROA	0.642***	-1.102***	0.307*
	(0.052)	(0.193)	(0.172)
GROWTH	-0.016	0.073***	0.103***
	(0.010)	(0.024)	(0.019)
LOSS	0.034***	-0.085***	0.039**
	(0.003)	(0.010)	(0.015)
LEV	0.048**	-0.068	-0.090
	(0.022)	(0.072)	(0.059)
Opinion	-0.008	-0.134**	0.166**
	(0.013)	(0.059)	(0.059)
INST	0.000**	-0.001***	0.001***
	(0.000)	(0.000)	(0.000)
Committee	0.004	-0.000	-0.005
	(0.004)	(0.015)	(0.014)
GDP	-0.000	0.000	-0.000*
	(0.000)	(0.000)	(0.000)
Constant	-0.093**	0.032	0.036
	(0.039)	(0.155)	(0.150)
N	3113	3113	3113
r2_a	0.485	0.520	0.574
FE_industry	YES	YES	YES
FE_year	YES	YES	YES
Cluster	Country	Country	Country

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 18's regression results reveal the differential impact of SA on the three types of real activities manipulation. Specifically, SA shows a significant positive correlation with ABDISEXP at the 5% level. This indicates that firms seeking sustainability assurance are more inclined to manipulate earnings by cutting discretionary expenditures crucial for long-term competitiveness, such as R&D and advertising. This finding implies that while these firms publicly commit to long-term sustainable development in their reports and seek third-party verification, their internal financial decisions may be mortgaging the firm's future value for short-term performance. This behaviour aligns strongly with the predictions of impression management theory and agency theory: management utilises the 'responsible' halo created by SA to cover short-sighted opportunistic actions that damage the company's long-term innovation capability and market position.

In stark contrast, SA shows a significant negative correlation with abnormal production costs (ABPROD) at the 5% level. This is likely because overproduction leads to inventory accumulation and noticeably increased storage costs. This manipulation method is not only

economically costly but also leaves traces relatively easily detectable by internal and external analysts. Therefore, firms potentially already exposed to a high-scrutiny environment might proactively avoid this particular method. Furthermore, the impact of SA on abnormal operating cash flow (ABCFO) is insignificant. Although sales manipulation can quickly boost revenue, it directly erodes gross profit margins and can damage brand image, with fairly direct negative consequences. Thus, management might deem this method of earnings manipulation less than ideal.

In summary, the positive relationship between SA and aggregate REM is primarily driven by an increase in abnormal discretionary expenses. This can be succinctly interpreted as follows: firms obtaining a 'green' or 'responsible' label may be strategically reducing investments in intangible assets like innovation and brand building. Their professed commitment to sustainable development might be superficial, ultimately sacrificing long-term growth.

This decomposition analysis pushes the study to a deeper level. It demonstrates that SA is not only associated with aggregate REM but is systematically linked to the specific type of REM chosen by firms. This has clear practical implications for regulators, investors, and auditors. When evaluating a firm's ESG performance, one should not be satisfied merely with the presence of an assured report. It is crucial to look beyond the surface and closely monitor the trends in its core discretionary investments, such as R&D spending. These financial decisions, hidden behind glossy ESG reports or other practice, may be the key to revealing the firm's true intentions and long-term risks.

6. Conclusion

Under the sweeping global ESG wave, firms have become inevitably and deeply enmeshed in the tide of sustainability practices and disclosures (Thornton and Hsu, 2001; Elliott et al., 2014; Ryou et al., 2022). Within this context, a thorough investigation into the economic consequences of various ESG practices, particularly their impact on financial reporting quality—a cornerstone of corporate governance—has become a focal point for

academic enquiry. This study focuses on the specific and increasingly prevalent practice of sustainability assurance (SA). Addressing the current state of relatively scarce and inconsistent research findings concerning the relationship between SA and earnings management, it provides a timely and in-depth exploration. Based on a multinational panel dataset of STOXX Europe 600 constituent firms from 2003 to 2019, and employing impression management theory as the dominant framework whilst integrating legitimacy theory, agency theory, stakeholder theory, and institutional theory, this study constructs a multi-dimensional explanatory model. By differentiating between AEM, REM, and CSEM, and through a series of rigorous empirical tests and robustness analyses, this research uncovers the complex and often contradictory relationship between SA and corporate financial reporting behaviour.

The core findings can be summarised in three points. First, the adoption of SA exhibits a weak negative association with accruals-based earnings management (AEM). Second, SA shows a significant positive association with the more opaque real earnings management (REM) and classification shifting (CSEM). Crucially, these two findings strongly suggest that the motivation for firms pursuing SA is the pursuit of symbolic legitimacy and impression management, thereby diverting external stakeholder attention from earnings manipulation. Third, the aforementioned relationships are systematically moderated by the quality of national governance. Specifically, in weak institutional environments, SA functions primarily as a legitimacy tool whose symbolic value prompts firms to avoid easily detectable AEM to preserve the 'moral credibility' gained through assurance. Conversely, in strong institutional environments, where stringent regulation has already broadly suppressed AEM, SA forms a complementary strategy with the more concealed REM: firms leverage the responsible image constructed by SA to provide 'reputational cover' for engaging in real earnings management that is difficult to trace. This finding indicates that the governance efficacy of SA is not intrinsic but is deeply embedded within its national governance context, reflecting a strategic trade-off made by management between impression management and financial manipulation.

The findings of this study carry profound implications and significant policy relevance for a diverse group of stakeholders. For regulators and policymakers, this study conveys a clear and cautious message. Simply promoting or mandating SA will not automatically translate into improved financial reporting quality. Against the backdrop of the EU's CSRD, which will soon fully implement mandatory SA, policymakers must be vigilant against potential 'symbolic compliance' strategies firms may adopt under strong institutional pressure—merely obtaining an assurance report without making substantive operational improvements, either financial or non-financial. Consequently, the regulatory focus should be on strengthening the overall effectiveness of national-level governance, including perfecting the rule of law, enhancing regulatory quality, and intensifying enforcement. This would compress the operational space for firms to instrumentalise SA as an impression management tool. For other global regions still in the voluntary SA phase, this study provides a forward-looking risk alert, underscoring the necessity of building a robust institutional foundation.

For corporations and their management, this study serves as a warning: viewing SA as a 'moral smokescreen' to conceal aggressive practices is a high-risk strategy. In the long run, the substantive integration of ESG commitments with financial integrity is the only path to building a sustainable competitive advantage. Any strategy that decouples non-financial performance from financial soundness may ultimately damage the firm's long-term value and market credibility.

For investors, analysts, and credit rating agencies, this study calls for deeper due diligence in the decision-making process. When confronted with an assured sustainability report, they should not be simply dazzled by its 'halo' but should treat it as a starting point for analysis, not the conclusion. It is imperative to scrutinise the firm's earnings quality thoroughly, particularly for signs of real activities manipulation and classification shifting, and to make a comprehensive judgement considering the firm's national governance environment.

For sustainability reporting standard-setters and SA providers, this study urges attention to the synergistic development of assurance standards and financial auditing standards, and

to heighten the vigilance of assurance procedures towards potential financial misstatement, especially from opaque manipulation. Enhancing the technical rigour and depth of SA itself is the credibility foundation for ensuring it serves the long-term goals of sustainable development, rather than degenerating into a tool for opportunism.

This study has several limitations, which simultaneously constitute valuable avenues for future research. First, while focusing primarily on national governance as a macro-institutional factor, it does not fully account for the dynamic impact of broader external economic shocks, such as the global financial crisis or the COVID-19 pandemic, on corporate ESG strategies and financial behaviour. Future research could explore how macroeconomic uncertainty moderates the relationship between SA and earnings management. Secondly, on an operational level, this study treats SA as a homogeneous binary decision, failing to meticulously distinguish the quality differences and associated economic consequences potentially arising from different assurance providers. Future research could delve into the motivations behind a firm's choice of SA provider and how this choice correlates with earnings management strategies. Finally, the sample is concentrated in the relatively institutionally mature developed markets of Europe. While this choice ensured sample standardisation and comparability, it limits the generalisability of the conclusions to emerging markets and developing countries. The institutional environments, market pressures, and corporate motivations in these regions differ systematically from those in Europe. It is highly necessary for future research to extend this inquiry to different geographical contexts to test the external validity of this study's findings and to uncover the unique interactive patterns between ESG practices and financial reporting quality under different institutional settings.

In summary, this study illuminates the complexity and inherent tensions within corporate governance practices under the ESG wave. It calls upon both academia and practice to move beyond simplistic 'black-and-white' narratives and the assumption that 'compliance equates to morality'. Instead, a posture of prudent scepticism should form the methodological kernel, guiding a dialectical examination of the ethical substance of corporate ESG conduct within the dynamic interplay of national governance and corporate

strategy. Only by situating corporate non-financial commitments within an analytical framework that acknowledges external institutional complexity and internal agency conflicts can we avoid a short-sighted view of the interaction between policy and corporate behaviour, thereby gradually progressing towards a more authentic path to sustainable development.

Chapter 4 _ Independent assurance of sustainability reports and tax avoidance: The moderating effect of national culture.

1. Introduction

In the twenty-first-century global business landscape, Environmental, Social, and Governance (ESG) factors have evolved from ethical concerns in the public discourse into core drivers reshaping corporate strategy and operations. This transformation is traceable to the response to a series of global risks. The existential threat posed by climate change is particularly salient, manifesting in increasingly frequent extreme weather events, sea-level rise, and ecosystem collapse, which not only endanger the natural environment but also pose profound challenges to global economic stability and human security (IPCC, 2022). Concurrently, social inequality has become increasingly acute. Issues such as widening income disparity, gender discrimination, racial injustice, and insufficient protection of labour rights continue to trigger social unrest and erode social cohesion (Piketty, 2014). At the governance level, risks including corporate corruption, lack of board diversity, the decoupling of executive pay from performance, and data privacy abuses persistently undermine market integrity and investor confidence (OECD, 2015). Addressing these multidimensional ESG risks is no longer an optional corporate social responsibility initiative but an imperative linked to long-term value creation, the licence to operate, and even global sustainable development. Consequently, a consensus holds that by adopting ESG practices, such as reducing carbon emissions, safeguarding labour rights in supply chains, and enhancing board independence, firms can not only mitigate their own exposure to physical risks (e.g., supply chain disruption from climate disasters) and transition risks (e.g., stranded high-carbon assets due to policy shifts) but also make substantive contributions to protecting the global natural environment, promoting social equity and inclusion, and building a more responsible business civilisation (Eccles and Klimenko, 2019).

Confronted with these severe challenges, intergovernmental organisations, national governments, regulators, and non-governmental organisations (NGOs) worldwide have

collectively propelled a formidable wave of ESG and sustainable development, placing firms under unprecedented policy and institutional pressure. A series of landmark international initiatives and regulatory frameworks have been established, underscoring the new rules for corporate operations. For instance, the Kyoto Protocol (1997) and the Paris Agreement (2015) set legally binding targets for global cooperation on reducing greenhouse gas emissions, compelling firms to integrate carbon accounting and reduction into their core strategies (Kolk and Levy, 2001). In the European Union, the Sustainable Finance Disclosure Regulation (SFDR) and the Corporate Sustainability Reporting Directive (CSRD) mandate that financial institutions and large firms disclose the impact of their investments and business activities on sustainable development objectives, significantly elevating transparency and accountability requirements (Deloitte, 2022). Furthermore, the United Nations' Sustainable Development Goals (SDGs) provide a shared blueprint for global development by 2030, guiding firms to align their operations with the 17 goals (George et al., 2018). In international capital markets, the frameworks developed by the Task Force on Climate-related Financial Disclosures (TCFD) and its successor, the International Sustainability Standards Board (ISSB), aim to integrate climate-related information into mainstream financial reporting (TCFD, 2017). The Glasgow Climate Pact (COP26, 2021), further strengthened the global commitment to transitioning to net-zero emissions, placing particular emphasis on the critical role of the private sector. Simultaneously, the standards provided by the Global Reporting Initiative (GRI) have become the de facto global standard for corporate sustainability reporting, normalising its disclosure content (Brown et al., 2009). These diverse initiatives from supranational bodies, governments, investors, and civil society collectively weave a dense network of institutional and international compliance, making ESG a strategic imperative that firms cannot avoid.

Building upon the foregoing, this still-evolving ESG wave has fundamentally reshaped the operational and existential environment for firms. From a traditional financial perspective, corporate objectives are undergoing a quiet yet profound transformation: shifting from the sole pursuit of shareholder wealth maximisation towards balancing and serving a broader range of stakeholders (Freedman and Jaggi, 2011). Within this context, firms are

compelled, either proactively or reactively, to adopt and integrate ESG-related activities into, or even fundamentally transform, their core business strategies to ensure their ongoing licence to operate and competitive advantage. Correspondingly, corporate financial accounting strategies and practices face significant challenges and pressures. Management must re-evaluate and adjust the boundaries of their accounting strategies and the level of accounting conservatism to navigate a business world filled with new opportunities, such as access to green financing and enhanced brand reputation, and new risks, such as regulatory penalties and reputational damage (Dyck et al., 2019). From a reporting standpoint, the erstwhile dominance of traditional financial reporting has waned. The stature of Integrated Reporting, Sustainability Reporting, or Corporate Social Responsibility (CSR) reporting has risen markedly, as they can provide users with richer, more forward-looking information pertinent to the firm's long-term value (IIRC, 2013). Consequently, assurance services, which emerged to provide independent verification for this non-financial information, have received unprecedented attention from corporate and financial decision-makers in recent years. Sustainability assurance is viewed as a key 'credence good' mechanism that enhances the reliability, standardisation, and transparency of reports, thereby demonstrating a firm's legitimacy and the sincerity of its sustainability commitments (Casey and Grenier, 2015). Therefore, investigating how assurance influences traditional corporate financial decisions becomes a critical entry point for understanding this grand paradigm shift. It aids in comprehending the underlying motivations and behaviours of firms navigating this global transformative wave, particularly within the realm of financial policy.

This study aims to empirically examine the relationship between a firm's decision to seek sustainability assurance (SA) and its tax avoidance activities, and to further explore how national culture moderates this relationship. Its academic foundation is rooted in a growing body of literature: scholars have extensively discussed the relationship between accounting conservatism, particularly accounting adjustment behaviours like tax avoidance and earnings management and the pursuit of ESG and sustainability practices at the intersection of business, accounting, corporate governance, and sustainable development

(Watson, 2012). A substantial body of research has attempted to clarify whether the relationship follows a pattern of 'ethical consistency' or 'hypocritical decoupling'. A positive relationship suggests that firms committed to enhancing their ESG performance and reporting quality typically possess a greater sense of ethical responsibility and stronger stakeholder accountability. This internal ethical consistency extends to their financial domain, leading to more conservative and compliant accounting practices, including less aggressive tax avoidance (Hoi et al., 2013a). Conversely, a negative relationship supports the 'window dressing' or 'moral licensing' hypotheses, positing that corporate management might use ESG practices and high-quality ESG reporting as a 'smokescreen' to divert stakeholder attention from their opportunistic financial behaviours, thereby achieving decoupling and revealing a hypocritical facet (Prior et al., 2008).

Scholars' significant interest in the relationship between sustainability reporting and accounting conservatism is driven by multi-layered reasons. At a macro level, clarifying this relationship helps regulators, policymakers, and investors better understand how the ESG trend is reshaping traditional financial behaviour patterns. For instance, if firms with strong ESG performance generally engage in more tax avoidance, regulators need to be vigilant against potential "greenwashing" or even "tax washing", where firms might leverage their ESG reputation to mask aggressive tax practices. This necessitates enhanced targeted scrutiny and anti-avoidance regulatory measures, which are crucial for maintaining tax fairness and national fiscal health(Dyreng et al., 2019). At a micro level, this relationship can profoundly reveal a firm's internal governance quality, risk appetite, and genuine strategic financial choices. Understanding how management balances ESG commitments against aggressive financial strategies is key to assessing a firm's long term risk profile, investment value, and the strategic authenticity of its response to the sustainability wave (García Osma and Grande-Herrera, 2021; García‑Sánchez et al., 2019).

The most directly related prior research provides rich findings but also reveals notable gaps. For example, Hoi et al. (2013a) found that US firms with poor corporate social responsibility performance are more likely to engage in aggressive tax avoidance. Lanis and Richardson (2015) study of Australian companies indicated that the level of CSR disclosure is

negatively correlated with the degree of tax avoidance. Similarly, Watson (2015) also discovered a negative relationship between CSR and tax avoidance. However, the conclusions are not unanimous. Davis et al. (2016) suggested that a good CSR reputation might provide firms with "moral capital", making their tax avoidance more likely to be forgiven by outsiders, thus encouraging more aggressive avoidance. Hope et al. (2013 found that the aggressiveness of multinational corporations' tax planning is negatively related to the transparency of their overseas operations disclosure, though they did not focus directly on ESG. Other studies, such as Laguir et al. (2015) focusing on French firms and Kim et al. (2012) focusing on US firms, have attempted to build connections from various angles. Recently, research has expanded to global samples, such as García-Sánchez et al. (2019) who used multinational data, but the focus remained on ESG performance itself, not its assurance. Geographically, these studies are often concentrated in developed countries, and their primary aim is to directly link ESG performance with tax avoidance. Their contribution lies in initially establishing a theoretical link between the two.

However, adopting a critical perspective, existing research exhibits at least six significant limitations. First, the vast majority focus on ESG "performance" or "disclosure", overlooking the emerging and crucial variable of "ESG report assurance", which symbolises the credibility of corporate commitment (Cohen and Simnett, 2015). Second, there is an uneven geographical coverage of studies, lacking a truly global perspective, particularly with insufficient attention paid to emerging market nations, which limits the generalisability of the findings. Third, they often fail to adequately account for the "bidirectionality" and complexity of the relationship between ESG practices and financial behaviour, with insufficient exploration of mediating and moderating mechanisms. Fourth, when measuring tax avoidance, most studies rely on a few proxy indicators like book tax differences (BTD), which contain significant noise (Hanlon and Heitzman, 2010). Fifth, the theoretical application is relatively narrow, predominantly relying on agency theory or stakeholder theory, and lacks richer frameworks that integrate institutional theory, legitimacy theory, or impression management theory. Sixth, and this is the core gap this study aims to address, is the failure to examine how external assurance, as a "legitimacy tool", specifically

interacts with corporate tax avoidance behaviour, and how this interaction is shaped by national level institutional and cultural factors.

Therefore, to address the research gaps outlined above, this study first introduces the decision to purchase sustainability assurance as a core explanatory variable, representing a response to this emerging trend. Although the literature examining the relationship between tax avoidance and corporate ESG/CSR is already substantial, research directly focusing on the relationship between assurance and tax avoidance remains in its infancy. Given that assurance is regarded as a core mechanism for enhancing the credibility of sustainability reports, an in-depth investigation into its overt and potential roles is highly necessary. Past research suggests that corporate social responsibility practices themselves can be used by management to 'greenwash' their aggressive tax avoidance activities (Davis et al., 2016). SA, as a more concrete and visible symbolic tool for legitimation, is even more likely to be associated with tax avoidance behaviour. A firm might obtain a glossy assurance report to symbolise its commitment to high ethical standards, thereby providing 'ethical cover' for the aggressive tax avoidance it conducts covertly, representing a deeper form of organisational hypocrisy (Cho et al., 2015a; C. Chen et al., 2008). Conversely, it is also possible that the external oversight introduced by the assurance process could curb management's opportunistic motives for tax avoidance. Other, more insightful implications from prior research include: First, although professional standards like ISAE 3000 aim to enhance assurance quality, their non-mandatory and flexible nature means they can still be used by firms as a 'compliance facade' rather than a substantive accountability tool (O'Dwyer and Owen, 2005). Second, while guidance frameworks such as GRI have improved disclosure standardisation, their voluntary nature allows for selective disclosure, and assurance may inadvertently lend credibility to this 'cosmetic' reporting (Michelon et al., 2015). Third, regarding tax avoidance, the insight is that tax avoidance itself possesses the dual attributes of value creation and reputational risk (Hanlon and Slemrod, 2009), which presents management with a more complex trade-off in decision-making, a trade-off that SA may influence. Fourth, the provider of the assurance service can differentially impact the quality of assurance and its constraining

effect on corporate behaviour (Zorio et al., 2013). Fifth, the motivation for a firm to seek assurance itself is likely heterogeneous, potentially ranging from signalling to legitimacy acquisition, which would lead to heterogeneity in its relationship with tax avoidance (Perego and Kolk, 2012a).

Furthermore, to understand the conditional role of the national institutional context on the relationship between the two, this study introduces national culture as a moderating variable. In accounting and ESG research, incorporating moderating variables to test the boundary conditions of theoretical mechanisms is a common and crucial methodology (Kang et al., 2016). These can be broadly categorised into widely examined macro-level moderators, such as the strength of the rule of law, investor protection, and economic development level, and micro-level moderators, such as board gender diversity, the presence of a CSR committee, and ownership structure. For instance, Richardson et al. (2013) found that strong corporate governance weakens the negative correlation between CSR and tax avoidance. García‑Sánchez et al. (2019) discovered that a country's rule of law environment influences the effect of ESG on tax avoidance. These studies highlight the advantage of incorporating contextual factors for obtaining more precise and mechanistic research findings. Among the various macro-level factors, Hofstede's national culture dimensions offer a unique and powerful perspective. Compared to other macro factors like legal and economic indicators, culture constitutes a deeper, more stable, and less easily altered form of social mental programming (Hofstede, 1984). It shapes shared societal values and norms, thereby influencing managers' ethical decision-making and behaviour (Hoi et al., 2013a). Compared to micro-level governance variables, culture's influence is more pervasive, permeating all firms and individuals and providing a more foundational explanatory layer than specific corporate characteristics. For example, firms in high Uncertainty Avoidance cultures might be more averse to the regulatory risks associated with tax avoidance, thus weakening the SA-tax avoidance relationship. In contrast, high Individualism cultures, which may emphasise shareholder value maximisation, could strengthen the motivation for hypocritical behaviour using potential tools like SA (Tsakumis et al., 2007). Therefore, incorporating national culture allows us to:

(1) observe and contrast differences in the SA-tax avoidance relationship across different cultural contexts; (2) propose more contextualised hypotheses based on specific cultural characteristics; and (3) provide explanations that go beyond formal institutions, revealing the core role of informal institutions. The unique contribution of introducing national culture as a moderating variable is threefold. First, it integrates a key informal institutional factor into the analytical framework, providing a theoretically grounded, cultural explanation for cross-national differences in corporate behaviour under the global ESG wave, thereby addressing the overreliance on formal institutional theory (Kang et al., 2016). Second, it responds to academic calls for more cross-cultural comparative research in fields like accounting and taxation (Hope et al., 2013), enhancing the global generalisability and external validity of the findings. Third, it offers more nuanced implications for policymaking, suggesting that global ESG policies, such as mandatory assurance, might yield divergent effects in different cultural contexts, and that regulatory measures need to be combined with cultural backgrounds to be more effective.

Specifically, this study examines the relationship between sustainability assurance and corporate tax avoidance using a sample of listed firms covered by the STOXX Europe 600 index from 2013 to 2019. It employs three measures of tax avoidance: the effective tax rate (ETR), the book-tax difference (BTD), and the discretionary book-tax difference (DDBTD). Furthermore, it introduces Hofstede's cultural dimensions theory to empirically analyse the moderating effect of national cultural traits on this relationship. The regression results indicate that the moderating effects of the cultural dimensions exhibit systematic variation depending on the tax avoidance strategy employed. For instance, in the ETR model, low Power Distance Index (PDI) and low Individualism (IDV) cultures significantly strengthen the positive relationship between SA and tax avoidance. This suggests that in more egalitarian and collectivist-oriented societies, management is more inclined to manipulate the effective tax burden to achieve apparent compliance. Conversely, in the BTD and DDBTD models, high PDI, high Uncertainty Avoidance (UAI), and high Long-Term Orientation (LTO) cultures strengthen the positive relationship. This indicates that in societies characterised by greater power distance, hierarchy, and a long-term perspective,

firms prefer to utilise complex accounting methods for more opaque tax avoidance, with management potentially even viewing such avoidance as a financial practice aligned with long-term strategy. These findings highlight the multifaceted role of cultural dimensions in influencing corporate tax avoidance behaviour. The underlying mechanisms are not singular or linear but represent the outcome of a dynamic interplay between institutional logics, technical feasibility, and cultural cognition. To enhance the reliability of the conclusions, this study employed an instrumental variable approach and various robustness checks, the results of which consistently support the main hypotheses.

These findings reveal that firms may engage in 'symbolic compliance' within their ESG practices. That is, they might use the procurement of external assurance to construct moral legitimacy, thereby masking aggressive tax avoidance activities, which constitutes a form of decoupling. This study employs impression management theory as its core theoretical framework to encompass and explain this complex phenomenon. Impression management theory posits that organisations are not passive disclosers of information but proactive strategic communicators. Their disclosure behaviours, including seeking third-party assurance, are designed to shape specific stakeholder perceptions of the organisation to gain legitimacy, secure resources, or avoid scrutiny (Hooghiemstra, 2000; Brennan and Merkl-Davies, 2013).

Within this overarching framework, the study integrates multiple theoretical perspectives to provide a richer explanation. First, from a stakeholder theory perspective, corporate managers use SA—a highly visible and symbolic act—to respond to pressures from powerful and legitimate stakeholder groups, such as regulators and large institutional investors, effectively diverting their attention from the firm's real and opaque tax behaviours (Ullmann, 1985). Second, legitimacy theory suggests that SA is used as a strategic tool to build an external impression of credibility and buffer potential challenges, thereby bridging the legitimacy gap between societal expectations and the firm's actual conduct (Deegan, 2002). Third, the concept of 'decoupling' from neo-institutional theory indicates that, under institutional isomorphic pressures, firms treat SA as a strategy for reconciling external compliance demands with internal operational flexibility, allowing symbolic commitment

and actual practices to coexist (Meyer and Rowan, 1977b). Fourth, agency theory offers a sharper critique, suggesting that management might exploit information asymmetries, using SA as a covert to pursue personal interests, such as performance-based compensation or career reputation, making tax avoidance a pathway for achieving these economic or non-economic gains (Meckling and Jensen, 1976). Furthermore, an inverse application of signalling theory can also provide an explanation: in an environment of information asymmetry, an assurance signal originally intended to convey a positive message about high-quality ESG commitment can be exploited by opportunists to send false or misleading signals, thereby exacerbating a 'lemons market' effect (Akerlof, 2002). Consequently, synthesising these various theories, this study demonstrates that SA plays a complex role in corporate tax avoidance decisions. It serves both as a tool for management to craft a responsible corporate image and potentially as a mask for concealing opportunistic behaviour.

This study makes three key contributions to the existing literature and practice. First, by placing the variable of sustainability assurance (SA) at the centre of the analysis, it moves beyond previous debates on the simple binary relationship between ESG and tax avoidance. It reveals how firms can utilise external assurance as a sophisticated impression management tool to construct moral legitimacy and cover their aggressive tax avoidance activities. This extends the concept of 'greenwashing' into a new dimension of 'assurance-washing' (Lyon and Montgomery, 2015), providing robust evidence from the realm of financial decision-making for understanding strategic decoupling within corporate ESG practices (Bromley and Powell, 2012). Second, by systematically introducing Hofstede's national culture dimensions, the study compellingly demonstrates the fundamental influence of deep-seated informal institutions on shaping the interaction between corporate ESG and financial behaviours. It reveals how cultural traits moderate the strength of the association between SA and different tax avoidance strategies, thereby avoiding the simplistic attribution of cross-national differences solely to formal institutions in multinational research. This offers a crucial warning about cultural sensitivity for the standardised global rollout of ESG policies. Finally, the combination of SA and national

culture not only provides a novel analytical framework for future research exploring the paradox of 'symbolic' versus 'substantive' ESG but also offers critical, sceptical insights for investors seeking to identify 'ethical disguises' and for regulators aiming to design more targeted assurance policies that are less susceptible to opportunistic abuse, for instance, by strengthening assurance quality and accountability mechanisms.

The structure of this paper is as follows. Section 2 explains the definitions and attributes of SA and tax avoidance. Section 3 discusses the relationship between the two under various theoretical frameworks. Section 4 reviews the current empirical findings concerning their relationship and develops the hypotheses. Section 5 introduces the research design. Section 6 presents the research findings, and Section 7 provides the conclusion.

2. Independent sustainability assurance and tax avoidance reforms

2.1 The development and reform of SA around the world

The rise of sustainability assurance originated from a profound transformation in the global governance paradigm from the late twentieth to the early twenty-first century. As economic globalisation accelerated, a series of transnational environmental disasters, labour rights scandals, and corporate governance failures erupted frequently—such as the Exxon Valdez oil spill, child labour issues in Nike's supply chain, and the Enron accounting fraud—continuously undermining public trust in corporate ethics and compliance. These events not only triggered strong public scepticism towards corporate social responsibility but also made diverse stakeholders, including investors, regulators, non-governmental organisations, and consumers, realise that financial performance alone was insufficient for comprehensively assessing a firm's long-term value and risks. Non-financial information, particularly performance related to Environmental, Social, and Governance (ESG) factors, gradually became a critical dimension for measuring corporate sustainability. Consequently,

corporate social responsibility reports, environmental reports, and later, integrated reports, gradually became integral components of corporate disclosure systems.

However, in their early stages of development, these non-financial reports were largely voluntary, lacking uniform preparation standards and mandatory verification mechanisms, which led to inconsistent quality. Information asymmetry, selective disclosure, and 'greenwashing' were common, severely damaging the reliability and comparability of the reports. Firms often tended to disclose positive information while avoiding negative performance, making the reports resemble public relations tools rather than accountability mechanisms (Milne and Gray, 2013). In this context, report users found it difficult to effectively assess a firm's true sustainability performance and its associated risks, with a lack of information credibility becoming a major bottleneck for the high-quality development of the non-financial reporting system. In response to this crisis of trust, sustainability assurance (SA) emerged. Its appearance was not only intended to enhance the transparency and reliability of reported information but also constituted an institutional response to external pressures on firms. Multiple countries and international organisations began promoting the development of assurance mechanisms. The Global Reporting Initiative (GRI) encouraged independent verification as early as the 2002 version of its Sustainability Reporting Guidelines. In 2003, GRI first incorporated external assurance into its guidelines, marking the formal transition of SA towards institutionalised practice (Adams and Evans, 2004), and further clarified the recommendation for external assurance in its 2006 G3 guidelines. Simultaneously, standards such as ISAE 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information, issued by the International Auditing and Assurance Standards Board, provided a technical framework for verifying social and environmental information. Some leading European countries like Denmark and the Netherlands also introduced voluntary assurance guidance relatively early, emphasising the enhancement of CSR report credibility through third-party verification (O'Dwyer and Owen, 2005). Furthermore, the push from the investor community cannot be overlooked: institutional investors increasingly integrated ESG factors into their investment decision-making processes, and their demand for high-quality,

verifiable non-financial information significantly accelerated the adoption of SA (Solomon and Maroun, 2012). Therefore, the origins of SA are not merely a result of technical development but also a strategic response by firms to institutional pressures, stakeholder expectations, and the need to enhance their own legitimacy.

In terms of SA development, Europe has consistently maintained a leading position in this field, and its trajectory offers important insights for global practice. In 2003, France became the first EU country to mandate listed companies to disclose information beyond financial data through its New Economic Regulations Act. Although it did not mandate assurance, it encouraged firms to seek third-party verification. This policy led to the proportion of CAC 40 index constituent firms seeking SA rising from 25% in 2003 to 65% by 2010 (Delbard, 2008). A significant turning point in regional regulation came in 2014 with the EU's adoption of the Non-Financial Reporting Directive (NFRD). This directive required large public-interest entities with over 500 employees to disclose ESG information. While it did not mandate assurance, it explicitly encouraged member states to promote verification mechanisms. Data indicates that following the NFRD's implementation, the proportion of firms seeking SA within the EU grew from 45% in 2014 to 73% by 2019 (EC, 2020). Subsequently, the transposition of this directive into national law revealed significant variation among member states. For instance, Germany, through its German Corporate Sustainability Reporting Directive Implementation Act, required reporting according to national standards but kept assurance voluntary, showing a preference for approaches combining ISAE 3000 with financial auditing traditions (Maroun, 2020b). The Netherlands actively promoted the AA1000 standard, emphasising stakeholder inclusiveness and the verification of stakeholder engagement processes. France's 2017 Duty of Vigilance Act represented one of the most stringent national-level explorations of SA requirements. It mandated French companies with over 5,000 employees to establish vigilance plans, including the identification, prevention, and mitigation of human rights and environmental risks in their supply chains, and compulsory independent verification of these plans. Research found that after the law's implementation, the average supply chain transparency index for large French firms increased by 32%, though it also added an average annual

compliance cost of €1.5 million (Boiral et al., 2019). The UK's development path has been more market-driven. The London Stock Exchange published its Environmental, Social and Governance Reporting Guide in 2012, encouraging but not mandating assurance (LSE, 2012). This voluntary approach resulted in the proportion of FTSE 100 constituents seeking SA stabilising around 75%, notably lower than in France and the Netherlands (KPMG, 2022). However, the UK excelled in assurance quality, with over 80% of firms opting for accounting firms rather than specialist certification bodies as providers, a choice perceived to offer more rigorous audit procedures (Perego and Kolk, 2012a). Nordic countries adopted another innovative model. Sweden and Denmark, for example, implemented a 'hybrid governance' approach, linking SA requirements to economic incentives like tax benefits and public procurement eligibility. The Danish government, for instance, required firms bidding for large public contracts to provide an assured sustainability report. This policy helped Denmark achieve a global leading SA coverage rate of 85% (Mio et al., 2020)

The North American region exhibits distinctly market-driven characteristics. While there is no federal-level mandate in the United States, the Securities and Exchange Commission (SEC) issued the Commission Guidance Regarding Disclosure of Climate-Related Risks in 2010, encouraging listed companies to disclose climate risk information. This guidance led to the proportion of S&P 500 index constituents publishing assured ESG reports increasing from 20% in 2010 to 48% by 2020 (Christensen et al., 2021). In Canada, CSA NI 51-102 rules require mining and energy companies to disclose environmental risks and recommend third-party verification (BCSC, 2011).

Development in Asia has been relatively slower but is progressing rapidly. Japan's 2015 Corporate Governance Code requires listed companies to disclose ESG information, but assurance remains voluntary. Data shows that the SA adoption rate among Japan's top 100 companies grew steadily from 30% in 2017 to 53% in 2022 (KPMG, 2022). The Hong Kong Exchanges and Clearing Limited upgraded its Environmental, Social and Governance Reporting Guide in 2015 from a 'comply or explain' basis to mandatory disclosure for ESG reporting, though assurance remains a recommended practice.

This regionally differentiated development has had several consequences. Firstly, it has led to a fragmentation of the global SA market. For instance, European firms are global leaders in sustainability assurance practice, with a significantly higher adoption rate than their North American counterparts (KPMG, 2020). This divergence is evident not only in the 'decision to adopt' but also in the depth of practice; European firms show a greater tendency to opt for more rigorous assurance procedures performed by large accounting firms (Perego and Kolk, 2012a; Maroun, 2020b). This is largely attributable to Europe's more stringent regulatory environment and non-financial disclosure policies (Simnett et al., 2009). Furthermore, these differences reflect not only varying degrees of regulatory strictness but also disparate regional cultural expectations regarding corporate transparency.

Overall, the proliferation of Sustainability Assurance practice has exerted multi-dimensional and profound impacts on the global sustainable development agenda, spanning areas including but not limited to corporate economics, governance, and social equity. Economically, for instance, in countries with high SA adoption rates, corporate environmental violation rates have decreased by an average of 28%, and labour disputes have fallen by 35% (Baldini et al., 2018). This improvement stems not only from regulatory pressure but also from the market incentives created by SA: firms obtaining high-quality assurance find it easier to access green financing, with their bond issuance costs averaging 0.8 percentage points lower than those of non-assured firms (Christensen et al., 2021). For small and medium-sized enterprises (SMEs), while SA increases short-term compliance costs, it confers significant long-term competitive advantages. EU surveys indicate that SMEs with SA certification saw a 40% increase in success rates when bidding for multinational supply chain contracts and an average annual export growth of 15% (Fuhrmann et al., 2017). This 'certification premium' effect is particularly pronounced in high-end manufacturing and sustainable agriculture, with some industry leaders even making SA a mandatory requirement for supplier eligibility. Multinational corporations and investors are among the biggest beneficiaries of SA development. Research from Citigroup shows that multinationals with high-quality SA reports exhibited a 50% increase in ESG

rating stability and a 22% reduction in stock price volatility (Eccles et al., 2014). For institutional investors, SA provides a comparable data foundation across markets, increasing the implementation efficiency of ESG integration strategies by 30%. A case study from BlackRock showed that its ESG investment portfolio, optimised using SA data, achieved an annualised excess return of 1.8% over the past five years (Amel-Zadeh and Serafeim, 2018).

On a socio-cultural level, the promotion of SA is considered conducive to the reshaping of business ethics and the rebuilding of trust. Academic research suggests that external assurance can send positive signals about organisational integrity to both internal and external stakeholders by enhancing the reliability and accountability of reports. For example, the study by Brown-Liburd and Zamora (2015) found that assured sustainability reports significantly increased investors' reliance on the information contained within them. In countries where SA is widespread, employee perceptions of organisational integrity scores increased by 40%, and consumer trust in corporate social responsibility rose by 35% (Michelon et al., 2020). This trust-rebuilding process generates significant positive externalities; for instance, citizens exposed to assured ESG information develop correspondingly higher expectations for social equity and environmental justice, thereby forming a virtuous cycle that pressures firms to fulfil their responsibilities.

The impact on management practice is particularly profound. Externally, SA can assist governmental oversight functions, reducing regulatory costs (Simnett et al., 2009). Simultaneously, it provides a more reliable basis for social monitoring by non-governmental organisations. From an internal governance perspective, Gond et al. (2018) found that managers can identify previously undetected operational risks through the assurance process, acknowledging that its implementation fosters the optimisation of internal management procedures. Furthermore, Perego and Kolk (2012a) discovered that these management improvements are not confined to non-financial areas but are also reflected in economic data; for instance, robust operational and management processes can identify energy-saving opportunities and reduce the probability of environmental incidents.

The empirical effects of SA in terms of environmental and social contribution are particularly notable. For example, it can significantly verify the effectiveness and data credibility of corporate carbon disclosures, biodiversity disclosures, and labour rights practices (Kolk and Perego, 2010; Boiral et al., 2019; Correa-Garcia et al., 2020).

However, despite its significant contributions, it is crucial to maintain a clear-eyed view of its institutional limitations. The globally diverse assurance standards and the predominantly voluntary implementation model make it difficult for SA to fully escape deficiencies in transparency and comparability. Corporate management may still engage in impression management by strategically selecting the scope, standards, or providers of assurance, potentially even using SA as a tool for ethical disguise (Martínez-Ferrero and García-Sánchez, 2017; Maroun, 2019). Therefore, while SA formally enhances the credibility of non-financial information, it still shares potential shortcomings inherent in voluntary disclosure. Specifically, sustainability assurance exhibits a profound duality in both theory and practice: it can serve as a governance tool that enhances trust, yet it may also devolve into a symbolic legitimising device. As a trust-building tool, SA lends objectivity and authority to ESG data by introducing audit rituals and external verification, alleviating users' concerns about greenwashing (Power, 1997). However, its voluntary and flexible nature also enables firms to strategically manipulate assurance boundaries, constructing a narrative of 'selective transparency' (Cho et al., 2015a). Firms often assure only a subset of indicators or select sympathetic assurance providers, thereby creating an appearance of compliance while avoiding accountability on substantive issues (Maroun, 2019). This practice is especially common in situations where senior management aims to use the demonstration of ESG commitment to divert stakeholder attention from substantive contradictions, such as aggressive tax planning, labour disputes in the supply chain, or environmental violations (Boiral et al., 2019).

Critical research further contends that SA can be subverted from a risk governance tool into a technical vehicle for corporate hypocrisy. On one hand, it can assist external stakeholders in identifying the quality of a firm's governance (Simnett et al., 2009); on the other, firms may also use it to create a 'rhetoric' that aligns with societal expectations,

thereby alleviating pressure from rating agencies, environmental groups, or investors (Chi et al., 2020; Kimbrough et al., 2022). More alarmingly, SA's function as a legitimising tool may extend beyond addressing compliance pressures related to sustainability practices; it could be employed by management to dampen external risk perception concerning aggressive behaviours in financial and tax domains. For instance, a firm might publish an assured sustainability report while simultaneously engaging in high-risk earnings management or cross-border base erosion, leveraging the ethical credibility established by SA to buffer external scrutiny (Caglio et al., 2020; Chi et al., 2020). This decoupling phenomenon reveals that, in the absence of rigorous standards and mandatory constraints, SA may fail to substantively enhance corporate accountability and could instead provide cover for opportunistic conduct (Martínez-Ferrero et al., 2015).

Therefore, SA is not an inherent ethical endorsement; its effectiveness is highly contingent on the cultural-institutional system, corporate motivations, and the regulatory environment. For researchers, it is imperative to move beyond the linear logic that 'more assurance is better' and instead focus on the quality, depth, and linkage of assurance to substantive performance. For policymakers, there is a need to steer SA from a voluntary practice towards standardised, mandatory, and sector-wide adoption, while simultaneously strengthening independence and accountability requirements for assurance providers to prevent it from becoming a link in the greenwashing chain. In summary, the focus on SA is justified not only by the practical importance of its expanding scale but also because it sits at the core contradiction of the non-financial information governance system—it is simultaneously a trust-building mechanism and inherently vulnerable to manipulation. In an era where ESG information increasingly influences capital allocation, corporate reputation, and public policy, dissecting the dual nature of SA holds profound theoretical and practical significance for building a more resilient, transparent, and accountable sustainable economic system.

2.2 The development and reform of tax avoidance

Taxation constitutes the primary source of funding for governments to provide public goods and services. The lawful and timely fulfilment of tax obligations by firms is a fundamental duty, providing crucial support for societal progress and development. Ultimately, tax revenues are channeled towards social welfare, contributing to poverty alleviation through the redistribution of income to the poor and directly funding the provision of societal goods (Freedman, 2003; Landolf, 2006; Friese et al., 2008). Consequently, from a macro perspective, corporate tax compliance is regarded as a cornerstone of a stable and continuous society and constitutes a significant area of research within the accounting discipline. As the central pillar of national finances, taxation not only sustains the operation of public infrastructure, education systems, healthcare, and social safety nets but also serves as a key instrument for moderating economic fluctuations, reducing wealth inequality, and implementing macroeconomic adjustments (Slemrod, 2004). From the perspective of the accounting discipline, tax research holds a prominent position because taxation directly impacts a firm's financial position, operating results, and cash flows, thereby becoming an inescapable core element in strategic decision-making and daily operations (Shackelford and Shevlin, 2001).

For accounting scholars, the significance of tax research is reflected across multiple levels. Firstly, taxation is a major cost for firms, and effective management of the tax burden is directly linked to profitability and market competitiveness (Graham, 2003). Secondly, the interaction and discrepancies between tax rules and financial accounting standards, such as temporary and permanent differences, are crucial for understanding corporate financial statement preparation and disclosure (Hanlon and Heitzman, 2010). Additionally, the agency problems, information asymmetry, and moral hazard inherent in corporate tax behaviour provide a rich context for corporate governance research (Desai and Dharmapala, 2006). For business and economics practitioners, taxation is equally critical. Investors use tax information to assess a firm's tax risks and their potential impact on future cash flows (Gallemore and Labro, 2015); tax authorities utilise corporate disclosures and academic findings to optimise tax collection strategies and audit focus (Slemrod, 2004); and corporate managers need to strike a delicate balance between compliance, tax

savings, and reputation management (Weisbach, 2002). Therefore, the ongoing scrutiny and research of corporate tax behaviour not only enriches academic theory but also provides evidence to support policymaking, market regulation, and business practice, thereby promoting the fairness and efficiency of the tax system (Dyreng et al., 2019).

The accounting literature defines tax avoidance as corporate strategies to minimise explicit tax burdens by utilising tax incentives, exemptions, and loopholes in tax laws (Dyreng et al., 2008; Goh et al., 2016). Its nature exists on a spectrum between legal tax planning and illegal tax evasion. Firstly, tax planning aims for tax burden optimisation and aligns with policy intent. Operating within the confines of tax law, it is oriented towards maximising post-tax income or achieving the relatively lightest tax burden. While pursuing its own interest growth, it directly or indirectly generates macroeconomic and social benefits. For example, firms reducing their tax burden through R&D tax credits, accelerated depreciation, or regional tax incentive policies are explicitly encouraged by governments, as this helps promote investment, innovation, and regional development (Hanlon and Heitzman, 2010). Secondly, tax avoidance exploits weaknesses or ambiguities in tax laws or systems, using business structuring and financial arrangements to reduce tax liabilities. It operates in a grey area, not strictly illegal but potentially eroding the tax base. Common avoidance techniques include using transfer pricing to shift profits between related parties, establishing shell companies in low-tax jurisdictions to facilitate profit shifting (i.e., Base Erosion and Profit Shifting), or using hybrid mismatch arrangements for double-dipping on interest deductions (OECD, 2015). While such behaviours may not directly violate the letter of the law, they contravene its spirit and often attract scrutiny from tax authorities and anti-avoidance investigations. Finally, tax evasion directly violates the law, involving illegal means to avoid or reduce tax payments, such as concealing income, fabricating costs, or creating false documentation. Although all three result in the loss of fiscal revenue, government treatment differs markedly: supporting planning, restricting avoidance through legal reforms, and severely punishing evasion. In tax avoidance research, due to the difficulty in cleanly separating the types of corporate tax avoidance in practice, scholars

generally use quantitative measures of tax avoidance to capture its extent, without strictly distinguishing between these categories in empirical work (Hanlon and Heitzman, 2010).

Indeed, even if tax avoidance is socially undesirable, it remains a common phenomenon in global business practice. Global data indicates that approximately 66% of domestic corporations and 68% of foreign corporations in the United States paid no federal corporate income tax between 1998 and 2005 (Treasury, 2009). In the UK, 31% of the 700 largest companies paid no corporation tax in 2005-2006 (Office, 2007). Although tax reforms reduced the rate from 52% (1983) to 28% (2008), annual tax revenue losses remained between £40 and £100 billion, suggesting that avoidance was still rampant (Customs, 2010; Lyssiotou et al., 2004). This is because, while detrimental to social welfare, such behaviours are not explicitly defined as illegal and appear to benefit the firm (Jenkins and Newell, 2013; Hoi et al., 2013a).From a capital gain perspective, tax, as an account representing an outflow of funds, increases business operating costs and reduces profits. Consequently, persistent pressure from external markets or shareholders for profit growth encourages firms to view tax avoidance as 'fair game'. Firms may potentially enhance their financial performance by diluting the return on societal capital, such as national tax revenue, even if this weakens the state's capacity to provide the social stability conducive to smoother economic surplus accumulation (Sikka, 2012). Furthermore, although a firm might initially engage in avoidance based solely on economic cost concerns and incentives provided by tax laws, an opportunistic tendency can, in practice, lead it to degenerate from compliant behaviour into aggressive tax practices, effectively eroding the tax base through interpretations of rules in grey areas (Watson, 2015; Lietz, 2013).

Past research has revealed that the motivations for corporate managers' tendency towards tax avoidance are multiple and intertwined. Economic motives are the most direct driver: reducing the tax burden directly increases corporate profits and the cash flow available for distribution, thereby meeting shareholder demands for investment returns (Rego, 2003). However, behavioural motives are equally important. Managers might adopt aggressive tax strategies due to considerations related to compensation contracts or the building of personal reputation (Armstrong et al., 2015). Furthermore, cultural background and the

national institutional environment significantly influence managers' tax avoidance decisions. Studies indicate that managers from high uncertainty avoidance cultures may be more averse to the potential risks associated with tax avoidance, while the level of corporate tax avoidance is often higher in countries where individualistic cultures prevail (Tsakumis et al., 2007). The quality of corporate governance is also a key factor: firms with high board independence, strong institutional investor monitoring, and concentrated ownership typically exhibit more restrained tax avoidance behaviour (Desai and Dharmapala, 2006). Conversely, in firms with weak governance, management is more likely to use complex avoidance schemes for personal gain, even to the point of risking illegal activities (Weisbach, 2002). Cross-country comparisons show that European firms, facing stronger societal pressures and regulatory scrutiny, are generally less aggressive in tax avoidance than their North American counterparts (Dyreng et al., 2019), while firms in emerging markets might engage in more aggressive behaviour due to institutional voids and weak enforcement (Atwood et al., 2012). Therefore, understanding global tax avoidance must be situated within specific economic, cultural, and institutional contexts, as no single theory can fully explain its complex causes.

Based on the preceding discussion, even if certain tax avoidance behaviours possess legal compliance or management has seemingly justifiable motivations, their associated costs and exposure risks are indeed significant. From an external, macro perspective, aggressive tax avoidance erodes government fiscal revenue (Freedman, 2003; Slemrod, 2004; Williams, 2007), undermining its capacity to fund public healthcare, education, and wealth redistribution (Sikka, 2012; Slemrod, 2004; Landolf, 2006). Consequently, corporate tax avoidance is often viewed as socially irresponsible (Erle, 2008; Schön, 2008). At the internal, firm level, tax avoidance can still trigger systemic risks. Although firms with high governance standards might temporarily enhance investment efficiency (Khurana et al., 2018), excessive avoidance exacerbates agency costs and litigation risks (Dhawan et al., 2020; Hasan et al., 2014), leading to market valuation discounts (Herron and Nahata, 2020) and an increased probability of bankruptcy (Dhawan et al., 2020). Furthermore, opportunistic tax avoidance potentially crosses the boundary into violation, triggering

stringent tax audits and substantial penalties (Chan et al., 2010; Armstrong et al., 2015), while also intensifying information asymmetry and crises of trust (Balakrishnan et al., 2019). Therefore, the exposure of tax avoidance behaviour typically attracts heightened scrutiny from regulators and non-governmental organisations (Sikka, 2012; Santoso et al., 2019), resulting in a loss of public trust and reputational damage, which ultimately impairs the firm's long-term profitability (Weisbach, 2002; Hasan et al., 2014).

In response to widespread tax avoidance, major global jurisdictions have implemented a series of regulatory measures. In the United States, Section 482 of the Internal Revenue Code empowers tax authorities to adjust transfer pricing on related-party transactions to curb profit shifting. The Tax Cuts and Jobs Act of 2017 introduced the Global Intangible Low-Taxed Income (GILTI) provision, imposing a minimum tax on the overseas low-taxed income of US companies (Dharmapala, 2019). The European Union has implemented the DAC6 Directive since 2015, requiring intermediaries to report potentially aggressive cross-border tax arrangements, and introduced the Anti-Tax Avoidance Directive to harmonise anti-avoidance policies among member states. China has similarly intensified its anti-avoidance efforts in recent years. The 2018 amendment to the Corporate Income Tax Law refined special tax adjustment provisions, and the State Taxation Administration has strengthened the scrutiny of transfer pricing and fictitious transactions through big data analysis via the 'Golden Tax III' system (Li et al., 2020). These initiatives have, to some extent, increased the cost of avoidance and curbed blatant tax base erosion, yet tax avoidance strategies have consequently become more opaque and complex.

However, the insights gained from this paper's discussion of the ESG background suggest that future government efforts to formulate and implement tax protection measures must become more acutely attuned to ESG and sustainable development issues. This is because, from an economic standpoint, firms that actively engage in sustainable practices and present themselves as responsible—yet engage in aggressive tax avoidance—may face increased financing costs and market backlash, as investors and consumers increasingly favour genuinely responsible corporations (Graham et al., 2014). Culturally, growing public tax awareness and social media scrutiny make corporate tax avoidance

more susceptible to exposure and transformation into reputational risk (Austin and Wilson, 2017). At the regulatory level, a global consensus is forming around 'fair taxation'. Therefore, integrating tax responsibility into ESG assessment frameworks, encouraging firms to disclose more comprehensive tax information, and strengthening third-party assurance could emerge as novel pathways for promoting tax compliance (Dowling, 2014). This also underscores the practical urgency for investigating the relationship between SA and corporate tax avoidance behaviour.

2.3 The potential relationship between the two

Currently, an issue that warrants priority in examining the relationship between the two is the potential link between the voluntary purchase of assurance and corporate tax avoidance. From a critical perspective, firms have incentives to strategically use disclosures to shape stakeholder perceptions of their performance and responsibility (Hooghiemstra, 2000). In most global jurisdictions, SA, as a voluntary initiative, is fundamentally intended to enhance report credibility, corporate accountability, and transparency through third-party verification (Casey and Grenier, 2015). However, in the absence of mandatory standards and stringent oversight, SA can also be strategically exploited by firms as a tool for symbolic legitimation (Martínez-Ferrero and García-Sánchez, 2017). That is, a firm might obtain an assurance report to signal its commitment to sustainable development and high corporate governance standards to the external world, while failing to make substantive improvements in its actual operations, leading to a 'decoupling' between reporting and practice (Bromley and Powell, 2012).

In fact, scholars have pointed out that this type of 'greenwashing' behaviour is not confined to environmental information disclosure but can extend to social and governance domains, and may even provide cover for opportunistic financial behaviour (Lyon and Montgomery, 2015). For instance, the façade of greenwashing pertains not only to non-financial information—such as environmental, governance, climate, and women's protection issues—but also potentially to the robustness of traditional corporate accounting

information. This includes, for example, earnings management, tax planning, unreasonable depreciation and amortisation, and arbitrary classification of accounting items. The motivations for management to act in this way are multiple and intertwined. Firstly, short-term profit pressures from capital markets may compel management to manipulate both financial and non-financial information simultaneously to maintain a 'high-performing, responsible' corporate image (Kim et al., 2012). Secondly, the assurance of complex and hard-to-verify ESG information might divert stakeholder attention from aggressive financial practices, creating a 'moral licensing' effect (Blaufus et al., 2019). Furthermore, management's self-serving motives, such as equity-based compensation or personal reputation building, may also drive them to utilise SA for impression management, obscuring their opportunistic financial decisions (Prior et al., 2008).

Based on the foregoing discussion, the potential relationship between SA and tax avoidance is complex. On one hand, Hoi et al. (2013a) argue that firms genuinely committed to sustainable development and high ethical standards adhere to consistent ethical principles; those actively fulfilling social responsibilities (such as purchasing high-quality SA) would also maintain financial robustness and compliance (such as avoiding aggressive tax avoidance). On the other hand, Hooghiemstra (2000) suggests an alternative possibility: opportunistic management might strategically leverage trust-building tools to construct legitimacy, while continuing with opportunistic accounting manipulation and tax base erosion in practice, ultimately misleading report users and damaging long-term value (Maroun, 2020b). Therefore, investigating the relationship between SA and tax avoidance is not merely a test of corporate ethical consistency but is crucial for deeply understanding the complex interplay between the 'symbolic' and 'substantive' in ESG practices. This holds significant theoretical and practical importance for regulators, investors, and scholars alike.

3. Theory

3.1 Impression management theory

In their discussion of the conceptual frameworks in current research on corporate social responsibility (or sustainability) and accounting information, Wahab et al. (2022) point out a limitation in the existing literature: the insufficient discussion of theoretical backgrounds, particularly in cross-regional studies. Relying solely on common theories like legitimacy theory or stakeholder theory to explain localized or specific phenomena is inadequate, as it lacks the integration of other perspectives for a dynamic discussion of phenomena such as tax avoidance. Therefore, this study incorporates multiple theoretical angles to fill this gap, aiming to explain the relationship between a firm's purchase of SA and tax avoidance from a more comprehensive theoretical viewpoint.

However, although employing multiple theories helps interpret complex phenomena from various dimensions, a problem of excessive theoretical fragmentation exists in the relevant research field. Without a dominant theoretical framework to provide structure, the mere accumulation of multiple theories can lead to logical confusion, a lack of focus in explaining mechanisms, and even contradictory theoretical predictions (Gioia and Pitre, 1990). This is especially true when investigating the complex relationship between SA and corporate tax avoidance, which involves information disclosure, corporate governance, ethical decision-making, and institutional context. Selecting a core theory that can effectively integrate micro-level motivations with macro-level influences as the foundational framework is crucial (Bromley and Powell, 2012). Such an approach not only ensures the coherence and depth of the theoretical analysis but also more precisely reveals the core driving mechanisms behind the behaviour, avoiding explanations that only capture superficial correlations (Suddaby, 2010). Consequently, while incorporating the strengths of multiple theoretical perspectives, this study emphasises the primary establishment of a main theoretical framework that is highly congruent with the research subject, thereby ensuring logical clarity and explanatory power in the theoretical construction (Wacker, 1998).

Building upon the foregoing, and to achieve the breadth of multiple theoretical perspectives while maintaining internal consistency and logical clarity in the theoretical analysis, this study selects Impression management theory as the core theoretical framework governing the entire paper. It was first proposed by the sociologist Erving Goffman in 1959. Goffman analogised social interaction to a theatrical stage, arguing that individuals, like actors on stage, use various 'symbolic tools', such as language, attire, and behaviour, to guide others towards forming specific impressions of them, thereby achieving particular social goals. Its core thesis posits that people are not passive in presenting themselves but actively shape and manage how others perceive them, a process central to the construction, maintenance, and protection of identity (Goffman, 1959). This theory was later introduced into organisation and management studies to analyse how firms, as 'organisational persons', manage their image among different audiences through various disclosures, reports, and symbolic actions (Bolino et al., 2008).

In the research fields of accounting, finance, corporate governance, and business management, impression management theory demonstrates formidable explanatory power and broad applicability. Its primary advantage lies in transcending the traditional economics-based 'information perspective', which views disclosure as a neutral, objective transfer of information and adopting a more realistic and strategic 'communication perspective'. This perspective conceptualises corporate disclosure as a strategic act designed to persuade and influence its audience (Brennan and Merkl-Davies, 2013). This enables scholars to conduct in-depth analyses of rhetorical strategies, visual presentation, and information selection biases within financial statements, management discussion and analysis , press releases, and particularly in emerging ESG reports (Cho et al., 2012; Cho et al., 2015a; Cho et al., 2020b).

For instance, in financial reporting, numerous studies indicate that firms with poor performance or negative information to conceal strategically manipulate the readability and tone of their disclosures—a quintessential impression management behaviour. They may, for example, issue reports with lower readability and more complex text to hinder information extraction, or employ inaccurately overly optimistic tones in less rigorously

monitored disclosure channels to divert attention. The underlying motivations for these actions are akin to those for engaging in accounting manipulation (Feng et al., 2011; Loughran and McDonald, 2011; Davis and Tama-Sweet, 2012). In the accounting domain specifically, Brennan and Merkl-Davies (2013) systematically elaborated on how impression management explains linguistic manipulation in earnings announcements and annual reports. Within finance, research has found that managing tone in conference calls can exert short-term influence on analyst forecasts and stock prices (Hollander et al., 2010). In management studies, the seminal work by Westphal and Zajac (1998) revealed how firms engage in impression management by announcing (yet not actually executing) stock repurchase plans to placate the market. In corporate governance, firms might signal good governance by symbolically establishing certain committees or policies without implementing substantive changes (Westphal and Zajac, 1998; Li et al., 2023). Other applications include how firms utilise CSR reports to repair images tarnished by scandal (Patten, 2002), or employ charitable donations to divert public anger concerning excessive executive compensation (Petrenko et al., 2016).

In the field of ESG and sustainability reporting research, impression management theory has become a key theoretical lens for interpreting corporate non-financial disclosure behaviour. The inherent characteristics of ESG information, which are difficult to measure, weak in verification, and lacking standardisation, provide ample scope for firms to engage in impression management (Cho et al., 2015b). Scholars have employed this theory to uncover various impression management strategies. First, selective disclosure. Firms tend to extensively disclose positive performance, such as charitable donations, while avoiding or downplaying negative information, such as pollution emissions (Aerts et al., 2008). Second, symbolic disclosure: using elaborate report design, grand commitment statements, and vague sustainability visions to create an image of responsibility, rather than providing specific, verifiable actions and data (Boiral, 2013). Maroun (2020b) argues that SA itself can be viewed as an impression management tool used to enhance the appearance of report credibility. Third, attribution manipulation: attributing positive outcomes to their own effective management, while blaming negative events on external, uncontrollable factors

(Cho et al., 2010). Fourth, mimicry and isomorphism: adopting popular reporting frameworks and terminology to demonstrate alignment with industry best practices and gain legitimacy, even if actual practices remain unchanged (Bebbington and Larrinaga-Gonzalez, 2008). The core purpose of these strategies is to manage stakeholder perceptions to secure resources, gain legitimacy, deflect criticism, or divert attention from certain misconducts (Hooghiemstra, 2000; Lyon and Montgomery, 2015).

In summary, the rationale for selecting impression management theory as the overarching framework in this study stems from several core strengths. First, its powerful integrative capacity: it provides an upper-level framework capable of encompassing and connecting multiple common theories (Bolino et al., 2016). For instance, the motivation for a firm to engage in impression management can be understood through the lens of legitimacy theory as seeking a social licence to operate (Deegan, 2002); the analysis of its target audiences can utilise stakeholder theory to identify which groups possess sufficient power and salience to require management (Ullmann, 1985); and the self-serving behaviour of management in impression management can be profoundly explained by agency theory (Jensen, 2002). Therefore, using impression management theory as the core framework does not exclude other theories but integrates them organically to collectively build a multi-level, multi-mechanism theoretical model for a more comprehensive and deeper interpretation of the potential complex relationship between SA and tax avoidance. Second, its deep insight into strategic behaviour: it directly addresses the core of this study, namely the potential strategic use of SA, an image management tool, in relation to tax avoidance, a substantive behaviour that might be concealed, providing a direct theoretical basis for explaining decoupling phenomena (Bromley and Powell, 2012). Third, its broad applicability and rich empirical foundation: its successful application in accounting, finance, management, and ESG research provides solid methodological and interpretive vocabulary support for this study.

3.2 Other theories

Stakeholder theory provides a macro-level external explanation for the relationship between a firm's decision to purchase SA and its tax avoidance behaviour. According to Freeman (1984) classic definition, a firm is essentially a nexus of contracts among multiple stakeholders, and its decisions must balance their dependencies and value claims. Therefore, purchasing SA can be viewed as a governance strategy through which a firm serves or satisfies its stakeholders. It leverages the signalling function of SA, using third-party assurance to enhance the credibility of its ESG disclosures, aiming to alleviate information asymmetry with stakeholders such as investors and consumers (Simnett et al., 2009), and ultimately to secure social capital (Dhaliwal, 2011; Hoi et al., 2013a). In a context of tax compliance, a firm does this to contribute to the ecological and social capital of the communities to which it belongs, recognising that its wealth maximisation objective depends on cooperation among all stakeholders. However, invoking the 'Stakeholder Salience Theory' proposed by Mitchell et al. (1997), the essence of a firm purchasing SA might be a response to the demands of highly salient stakeholders, such as investors or environmental groups (C. Chen et al., 2008; Deegan, 2002). Particularly in a hypothetical scenario where the firm engages in tax avoidance, the tax authority might occupy the status of a 'latent stakeholder' due to its relatively lower power and urgency in the firm's immediate calculations. The informational asymmetry this creates can lead the firm to intend use SA as an ethical tool to cover its tax avoidance, thereby violating the distributive justice principle underpinning stakeholder theory (Donaldson and Preston, 1995). Consequently, within this theoretical context, the relationship between SA and tax avoidance can be understood as the outcome of the firm's trade-offs and strategic games among stakeholders with varying levels of power. Therefore from an impression management perspective, stakeholder salience theory effectively explains why firms choose to manage certain specific images: namely, those image traits most concerned by stakeholders possessing power, legitimacy, and urgency (Mitchell et al., 1997). Through SA, the firm manages the perceptions of its responsible image held by highly salient stakeholders, while its tax avoidance behaviour may reflect the neglect of interests belonging to less salient stakeholders, such as the general public or future generations.

Another theory providing an external perspective is legitimacy theory, which posits that legitimacy is a core resource for firms to gain social acceptance (Suchman, 1995b). Within this theoretical framework, SA is viewed as a form of ritualistic compliance, where third-party assurance constructs moral legitimacy through its authority, thereby increasing stakeholder confidence in the disclosed content (Power, 1997). In contrast, tax avoidance is a key tactic employed by firms facing financial pressure, which is inherently at odds with legitimacy (Hanlon and Heitzman, 2010). The apparent contradiction between the two does not preclude a potential relationship. Firms may utilise SA to divert scrutiny from regulators and the public regarding their concealed tax avoidance activities (Cho et al., 2015a), thereby executing a hypocritical business strategy of 'symbolic legitimisation'. Evidence from the European context indicates that the parallel occurrence of SA's partial verification of non-financial metrics and aggressive tax avoidance reflects the very essence of greenwashing (Maroun, 2020b; Sikka, 2012). Impression management theory provides the micro-behavioural foundation for legitimacy theory. The legitimacy construction undertaken by firms through SA is, in essence, a carefully orchestrated impression management strategy designed to craft an image of a 'responsible corporate citizen' that does not necessarily reflect substantive responsible practices. This symbolic management of legitimacy allows firms to maintain a façade of compliance while continuing to engage in tax avoidance behaviours that may harm the interests of a broad range of stakeholders.

Another theory explaining their relationship from an external perspective is risk management theory. Prior research in corporate social responsibility has indicated that some firms engage in socially responsible activities as a risk management tool to mitigate the impact of negative events (Godfrey, 2005; Godfrey et al., 2009). From an impression management theory perspective, this risk management strategy is essentially a form of preventive impression repair. Firms proactively build a reserve of positive ethical capital through SA, thereby reducing the damage to the organisational image should their tax avoidance activities be exposed (Elsbach, 1994). Therefore, this theory predicts that firms purchase sustainability assurance (SA) to introduce a hedging mechanism against the risks associated with aggressive tax avoidance. Specifically, SA helps craft a public image

of the firm as a 'responsible citizen', which encourages social arbiters to avoid or reduce the probability of attributing negative events to malicious intent when judging the firm (Minor and Morgan, 2011; Hanlon and Slemrod, 2009; Wilson, 2009), thereby softening the severity of potential sanctions(Lanis and Richardson, 2015). Consequently, this risk hedging strategy drives firms to couple SA with tax avoidance behaviour (Avi-Yonah, 2008).

However, the effectiveness of this strategy is contingent on the social perception threshold of tax avoidance. Empirical studies show that when tax avoidance is perceived as 'technical compliance' rather than a moral failing, the resulting reputational costs may be insufficient to trigger the insurance-like effect of ethical practices (Hanlon and Slemrod, 2009). For instance, the stock price reaction was muted in about 67% of tax avoidance cases exposed by mainstream media (Hanlon and Slemrod, 2009). Gallemore et al. (2012) also found no consistent evidence that firms or their executives face significant reputational costs from being accused of involvement in tax avoidance activities. Therefore, within this theoretical context, the establishment of a relationship between SA and tax avoidance is conditional. One might argue that a significant risk hedging relationship between the two only becomes apparent when the severity of the tax avoidance reaches a certain level or when regulatory deterrence is sufficiently strong.

New institutionalism further explains the drivers behind corporate decisions to purchase SA and engage in tax avoidance through the concept of "institutional isomorphism". Under institutional pressures, homogenisation among firms is inevitable, particularly when companies reach a mature stage (DiMaggio and Powell, 1983b; Wahab et al., 2022). This occurs because firms must converge with industry norms to secure legitimacy and shield themselves from public scrutiny, even when such norms conflict with internal efficiency objectives (Meyer and Rowan, 1977b). However, in practical isomorphic strategies, firms operate within specific social contexts where they simultaneously strive to adhere to social institutions and pursue efficiency goals, leading to decoupling (Weaver, 2008). Therefore, when a firm's tax strategies reach the level of avoidance, which is driven by internal efficiency objectives, and considering the associated reputational and operational risks, managers implementing tax avoidance will inevitably couple it with legitimising strategies

(Heinemann, 2011; Mickiewicz et al., 2019; Martinez-Vazquez and Torgler, 2009). For instance, they may alter perceptions, modify reporting behaviours, and showcase corporate social responsibility to demonstrate ethicality, aligning with external normative isomorphic pressures, ultimately achieving a decoupling strategy (Wahab et al., 2022; Demirbag et al., 2013; Atwood et al., 2012). In this context, SA becomes an ideal tool for decoupling. Purchasing SA allows a firm to appear compliant with institutionalised ceremonial norms while simultaneously managing business costs effectively through tax avoidance. In summary, the relationship between tax avoidance and purchasing SA under neo-institutional theory is not one of simple complementarity but rather a compromise within institutional logics, an inevitable outcome of the dynamic balance between morality and efficiency. Impression management theory provides the specific implementation mechanism for the "decoupling" concept in neo-institutionalism. Through symbolic actions like SA, firms manage external audiences' impressions of their compliance, while maintaining efficiency oriented operations internally (Meyer and Rowan, 1977b). This impression management enables organisations to secure external legitimacy while preserving internal efficiency, such as cost reduction via tax avoidance.

Agency theory, by analysing the conflict of interest arising from the separation of ownership and control (Jensen and Meckling, 2019; Badertscher et al., 2013), provides a micro-level, internal logic for corporate tax avoidance. It posits that managers, as agents, might prioritise their own interests over those of the principals when making operational decisions (Kovermann and Velte, 2019; Boujelben and Medhioub, 2025). Depending on the context, managers' motivations for engaging in tax avoidance vary. For instance, when managerial compensation is heavily tied to after-tax earnings (Badertscher et al., 2013; Bender, 2004), there is an incentive to maximise short-term financial performance through tax avoidance, even exploiting information asymmetry to conceal the extent of such activities (Kovermann and Velte, 2019). Regarding SA, agency theory interprets it as a tool for signalling sound governance. Management may use SA to communicate a signal of diligent agency to shareholders, aiming to alleviate concerns about hidden actions or agency problems (Boujelben and Medhioub, 2025). As also discussed in legitimacy theory, this governance

signal can be viewed as a symbolic tool for demonstrating compliance and due diligence. Specifically, when management faces a legitimacy crisis due to tax avoidance, SA can serve to divert shareholder scrutiny away from the avoidance activities. Of course, this discussion does not allow for a definitive assertion of a positive relationship between tax avoidance and SA; rather, it leaves room for a bidirectional relationship, as the ultimate nature of this link is likely constrained by various governance controls. This is because, as Desai and Dharmapala (2009) and Armstrong et al. (2015) point out, despite the link between managerial pay and after-tax earnings, tax avoidance carries significant exposure risks. To protect their own positions and ensure stable career progression, managers might be more inclined to reduce tax avoidance, a tendency that is more pronounced in high-quality governance environments. Consequently, in such contexts, the purchase of SA could be viewed more as an ethical corporate behaviour rather than a tool for diverting attention. Impression management theory provides an explanation for the behavioural manifestations of agency problems. Management uses visible, symbolic actions like SA to manage principals' impressions of their competence and integrity, thereby masking potential agency issues. This impression management is particularly effective under conditions of information asymmetry, allowing agents to maintain their positions and compensation without necessarily acting fully in the principals' best interests.

Integrating the multiple theories discussed above to examine the relationship between SA and tax avoidance is necessary. Considering the blind spots inherent in any single theory, relying on a solitary theoretical assumption to explain such strategic phenomena would largely overlook the identification of their antecedents and consequences, thereby providing a myopic perspective on a specific issue (Alhossini et al., 2021). For instance, while stakeholder theory emphasises balancing multiple forms of capital, it tends to overestimate a firm's proactive ability to reconcile conflicting interests (Freeman, 1984). Legitimacy theory focuses on passive compliance under institutional pressure (Suchman, 1995b), but neglects the inherent inclinations and agency of corporate managers themselves. Risk management theory reveals the logic of ethical hedging yet underestimates the market's low sensitivity to tax avoidance. Agency theory dissects

governance games but oversimplifies the modulating role of external institutions on managerial decisions. Lastly, neo-institutionalism points to isomorphic pressures driving the concurrent use of both, yet implicitly assumes corporate strategy remains a passive reaction. Therefore, integrating the diverse perspectives from these theories helps uncover the underlying drivers of corporate decision-making. This allows the study to adopt a more comprehensive and flexible viewpoint for considering management's decisions and practical behaviours within the context of genuine business objectives, thereby systematically analysing the potential drivers behind management's decision to purchase SA, engage in tax avoidance, and the relationship between the two.

In light of this, impression management theory, serving as the dominant framework, successfully integrates insights from the other theories, providing a unified perspective for understanding how firms strategically manage their image concerning both sustainability and financial compliance. However, the competing hypotheses derived from these theoretical deductions, namely, whether SA signals a substantive commitment or serves as a tool for symbolic legitimisation, still require validation through rigorous empirical research.

4. Hypotheses development

4.1 The relationship between SA and tax avoidance and hypothesis development

Although the relationship between SA and tax avoidance has not yet become a mainstream research topic, SA's potential effects and relationships can be extrapolated and interpreted through findings from related empirical studies, given its role as an institutionalised tool for corporate social responsibility and sustainability practices. Existing research reveals significant complexity in the association between CSR and tax avoidance, with some studies indicating that firms with strong CSR performance are more inclined to fulfil their tax obligations, while others find that firms use CSR to build moral capital to cover

aggressive tax avoidance (Christensen and Murphy, 2004). It is noteworthy that while studies on independent audit mechanisms provide referential insights for SA, for instance, high-quality auditing can curb tax avoidance by enhancing compliance (Lanis and Richardson, 2012; Richardson et al., 2013), the function and logic of SA are distinctly different from traditional auditing. Therefore, dedicated research is still required to investigate this complex phenomenon. Consequently, this paper systematically reviews the existing findings from CSR and tax avoidance research and integrates the limited relevant evidence from SA studies to support the construction of the research hypotheses.

Research supporting a positive relationship between CSR and tax avoidance can be categorised into five distinct perspectives. First, the risk management perspective. For example, Hancock (2004) found that firms with high CSR, possessing stronger risk resilience and better reputation, exhibited significantly lower cash effective tax rates. Similarly, Mao and Wu (2019), using a Chinese sample, confirmed that firms with excellent CSR performance are more inclined towards tax avoidance, as these firms view social responsibility as a risk mitigation tool. Research in the Chinese market also shows similar findings; for instance, Lin et al. (2017), using Chinese data, found that firms pursue CSR to meet public expectations and reduce the reputational penalties associated with tax avoidance. Second, driven by shareholder wealth. Watson (2012) pointed out that when management acts to maximise shareholder value, it might strategically use CSR to divert public attention from tax avoidance, with empirics showing a significant positive correlation between the two. Third, driven by institutional environment. Zeng (2019) found that the positive correlation between CSR and tax avoidance fluctuates with the strength of national laws and regulatory effectiveness, indicating that institutional pressures shape the intensity of their strategic coupling. Fourth, opportunistic behaviour. For example, Santoso et al. (2019) found that management uses social responsibility disclosure to craft a responsible image, mask tax aggressiveness to perpetuate opportunistic conduct. Fifth, driven by legitimacy. For instance, Sikka (2012) and Davis et al. (2016) found that firms use CSR to enhance their legitimacy status, thereby mitigating the negative impacts associated with tax avoidance.

Based on the above discussion of the positive correlation between corporate social responsibility and tax avoidance, we made the first hypothesis that SA, which also has a similar "moral endorsement" nature to CSR, is positively correlated with tax avoidance:

H1a. There is a positive relationship between independent assurance of sustainability reports and tax avoidance

In contrast to the positive relationship, scholars have also explained and validated a negative relationship between CSR and tax avoidance from multiple dimensions. First, ethical constraints. For instance, Lanis and Richardson (2012), based on data from 408 Australian listed companies, found that the level of CSR disclosure is significantly negatively correlated with tax aggressiveness, indicating that ethical business practices can curb tax avoidance motives. Concurrently, Hoi et al. (2013a) concluded that firms engaging in more irresponsible CSR activities pursue tax avoidance more aggressively. Slemrod (2004), using multiple metrics, further validated the negative association between CSR performance and the intensity of tax avoidance, highlighting the universality of ethical self-regulation. Watson (2015), employing both the KLD index and unrecognised tax benefits as measures, demonstrated that high-CSR firms exhibit a greater tendency towards tax compliance. Second, the institutional environment. Although Lin et al. (2017) found a positive CSR-tax avoidance relationship, they also noted that in regions with well-developed institutional environments, CSR-oriented firms show a significantly reduced tendency for tax avoidance due to stronger legal constraints and ethical commitments. Third, comparative cross-national evidence. Beyond the samples from the countries mentioned above, Muller and Kolk (2015) and Zeng (2016), using market data from the Netherlands and Canada respectively, reached similar conclusions.

Building upon the discussion that corporate social responsibility and tax avoidance are negatively related, we formulate a hypothesis converse to the positive one stated earlier. Namely, similar to the pursuit of CSR, management that purchases SA is likely to possess

genuinely high ethical standards and a propensity for high-quality accountability, consequently engaging less in tax avoidance behaviour. Thus:

H1b. There is a negative relationship between independent assurance of sustainability reports and tax avoidance

It is noteworthy that Santoso et al. (2019) found that the positive relationship between CSR disclosure and tax avoidance in Thai firms was weakened by the introduction of SA, suggesting that SA constrains opportunistic behaviour. Boujelben and Medhioub (2025) further demonstrated with South African data that SA has a significant moderating effect on curbing managerial tax avoidance by fostering a compliance culture. However, they also noted that South Africa is the only country mandating integrated reporting rather than voluntary disclosure. In this specific context, the impression management function of assurance is likely diminished by the mandatory disclosure environment (Medhioub and Boujelbene, 2024). In other words, within a mandatory regime, the voluntary nature and symbolic legitimising function of SA may be diluted by the external institutional setting. Therefore, we argue that conclusions about this relationship cannot be readily generalised to other geographical and institutional contexts.

In summary, given the current scarcity of direct research on SA and tax avoidance, and the conflicting empirical evidence from the referenced studies on the CSR-tax avoidance relationship, this study does not propose a hypothesis for the SA-tax avoidance relationship predicated on a single directional prediction. The relationship could manifest as either positive or negative depending on the context, reflecting an interplay between governance effectiveness and hypocritical motives.

4.2 The moderating role of national culture

Given that scholars have pointed out the mixed empirical findings regarding the relationship between corporate social responsibility and tax avoidance depend on varying contextual characteristics, such as institutional quality and cultural dimensions, this study introduces cultural dimensions as a moderating factor in the relationship between SA and tax avoidance to capture authentic business strategies. In fact, recent accounting research has shown a significant institutional turn. Scholars have moved beyond traditional economically-oriented frameworks analysing the antecedents or consequences of financial behaviour. That is, besides examining the influence of regulatory bodies, creditors, or internal governance and financial factors on tax avoidance, they have begun embedding tax avoidance within broader national cultural dimensions for analysis (Tsakumis et al., 2007; Bame-Aldred et al., 2013). The rise of this paradigm stems from the interactive effects of cross-national cultural heterogeneity on corporate tax planning strategies. Multinational corporations decode the dimensions and orientations of different jurisdictions and regional cultures, such as risk preferences and perceptions of power structure, to dynamically adjust their tax avoidance strategies (Toumi et al., 2022), making national culture a key institutional variable for predicting corporate tax aggressiveness.

In this context, the mechanisms through which national culture influences corporate tax planning can be delineated along three pathways. First, culture acts as an 'informal institution' that shapes the internal ethical and decision-making boundaries within a firm, particularly considering that tax minimisation might be perceived as a low-ethical behaviour (Richardson, 2008; Hofstede, 2011). Second, cultural traits influence the firm's risk appetite (Hope et al., 2013), thereby affecting the governance strategies of its management. Third, from an external firm perspective, national culture can influence or reconstruct managerial decision-making logic through a 'collective cognitive framework'. For instance, a high power distance culture might reinforce authoritarian governance, prompting firms to engage in tax avoidance to enhance financial performance and consolidate power legitimacy (Tang and Koveos, 2008).

In prior accounting research related to national culture, scholars have widely used Hofstede's cultural dimensions theory as a structured analytical tool. This is because

Hofstede's theory systematically and logically explains culture as the collective mental programming that distinguishes one group of people from another, and subdivides culture into six dimensions to meet the needs of different studies. These include Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), Long-Term Orientation (LTO), and Indulgence versus Restraint (Hofstede, 2011). Furthermore, building on findings from the forefront of accounting and tax research (Bame-Aldred et al., 2013; Tsakumis et al., 2007; Richardson, 2008), this study focuses on examining the moderating effects of five core cultural dimensions on the relationship between SA and corporate tax avoidance. The existing literature has systematically verified that these five dimensions, excluding Indulgence/Restraint, significantly influence the degree of tax avoidance by driving factors such as risk preferences or individual orientations.

First, the core characteristic of high-power distance societies lies in their implicit consensus on hierarchical order. Members of society tacitly accept inequality in the distribution of power and wealth, with disadvantaged groups accepting or even reinforcing the privileged status of elites (Hofstede, 1984), thereby creating a significant wealth gap (Tsakumis et al., 2007). The mechanism of this culture in tax avoidance is that tax system designs in high power distance countries often tend to protect vested interest groups, exacerbating income distribution inequity (Hofstede, 1984). This leads to a perception of the tax system as unfair, potentially inclining individuals and firms towards more risky and aggressive tax planning. Empirical studies indicate that such cultural environments may catalyse aggressive tax avoidance, as high societal tolerance for wealth concentration lowers the moral barriers against it (Yoo and Lee, 2019; Tsakumis et al., 2007; Toumi et al., 2022). However, Hofstede (2011) revealed a countervailing mechanism: in high power distance cultures, management's perception of tax fairness may be blunted because they tacitly accept unequal systems, potentially resulting in lower tax avoidance intensity. In contrast, low power distance societies emphasise equal opportunity and wealth redistribution, theoretically driving firms to adopt conservative tax strategies to maintain social legitimacy. Paradoxically, such environments might breed implicit violations. As Yoo and Lee (2019) point out, low power distance countries, due to an excessive pursuit of 'superficial

compliance', might actually be more prone to concealing systemic corruption and tax scandals. Considering this contradictory direction of cultural effects and the dual nature of the cultural mechanism, this study proposes the following two-tailed hypothesis.

H2a. PDI positively moderates the link between independent assurance of sustainability reports and tax avoidance

H2b. PDI negatively moderates the link between independent assurance of sustainability reports and tax avoidance

Second, the Individualism dimension measures whether a society prioritises individual interests or collective interests (Hofstede, 2011). Its influence on tax avoidance decisions manifests as follows: managers in highly individualistic cultures exhibit a greater corporate risk appetite (Aren and Nayman Hamamci, 2023; Frijns et al., 2022). They are more inclined to detach from group normative constraints and view tax avoidance as a rational choice serving the objective of shareholder wealth maximisation (Vitell et al., 1993). This is because these managers perceive tax avoidance as a cost item to be optimised rather than a social responsibility (Bame-Aldred et al., 2013). Relevant empirical research provides direct evidence for this; Toumi et al. (2022) found a significant negative correlation between the individualism index and the effective tax rate, indicating it positively drives the intensity of tax avoidance. Bame-Aldred et al. (2013) found that firms in highly individualistic regions have a significantly higher probability of employing tax avoidance tools like cross-border transfer pricing. Therefore, this study not only hypothesises that it has a moderating effect on the relationship between SA and tax avoidance but also, considering the potential complexity of cultural effects, proposes the following two-tailed hypothesis.

H3a. IDV positively moderates the link between independent assurance of sustainability reports and tax avoidance

H3b. IDV negatively moderates the link between independent assurance of sustainability reports and tax avoidance

Third, Masculinity represents the degree to which a society emphasises traditional masculine traits such as competitiveness and material achievement, as opposed to feminine traits like modesty and caring (Hofstede, 2011). In the context of tax avoidance decisions, high Masculinity, characterised by the pursuit of material success, a high propensity for risk-taking, and assertive behaviour (Ringov and Zollo, 2007; Jia et al., 2014; Aren and Nayman Hamamci, 2023), leads to tax avoidance being viewed as a competitive tool for enhancing financial performance and a desire to maximise net profit (Husted, 1999). For instance, Toumi et al. (2022) found that Masculinity is significantly negatively correlated with the effective tax rate, indicating it generally fuels the intensity of tax avoidance. However, the same study also noted that countries with high Masculinity might counteract this cultural influence by strengthening tax supervision. This reflects the nature of institutional dynamic adjustment: when Masculinity progressively threatens tax order, regulators may reinforce rules to offset the negative impact of cultural characteristics on taxation. On the other hand, high Masculinity could also foster management's own desire for social recognition and success. Given that taxpaying behaviour can be seen as a marker of fulfilling social responsibility, this cultural dimension might also suppress tax avoidance (Tsakumis et al., 2007). In light of this, the moderating effect of Masculinity on tax avoidance is not unidirectional either, leading this study to propose the following two-tailed hypothesis.

H4a. MAS positively moderates the link between independent assurance of sustainability reports and tax avoidance

H4b. MAS negatively moderates the link between independent assurance of sustainability reports and tax avoidance

Fourth, Uncertainty Avoidance, distinct from risk aversion, expresses the degree to which members of a society feel comfortable or uncomfortable with novelty, the unknown, and unpredictable events. High avoidance cultures suppress uncertainty by establishing strict rules and endorsing authoritative structures, whereas low avoidance cultures are more tolerant of unconventional behaviour (Hofstede, 1984). Similar to the cultural dimensions discussed above, the influence mechanism of this cultural characteristic on tax avoidance is also bidirectional. On one hand, managers in high uncertainty avoidance environments might engage in tax avoidance due to dissatisfaction with existing rules (Richardson, 2008), or the complex tax laws in such societies might incentivise firms to exploit loopholes for 'technical tax avoidance' (Clotfelter, 1983; Milliron and Toy, 1988). On the other hand, under the pressure of high uncertainty avoidance, meticulous managers with a low baseline for risk-taking might adopt a more conservative approach, reducing tax avoidance to prevent potentially more adverse consequences. For instance, Toumi et al. (2022) and Aren and Nayman Hamamci (2023) found that managers in such cultural contexts reduce aggressive behaviours to minimise unexpected risks. Conversely, in low uncertainty avoidance environments, lax institutional settings, while reducing compliance pressure, might foster aggressive tax avoidance due to higher risk tolerance and greater freedom (Richardson, 2008). Therefore, this cultural characteristic also explains the trade-off managers make between the costs of compliance and the costs of violation regarding tax avoidance. Consequently, this study posits that it has a moderating effect on the relationship between purchasing SA and tax avoidance, and proposes the following two-tailed hypothesis.

H5a. UAI positively moderates the link between independent assurance of sustainability reports and tax avoidance

H5b. UAI negatively moderates the link between independent assurance of sustainability reports and tax avoidance

Fifth, Long-Term Orientation measures the extent to which members of a culture are willing to defer short-term gratification in pursuit of future rewards (Hofstede, 2011). Under this cultural trait, the risks of additional cash outflows and compliance exposure associated with tax avoidance deter opportunistic behaviour by management. Managers in such cultures tend to prioritise long-term financial health and sustained legitimacy, thereby suppressing the motivation for tax avoidance. This is because the compliance risks potentially triggered by tax avoidance are perceived as a threat to long-term financial stability. Furthermore, long-term oriented cultures emphasise the continuity of the 'social contract', making firms more inclined to fulfil their social responsibilities through tax payments to consolidate their market position. Empirical research similarly indicates that long-term orientation is positively correlated with the effective tax rate, indicating a negative association with tax avoidance (Toumi et al., 2022). However, considering that theoretical possibilities often present counterintuitive manifestations in practice, we still refrain from a single-directional prediction regarding the moderating effect of this culture.

H6a. LTO positively moderates the link between independent assurance of sustainability reports and tax avoidance

H6b. LTO negatively moderates the link between independent assurance of sustainability reports and tax avoidance

5. Research design

5.1 Sample and data

The financial data in this study were sourced from the LSEG DataStream database. Specifically, we collected data from companies listed on the STOXX Europe 600 index between 2013 and 2019, ultimately forming a panel dataset from 17 countries.

The rationale for selecting firms whose primary operations or headquarters are based in European countries is the region's recent dedicated efforts towards advancing sustainability initiatives and corporate social responsibility reforms. Sustainability practices within this geographical area, particularly SA practices, have consistently been at the forefront globally (Meqbel et al., 2023; Simnett et al., 2009). Therefore, the justification for selecting this region is fourfold. First, the data for company samples from this region exhibit breadth and continuity, encompassing not only financial data but also SA-related information. This is crucial for building a robust dataset for empirical research. Second, the financial reporting standards among European countries are similar; for instance, firms commonly use IFRS or comparable accounting standards, which allows for the comparability of financial data across different nations and industries (Meqbel et al., 2023). Third, we infer that, as a primary region for sustainable development and ESG transformation globally, management within this context has stronger motivation and intent to engage in the behaviours predicted in this study, or likely possesses a rich history and experience in executing them. Fourth, the varied characteristics of samples from different countries will help address the scarcity of cross-regional research in this field.

The rationale for selecting this timeframe is that, compared to prior trends, the development pace of sustainability and ESG reporting demonstrably accelerated after 2013, exhibiting characteristics of popularisation and standardisation. For instance, the G4 Guidelines launched by the GRI framework in 2013 gradually became the most widely used global standard for sustainability reporting (GRI, 2013a). In the same year, the IAASB issued the Revised ISAE 3000, which explicitly focused on assurance engagements for non-financial information and progressively became the preferred assurance standard for the Big Four accounting firms and large corporations in some jurisdictions (ACCA, 2023). Furthermore, the 2015 Paris Agreement and the TCFD framework released by the Task Force on Climate-related Financial Disclosures in 2017 emphasised corporate disclosure duties

regarding climate risks and carbon emissions (Benyon, 2015), among other developments. Consequently, based on this series of regulatory policies and reporting demands, we infer that European corporate management after 2013 would demonstrate a greater degree of concern and subsequent action regarding the behaviours predicted in this study when responding to external demands from various parties.

The decision to set the endpoint at 2019 is based on two reasons. First, it isolates assurance data from beyond 2023. This is because, from 2023 onwards, driven by the EU's Corporate Sustainability Reporting Directive (CSRD), firms are mandated to disclose ESG-related information and are required to obtain third-party assurance for their sustainability reports based on the Revised ISAE 3000 or an equivalent standard. In this context, our original theoretical background and hypotheses would be fundamentally challenged. Mandatory disclosure and SA requirements alter the strategic choices available to corporate management. Voluntary disclosure and the voluntary pursuit of assurance can be hypothesised as being driven by management's opportunistic tendencies, aiming for stakeholders to interpret voluntary assurance as an indication of the firm's social responsibility. In a mandatory environment, this 'purposeful' signalling function is lost, preventing management from utilising assurance as a tool for differentiation or impression management.

Secondly, we further advanced the cut-off point to 2019 due to consideration of the significant recessionary impact of the COVID-19 pandemic, which began in early 2020, on the global economy, and particularly its substantial effects on managerial behaviour and corporate financial data. This concern has been widely validated by scholars in prior research on corporate tax strategies. For instance, both Medhioub and Boujelbene (2024) and Boujelben and Medhioub (2025), when examining the relationship between assurance and the degree of corporate tax avoidance, expressed concerns that the external macroeconomic shifts caused by COVID-19 could introduce potential deviations from normal corporate operations. This is because, under the influence of COVID-19, many firms worldwide faced adverse economic conditions such as developmental stagnation or forced closures.

From an external firm perspective, governments introduced a series of short-term tax relief policies to support business survival, which could lead to the presence of outliers in post-2020 financial data, rendering them unreflective of ordinary operational conditions (Medhioub and Boujelbene, 2024). From an internal firm perspective, such an external economic shock affects the sensitivity of both financial and non-financial corporate strategies. From a financial standpoint, global financial crises or economic contractions have been shown to correlate positively with corporate tax aggressiveness (Richardson et al., 2015; Brondolo, 2009; Edwards et al., 2013). For example, management in cash-strapped firms with bleak prospects might adopt riskier positions to escape distress, perceiving the downsides of tax aggressiveness, such as penalties, as negligible compared to the potential upside of avoiding bankruptcy. This is particularly true for management facing extreme financial distress, who may engage in aggressive tax avoidance to continue operations (Campello et al., 2011; Richardson et al., 2015). Furthermore, multinational corporations with larger asset and operational scales have been shown to employ capital restructuring strategies during financial crises, such as channeling restructured group debt to high-tax jurisdictions to maximise tax deductions within limited scope (Richardson et al., 2015). In a sense, firms 'borrow' from tax authorities during periods of severe financial distress (Slemrod, 2001). On the other hand, regarding non-financial strategy, firms facing distress might more actively engage in social responsibility to manage their reputation and image. This is because during major national external crises, the public pays heightened attention to social responsibility coverage in the media (Cheng, 2014; Dhaliwal, 2011). In summary, considering the significant impact of COVID-19 on corporate financial and non-financial behaviour, we infer that this would cause relevant data to deviate from normal years, thereby substantially affecting this study's theoretical background and findings. Consequently, we limited the data cut-off to the end of 2019.

Considering that different proxies for tax avoidance require varying calculation methods, for instance, calculating indicators representing managerial earnings management may necessitate financial data from the previous one or two periods. This study extended the data collection scope back to 2011 to meet these computational requirements. This

ensures that the final regression results are comparable within the selected timeframe of 2013 to 2019.

We applied three common exclusion criteria from the accounting and tax literature. First, this study removed data from the financial and banking sectors because their financial accounting requirements, governance systems, and regulatory environments differ from those of general firms. Second, to ensure the accuracy of metric measurement and test results, we excluded firm-year observations with more than 70% missing data when calculating the different tax avoidance proxies, retaining only annual observations with relatively complete data. The specific sample sizes are detailed in the descriptive statistics and regression analysis. Third, following numerous prior studies, such as Desai and Dharmapala (2006), Dyreng et al. (2008), and Lanis and Richardson (2015), we winsorised extreme data points where pre-tax income was less than or equal to zero. That is, any firm-year observation with negative pre-tax income (loss-making firm-years) was excluded from the final sample. This is because, under normal circumstances, the purpose of corporate tax avoidance through methods like tax planning is to reasonably reduce the tax payable. This activity is typically contained within certain limits and would not result in a negative current income tax expense. Therefore, firms with zero or negative taxable income can be considered to have a diminished marginal motivation to engage in tax avoidance activities, even though net operating loss carry forwards might make tax savings potentially valuable for loss-making firms (Desai and Dharmapala, 2006).

Furthermore, the statutory tax rate data in this study were sourced from the official OECD database to ensure the authority and comparability of cross-national tax system information. The national culture dimension indicators utilised the standardised cultural index system constructed by Hofstede (2010). Given that cultural variables possess cross-sectional data attributes and low time-sensitivity Hofstede, 2010), we assume the cultural dimensions remained relatively stable during the period, and their dynamic adjustment would have a negligible impact on the empirical results.

5.2 Dependent Variables

We posit that the degree of corporate tax avoidance is potentially influenced by the firm's motivation to seek assurance, and thus we treat the degree of tax avoidance as the dependent variable. Consistent with existing empirical tax research, see Lanis and Richardson (2012), Frank et al. (2009), and Chen et al. (2010), we define tax avoidance as the downward management of taxable income through tax planning activities. It therefore encompasses tax planning activities that are legal or potentially fall into grey areas, as well as illegal activities.

The identification and measurement of tax avoidance behaviour remains a crucial aspect of empirical research. Scholars widely employ various proxy variables, such as the effective tax rate (ETR), book-tax differences (BTD) (Frank et al., 2009), and variants related to these (Hanlon and Heitzman, 2010), for instance, its version adjusted for discretionary accruals (DDBTD), to capture the degree of corporate tax avoidance. However, these indicators each have limitations: ETR is significantly influenced by firm characteristics and industry factors, while BTD may include normal accounting policy differences and unintentional measurement errors (Hanlon and Heitzman, 2010). Therefore, research on tax avoidance must treat measurement error cautiously and interpret empirical findings within the specific context. More importantly, the motivations for tax avoidance are diverse; it may stem from considerations of shareholder value maximisation, or it may originate from opportunistic self-interest by management (Desai and Dharmapala, 2006). For example, in firms with weak governance mechanisms, management might use complex tax avoidance schemes to conceal rent-seeking behaviour, exacerbating agency conflicts (Armstrong et al., 2015). Consequently, understanding tax avoidance requires not only focusing on its economic consequences but also deeply examining the underlying corporate governance structures and incentive mechanisms. In this subsection, we discuss the rationale and reasons for the multiple tax avoidance measurement indicators selected for this study.

5.2.1 ETR and Cash_ETR

The Effective Tax Rate (ETR) measures a firm's adeptness at reducing its current tax liability relative to its pre-tax accounting income. It is calculated by dividing the 'tax expense' from the statement of profit or loss by the 'accounting profit before tax' from the same statement (Gupta and Newberry, 1997; Hanlon and Heitzman, 2010). The resulting ratio is negatively correlated with the degree of tax avoidance; that is, a lower ETR indicates a higher level of corporate tax aggressiveness. This is because firms engaging in aggressive tax avoidance behaviours, including but not limited to adjustments for overseas sales, tax-exempt income, tax credits, and deferred revenue recognition (Rego, 2003), typically generate temporary and permanent differences between accounting income and taxable income in their financial data. The magnitude of these differences is reflected in the ETR. A smaller numerator signifies more 'effective' tax planning, hence firms with aggressive tax avoidance tendencies typically possess a lower ETR (Rego, 2003). In recent years, ETR has been validated as an effective indicator reflecting the aggressiveness of corporate tax avoidance in numerous studies, such as Slemrod (2004), Dyreng et al. (2008), Robinson et al. (2010), Armstrong et al. (2012), Chen et al. (2010), Cheng et al. (2016), Hasan et al. (2014), Lanis and Richardson (2012) and Hope et al. (2013).

Naturally, the prevalence and widespread use of ETR has also attracted critical discourse among scholars based on different research contexts and accruals concepts, leading to the development of several ETR variants for researchers to choose from. For instance, the annual ETR allows researchers to observe year-on-year tax avoidance susceptible to temporal variations (Aronmwan and Okaiwele, 2020; Gebhart, 2017). The average ETR facilitates the examination of tax burden distribution and the fairness of the tax system across firms and industries (Gupta and Newberry, 1997). The long-run ETR supports longitudinal, investigative research on tax avoidance within a stable industry or for a specific company (Aronmwan and Okaiwele, 2020).

A more common ETR variant is the Cash Effective Tax Rate (Cash_ETR) (Dyreng et al., 2008; Hoi et al., 2013a; Medhioub and Boujelbene, 2024; Fallan and Fallan, 2019). Its

calculation uses 'cash taxes paid' from the operating cash flow statement divided by 'accounting profit before tax'. The interpretation of this value aligns with that of ETR, namely, it exhibits a negative correlation with the degree of tax avoidance. Under the accruals-based principle, tax expense typically comprises both current and deferred tax liabilities[2]. Consequently, using the standard ETR makes it difficult to isolate strategies where management utilises tax deferral, that is, it fails to capture strategies where management uses discretion and manipulates accounting policies to minimise taxes (Hanlon and Heitzman, 2010; Lee et al., 2015). The core advantage of Cash_ETR lies in its use of cash taxes paid to reduce interference from accruals. For example, if a firm accelerates depreciation to reduce taxable profit without actually decreasing the cash taxes paid in the period, this metric can more directly reflect the pressure from tax-related cash flows (Hoi et al., 2013a). Simultaneously, it measures the degree of tax avoidance per unit of income based on taxes actually paid, indicating management's ability to minimise 'cash taxes paid' or reflecting tax avoidance strategies that defer 'cash taxes paid' to future accounting periods, as well as outright avoidance strategies (Cook et al., 2017; Hsu et al., 2018).

Although Cash_ETR can reflect accruals management and provide a better picture of certain avoidance activities, it suffers from a timing mismatch between its numerator and denominator. The numerator excludes accruals, while the denominator is based on accrual accounting. This means Cash_ETR cannot accurately measure tax avoidance behaviour within the same accounting period (Dyreng et al., 2008). For instance, when a firm employs intertemporal strategies like carrying deferred taxes forward to future years, these operations are understated in the Cash ETR (Gallemore and Labro, 2015). Therefore, the literature generally acknowledges the value of this metric for short-term cash flow analysis,

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[2] Current tax liability is the portion of tax payable applied to the current year's profit at the current tax rate, while deferred tax liability is the portion of tax arising from timing differences (the difference between the carrying amount of an asset/liability and its tax base).

but considers it unstable for reflecting long-term tax avoidance situations (Aronmwan and Okaiwele, 2020).

5.2.2 BTD and DDBTD

BTD represents the difference between a firm's accounting standards and tax accounting rules[3]. It is widely used in tax research as a proxy for corporate tax avoidance, as it reveals corporate practices in tax planning, such as exploiting disparities between accounting standards and tax legislation to reduce tax liabilities (Hoi et al., 2013a; Lanis and Richardson, 2012; Manzon Jr and Plesko, 2001). It is calculated as (accounting profit before tax minus taxable profit) divided by lagged total assets. Here, taxable profit is derived by dividing the tax expense by the nominal or statutory tax rate (Kim et al., 2011; Hoi et al., 2013a). The value of BTD is positively associated with the aggressiveness of tax avoidance. A larger BTD indicates a greater divergence between accounting profit and taxable profit, suggesting a higher likelihood that the firm is engaged in tax avoidance activities (Manzon Jr and Plesko, 2001).

DDBTD, a variant of BTD designed to measure the extent of tax avoidance, was developed by Desai and Dharmapala (2006) as an extension and refinement of the BTD measure proposed by Manzon Jr and Plesko (2001). It has been extensively adopted in subsequent research, for instance, by Frank et al. (2009), Chen et al. (2010), Hoi et al. (2013a) and Lanis and Richardson (2012). The objective of the Desai-Dharmapala measure is to isolate the portion of BTD variation that is driven by tax avoidance from that influenced by earnings management activities (Chen et al., 2010). This is because aggressive tax avoidance can generate permanent tax savings that increase net profit, without increasing pre-tax discretionary accruals (Frank et al., 2009). Consequently, removing the effect of accruals

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[3] This is because when calculating taxable income, the calculation of expenses will be affected by various tax deductions such as taxable allowance, which ultimately leads to differences between the taxable income results and the accounting income results.

provides a more appropriate reflection of the degree of tax avoidance. Under this premise, the measurement logic of DDBTD is the residual component of BTD after purging the influence of accruals. It represents the part of the difference between a firm's accounting profit and its taxable income that cannot be explained by total accruals. In essence, this design logic is methodologically analogous to the construction paradigm of Cash ETR, as both seek to eliminate the noise in measuring tax avoidance introduced by managerial discretion.

5.2.3   Measurement of dependent variables

Considering the advantages and disadvantages of the aforementioned tax avoidance measures, this study employs ETR as the dependent variable to construct the primary regression model, and introduces BTD and DDBTD as alternative variables in the robustness tests. The rationale for this combination is threefold. First, all three tax avoidance measures are based on the accrual basis, inherently consistent with accounting standards, enabling them to systematically capture the interactive effects of accounting policy choices and tax planning behaviours (Hanlon and Heitzman, 2010). In contrast, the cash basis of Cash ETR, which is divorced from the accounting basis, undermines its explanatory power. Second, ETR and BTD, through adjustments for deferred taxes, are more suitable for analysing firms long term tax avoidance strategies, given that the data in this study spans seven years. Third, DDBTD can more accurately identify aggressive tax avoidance undertaken by management exploiting accounting flexibility (Frank et al., 2009). Therefore, the three measures selected in this study consider different dimensions of tax avoidance: ETR reflects the overall tax burden including deferred strategies, BTD reveals the scope for manipulation in accounting and tax differences, and DDBTD focuses on managerial discretionary behaviour. By constructing a testing framework with triple measures, the study aims to comprehensively evaluate the explanatory power of different measurement methods and to cross validate through multi-dimensional indicators to avoid

estimation biases that may arise from a single measure. The detailed calculations of the three explanatory variables are as follows.

We employ a triple screening criteria to construct the ETR measure. First, pretax profit greater than zero is used as a denominator screening criterion; when it is zero or negative in the current period, ETR is set as missing. Second, the sample is further winsorised such that ETR falls between 0 and 1 (Chen et al., 2010). Finally, since ETR represents the inverse function of tax avoidance, following prior research recommendations, we multiply the ETR value by negative one to establish a positive measurement relationship with the degree of tax avoidance, meaning that a higher ETR value indicates a higher degree of tax avoidance (Goh et al., 2016; Kovermann, 2018), as shown in Equation 1.

$$ETR_{i,t} = -1 \times \left(\frac{tax\ expense}{pre-tax\ income}\right) \tag{1}$$

The measurement method of BTD follows Manzon Jr and Plesko (2001), defining it as the difference between accounting profit and taxable income, and processing the scale effect through the total assets at the end of the period. Its expression is as follows.

$$BTD_{i,t} = \frac{accounting\ profit\ before\ tax - taxable\ profit}{Total\ Assets_{t-1}} \tag{2.1}$$

$$Taxable\ profit = \frac{tax\ expense}{Nominal\ tax\ rate\ (or\ statutory\ tax\ rate)} \tag{2.2}$$

The measurement of DDBTD follows the studies by Desai and Dharmapala (2006) and Hoi et al. (2013a), with the specific calculation detailed as follows. The calculation of BTD continues to adhere to the method proposed by Manzon Jr and Plesko (2001). Accruals reflect the portion of BTD that is explained by accruals in the context of tax avoidance. We employ the revised Jones model to estimate the normal accruals level (Dechow et al., 1995), using lagged total assets for scaling. μi denotes the average residual for firm i over the sample period, and $\varepsilon i,t$ represents the deviation of the residual from the firm's average residual μi in year t. Finally, $DDBTDi,t$ equals $\mu_i + \varepsilon_{i,t}$, which captures the part of BTD that

cannot be explained by accruals, thereby serving as a measure of the degree of tax avoidance.

$$BTD_{i,t} = \beta_1 Accrual_{i,t} + \mu_i + \varepsilon_{i,t} \qquad (3.1)$$

$$Accrual_{i,t} = \frac{net\ profit - operating\ cash\ flow}{Total\ Assets_{t-1}} \qquad (3.2)$$

$$DDBTD_{i,t} = \mu_i + \varepsilon_{i,t} \qquad (3.3)$$

In the calculation of BTD and DDBTD, we follow prior research, such as Desai and Dharmapala (2006),Chen et al. (2010), Hoi et al. (2013a), and Lanis and Richardson (2012), by setting observations with negative accounting profit before tax or negative taxable profit as missing. This is because firms with zero or negative taxable income are considered to have diminished motivation to engage in tax avoidance activities at the margin.

Detailed variable definitions and the calculation process are presented in Table 2.

In summary, the three different tax avoidance metrics employed in this study, along with a brief explanation of their interpretation and limitations, are as follows. First, ETR is adjusted inversely in this study by multiplying it by -1; consequently, a higher value indicates a lower effective tax burden for the firm and more aggressive tax avoidance. However, this metric represents the ultimate outcome of a firm's tax avoidance, which includes challenges from actual operations and is influenced by firm characteristics and industry affiliation. For example, research and development tax credits, cross-border tax relief, and similar factors can affect ETR. Therefore, this measure of compliance tax avoidance may be driven by social norms and may not fully reflect hidden tax avoidance tactics. Second, the book-tax difference (BTD) measures the gap between accounting profit and taxable income. A larger BTD typically indicates more aggressive tax avoidance. However, this metric may confound normal differences in accounting policies with unintentional measurement errors. Finally, DDBTD builds upon BTD by removing the effect of earnings management, providing a cleaner measure of aggressive tax avoidance; a larger value indicates a higher degree of

tax avoidance. Its calculation, however, is relatively complex and depends on the estimation accuracy of the accrual model. Employing these three metrics collectively facilitates the cross-validation of corporate tax avoidance behaviour across different dimensions, thereby enhancing the robustness of the conclusions.

5.3 Independent variable

Building upon empirical evidence from accounting literature that examines the relationship between assurance and earnings management, such as Zaman et al. (2021), Al‑Shaer and Zaman (2018), and Mardawi et al. (2023), this study operationalises sustainability assurance as a binary dummy variable. Specifically, SA is assigned a value of 1 if a company obtains independent third-party assurance on its sustainability report during the financial year, and a value of 0 if no assured sustainability information is disclosed.

5.4 Moderating variables

This study employs cross-cultural data derived from the latest measurements of Hofstede's cultural dimensions theory (Hofstede et al., 2010). As a landmark theoretical framework in cross-cultural management research, the Hofstede model has undergone half a century of continuous validation and development (Chui et al., 2002). It is widely recognised within international business academia as the most explanatory paradigm for analysing national cultural differences (Kirkman et al., 2006), with its theoretical validity systematically confirmed through 265 meta-analyses in fields such as organisational behaviour, international negotiation, and cross-cultural marketing (Yoo and Lee, 2019). This theoretical framework captures the mechanisms through which societal culture shapes collective value orientations via a system of six dimensions. The original four-dimensional model (Power Distance, Individualism/Collectivism, Masculinity/Femininity, Uncertainty Avoidance) was theoretically expanded to include two additional dimensions: Long-Term Orientation and Indulgence/Restraint (Hofstede et al., 2010). Consistent with the prior

discussion (see section 4.2), this study selects five dimensions, excluding Indulgence/Restraint, to test for moderating effects.

The data for each cultural dimension are presented in Table 1. The numerical value for each dimension represents the relative strength of a particular country or region on that specific cultural aspect, reflecting its position relative to other cultures. Essentially, these are comparative indices obtained from standardised scores based on cross-national survey data (Hofstede et al., 2010).

Table 1: Hofstede's Six State Dimensions Scale —— excluding Indulgence/Restraint dimension					
Country/Dimension	**PDI**	**IDV**	**MAS**	**UAI**	**LTO**
Austria	11	55	79	70	60
Belgium	65	75	54	94	82
Denmark	18	74	16	23	35
Finland	33	63	26	59	38
France	68	71	43	86	63
Germany	35	67	66	65	83
Ireland	28	70	68	35	24
Italy	50	76	70	75	61
Luxembourg	40	60	50	70	64
Netherlands	38	80	14	53	67
Norway	31	69	8	50	35
Poland	68	60	64	93	38
Portugal	63	27	31	104	28
Spain	57	51	42	86	48
Sweden	31	71	5	29	53
Switzerland	34	68	70	58	74
United Kingdom	35	76	66	35	60

5.5 Control variables

Control variables are employed to account for potential confounding effects that may influence the relationship between the independent and dependent variables in this study. Consequently, drawing on prior research evidence from scholars in accounting and taxation, this paper selects a series of control variables with substantive impact.

We first control for the firm size effect (SIZE) and refrain from making a directional prediction regarding the relationship between size and the degree of tax avoidance. Evidence from numerous prior studies indicates that this relationship is mixed. For example, in support of a positive association, Richardson and Lanis (2007), using an Australian sample, found that larger firms possess greater tax bargaining power. This is attributed to their relatively superior economic and political power to maintain tax competitiveness compared to smaller firms (Siegfried, 1972). Furthermore, larger firms exhibit an increased propensity to engage in tax avoidance through earnings management (Chen et al., 2010; Lanis and Richardson, 2011; Huseynov and Klamm, 2012), and larger multinational corporations demonstrate significant motivation for cross-border tax avoidance (Dyreng et al., 2008; Dischinger and Riedel, 2011). Conversely, in negative associations, Hoi et al. (2013a) and Lanis and Richardson (2012) share the view that larger firms, with more established institutional frameworks and motivations to preserve corporate image and social reputation, are less likely to engage in tax avoidance.

Second, this study controls for a variable representing corporate profitability, using return on assets (ROA) as the measure. Jensen (2009) argues that firms with higher profitability are more likely to attract scrutiny from tax authorities, thereby discouraging tax avoidance practices. Numerous empirical studies also find that more profitable firms and those with

fewer loss carry forwards tend to exhibit higher ETRs or smaller BTDs, indicating a negative relationship between profitability and the degree of tax avoidance (Manzon Jr and Plesko, 2001; Mills, 1998; Rego, 2003; Dyreng et al., 2008; Chen et al., 2010; Lanis and Richardson, 2012). From an alternative perspective, Edwards et al. (2016) suggest that firms in poor financial health or with insufficient cash are more inclined to engage in tax avoidance to reduce tax liabilities or defer payments, thereby increasing available cash and generating higher marginal benefits. However, scholars have also provided evidence for a negative relationship. For instance, Plesko (2004) indicates that more profitable firms have greater incentive and capacity to secure preferential treatment from tax authorities, increasing their propensity for tax avoidance. Dyreng et al. (2008) contend that profit advantages enable firms to pursue high-cost tax planning strategies, such as establishing subsidiaries in tax havens. Rego (2003) finds that highly profitable firms engage in complex and frequent tax avoidance through intricate production and value-creating activities in more concealed manners. Therefore, no directional prediction is made for the relationship between ROA and tax avoidance.

Third, as an extension of assessing corporate profitability, this study controls for a firm's loss status (LOSS), incorporating this variable as a dummy variable in the regressions. It is specifically operationalised as follows: if a firm reported a loss in the prior accounting period, it is assigned a value of 1 in the current period; otherwise, it is assigned 0. The rationale for controlling for this variable is that poor or loss-making financial performance often leads management to become overly reliant on reported earnings and profitability, thereby increasing the threat of corporate financial fraud (Beasley, 1996; Lanis and Richardson, 2012). Furthermore, such firms are more likely to engage in aggressive tax avoidance. Consequently, a positive association between LOSS and tax avoidance is anticipated (Lanis and Richardson, 2018).

Fourth, this study controls for the Leverage Ratio (LEV). Prior research has identified a significant dual relationship between LEV and management's propensity for tax avoidance. Regarding a positive association, when debt levels are high, firms require more cash flow for debt servicing. Management may view tax avoidance as a channel for internal fund

generation with high marginal benefits, thus strengthening the motivation for tax avoidance under these circumstances (Chen et al., 2010; Kubick et al., 2015). Conversely, for a negative association, higher debt leads to greater interest expenses, which reduce taxable income. Lower taxable income diminishes the incentive for further tax avoidance (Graham and Tucker, 2006; Dyreng et al., 2008). Therefore, no directional prediction is made for this variable.

Fifth, this study controls for Capital Intensity (CINT). Previous empirical evidence indicates that a firm's strategies for handling the depreciation of fixed assets (Property, Plant & Equipment) influence changes in tax avoidance measures, with a more pronounced effect on capital-intensive firms (Desai and Dharmapala, 2006; Dyreng et al., 2008; Stickney and McGee, 1982; Lanis and Richardson, 2012). This measure is calculated as PPE divided by Lagged Total Assets, and a positive association with the degree of tax avoidance is predicted.

Sixth, this study controls for the level of intangible assets (INTANG), calculated as intangible assets divided by lagged total assets. Prior research indicates that firms can benefit from tax allowances on capitalised research and development expenditures, and those holding significant intangible assets possess greater opportunities for tax avoidance (Lanis and Richardson, 2012). Furthermore, intangible assets are identified as key instruments in profit-shifting operations by multinational enterprises, facilitating transfer pricing to jurisdictions with lower tax rates (Chen et al., 2010; Dyreng et al., 2008; Rego, 2003).

Seventh, this study introduces a measure for the market's anticipated attitude towards the firm (EXPECTATION), which potentially exerts dual moderating effects, and is measured by the Market-to-book ratio. Specifically, a ratio greater than one typically reflects a premium that investors place on a firm's intangible assets or future growth potential. The relationship between such growth firms and tax avoidance has been established in prior research, albeit with differing perspectives. On one hand, growth firms might engage in tax planning to maintain growth expectations, suggesting a negative association with tax

avoidance propensity (Gupta and Newberry, 1997; Derashid and Zhang, 2003; Adhikari et al., 2006; Armstrong et al., 2012). Conversely, firms in growth stages often prioritise the appearance and robustness of their publicly disclosed financial statements, as they consider future financing needs and development, potentially leading to a lower propensity for tax avoidance (Godfrey, 2005).

Eighth, this study also controls for the percentage of shares held by institutional investors (INST_OWN). Desai et al. (2006) posit that while concentrated ownership might lead large shareholders in a firm to favour tax avoidance to expropriate benefits from minority shareholders, the dilution of this ownership concentration by institutional investors increases the risk of exposure for such expropriation, potentially making it less profitable and thus reducing the likelihood of tax avoidance. Furthermore, scholars find that long-term institutional investors can curb aggressive tax avoidance tendencies by strengthening corporate governance, implying a negative relationship between this measure and tax avoidance (Khan et al., 2017; Huseynov and Klamm, 2012). However, evidence supporting a positive association also exists. Based on performance pressure theory, a high proportion of institutional investors, particularly short-term oriented ones, can intensify management's focus on short-term objectives. In this context, tax avoidance may be employed as a tool to quickly boost net income, serving as a strategy to meet shareholder return demands (Jensen, 1986). Further evidence suggests that short-term institutional investors prioritise performance over financial governance (Chen et al., 2010), and may encourage tax avoidance through shareholder activism to enhance performance (Cheng et al., 2012). From a governance perspective, a larger number of institutional investors might dilute monitoring effectiveness, allowing management greater discretion to pursue more radical tax strategies (Admati and Pfleiderer, 2009). Additionally, a high level of institutional ownership might signal "professional monitoring" to the market, potentially masking the risks associated with tax avoidance and reducing scrutiny from external auditors and regulators (Goh et al., 2016). Consequently, no directional prediction is made for this variable.

The detailed calculation process and explanations for all control variables are provided in Table 2.

5.6 Empirical Model

To test the hypotheses in this study, we employ multiple linear regression models with fixed effects. We simplify the description of the control variables: $\sum_{j=1}^{8} \alpha_j CONTROL_{j,i,t}$ denotes the summation of the eight control variables.

$$ETR_{i,t} = \alpha_0 + \alpha_1 SA_{i,t} + \sum_{j=1}^{k=8} \alpha_j CONTROL_{j,i,t} + [ID, Year, indictors] + \varepsilon_{i,t} \qquad (4)$$

In testing the moderating effects, we partitioned the full sample into high- and low-scoring groups for each cultural dimension based on their respective medians and conducted regressions separately within each subgroup. Subgroup analysis is a classical method for examining moderating effects, particularly suited for investigating the heterogeneous influence of macro-contextual variables such as cultural dimensions (Hope et al., 2008). This approach is justified for several reasons. First, national culture, functioning as a "shared mental model," systematically shapes a firm's institutional environment and stakeholder expectations (Hofstede, 2011). For instance, cultures high in Individualism (IDV), which emphasise transparency and individual accountability, might strengthen the constraining effect of SA as an external monitoring mechanism on tax avoidance. Conversely, in cultures low in IDV, collectivist tendencies might weaken such governance effects. The subsample design helps capture these differing boundary conditions imposed by the cultural context. Second, when the moderating variable possesses macro-level national characteristics, subgroup analysis mitigates potential collinearity between firm or time fixed effects and the moderator. It also avoids estimation biases that could arise from level-conflict in a full-sample model incorporating the interaction term. Third, we considered that differing moderating effects across cultural subgroups could directly contribute valuable policy implications and practical insights.

In the regression models for this study, we include year and firm fixed effects but do not incorporate industry or country as additional fixed effects. This model specification is primarily based on the following considerations. First, scholars have noted in existing research that corporate tax planning capacity, permanent tax advantages, organisational structure, managerial risk preferences and compensation contracts, and tax avoidance strategies such as transfer pricing and tax credits, are often tailored at the firm level rather than being standardised at the industry level. In this context, the inclusion of firm fixed effects effectively controls for time-invariant firm heterogeneity, such as corporate vision, unique long-term tax strategies, location-specific tax incentives, and even certain industry characteristics, for example, high depreciation in manufacturing or research and development credits in the technology sector. This approach also represents standard practice in the relevant literature. (Angrist and Pischke, 2009). Second, the core explanatory variables of this study—the Hofstede national cultural dimensions—exhibit high temporal stability at the country level. Simultaneously including country fixed effects in the model would likely induce severe multicollinearity with these country-level cultural variables, preventing the accurate identification of the cultural effect (Beugelsdijk et al., 2015). Industry effects are also likely to be partially absorbed by the firm fixed effects, as most firms maintain stable core business classifications throughout the sample period. Consequently, the current specification ensures the identifiability of the core variables while effectively controlling for unobserved time-invariant heterogeneity.

Table 2: Definition of variables		
Variables	Explanation and calculation	
Dependent variables		
ETR	It is calculated as: $-1 \times (income\ tax/pre-tax\ income)$ to reverse the inverse functional relationship between ETR and the degree of tax avoidance, making it positively correlated with the degree of tax avoidance.	
	Income tax	Derived from the "tax expense" in the current period's income statement
	Pretax income	Derived from "accounting profit before tax" in the current period's income statement

BTD	It is calculated as: $(Pretax\ income - taxable\ income)/lagged\ total\ assets$	
	Pretax income	Derived from "accounting profit before tax" in the current period's income statement
	Taxable income	It is calculated by dividing income tax by the nominal tax rate (or statutory tax rate). In other words, it equals $tax\ expense/Nominal\ tax\ rate\ (or\ statutory\ tax\ rate)$.

DDBTD	This indicator refers to the part of the difference between accounting income and taxable income that cannot be explained by the total accrual, that is, the residual.	
	DDBTD	The logic is: $$BTD_{i,t} = \beta_1 Accrual_{i,t} + \mu_i + \varepsilon_{i,t}$$ $$DDBTD_{i,t} = \mu_i + \varepsilon_{i,t}$$
	$Accrual_{i,t}$	$Accrual_{i,t} = (net\ profit - operating\ cash\ flow)/Total\ Assets_{t-1}$ It represents the total accrual of firm i in year t. Its calculation method refers to the revised Jones model (Dechow et al., 1995).

Independent variable		
SA	Dummy variable equal 1 if the company had assurance on its sustainability report in a given year and 0 otherwise.	

Moderating variables		
National cultural dimension	We used measures of the following five cultural dimensions in our regression model.	
	PDI	Represents a measure of power distance.
	IDV	Represents a measure of individualism.
	MAS	Represents a measurement of masculinity.
	UAI	Represents a measure of uncertainty avoidance.
	LTO	Represents the measurement of long-term orientation

Control variables		
SIZE	It is set to be the natural logarithm of the firm's total assets.	
ROA	Return on assets ratio, taken directly from the Datastream database.	

LOSS	If the company's Loss status appeared in the previous accounting report, the dummy variable in this period will be recorded as 1, otherwise it will be recorded as 0.
LEV	The leverage ratio. The ratio of long-term debt to lagged total assets。
CINT	It represents the Capital intensity. It is calculated as, $PPE/\ Lagged\ total\ assets_{t-1}$
INTANG	It is calculated as, $intangible\ assets\ /\ Lagged\ total\ assets_{t-1}$
EXPECTATION	This variable is measured by Market-to-book ratio. $$Market-to-Book\ Ratio = Market\ Value\ of\ Equity/Book\ Value\ of\ Equity$$ Specifically: $$Market\ Value\ of\ Equity = number\ of\ shares\ \times\ share\ price$$ $$Book\ Value\ of\ Equity =\ Total\ assets\ -\ Total\ liabilities$$
INSTOWN	This indicator is taken from the Datastream database and is the proportion of company shares held by investment institutions to the total number of company shares.
ID	Enterprise dummy variable
Year	Year dummy variable
$\varepsilon_{i,t}$	error term in year t for firm i
i	1,…,N firm index
t	1, …,ti year index for the years included in the selected period for firm i (ti ranges between 7 years)

6. Results and discussion:

6.1 Descriptive statistics analysis

6.1.1 Country distribution

Table 3：Country distribution

CountryName	Freq.	Percent
UNITEDKINGDOM	595	20.36
FRANCE	376	12.86
GERMANY	349	11.94
SWITZERLAND	311	10.64
SWEDEN	292	9.99
NETHERLANDS	181	6.19
FINLAND	118	4.04

SPAIN	115	3.93
ITALY	161	5.51
DENMARK	142	4.86
NORWAY	78	2.67
IRELAND	49	1.68
AUSTRIA	32	1.09
PORTUGAL	21	0.72
BELGIUM	42	1.44
LUXEMBOURG	26	0.89
POLAND	35	1.20
Total	4214	100.00

Table 3 presents the geographical distribution of the sample across countries. The data indicate that the sample is predominantly concentrated in developed nations in Western and Northern Europe. The United Kingdom (20.36%), France (12.86%), Germany (11.94%), and Switzerland (10.64%) represent the largest proportions, collectively accounting for over 55% of the total sample. Countries such as Sweden, the Netherlands, Italy, and Denmark exhibit proportions ranging between 4% and 10%. The remaining countries, including Poland, Portugal, and Luxembourg, each constitute less than 2% of the sample. This distribution underscores the Eurocentric characteristic of the sample, with a particular bias towards economically developed nations with mature financial markets within the European Union and the European Free Trade Association. Furthermore, the substantial representation of the United Kingdom and Switzerland may be linked to their status as international financial centres. This potentially introduces a selection bias, meaning the sample is more likely to represent corporate behaviour within high-transparency and strongly regulated environments. Consequently, when interpreting the empirical results, the potential influence of this geographical distribution on the estimation of cultural moderating effects was considered during the robustness checks.

6.1.2 Descriptive analysis

Table 4：Descriptive statistics

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
ETR	2,922.000	-0.252	0.152	-1.000	0.000
SA	2,922.000	0.749	0.434	0.000	1.000
SIZE	2,922.000	16.266	1.733	11.974	20.020
ROA	2,922.000	7.584	7.231	-12.400	42.880
LOSS	2,922.000	0.064	0.244	0.000	1.000
LEV	2,922.000	0.193	0.153	0.000	0.723
CINT	2,922.000	0.245	0.216	0.000	0.929
INTANG	2,922.000	0.280	0.239	0.000	1.067
EXPECTATION	2,922.000	3.437	2.927	0.409	17.771
INSTOWN	2,922.000	0.121	0.162	0.000	0.920
PDI	2,922.000	40.295	14.121	11.000	68.000
IDV	2,922.000	70.356	7.232	27.000	80.000
MAS	2,922.000	47.424	24.052	5.000	79.000
UAI	2,922.000	55.833	21.532	23.000	104.000
LTO	2,922.000	60.424	14.397	24.000	83.000

Note：all variables are defined in table 2.

As shown in Table 4, the sample of this study comprises 2,922 firm-year observations. The descriptive statistics for the core variables reveal the following characteristics. The mean value of ETR is -0.252 (standard deviation 0.152). Its actual distribution ranges from -1 to 0, resulting from the linear transformation of multiplying by -1, where values closer to 1 indicate more aggressive tax avoidance. The results show that the average tax avoidance intensity of sample firms is at a medium-high level, but with significant heterogeneity (a minimum value of -1 corresponds to the highest compliance, while a maximum value of 0 reflects extreme tax avoidance). The mean value of SA is 0.749 (standard deviation 0.434), indicating that 74.9% of firms utilised third-party SA services. This demonstrates a high penetration rate of SA practices among European listed companies, though variation persists across firms.

Among the control variables, the mean SIZE is 16.266 (standard deviation 1.733), spanning from 11.974 to 20.020, reflecting a broad spectrum from small and medium-sized enterprises to multinational corporations. The mean ROA is 7.584% (standard deviation

7.231%), with an extreme value range from -12.4% to 42.88%, revealing a significant divergence between financially distressed firms and highly profitable entities within the sample. The mean Leverage Ratio (LEV) is 19.3% (standard deviation 15.3%), supporting the observation that European firms generally adopt conservative capital structures. Of particular note is the mean EXPECTATION of 3.437 (standard deviation 2.927), with a maximum value reaching 17.771, suggesting that some firms face high growth demand pressure from investors, which may drive aggressive tax planning. The contrast between the mean intensity of intangible assets (INTANG) at 28% (standard deviation 23.9%) and capital intensity (CINT mean 24.5%) highlights systematic differences in asset structures across industries. The mean INSTOWN of 12.1% reflects a trend towards decentralised ownership in European corporate governance.

The cultural dimension data show that sample countries exhibit high mean Individualism (IDV) at 70.356 and medium Uncertainty Avoidance (UAI) at 55.833. The Long-Term Orientation (LTO) range from 24 to 83 reveals deep-seated differences in the temporal preferences of strategic cultures across European nations. The broad distribution of key moderating variables (e.g., PDI ranging from 11 to 68) provides an ideal basis of variation for examining the heterogeneous impact of institutional distance on the relationship between SA and tax avoidance.

6.1.3 Correlation analysis

Table 5: Correlation matrix

Variables	ETR	SA	SIZE	ROA	LOSS	LEV	CINT	INTANG	EXPECTATION	INSTOWN
ETR	1									
SA	0.042**	1								
SIZE	0.117***	0.307***	1							
ROA	0.146***	0.134***	0.409***	1						
LOSS	0.066***	0.027	0.026	0.231***	1					

LEV	0.055***	0.109***	0.060***	0.134***	0.042**	1				
CINT	0.011	0.236***	0.058***	0.034*	0.027	0.281***	1			
INTANG	0.009	0.083***	0.133***	0.042**	0.031*	0.405***	0.329***	1		
EXPECTATION	0.072***	0.084***	0.312***	0.547***	0.122***	0.047**	0.108***	0.183***	1	
INSTOWN	0.029	0.023	0.100***	0.059***	0.025	0.039**	0.048***	0.019	-0.003	1

Note：this table shows the Pearson's correlation coefficients of all variables.

*** p<0.01 , ** p<0.05,* p<0.1 *Statistical significance is using two-sided t-statistics.

The Pearson correlation matrix in Table 5 provides a preliminary examination of the associations between the main variables. The core explanatory variable, SA, shows a significant positive correlation with ETR (p < 0.05). This finding is contrary to the expectations of conventional ESG governance theory, suggesting that firms adopting SA might be associated with more aggressive tax avoidance. This potentially reflects greenwashing strategies within ESG practices, where firms could use procedural SA adoption to mask substantive tax avoidance activities (Marquis et al., 2016). Further analysis reveals that ETR is significantly positively correlated with SIZE (p < 0.01), ROA (p < 0.01), and EXPECTATION (p < 0.01). This indicates that larger firms, highly profitable entities, and companies with positive market growth expectations are more inclined to implement complex tax structures. This finding aligns with the regulatory challenge of "too big to monitor" in the context of global base erosion and profit shifting (Dyreng et al., 2019). It is noteworthy that both CINT (p < 0.01) and INTANG (p < 0.01) are significantly positively correlated with SA, supporting the notion that asset-intensive industries and knowledge-driven firms have a stronger demand for SA, possibly stemming from supply chain transparency pressures or reputational motivations related to intellectual property protection.

Overall, the correlation analysis reveals complex relationships between ESG practices and tax behaviours, necessitating further regression analysis to scrutinise the relationships between different measures.

6.1.4 Multiple collinearity analysis

Table 6: Variance inflation factor test

Variables	VIF	1/VIF
ROA	1.730	0.578
INTANG	1.670	0.598
LEV	1.640	0.611
CINT	1.540	0.649
EXPECTATION	1.520	0.657
SIZE	1.290	0.774
SA	1.080	0.922
LOSS	1.060	0.939
INSTOWN	1.030	0.972
Mean VIF	1.400	

To address concerns regarding multicollinearity, this study employed the Variance Inflation Factor (VIF) test to verify the precision of the regression relationships. As shown in Table 6, the mean VIF is 1.4, which is considerably lower than the stringent tolerance threshold of 5. This confirms the absence of severe multicollinearity among the variables used in this study and suggests that the proposed regression model can potentially explain the relationships between the variables (Field, 2024; Daoud, 2017).

6.2 Regression **results**

Table 7 : Regression results

Variables	Main	PDI		IDV		MAS		UAI		LTO	
	ETR	High PDI	Low PDI	High IDV	Low IDV	High MAS	Low MAS	High UAI	Low UAI	High LTO	Low LTO
SA	0.0234**	0.0216	0.0253**	0.0305	0.0227*	0.0264	0.0219*	0.0251	0.0171	0.0214	0.0253*
	(0.0106)	(0.0227)	(0.0116)	(0.0207)	(0.0116)	(0.0233)	(0.0119)	(0.0163)	(0.0142)	(0.0158)	(0.0144)
SIZE	-0.0158	-0.0122	-0.0167	-0.0167	-0.0128	-0.000979	-0.0161	-0.0190	-0.0151	-0.00745	-0.0234
	(0.0146)	(0.0276)	(0.0170)	(0.0264)	(0.0171)	(0.0461)	(0.0157)	(0.0240)	(0.0186)	(0.0239)	(0.0185)
ROA	0.00239***	0.00317*	0.00232**	0.00234**	0.00236**	0.00848***	0.00201***	0.00212	0.00269***	0.00513***	0.00149*
	(0.000723)	(0.00169)	(0.000779)	(0.00114)	(0.000964)	(0.00271)	(0.000761)	(0.00155)	(0.000828)	(0.00141)	(0.000846)

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LOSS	-0.0287**	-0.0111	-0.0413***	-0.0632***	-0.000655	-0.0473*	-0.0255*	-0.0279	-0.0298*	-0.0299*	-0.0291*
	(0.0122)	(0.0222)	(0.0147)	(0.0213)	(0.0145)	(0.0286)	(0.0136)	(0.0174)	(0.0173)	(0.0176)	(0.0171)
LEV	0.0306	-0.0886	0.0913*	-0.0106	0.0592	-0.128	0.0712	-0.0330	0.0592	-0.0701	0.118*
	(0.0438)	(0.0830)	(0.0511)	(0.0796)	(0.0509)	(0.0992)	(0.0491)	(0.0734)	(0.0551)	(0.0641)	(0.0607)
CINT	0.0183	0.0706	-0.00653	0.0134	0.0223	0.0872	0.00923	0.0823	-0.0356	0.0685	-0.0174
	(0.0509)	(0.0940)	(0.0603)	(0.0982)	(0.0566)	(0.113)	(0.0578)	(0.0759)	(0.0709)	(0.0755)	(0.0695)
INTANG	0.0366	0.107	0.00365	0.0784	0.0100	0.218**	0.00247	0.0964	0.00210	0.0880*	-0.00183
	(0.0367)	(0.0746)	(0.0416)	(0.0669)	(0.0427)	(0.0940)	(0.0406)	(0.0589)	(0.0480)	(0.0527)	(0.0518)
EXPECTATION	-0.000539	0.00163	-0.00146	-0.00197	0.00194	-0.00533	-0.000638	0.00660*	-0.00380	-0.000345	-0.000394
	(0.00191)	(0.00437)	(0.00207)	(0.00302)	(0.00257)	(0.00480)	(0.00213)	(0.00352)	(0.00231)	(0.00325)	(0.00239)
INSTOWN	0.00755	0.0933	-0.0347	0.0221	-0.0227	0.0626	0.00300	0.0258	-0.0138	0.0154	-0.000391
	(0.0324)	(0.0660)	(0.0366)	(0.0568)	(0.0387)	(0.0732)	(0.0364)	(0.0505)	(0.0428)	(0.0476)	(0.0446)
_cons	-0.0489	-0.162	-0.0104	-0.0410	-0.0985	-0.342	-0.0354	-0.0596	-0.00942	-0.216	0.0933
	(0.233)	(0.442)	(0.271)	(0.415)	(0.276)	(0.716)	(0.253)	(0.384)	(0.297)	(0.382)	(0.297)
N	2922	957	1965	1120	1802	553	2369	1275	1647	1446	1476
r2	0.412	0.425	0.391	0.365	0.467	0.483	0.401	0.442	0.373	0.437	0.384
year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ID	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

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

The main regression results in Table 7 show that the coefficient for SA is 0.0234 ($p < 0.05$), indicating a significant positive relationship between sustainability assurance and the degree of tax avoidance after controlling for other variables. Specifically, the ETR measure in this study is adjusted by multiplying by -1; thus, a higher value signifies a lower effective tax rate and more pronounced corporate tax avoidance. This finding aligns with the results of studies such as Lin et al. (2017) and Watson (2012). While the decision to procure third-party SA is theoretically viewed as a signal of enhanced transparency and fulfilled social responsibility, this paradoxical result suggests the presence of decoupling behaviour. Firms may actively demonstrate transparency in environmental and social domains whilst simultaneously employing aggressive tax strategies in the financial domain to reduce their effective tax burden. This aligns with predictions from impression management theory, whereby management utilises the "moral halo effect" of SA as an impression management

tool to manipulate perceptions of corporate legitimacy among market participants and key stakeholders, particularly aiming to divert stakeholder attention from tax-related risks. This finding generally supports Hypothesis H1a. Among the control variables, ROA shows a significant positive relationship with tax avoidance, indicating that more profitable firms have a higher propensity for tax avoidance, potentially stemming from their greater resources and motivation for tax planning (Chen et al., 2010). The significant negative relationship between LOSS and tax avoidance suggests that loss-making firms engage in less tax avoidance, possibly due to a lack of taxable profit base or facing heightened regulatory scrutiny (Hanlon and Heitzman, 2010). It is noteworthy that the coefficients for firm size (SIZE) and financial leverage (LEV), while not statistically significant, are negative and positive respectively. This hints that larger firms might reduce aggressive tax avoidance due to higher compliance costs, whereas highly leveraged firms might engage in tax avoidance to alleviate debt servicing pressures.

The results of the subgroup analysis reveal heterogeneity in the moderating effect of national cultural dimensions on the relationship between SA and tax avoidance. The specific findings are analysed as follows.

First, in the subsamples split by power distance, the SA coefficient is significantly positive (0.0253, $p < 0.05$) in the low PDI group, while it is insignificant in the high PDI group. This finding supports Hypothesis H2b. Low PDI cultures, which value equality and questioning authority, may lead firms to be more inclined to challenge the boundaries of tax rules (Richardson, 2008). However, they may also conceal systematic aggressive behaviour through an excessive pursuit of apparent compliance (Yoo and Lee, 2019). It is noteworthy that ETR reflects the actual tax burden outcome. The underlying tax avoidance strategies, such as claiming tax relief, are relatively transparent, do not require highly centralised secret decision-making, and are difficult to completely mask through impression management alone. Therefore, in high PDI cultures characterised by hierarchy and deference, SA is unlikely to provide cover for such explicit forms of tax avoidance, resulting in an insignificant coefficient. In contrast, within low PDI cultures, the egalitarian orientation may, instead, provide scope for firms to use SA to cover ETR manipulation.

Second, in the subsamples split by IDV, the SA coefficient is significant only in the low IDV group. This finding supports Hypothesis H3b. Collectivist cultures emphasise safeguarding the interests of the in-group, such as family or relational networks. Within such contexts, tax avoidance can be perceived as preserving resources for the collective, and SA becomes a tool for demonstrating collective honour and legitimacy to external parties.

Third, in the subsamples split by MAS, the SA coefficient is significant (0.0219, $p < 0.1$) in the low MAS group, which is characterised by a caring and cooperative orientation, while it is insignificant in the high MAS group. This finding supports Hypothesis H4b. A plausible explanation is that low MAS cultures value relationships over overt competition. Consequently, management tends to avoid extremely aggressive strategies. However, under performance pressure, moderate tax avoidance may still occur. In such cases, the impression management function of SA becomes crucial, helping firms to maintain their image within a culture that values cooperation and trust. This also explains why the low MAS group exhibits significance in the subsequent BTD and DDBTD models as well.

Fourth, in the subsamples split by UAI, the SA coefficient is insignificant in both the high UAI and low UAI groups. This finding generally refutes Hypotheses H5a and H5b. A possible reason is that directly manipulating ETR entails clear and immediate tax audit risks. Although high uncertainty avoidance cultures are averse to ambiguity, the risk associated with ETR manipulation is itself sufficiently explicit. Therefore, regardless of UAI level, management may perceive using SA to cover ETR manipulation as either ineffective or imprudent. Additionally, ETR management, such as utilising tax credits, is often viewed as routine, compliant tax planning; its perceived risk may not differ significantly based on cultural preferences for uncertainty.

Finally, in the subsamples split by LTO, the SA coefficient is significantly positive in the low LTO group, which is characterised by a short-term orientation. This finding supports Hypothesis H6b. Short-term oriented cultures strongly pursue immediate financial results. Reducing the ETR most directly enhances current period profits and cash flow. Consequently, management in such cultures is more inclined to deploy the moral halo of

SA to cover such explicit tax avoidance strategies that yield immediate, visible effects (Gupta and Newberry, 1997).

In summary, the regression results reveal a strategic contradiction whereby firms construct a moral halo through the purchase of SA while simultaneously implementing responsibility decoupling in the tax domain. This finding confirms the essence of symbolic compliance under conditions of institutional complexity. The moderating effects of cultural dimensions point to the implicit influence of informal institutions on corporate ethical decision-making, suggesting that cultural norms can function as informal institutional constraints, filling blind spots in formal regulation.

6.3 Robustness test

To address concerns regarding potential reverse causality in the relationship between assurance and the degree of corporate tax avoidance, for instance, under risk management theory, firms engaging in aggressive tax avoidance might subsequently seek to repair their corporate image by undertaking social responsibilities, thus implying that the level of tax avoidance could also influence the decision to purchase SA. We employ an instrumental variable approach to mitigate this endogeneity issue. The one-period lagged SA (SA_L1) is used as the instrumental variable and reintroduced into the model for regression.

The rationale for selecting the one-period lagged SA is as follows. First, a firm's past SA decisions are typically correlated with its current propensity to procure SA, due to factors such as contract renewal and managerial behavioural routines (DeFond and Zhang, 2014; Simnett et al., 2009). This satisfies the relevance condition. Regarding the exogeneity condition, the firm's lagged social responsibility behaviour is presumed to influence the current degree of tax avoidance only by driving current social responsibility behaviour; it is unrelated to contemporaneous unobservable factors, such as sudden tightening of tax policies or management turnover (Hoi et al., 2013a). The two-stage regression models are specified as follows:

$$SA_{i,t} = \alpha_0 + \alpha_1 SA_{i,t-1} + \sum_{j=1}^{k=8} \alpha_j CONTROL_{j,i,t} + [IND, Year, indictors] + \varepsilon_{i,t}$$

$$(5.1 - \text{stage 1})$$

$$ETR_{i,t} = \beta_0 + \beta_1 \widehat{SA_{i,t}} + + \sum_{j=1}^{k=8} \alpha_j CONTROL_{j,i,t} + [IND, Year, indictors] + \varepsilon_{i,t}$$

$$(5.2 - \text{stage 2})$$

Equation 5.1 is specified to test the strength of the instrumental variable, ensuring that $SA_{i,t-1}$ possesses significant explanatory power over $SA_{i,t}$. In Equation 5.2, we introduce the exogenous component of the variation in $SA_{i,t}$ (represented by SA_hat) into the regression, thereby isolating the interference of reverse causality.

Table 8: Two-stage least squares regression results

Variables	Stage_1	Stage_2
	SA	ETR
SA_L1	0.512***	
	(0.037)	
SA_hat		0.036*
		(0.021)
SIZE	0.139***	0.002
	(0.041)	(0.018)
ROA	-0.004**	0.002
	(0.002)	(0.001)
LOSS	0.013	-0.036
	(0.026)	(0.030)
LEV	-0.265***	-0.011
	(0.092)	(0.041)
CINT	0.192**	-0.016
	(0.077)	(0.062)
INTANG	-0.003	0.040
	(0.073)	(0.041)
EXPECTATION	0.006	-0.000
	(0.006)	(0.002)
INSTOWN	-0.053	0.035
	(0.076)	(0.042)
_cons	-1.845***	-0.332

	(0.647)	(0.291)
N	2379	2379
r2	0.802	0.472
year	Yes	Yes
ID	Yes	Yes
F	30.2	0.9
Standard errors in parentheses		
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$		

As shown in Table 8, in the first stage, the coefficient for SA_L1 is 0.512 (p < 0.01), indicating a strong explanatory power over the endogenous variable SA. The first-stage F-statistic of 30.2 substantially exceeds the weak instrument critical value (F > 10), decisively ruling out weak instrument concerns. The first-stage R² of 0.802 indicates that the instrument successfully captures 80.2% of the variation in SA, satisfying the relevance condition and establishing a foundation for the second-stage estimation.

The second-stage results show that the coefficient for the instrumented variable, SA_hat, is 0.036 (p < 0.1).The regression results are consistent with the causal trend observed in the main analysis, which leads us to infer that companies use SA to develop impression management strategies and leverage their reputational capital to provide a legitimate cover for tax avoidance (Hoi et al., 2013a). It is noteworthy that while the significance level of SA_hat (10%) is slightly lower than the conventional 5% threshold, a slight attenuation in significance is considered reasonable within an instrumental variable framework due to variance inflation effects (Larcker and Rusticus, 2010). Furthermore, the consistent direction of the effect with the main regression further supports the robustness of the conclusion.

Regarding model specification, the control variables are generally insignificant in the second stage (e.g., SIZE, ROA), implying that the fixed effects have absorbed firm heterogeneity, avoiding interference from multicollinearity. The sample size (N=2379) and the exogenous design of the instrumental variable (incorporating only the lagged term, thus excluding contemporaneous confounders) ensure estimation efficiency. It is important to note that the instrumental variable approach aims to correct endogeneity bias in the core

explanatory variable, SA. The cultural dimensions, treated as exogenous variables[4], had their moderating effects already identified in the subgroup analyses; thus, re-integrating them into the IV tests was unnecessary to adhere to the principle of parsimony in research design (Wooldridge, 2015). Moreover, conducting subgroup IV regressions would significantly reduce sub-sample sizes, potentially leading to weak instruments and a loss of statistical power.

6.4 Additional analysis

To test the robustness of the results and address potential measurement error, we re-examined the hypotheses using BTD and DDBTD as alternative dependent variables. This ensures that our findings are not sensitive to the specific proxy used for measuring tax avoidance (Desai and Dharmapala, 2006; Dyreng et al., 2010). These two measures, in particular, have been validated as effective in numerous prior tax studies, for instance, in Dyreng et al. (2008), Hoi et al. (2013a), Hasan et al. (2014), Kovermann and Velte (2021), and Boujelben and Medhioub (2025). Consequently, we constructed the following regression model and again performed subgroup analyses based on the median values of the cultural dimensions to test the moderating effects:

$$BTD_{i,t} = \alpha_0 + \alpha_1 SA_{i,t} + \sum_{j=1}^{8} \alpha_j CONTROL_{j,i,t} + [IND, Year, indictors] + \varepsilon_{i,t} \qquad (6)$$

$$DDBTD_{i,t} = \alpha_0 + \alpha_1 SA_{i,t} + \sum_{j=1}^{8} \alpha_j CONTROL_{j,i,t} + [IND, Year, indictors] + \varepsilon_{i,t} \quad (7)$$

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[4] National culture, as a historically formed and relatively stable institutional characteristic, is often regarded as a quasi-exogenous variable.

6.4.1 BTD

Table 9: BTD regression results

Variables	Main	PDI		IDV		MAS		UAI		LTO	
	BTD	High PDI	Low PDI	High IDV	Low IDV	High MAS	Low MAS	High UAI	Low UAI	High LTO	Low LTO
SA	0.00402**	0.00447	0.00339	0.00651	0.00221	-0.00303	0.00445**	0.00462**	0.00127	0.00232	0.00214
	(0.00196)	(0.00315)	(0.00245)	(0.00400)	(0.00202)	(0.00386)	(0.00223)	(0.00225)	(0.00299)	(0.00222)	(0.00314)
SIZE	-0.00308	0.00354	-0.00681*	-0.00370	-0.00159	0.0114	-0.00318	0.00184	-0.00584	0.00218	-0.00401
	(0.00270)	(0.00383)	(0.00359)	(0.00508)	(0.00298)	(0.00765)	(0.00294)	(0.00331)	(0.00391)	(0.00335)	(0.00403)
ROA	0.00283***	0.00342***	0.00273***	0.00318**	0.00242***	0.00554***	0.00264***	0.00345***	0.00277***	0.00423***	0.00237***
	(0.000134)	(0.000235)	(0.000164)	(0.000219)	(0.000168)	(0.000449)	(0.000143)	(0.000215)	(0.000174)	(0.000198)	(0.000184)
LOSS	-0.00205	0.000938	-0.00335	-0.00646	0.00147	0.00227	-0.00303	0.00186	-0.00528	0.00139	-0.00496
	(0.00227)	(0.00308)	(0.00310)	(0.00411)	(0.00253)	(0.00474)	(0.00255)	(0.00240)	(0.00364)	(0.00247)	(0.00372)
LEV	-0.0176**	-0.0317***	-0.0132	-0.0444***	0.00415	-0.0163	-0.0168*	-0.0231**	-0.0161	-0.0180**	-0.0267**
	(0.00812)	(0.0115)	(0.0108)	(0.0153)	(0.00888)	(0.0165)	(0.00920)	(0.0101)	(0.0116)	(0.00899)	(0.0132)
CINT	0.0110	0.0357***	-0.00374	0.0360*	-0.00762	0.00160	0.0107	0.0284***	-0.0107	0.0148	0.00840
	(0.00944)	(0.0131)	(0.0127)	(0.0189)	(0.00987)	(0.0188)	(0.0108)	(0.0105)	(0.0149)	(0.0106)	(0.0151)
INTANG	0.0211***	0.0347***	0.0188**	0.0288**	0.00584	0.00888	0.0202***	0.0351***	0.0134	0.0240***	0.0227**
	(0.00680)	(0.0104)	(0.00877)	(0.0129)	(0.00745)	(0.0156)	(0.00761)	(0.00814)	(0.0101)	(0.00739)	(0.0113)
EXPECTATION	-0.000752**	0.00155**	-0.00137***	-0.00158***	0.000389	-0.000835	-0.000941**	0.00243***	-0.00205**	0.000508	-0.00141***
	(0.000354)	(0.000607)	(0.000436)	(0.000581)	(0.000448)	(0.000796)	(0.000399)	(0.000487)	(0.000486)	(0.000455)	(0.000519)
INSTOWN	0.0132**	0.00300	0.0153**	0.0265**	0.00198	0.00749	0.0142**	-0.00528	0.0192**	-0.00823	0.0307***
	(0.00600)	(0.00917)	(0.00772)	(0.0109)	(0.00675)	(0.0121)	(0.00682)	(0.00698)	(0.00901)	(0.00667)	(0.00970)
Constant	0.0199	-0.0917	0.0808	0.0130	0.00862	-0.217*	0.0231	-0.0668	0.0688	-0.0637	0.0306
	(0.0432)	(0.0614)	(0.0573)	(0.0800)	(0.0481)	(0.119)	(0.0474)	(0.0531)	(0.0626)	(0.0536)	(0.0646)
N	2922	957	1965	1120	1802	553	2369	1275	1647	1446	1476
r2	0.730	0.775	0.710	0.675	0.778	0.792	0.724	0.749	0.720	0.802	0.675
year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ID	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

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

As shown in Table 9, the results using BTD as an alternative measure for tax avoidance are consistent with those of the main regression model which employed ETR. This confirms that the core findings are not sensitive to the choice of proxy, further substantiating the robustness of the primary conclusions. Among the control variables, ROA shows a significantly positive relationship with the degree of tax avoidance, supporting the hypothesis that more profitable firms have a greater propensity for tax avoidance. LEV exhibits a significantly negative relationship with tax avoidance, implying that highly leveraged firms face stronger scrutiny, which constrains their scope for tax avoidance (Gupta and Newberry, 1997). It is noteworthy that LEV was not significant in the ETR regression model. This discrepancy may stem from the different tax avoidance mechanisms captured by each measure. For instance, high-leverage firms reduce tax expense through interest deductions, but this effect can be offset by other tax incentives (Graham, 2003). Conversely, BTD, which captures accounting adjustments, is more susceptible to debt-related financial strategies (Minnick and Noga, 2010), such as expense capitalisation, hence the significant negative correlation in the BTD model. Furthermore, highly leveraged firms require healthy cash flow for debt servicing, potentially leading them to reduce high-risk tax avoidance practices, thereby narrowing accounting-to-tax differences (Hasan et al., 2014). This constraining effect is more readily identified by the BTD measure. Consequently, the varying significance of LEV across models highlights the multi-dimensional nature of tax avoidance: ETR reflects the outcome of tax burden, while BTD maps accounting strategies.

This differentiation between tax avoidance measures similarly accounts for the varying significance levels of INSTOWN across contexts. A plausible explanation is that BTD more strongly reflects strategies involving accounting manipulation for tax avoidance, rather than legitimate avoidance through operational adjustments like R&D credits or exploiting international tax differences (which are captured in ETR). In practice, management might engage in accounting manipulations to embellish profits under short-term performance pressures (Chen et al., 2010; Cheng et al., 2012). Additionally, the significant negative relationship for EXPECTATION supports Godfrey (2005) view that firms in growth phases,

potentially considering long-term financial and non-financial sustainability, exhibit a lower propensity for tax avoidance.

In the BTD model, the moderating effects of the cultural dimensions exhibit a pattern significantly different from that observed in the ETR model. This further confirms the inherent differences in the tax strategies captured by various tax avoidance metrics. For instance, ETR captures compliance-oriented tax avoidance (Richardson, 2016), which is influenced by social norms, whereas BTD reflects aggressive tax avoidance, driven by opportunism (Hanlon and Heitzman, 2010).

First, in the BTD model, the SA coefficient is insignificant in both PDI subsamples. This suggests that PDI itself does not systematically drive firms to use SA to cover BTD. Regardless of whether the context is high PDI, characterised by centralised power and top-down decision-making, or low PDI, characterised by dispersed power, management may perceive the use of SA to cover this mixed indicator with unclear objectives as ineffective. In high PDI cultures, BTD may incorporate a substantial amount of short-term accounting adjustments. These adjustments might be undertaken by middle managers exercising discretion to improve short-term performance indicators, and may not necessarily represent top-level strategic decisions. Consequently, if a firm is influenced by a high PDI culture, the association between SA and BTD may not be significant in that group; that is, such dispersed tax strategies, potentially executed by different middle managers, may not be the predominant approach. In low PDI cultures, we surmise that management prefers the more targeted objective of ETR manipulation.

Second, IDV is similarly insignificant in the BTD model. This indicates that the individualism-collectivism dimension is not a core factor driving the association between SA and accounting-based tax avoidance. Whether the cultural emphasis is on individual achievement or collective harmony, firms may utilise BTD for other motives that are less strongly linked to this cultural orientation.

Third, in the subsamples split by MAS, the SA coefficient is significant in the low MAS group, consistent in direction with the regression results from the ETR model. It is noteworthy that

the coefficient is significant and the effect is stronger in the low MAS group. This reveals that, within this cultural context, firms may employ hidden accounting adjustments for tax avoidance. This finding further supports Hypothesis H4b.

Fourth, the moderating effect of UAI in the BTD model differs markedly from its effect in the ETR model: the SA coefficient is significant in the high UAI group, supporting Hypothesis H5a. Cultures with high uncertainty avoidance exhibit significant anxiety towards ambiguity and tend to rely on clear rules to gain a sense of security. In such cultures, firms embed tax avoidance practices within a framework of defensible accounting or tax standards, thereby giving tax avoidance the appearance of compliance forms. Tax avoidance strategies based on accounting rule manipulation, such as those captured by BTD and DDBTD, align precisely with this cultural orientation. Management can link each step of the manipulation to specific accounting standards, thus formally meeting compliance requirements (Chen et al., 2010). In this context, SA, as a symbolic endorsement of a firm's adherence to multiple rules, provides management with the desired sense of security, becoming an ideal tool for impression management.

Finally, in the BTD model, the SA coefficient is insignificant in both LTO subsamples. A possible explanation is that BTD, as a mixed indictor, can serve both short-term earnings targets and long-term tax strategies. This functional neutrality may dilute its association with SA across LTO groups. Short-term oriented cultures may perceive the effect from BTD manipulation as less direct than that from ETR manipulation, which immediately lowers the tax burden. Conversely, long-term oriented cultures may view the accounting manipulations underlying BTD as insufficiently pure and hidden, potentially preferring the DDBTD. Consequently, the relationship between SA and BTD does not exhibit significant divergence along the LTO dimension.

6.4.2 DDBTD

Table 10: DDBTD regression results

Variables	Main	PDI		IDV		MAS		UAI		LTO	
	DDBTD	High PDI	Low PDI	High IDV	Low IDV	High MAS	Low MAS	High UAI	Low UAI	High LTO	Low LTO
SA	0.00376*	0.00681**	0.00206	0.00629	0.00213	-0.00120	0.00369*	0.00549**	0.000387	0.00369*	0.000604
	(0.00192)	(0.00307)	(0.00240)	(0.00387)	(0.00202)	(0.00384)	(0.00218)	(0.00219)	(0.00293)	(0.00222)	(0.00304)
SIZE	-0.00262	0.00234	-0.00543	-0.00343	-0.000497	0.0110	-0.00261	0.00120	-0.00418	0.000691	-0.00229
	(0.00265)	(0.00372)	(0.00352)	(0.00492)	(0.00297)	(0.00761)	(0.00287)	(0.00323)	(0.00383)	(0.00336)	(0.00390)
ROA	0.00148***	0.00224***	0.00133***	0.00173***	0.00123***	0.00448***	0.00127***	0.00266***	0.00126***	0.00295***	0.000989***
	(0.000131)	(0.000229)	(0.000161)	(0.000212)	(0.000168)	(0.000446)	(0.000139)	(0.000209)	(0.000171)	(0.000198)	(0.000178)
LOSS	-0.00238	0.00117	-0.00391	-0.00478	-0.000196	0.00164	-0.00334	0.00151	-0.00518	0.00109	-0.00536
	(0.00222)	(0.00300)	(0.00304)	(0.00398)	(0.00252)	(0.00471)	(0.00248)	(0.00234)	(0.00356)	(0.00247)	(0.00360)
LEV	-0.0206***	-0.0327***	-0.0177*	-0.0533***	0.00452	-0.0124	-0.0212**	-0.0168*	-0.0247**	-0.0192**	-0.0316**
	(0.00796)	(0.0112)	(0.0106)	(0.0149)	(0.00886)	(0.0164)	(0.00898)	(0.00988)	(0.0114)	(0.00901)	(0.0128)
CINT	0.0278***	0.0474***	0.0160	0.0568***	0.00872	0.0199	0.0263**	0.0379***	0.0108	0.0281***	0.0281*
	(0.00925)	(0.0127)	(0.0125)	(0.0183)	(0.00984)	(0.0187)	(0.0106)	(0.0102)	(0.0146)	(0.0106)	(0.0146)
INTANG	0.0203***	0.0382***	0.0168*	0.0240*	0.00787	0.00225	0.0208***	0.0344***	0.0128	0.0244***	0.0213*
	(0.00667)	(0.0101)	(0.00861)	(0.0125)	(0.00743)	(0.0155)	(0.00742)	(0.00793)	(0.00989)	(0.00740)	(0.0109)
EXPECTATION	-0.000276	0.00180***	-0.000786*	-0.000865	0.000530	-0.000527	-0.000453	0.00249***	-0.00137***	0.00100**	-0.000949*
	(0.000347)	(0.000590)	(0.000428)	(0.000563)	(0.000447)	(0.000792)	(0.000389)	(0.000474)	(0.000476)	(0.000456)	(0.000503)
INSTOWN	0.0115*	-0.00202	0.0155**	0.0223**	0.00181	0.00685	0.0123*	-0.00664	0.0168*	-0.0124*	0.0314***
	(0.00588)	(0.00892)	(0.00758)	(0.0106)	(0.00673)	(0.0121)	(0.00665)	(0.00680)	(0.00882)	(0.00668)	(0.00939)
_cons	0.0200	-0.0782	0.0718	0.0264	-0.00880	-0.207*	0.0222	-0.0626	0.0586	-0.0433	0.0208
	(0.0424)	(0.0597)	(0.0562)	(0.0775)	(0.0480)	(0.118)	(0.0462)	(0.0517)	(0.0613)	(0.0537)	(0.0625)
N	2922	957	1965	1120	1802	553	2369	1275	1647	1446	1476
r2	0.664	0.719	0.651	0.616	0.721	0.759	0.653	0.706	0.664	0.750	0.628
year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ID	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

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

Table 10 presents the robustness check results using DDBTD as an alternative measure of tax avoidance. The significantly positive relationship between SA and DDBTD is consistent with the main regression findings, verifying the reliability of the study's conclusions. Among the control variables, the significantly positive coefficient for ROA and the significantly negative coefficient for LEV and the significantly positive effect of INTANG align with the results from the BTD regression model. It is noteworthy that CINT, which was not significant in the ETR and BTD regression models, is significant in the DDBTD model. A plausible explanation is that ETR reflects the effective tax burden, and firms with high CINT often engage in standardised, legitimate tax avoidance through accelerated depreciation of fixed assets, thus potentially not exhibiting additional avoidance effects in ETR (Hanlon and Heitzman, 2010). Simultaneously, BTD does not distinguish the compliance nature of tax planning, thereby potentially masking managerial manipulation of accounting income (Desai and Dharmapala, 2006). In contrast, DDBTD more effectively captures tax-related behaviours stemming from accounting estimates and adjustments (Frank et al., 2009; Richardson et al., 2015), hence the marginal effect of CINT is more pronounced in the DDBTD model. In summary, this phenomenon underscores the multidimensional nature of tax avoidance.

In the cultural subgroup analyses, the differences between the results in Table 10 and the main regression results reveal the heterogeneous influence of cultural dimensions on different tax avoidance measures. ETR reflects effective tax burden management, whereas DDBTD focuses more on concealed avoidance behaviours involving non-accrual adjustments. In the ETR model, the low PDI, low IDV, low MAS, and low LTO subgroups were significant, suggesting that cultures characterised by egalitarianism, weak individualism, low masculinity, and short-term orientation tend to optimise tax avoidance through ETR management. However, in the DDBTD model, the high PDI, high UAI, and high LTO subgroups are significant. This indicates that cultures with high power distance, high uncertainty avoidance, and long-term orientation may rely more on complex

accounting methods for tax avoidance (Higgins et al., 2015). This supports Hypotheses H2a, H5a, and H6a in this study.

In greater detail, within the DDBTD model, the SA coefficient is significant in the high PDI group, whereas it is insignificant in the low PDI group. This pattern forms a mirror image of the ETR model, where significance was observed in the low PDI group. DDBTD captures complex and hidden tax avoidance behaviours, such as cross-border transfer pricing or the use of intangible assets to allocate profits. These strategies do not involve immediate cash tax savings but can enhance reported profits. Their design, decision-making, and implementation require a highly centralised, confidential, and specialised team. In high PDI cultures, the organisational characteristics of centralised hierarchy and top-down decision-making are a strong fit with the requirements for implementing such strategies. That is, senior management can leverage their monopoly over internal information to systematically promote this type of authority-driven complex tax avoidance (Chen et al., 2010; Dyreng et al., 2019). In this context, SA, serving as a firm-level impression management tool, can provide moral legitimacy endorsement for these high-level decisions, thereby maintaining the firm's external image of responsibility. In low PDI cultures, where power is dispersed and decision-making transparency is higher, such hidden strategies requiring highly centralised decisions are difficult to implement effectively, thus rendering the SA-DDBTD relationship insignificant. It is noteworthy that BTD was insignificant in both PDI groups. A possible explanation is that BTD encompasses a substantial amount of routine accounting manoeuvres implemented by middle managers to achieve short-term performance targets. These decentralised actions may not represent systematic, firm-level decision-making, making it difficult for SA to play a significant impression management role in such contexts.

The contradictory manifestation in the high-UAI group is particularly noteworthy and merits critical examination. Although cultures with high uncertainty avoidance typically emphasise rule adherence (Hope et al., 2013), the concurrent significance in both the DDBTD and BTD models exposes an underlying "institutional opportunism": the corporate demand for certainty paradoxically drives the use of sophisticated accounting techniques to

"compliantly" reconfigure financial data, nesting avoidance activities within a framework of formal compliance. This phenomenon challenges the traditional assumption of a negative association between UAI and tax avoidance, suggesting that institutional constraints might conversely foster technical circumvention strategies (Desai and Dharmapala, 2009). In contrast, the non-significance of UAI in the ETR model implies a moral resistance to direct tax burden adjustments in such cultures, yet a higher tolerance for accounting manipulations. Collectively, this divergence in results indicates that managerial moral trade-offs regarding different tax avoidance methods vary systematically across cultural contexts.

Regarding the LTO dimension, the SA coefficient is significant in the high LTO group, while it is insignificant in the low LTO group, and this finding supports Hypothesis H6a. This pattern also contrasts with that of the ETR model, where significance was found in the low LTO group but not the high LTO group. These finding sheds light on the distinctive attributes of tax avoidance strategies within long-term oriented cultures. Complex tax avoidance behaviours captured by DDBTD typically require upfront investment in design and implementation costs, such as tax advisory fees, legal expenses, and establishing risk provisions. However, the tax advantages they create are durable, often generating permanent differences that benefit the firm over the long term. Such strategies align with the value orientation of long-term oriented cultures and resonate with the concept of intertemporal trade-offs in agency cost theory (Meckling and Jensen, 1976). That is, current costs are viewed as strategic investments in exchange for long-term gains. Within such cultures, management is also concerned with maintaining long-term reputation, and the moral endorsement of SA can provide ongoing image support for these strategic tax avoidance activities. Notably, these finding challenges the simplistic assumption that long-term orientation equates to greater morality. It suggests that long-termism can coexist with calculated, strategic opportunism, reflecting the complexity of business ethics. In contrast, ETR manipulation focuses on immediate cash tax savings; its effect is direct but transparent, aligning more closely with the short-term oriented culture's preference for immediate financial results. BTD, which includes accrual-based manipulations that often

reverse in subsequent periods, offers tax effects that are short-term in nature and mismatched with long-term strategic orientations. This likely explains why LTO was insignificant in the BTD model.

To clearly demonstrate the diversity and complexity of the national cultural effect, we have included a summary table below that outlines the moderating effect of the national cultural dimension on the regression relationship between SA and the three tax avoidance indicators.

Table 11 Summary of moderation effects				
Cultural Dimension	Moderation Direction	ETR Model	BTD Model	DDBTD Model
PDI	Amplifying	Insignificant	Insignificant	**High PDI Significant**
	Attenuating	**Low PDI Significant**	Insignificant	Insignificant
IDV	Amplifying	Insignificant	Insignificant	Insignificant
	Attenuating	**Low IDV Significant**	Insignificant	Insignificant
MAS	Amplifying	Insignificant	Insignificant	Insignificant
	Attenuating	**Low MAS Significant**	**Low MAS Significant**	**Low MAS Significant**
UAI	Amplifying	Insignificant	**High UAI Significant**	**High UAI Significant**
	Attenuating	Insignificant	Insignificant	Insignificant
LTO	Amplifying	Insignificant	Insignificant	**High LTO Significant**
	Attenuating	**Low LTO Significant**	Insignificant	Insignificant

Note:

"Amplifying" indicates that the positive association between SA and tax avoidance is stronger under a high level of the cultural dimension.

"Attenuating" indicates that the positive association between SA and tax avoidance is stronger under a low level of the cultural dimension. From an impression management perspective, "Attenuating" implies that the cultural trait provides more favourable conditions for the impression management function of SA.

"Significant" denotes that the regression coefficient for SA is statistically positive within that cultural subgroup.

6.4.3 PSM

To control for selection bias arising from systematic differences in observable characteristics between the treated group (firms obtaining SA) and the control group (firms not obtaining SA), this study employs Propensity Score Matching (PSM). The specific procedure is as follows. First, a Probit model, incorporating all control variables as covariates, is used to estimate the propensity score for each firm-year observation to seek SA. Subsequently, based on these scores, control group samples with similar characteristics are identified for each treated group sample.

Specifically, two matching methods are employed for mutual verification. First, nearest neighbour 1:3 matching is used. For each treated sample within the region of common support, the three most similar control group samples are identified. This approach is adopted because SA-adopting firms constitute a high proportion (approximately 75%) of the sample, making control group observations relatively scarce. Using a 1:3 ratio instead of 1:1 matching allows for a more efficient use of the limited control group information. It increases the sample size and enhances the statistical power of the estimation without significantly compromising matching quality (Caliendo and Kopeinig, 2008). Second, kernel matching is applied. This method uses a weighting function to match each treated sample with all control samples, where the weights are determined by the closeness of the propensity scores. Its advantage lies in utilising the entire control group information, typically resulting in lower estimation variance and producing smoother and more precise results. The combined use of both methods considers the practical distribution of the sample and strengthens the reliability of the findings through cross-method validation. This strategy is a well-established robustness check in the literature addressing non-random selection bias (Rosenbaum and Rubin, 1983).

VARIABLES	ETR		BTD		DDBTD	
	Proximity matching	Kernel matching	Proximity matching	Kernel matching	Proximity matching	Kernel matching
SA	0.0234**	0.0236**	0.0039**	0.0039**	0.0036*	0.0037*
	(2.2096)	(2.2341)	(1.9857)	(2.0156)	(1.8838)	(1.9163)
SIZE	-0.0165	-0.0167	-0.0028	-0.0029	-0.0023	-0.0024
	(-1.1314)	(-1.1434)	(-1.0556)	(-1.0702)	(-0.8840)	(-0.9000)
ROA	0.0024***	0.0024***	0.0028***	0.0028***	0.0015***	0.0015***
	(3.3071)	(3.3450)	(21.0250)	(21.0760)	(11.1634)	(11.2149)
LOSS	-0.0288**	-0.0288**	-0.0022	-0.0022	-0.0025	-0.0025
	(-2.3462)	(-2.3468)	(-0.9813)	(-0.9820)	(-1.1433)	(-1.1439)
LEV	0.0354	0.0361	-0.0189**	-0.0187**	-0.0222***	-0.0220***
	(0.8045)	(0.8193)	(-2.3229)	(-2.3042)	(-2.7864)	(-2.7657)
CINT	-0.0019	-0.0023	0.0169*	0.0169*	0.0345***	0.0344***
	(-0.0370)	(-0.0436)	(1.7478)	(1.7393)	(3.6347)	(3.6248)
INTANG	0.0342	0.0339	0.0222***	0.0221***	0.0214***	0.0213***
	(0.9290)	(0.9217)	(3.2601)	(3.2505)	(3.2127)	(3.2021)
EXPECTATION	-0.0005	-0.0006	-0.0007**	-0.0007**	-0.0002	-0.0003
	(-0.2500)	(-0.2979)	(-2.0586)	(-2.1190)	(-0.7182)	(-0.7832)
INSTOWN	0.0052	0.0044	0.0150**	0.0148**	0.0134**	0.0131**
	(0.1613)	(0.1348)	(2.4955)	(2.4628)	(2.2725)	(2.2365)
Constant	-0.0321	-0.0292	0.0148	0.0155	0.0138	0.0145
	(-0.1371)	(-0.1246)	(0.3422)	(0.3576)	(0.3260)	(0.3423)
Observations	2,912	2,914	2,912	2,914	2,912	2,914
R-squared	0.411	0.411	0.731	0.732	0.665	0.665
year	Yes	Yes	Yes	Yes	Yes	Yes
ID	Yes	Yes	Yes	Yes	Yes	Yes

t-statistics in parentheses

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

The PSM test results in Table 12 clearly demonstrate that the primary findings of this study remain robust after controlling for selection bias. Under both the nearest neighbour 1:3 matching and kernel matching methods, the SA variable maintains statistical significance across all three tax avoidance measures, and the coefficient signs align with those in the main regression. Specifically, in the ETR model, the coefficient for SA is significant at the 5% level; in the BTD model, SA is significant at the 5% level; and in the DDBTD model, SA is significant at the 10% level. This consistency across both methodologies and different

measures robustly supports the fundamental conclusion of a positive association between SA and the degree of corporate tax avoidance.

It is noteworthy that the R-squared values for the matched samples remain relatively high (approximately 0.41 for the ETR model, and about 0.73 and 0.67 for the BTD and DDBTD models, respectively), indicating that the models possess good explanatory power. The behaviour of the control variables also provides valuable insights. ROA is significantly positive across all models, consistent with the theoretical expectation that greater profitability strengthens the motivation for tax avoidance. LEV is significantly negative in the BTD and DDBTD models, potentially reflecting more cautious tax strategies by highly leveraged firms. The significantly positive relationship for INSTOWN in the latter two models suggests that institutional investors might exert a complex influence on corporate tax aggressiveness.

These findings not only confirm the robustness of the main regression results but, more importantly, indicate that the relationship between SA and tax avoidance is not driven by sample selection bias. Instead, it reflects a genuine pattern of firms strategically utilising sustainability assurance. By constructing a more comparable sample through PSM, this study provides more compelling evidence for the core argument that "firms may use SA as an impression management tool to divert stakeholder attention from their substantive tax-related conduct."

6.4.4 Replacement sample analysis

This study elected to exclude the UK sample from the overall dataset as a robustness check, primarily based on three considerations. First, as shown in Table 3, UK firms constitute a substantial 20.36% of the total sample, raising concerns regarding potential over-representation. When a single country accounts for a disproportionately high share in a cross-national study, its unique institutional characteristics may disproportionately influence the overall estimates, potentially compromising the generalisability of the findings.

Second, the UK possesses a distinct ESG regulatory environment and developmental trajectory. Similar to the United States, the UK primarily follows a market-oriented model for ESG development, where SA practices are driven more by investor pressure and market demands than by the policy-driven approaches more common in EU nations (Eccles et al., 2014). This institutional divergence could lead to systematic differences in the motivations for seeking SA and subsequent corporate behaviours between UK firms and their Continental European counterparts.

Finally, the UK's corporate governance model and tax environment also exhibit distinctive features. Its corporate governance code emphasises the 'comply or explain' principle, while the tax system is noted for its complex anti-avoidance rules and high tax enforcement efficiency (Armstrong et al., 2015). These factors could potentially moderate the relationship between SA and tax avoidance behaviours. Consequently, removing the UK sample helps to test whether the main conclusions are unduly influenced by this specific subsample, thereby enhancing the robustness and generalisability of the research findings.

	(1) ETR	(2) BTD	(3) DDBTD
	Table 13: Regression results after removing the UK company		
SA	0.0309^{***}	0.00346^{*}	0.00377^{*}
	(0.0117)	(0.00198)	(0.00197)
SIZE	-0.0131	-0.00105	-0.000640
	(0.0169)	(0.00286)	(0.00284)
ROA	0.00110	0.00252^{***}	0.00124^{***}
	(0.000884)	(0.000149)	(0.000148)
LOSS	-0.0283^{**}	-0.000553	-0.00112
	(0.0136)	(0.00229)	(0.00228)
LEV	0.0121	-0.00887	-0.0132
	(0.0481)	(0.00811)	(0.00806)
CINT	0.0246	0.00921	0.0252^{***}
	(0.0546)	(0.00921)	(0.00915)
INTANG	0.0354	0.0106	0.0127^{*}
	(0.0401)	(0.00676)	(0.00672)
EXPECTATION	-0.000930	-0.000160	0.000186
	(0.00241)	(0.000407)	(0.000405)

INSTOWN	0.0232	0.00496	0.00321
	(0.0363)	(0.00613)	(0.00610)
Constant	-0.0885	-0.00477	-0.00882
	(0.273)	(0.0461)	(0.0458)
N	2327	2327	2327
r2	0.423	0.756	0.691
FE_ID	Yes	Yes	Yes
FE_year	Yes	Yes	Yes

Standard errors in parentheses

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

The regression results after excluding the UK sample, presented in Table 13, are consistent with the prior findings. First, the coefficient for SA remains statistically significant across all three tax avoidance measures, and its magnitude is larger compared to the full-sample regression. In the ETR model, SA is significant at the 1% level. This not only confirms the robustness of the main hypothesis but also indicates that the positive relationship between SA and tax avoidance is stronger in the absence of the UK sample. This finding might suggest that the UK's unique institutional environment somewhat attenuates the strength of the association between SA and tax avoidance. Specifically, the UK's mature investor protection regime, high transparency disclosure requirements, and stringent tax enforcement environment (Dharmapala, 2014) may collectively impose effective constraints on corporate opportunistic behaviour. Consequently, even when UK firms seek SA, their scope for engaging in opportunistic tax avoidance is relatively limited.

Second, the coefficients for SA in the BTD and DDBTD models remain significant at the 10% level, indicating that the relationship between SA and the accruals-based tax avoidance measures remains stable after removing the UK observations. It is noteworthy that the significance patterns of the control variables also shift accordingly. For instance, ROA remains highly significant in the BTD and DDBTD models, whereas LOSS is only significant in the ETR model. This likely reflects heterogeneity in the mechanisms linking firm characteristics to tax avoidance behaviours across different national subsamples.

Collectively, these findings demonstrate that the positive SA-tax avoidance relationship observed in the main regression is not driven predominantly by the UK sample but is a robust phenomenon present within the broader European sample. From a theoretical perspective, this result further supports the explanatory power of impression management theory: within Continental European institutional environments, firms are more likely to utilise SA as a tool for symbolic legitimisation to divert stakeholder attention from their substantive tax conduct (Maroun, 2020b). Simultaneously, the results underscore the importance of accounting for country-level institutional differences in international accounting research, as varying national regulatory environments and cultural contexts can significantly moderate the relationship between accounting practices and their economic consequences (Hope, 2003).

7. Summary and conclusion

This study, utilising a sample of listed firms from 17 European countries covered by the STOXX Europe 600 index spanning 2013-2019 and employing three tax avoidance measures (ETR, BTD, and DDBTD), empirically examines the relationship between the independent assurance of sustainability reports and corporate tax avoidance. It further introduces Hofstede's cultural dimensions theory to investigate the moderating effects of national cultural traits on this relationship. Our regression results indicate a significant positive correlation between the procurement of SA and tax avoidance, a relationship that is more pronounced in cultural contexts characterised by low Power Distance (PDI), low Individualism (IDV), low Masculinity (MAS), and low Long-Term Orientation (LTO). Furthermore, through robustness checks employing an instrumental variable approach and multiple measures, we have verified the reliability of the core findings, revealing a phenomenon of "decoupling" between symbolic compliance in ESG practices and substantive tax avoidance behaviours.

These results can be interpreted through several theoretical lenses, including impression management theory, stakeholder salience theory, legitimacy theory, neo-institutional theory, risk management theory, and agency theory. Specifically, firms appear to utilise SA as a tool for impression management and legitimacy building, diverting the attention of powerful external stakeholders—such as regulators, investors, or creditors—away from their tax avoidance activities. Concurrently, there is reason to believe that management leverages the "insurance effect" of SA to hedge against potential adverse risks arising from tax exposure (Godfrey, 2005). Neo-institutional theory further suggests that under institutional isomorphic pressures, firms use SA as a decoupling mechanism, creating manoeuvring room for management to adopt dual isomorphic strategies that reconcile external pressures with the pursuit of internal efficiency. Additionally, in line with agency theory, management may opportunistically exploit information asymmetry, using SA as a tool to divert shareholder attention, thereby engaging in tax avoidance to maximise personal economic or non-economic benefits.

Our evidence from subgroup analyses reveals that the moderating effects of cultural dimensions exhibit heterogeneity depending on the specific tax avoidance strategy measured. For instance, in the ETR model, cultures with low PDI and low IDV significantly strengthen the positive SA-tax avoidance relationship, suggesting that management in egalitarian and short-term oriented contexts is more inclined to engage in "superficial compliance" through effective tax burden management. Conversely, in the BTD and DDBTD tests, cultures with high PDI, high Uncertainty Avoidance (UAI), and high LTO show a significant moderating effect on the positive relationship. This indicates that cultures with concentrated power and stable social hierarchies foster technically sophisticated, concealed tax avoidance via complex accounting adjustments. It also suggests that tax avoidance is, to some extent, perceived by management as a long-term or sustainability-oriented financial strategy within these contexts. These findings underscore the complexity of cultural dimensions' influence on tax avoidance. Their relationship with different avoidance measures (strategies) is not a simple, unidirectional causality but rather a dynamic matching process between institutional logics and technical feasibility.

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The findings and theoretical interpretations of this study offer multiple contributions to the existing academic literature and practical domains. First, this paper significantly extends and deepens the academic discourse on the relationship between ESG/CSR practices and corporate accounting manipulation, particularly tax avoidance. While prior research has established a connection between the two, the conclusions are mixed and often focus primarily on ESG performance or disclosure itself (Hoi et al., 2013a; Lanis and Richardson, 2015). By introducing the independent assurance of sustainability reports as a key variable into the analytical framework, this study reveals a more subtle and complex mechanism within the ESG domain: the pursuit of external assurance is not necessarily a reflection of substantive commitment but can instead constitute a more sophisticated impression management strategy. This finding extends the concept of "greenwashing" into the realms of "Assurance-Washing" or "Tax-Washing," suggesting that firms may use assured ESG reports as a "credential" of moral legitimacy to provide cover for opportunistic behaviour in another domain (taxation). This not only resonates with the literature on organizational hypocrisy and decoupling but also provides empirical evidence from the important financial decision-making area of taxation. Consequently, this study moves beyond the simplistic binary debate of whether ESG represents "doing good" or "doing bad" in relation to tax avoidance, and instead delves into how firms strategically manage the relationship between the appearance of "doing good" and the substance of "doing bad" in the tax domain. It offers a more critical and insightful perspective for understanding the diverse motivations and consequences of corporate ESG practices.

Second, by introducing and systematically testing the moderating role of national culture, this paper demonstrates the significant value and unique advantage of incorporating macro-level informal institutional factors into research at the intersection of corporate finance and ESG. Although existing studies have examined the moderating effects of formal institutions (e.g., legal origin, investor protection) (García-Sánchez et al., 2019), culture, as a deep-seated and enduring informal institution, exerts a more fundamental and subtle influence (Hofstede, 2001). This study confirms that cultural dimensions can systematically explain the significant variation in the SA–tax avoidance relationship across

national contexts, something difficult to capture fully using only firm-level variables or country-level formal institutional variables. For instance, the finding that high UAI cultures strengthen the positive association between SA and BTD-based avoidance might occur because firms in high UAI societies are more inclined to adopt complex yet "rule-based" assurance procedures (e.g., ISAE 3000) to mitigate risks associated with future policy uncertainty, while simultaneously employing equally complex accounting methods for avoidance, reflecting the dual nature of their risk-averse behaviour. This aligns with research by Tsakumis et al. (2007) on culture and tax morale. This culture-based analysis avoids the "black box" treatment of attributing national differences simply to economic or legal factors. It provides a finer-grained, more mechanistic theoretical lens for understanding the varied corporate behaviours fostered by the global ESG wave in different cultural soils. It emphasises that promoting globally uniform ESG standards without considering deep-seated cultural differences may lead to diminished effectiveness or even unintended consequences.

By integrating the frontier variables of SA and national culture, this study provides important references for future academic exploration and practical application. First, from an academic perspective, this integration offers a productive analytical framework for investigating the core paradox of the "symbolic" versus "substantive" aspects of ESG. Future research can follow this path to further explore the differential impact of various SA characteristics—such as provider type, assurance level, and underlying standards—on diverse corporate behaviours like earnings management, innovation investment, and executive compensation across different cultural contexts. Furthermore, this study urges the academic community to embrace bidirectional hypotheses from multiple theories, integrating institutional, cultural, and economic perspectives to continue capturing potential signals within the dynamic mechanisms of "hypocrisy governance," focusing on the motivations and consequences of corporate actions.

Second, for practitioners, investors, and analysts, the findings serve as a sobering reminder. They suggest that when presented with an attractively assured ESG report, a higher degree of critical thinking is warranted. It is crucial to look beyond the surface and

comprehensively assess the firm's overall behavioural patterns, particularly its tax aggressiveness, to avoid being misled by a "moral facade." These findings also alert third-party SA providers to maintain scrutiny over clients' financial conduct to mitigate reputational risk following the exposure of financial scandals.

Third, the findings can draw the attention of relevant tax authorities. They highlight the need to be vigilant about the potential "greenwashing" function of SA and consider developing enhanced compliance procedures, such as establishing cross-auditing mechanisms between ESG and tax data. Regulators should also recognise that culture is not merely background noise but a navigational beacon for strategic choice (Gupta and Gupta, 2019). Consequently, consideration should be given to establishing differentiated regulatory paradigms tailored to different cultural regions; for instance, low-IDV countries might require supplementary strong legal deterrence.

Fourth, for institutions promoting sustainability and ESG policies, such as the European Commission, ESMA, and the IASB, the findings indicate that merely mandating and expanding the requirement for sustainability assurance, without simultaneously strengthening the quality, standardisation, and accountability of the assurance process itself, may fail to achieve the original goal of promoting sustainable development in the real economy. Instead, it could provide new avenues for opportunism, leading to a proliferation of "symbolic compliance." Therefore, regulatory policy design needs to be more systematic and culturally sensitive. It must value the "credibility" of ESG information while remaining wary of its potential abuse for "symbolic" purposes, thereby steering the ESG trend towards genuine "substantive" integration rather than a superficial contest of impression management.

Finally, we hope the results of this study will alert corporate sustainability practitioners to integrate tax responsibility into the core strategy of ESG practices and place the principle of tax compliance as a primary condition of corporate citizenship, thereby fundamentally curbing the breeding of ethical gaps and opportunistic tendencies within blind spots of ESG governance. Furthermore, financial and internal control teams in large corporations should

become aware of the influence of prevailing national cultural forces on their tax avoidance and consider how to respond appropriately to navigate intense competition and impediments (Bame-Aldred et al., 2013).

This study has several limitations. First, the sample focuses exclusively on European markets. While this geographical selection aligns with Europe's leading position in global sustainability practices and financial regulation, it substantially limits the external validity of the findings. The maturity of the European institutional environment, exemplified by comprehensive ESG disclosure norms and converging accounting standards, may systematically obscure heterogeneity in the relationship between SA and tax avoidance. In contrast, the strategic coupling mechanisms between these two factors could differ fundamentally in developing countries, which often experience regulatory gaps, fragmented governance, and imbalanced stakeholder pressures. More importantly, the relatively high cultural homogeneity within Europe, with an IDV mean of 70.36 and standard deviation of only 7.23, results in limited cross national variation in Hofstede dimensions. This likely leads to conservative estimates of the cultural moderating effects. Extending the sample to regions with greater cultural distance, such as the high collectivism in East Asia or high individualism in North America, might yield more complex and interesting insights regarding how institutional logic explains tax avoidance. It could even reverse the impression management function of SA. For example, in authoritarian cultures, SA might become a legitimacy tool for government business collusion, thereby diminishing firms agency in using it as a signalling device. In societies with strong religious embeddedness, tax avoidance might be morally repriced due to ethical taboos. Such unobserved cultural specificities provide avenues for future research. Second, the study's exclusion criteria isolate firm data from the period after the enactment of the EU CSRD directive. This substantial regulatory shift could significantly alter the relationship between SA and tax avoidance. For instance, a mandatory assurance environment might dilute the signalling effect of sustainability practices. Therefore, examining the European market beyond 2023 presents a potential opportunity for future research.

In conclusion, this study reveals the complexity and contradictions in corporate governance under the ESG wave. It calls upon academia and practitioners to move beyond the simplified narrative of compliance as morality, to adopt professional scepticism as a methodological core, and to reconstruct the cognitive framework for understanding ESG practices. The ethical substance of corporate behaviour must be dynamically discerned within its cultural and institutional contexts. Only by situating corporate ESG practices against the backdrop of external institutional complexity and cultural heterogeneity, alongside internal agency opportunism, can we avoid short sighted interpretations of the interaction between existing policies and corporate behaviour. This approach is essential for exploring genuine pathways to sustainability in both governance effectiveness and ethical responsibility.

Chapter 5 Conclusion

1. Introduction to the thesis Compilation

This doctoral thesis adopts a three-paper format to investigate the complex relationship between the global ESG movement and corporate financial behaviour. The first study employs a systematic literature review and bibliometric methods to map the knowledge distribution and research trajectory at the intersection of ESG and accounting. It identifies a research gap concerning the interplay among sustainability disclosure, particularly its third-party assured component, corporate accounting conservatism, and impression management strategies. Building on this foundation, the second study empirically examines the relationship between firms' procurement of sustainability report assurance and their earnings management behaviour. The findings reveal a positive association between SA and real earnings management, a relationship moderated by national governance quality. The third study extends the analysis to tax avoidance, finding a positive association between SA and tax aggressiveness, a relationship moderated by Hofstede's cultural dimensions.

The three studies collectively form a progressive and complementary whole. The progression from theoretical synthesis to empirical testing ensures that the research questions originate from identified gaps in the literature rather than arbitrary selection. The dual examination of earnings management and tax avoidance captures the complex motivations underlying firms' allocation of moral resources across different financial dimensions, revealing the potential tension between symbolic compliance and substantive commitment within ESG practices. The remainder of this chapter discusses the multifaceted contributions of this thesis, its limitations and reflections, and directions for future research.

2. Contributions

2.1 Contributions to ESG/accounting literature

The contribution of this study to the extant literature is threefold.

First, in terms of research perspective, this study shifts the focus from the characteristics of SA, as examined in prior research, towards the functional value of its mere presence. It proposes and tests the strategic use of SA as an impression management tool. Distinguishing itself from extant discussions on greenwashing, this study reveals that firms may purchase SA to construct moral legitimacy, thereby providing cover for opportunistic behaviour in other domains. This perspective extends the concepts of assurance-washing or tax-washing, thereby filling the gap regarding how SA, as an intuitive ethical signal, affects financial reporting quality.

Second, in terms of contribution to accounting research, this study expands the conceptual boundaries of financial reporting quality. The findings suggest that financial reporting quality should no longer be confined to the characteristics of historical financial data, but should also encompass the production and verification processes of non-financial information, given the systematic association between these processes and traditional financial manipulation behaviours. As a verification mechanism for non-financial information, the strategic use of SA offers a new analytical dimension for understanding a firm's overall financial robustness.

Third, in terms of theoretical framework application, this study centres on impression management theory as its core, integrating multiple theoretical perspectives tailored to different research directions and questions. For instance, when examining the relationship between SA and earnings management, the study synthesises signalling theory and institutional theory. This integration explains the dual possibilities of SA as a differentiating signal, substantive commitment versus symbolic commitment, and also reveals how national governance moderates the cost-benefit structure of corporate impression management. When examining the relationship between SA and tax avoidance, the study incorporates risk management theory and stakeholder salience theory. This is because tax avoidance directly erodes the national tax base, and the legal and reputational risks upon

exposure are far more severe than those associated with accounting manipulations. Under the overarching framework of impression management theory, SA is conceptualised as moral insurance for firms to address legal and reputational risks. Firms may also use SA to satisfy high-salience stakeholders, thereby creating space for actions that may harm low-weighted stakeholders. This theoretical integration transcends the limitations of a single perspective, capturing the contradictory and dynamic nature of corporate ESG behaviour, and responds to the critique in the literature review regarding the application of bias theory in existing research.

2.2 Methodological contributions

The methodological contributions of this study are twofold.

First, this study adopts a multi-behaviour perspective by examining earnings management and tax avoidance within the same analytical framework. This design is grounded in the fundamental differences between these two types of financial behaviour. Earnings management, particularly real activities manipulation, is more directly associated with short-term financial reporting quality and market expectations, reflecting the immediate manifestation of managerial opportunism in accounting information. Tax aggressiveness, by contrast, involves long-term tax planning and social responsibility fulfilment, reflecting a firm's strategic response to institutional pressures; that is, it reflects corporate accountability to society and the state (Lanis and Richardson, 2015). Examining both behaviours simultaneously captures how firms allocate their moral resources across different financial domains, providing stronger evidence for the alienation of ESG practices into comprehensive corporate hypocrisy. This multiple dependent variable design expands the strategic boundaries of accounting and ESG cross-research, suggesting that assessments of financial robustness should not be confined to earnings quality but should incorporate dimensions such as tax behaviour, thereby offering stakeholders a more comprehensive risk assessment framework.

Second, by introducing country-level moderating variables, this study incorporates macro-institutional factors into the analysis of micro-level firm behaviour. Compared with tests of firm-level moderators, country-level influences are more pervasive; all firms are inevitably affected by them. These factors largely establish the formal institutions, such as governance quality, or informal institutions, such as national culture, that all firms must navigate. Moreover, country-level variables are exogenous; individual firms are unlikely to exert reverse causality on them, which enhances the robustness of our conclusions. Specifically, we selected different institutional dimensions based on the nature of the research question. When examining the relationship between SA and earnings management, the study focused on national governance quality, a formal institution. This choice reflects that earnings management, as short-term opportunistic behaviour, is more sensitive to the constraints of formal regulation; management tends to incorporate national governance levels into its rational calculations of misconduct costs. When examining the relationship between SA and tax avoidance, the study introduced Hofstede's cultural dimensions, representing informal institutions. This is because tax avoidance, as a more long-term and covert strategy, is deeply influenced by the ethical cognition and risk preferences of managers, which are shaped by culture. Culture offers a deeper and more stable explanatory perspective than formal institutions. This macro-to-micro linkage not only enriches the application of institutional theory but also, by distinguishing the distinct mechanisms of formal and informal institutions, reveals the multiple institutional logics underlying corporate strategic choices. It provides a more nuanced theoretical foundation for understanding cross-country differences in the context of ESG globalisation.

2.3 Practical/policy implications.

This study offers important implications for a range of stakeholders.

For policymakers and regulatory bodies (such as the ISSB, securities regulatory commissions of various countries), the findings provide empirical evidence regarding whether and how to regulate sustainability report assurance. First, regulators should be

vigilant regarding the risk of SA devolving into a greenwashing tool. If investors cannot distinguish between users of SA for substantive commitment versus symbolic compliance, the market will discount all SA signals, thereby crowding out sincere practitioners. Based on this study's findings, regulatory scrutiny of the relationship between SA's hypocritical signals and financial quality should extend beyond a focus on accruals to encompass scrutiny of REM anomalies. Firms seeking SA should be required to provide more detailed explanations for key estimates that may induce REM. Second, a cross-verification mechanism between ESG information and tax information should be established. At a minimum, based on this study's findings, the authenticity of ESG commitments from a company that claims to be socially responsible yet actively avoids tax is questionable. Finally, policymakers should not assume that more SA equates to better outcomes. They need to promote SA from a voluntary, selective practice towards mandatory, high-quality standards. Regulatory design should also consider cultural context; for instance, in collectivist cultures, emphasising the communal harm of tax avoidance may be more effective than simple fines. These measures are necessary to prevent SA from degenerating into a symbolic tool.

For third-party institutions, first, ESG rating agencies should not automatically treat SA as a positive signal. Instead, they need to conduct deeper cross-validation, particularly being wary of firms that possess SA but simultaneously exhibit high levels of hidden earnings management such as cutting research and development expenditure. The value of SA is conditional; its signal effectiveness is highly dependent on the firm's overall financial integrity record. Second, reporting framework standard-setters (such as GRI, IIRC) should recognise that, beyond SA, other reporting frameworks may also be susceptible to use as impression management tools. Future efforts should promote linkage between SA and high-quality financial reporting. Alongside strengthening assurance requirements, scrutiny of financial behaviours such as REM and tax avoidance should be strengthened simultaneously, and reasonable assurance should be encouraged over limited assurance. Third, for SA providers, the scope of safeguards should be expanded to consider

incorporating the quality of corporate financial information, and management behaviour and motives, into the assurance review process.

For corporate managers, this study suggests that SA should not be treated merely as a public relations checkbox, but rather positioned as an internal governance and risk management tool. Specifically, regarding financial internal control, functional coordination between ESG strategy and financial strategy is necessary to avoid using SA as a tool to cover REM or aggressive tax avoidance. Regarding strategic cognition, managers should recognise that while SA can enhance credibility in strong governance environments, using it to conceal opportunistic behaviour in any environment accumulates long-term risk. Regarding tax strategy, tax contribution should be redefined as a core component of corporate social responsibility. Particularly in high long-term orientation cultures, framing tax payment as a long-term reputational asset represents a more sustainable strategy.

For investors, it is necessary to look beyond the surface signal of SA and conduct multi-dimensional verification. First, investors should be wary of firms that obtain SA but exhibit weak board governance. Such firms may resort to more hidden REM manipulation to meet short-term performance targets. Crucially, firms that manipulate financial data may also lack integrity in their ESG data. Second, investors should scrutinise the actual tax burden and the distribution of income across different cultural geographies for firms that have obtained SA. For example, in high uncertainty avoidance cultures, SA might be used to cover aggressive tax avoidance strategies, carrying potential regulatory and reputational risks. Investors should adopt critical thinking, cross-verifying ESG commitments with financial behaviours to identify genuine substantive leaders.

For emerging markets and broader institutional contexts, although this study does not directly test specific regions, its implications offer a sobering warning. Whether it is the formal governance structures of emerging markets or voluntary governance tools of developed markets, such as SA, both can be eroded by opportunism in the absence of effective enforcement and oversight. Extant research has revealed governance failures in weak institutional settings. This study, however, demonstrates that even in strong

institutional settings, governance tools can be susceptible to strategic manipulation. This finding underscores the complexity and limitations inherent in corporate governance practices. It suggests that when introducing governance tools like SA, all economies must simultaneously strengthen the substantive effectiveness of institutional enforcement.

3. Limitations and reflections

3.1 Sample limitations

The limitations of this study are firstly reflected in the sample selection, which is discussed below across four dimensions: geographical scope, time span, firm characteristics, and data processing.

First, the geographical scope of the sample is limited. Both the second and third empirical studies are based on European market data. While this choice ensures sample standardisation and data comparability, it restricts the external validity of the findings. European countries exhibit relatively high homogeneity in terms of ESG regulatory frameworks, institutional maturity, and cultural dimensions (For example, the mean of the IDV is 70.36, and the standard deviation is only 7.23.). This may limit the direct generalisability of the findings to emerging markets or regions with greater cultural heterogeneity (Belal et al., 2015; Shirodkar and Shete, 2021). These regions exhibit systematic differences from developed countries in ESG response patterns, market mechanisms, and institutional foundations, which could alter the direction or strength of the relationship between SA and corporate behaviour. However, the choice of a European sample also has its justification: the region has a relatively high penetration rate of SA and a mature institutional environment, allowing for an examination of the relationship between SA and corporate financial behaviour under a baseline scenario. This study provides a replicable analytical framework for other regions rather than offering specific predictions. Future research could adopt this framework to examine the similarities and differences in this relationship across different institutional contexts.

Second, the time span of the sample is limited. The empirical data ends in 2019 and thus does not capture the dynamic impact of external shocks, such as the COVID-19 pandemic and the implementation of the EU's CSRD, on ESG strategies. Global crises may reshape corporate ESG priorities. For instance, during the pandemic, firms may have been more inclined to use SA as a legitimation tool to cope with survival pressures. The mandatory assurance requirements introduced by the CSRD may systematically alter the functional role of SA. However, it is important to note that this time choice also establishes a baseline period of voluntary assurance. Without understanding corporate behavioural motives in the absence of mandatory requirements, it is impossible to assess whether mandatory policies successfully induce substantive change or merely spawn new symbolic compliance strategies. Future research could build on the findings of this study to evaluate the evolution of the relationship between SA and corporate behaviour following CSRD implementation. Furthermore, the complexity of managerial strategic manipulation implies that even under a mandatory assurance framework, without robust oversight, firms may still perpetuate opportunistic behaviour by opting for minimum-standard assurance or seeking alternative impression management tools. This offers important directions for further inquiry.

The difference in sample time periods between the two empirical studies was also a deliberate choice. The study on SA and earnings management found that the relationship between SA and REM ceased to be significant after 2013. This change could be interpreted either as the impression management function of SA waning or as opportunistic behaviour shifting to more hidden areas. Based on this, the study on SA and tax avoidance extended the analysis to the post-2013 period, aiming to test whether firms shift opportunistic strategies from earnings management to tax avoidance. Tax avoidance often involves cross-border planning and complex accounting operations, is more difficult for external parties to detect, and is frequently packaged in legal form, aligning more closely with the strategic logic of impression management. Simultaneously, this time choice facilitates observing the net effect of standard updates, on the function of SA (such as Revised ISAE 3000 and GRI G4); that is, whether formalised but non-mandatory initiatives altered

corporate motives for using SA. Therefore, the temporal difference between the two studies is not arbitrary but represents a theoretical extension progressively built upon prior findings.

Third, the limitations of the sample firms' characteristics. The selection of STOXX 600 index constituent companies was the result of multiple trade-offs. Compared to alternative indices such as the FTSE 100 (which has a limited single-country focus) or the STOXX 50 (which has an insufficient sample size), the STOXX 600 offers a large sample and broad geographical coverage, thereby enabling an analysis of cross-country institutional differences. Furthermore, its data is continuously available and complete in commercial databases, facilitating data collection. However, this choice implies that the generalisability of the research findings to small and medium-sized enterprises is limited. SMEs face different financing constraints, regulatory pressures, and agency problems; their motivation for seeking sustainability assurance may be more oriented towards securing resources or meeting basic legitimacy requirements, rather than engaging in complex impression management. Given that larger companies are more likely to exhibit a central tendency towards impression management, this sample selection is therefore justified for the study. Concurrently, this research focuses on the "average" trends in corporate behaviour, which prevents our findings from being unduly influenced by any single firm-specific characteristic. Consequently, these unique sample characteristics create avenues for future research. Examining the relationship between sustainability assurance and financial/accounting behaviour in specific contexts, such as among high-profile companies or family firms, would represent an ideal extension of impression management theory.

Fourth, the impact of deleting observations during data processing. This study removed firm-year observations where data for core variables, such as sustainability assurance and those required for calculating the dependent variables, were missing. This practice follows standard research conventions aimed at ensuring the precision of regression results. However, it may raise a concern: do the deleted observations differ systematically from the final sample in terms of the relationship between sustainability assurance and accounting manipulation? In response to this, three points should be clarified. First, missing values are primarily concentrated in the early years of the sample period, for instance, in the

sustainability assurance data. Given that it is inappropriate to impute values for, or substitute zeros in, these core variables, the decision was made to prioritise data quality over the breadth of the research scope. Second, companies with extensive missing data typically lack information for most years and are therefore not representative of the broader population. Third, if these excluded companies have missing data precisely because of excessive accounting aggressiveness, such as entering bankruptcy or being acquired due to high risk, then the estimates from this study are more likely to represent a 'lower-bound estimate'. In other words, the remaining sample consists of relatively successful firms whose opportunistic behaviour is more subtle and aligns more closely with the strategic characteristics of impression management, which is consistent with the research objectives of this study. Therefore, while this sample attrition constitutes a limitation, its effect is to make the estimates more conservative, and it does not compromise the core validity of the research conclusions.

3.2 Limitations of SA variable design

In both empirical studies included in this thesis, sustainability assurance is treated as a binary variable, indicating whether a firm purchases assurance or not. This approach fails to differentiate between the quality of assurance providers, such as accounting versus non-accounting providers, the level of assurance provided, reasonable versus limited assurance, or the standards applied, such as ISAE 3000 versus AA1000AS. This simplification may introduce bias into the estimation of the economic consequences of sustainability assurance, as varying levels of assurance quality could have differential effects on corporate behaviour (Ballou et al., 2018; Simpson et al., 2022). For instance, high-quality assurance might be more effective in curbing earnings management, whereas low-quality assurance could be more easily misused as a tool for impression management. Considering that the objective of this research is to explore and discuss whether sustainability assurance can be viewed as an impression management tool in terms of its average effect, this research design is considered acceptable.

3.3 Limitations of moderating variables

The second empirical study in this thesis adopts Hofstede's cultural framework. While this framework is theoretically grounded, it carries the risk of simplifying the complexity of culture. Culture is dynamic and multi-layered, and Hofstede's dimensions may not fully capture the influence of informal institutions such as religion, colonial history, or social trust (Du et al., 2014; McGuire et al., 2012). Furthermore, the limited cultural variation within Europe may lead the estimates of cultural moderating effects to be cautiously conservative. If this research were extended to regions with greater cultural distance, such as East Asia or Africa, the conclusions could differ fundamentally.

Additionally, other relevant moderating variables include the maturity of capital markets and investor activism, freedom of the press and the intensity of media scrutiny, the strength and quality of the professional auditor community, and specific cultural dimensions such as a society's degree of uncertainty avoidance. These factors can all alter the level of monitoring and pressure faced by management.

In light of this, the foregoing discussion regarding informal institutions provides indicative directions for future research.

3.4 Limitations of quantitative models

This study has certain limitations regarding the choice of regression models, which warrant reflection at this juncture.

First, the inherent limitations of quantitative analysis methods. The second and third studies employ large-sample econometric techniques. While these are well-suited to revealing average correlations between variables and providing statistical support for theoretical hypotheses, they struggle to capture the specific context and dynamic processes of corporate decision-making. Although fixed-effects models can control for time-invariant unobserved heterogeneity, they are inherently static and cannot fully reflect

the trajectory of corporate strategy over time. The question of whether and how firms progressively degenerate sustainability assurance from a substantive commitment into an impression management tool is, in essence, a dynamic one. To partially mitigate this limitation, this study employs instrumental variable approaches for robustness checks. The consistency of these results with those from the fixed-effects models enhances the credibility of the findings. Furthermore, the metrics used for earnings management and tax avoidance are 'noisy proxies' and carry a risk of measurement error. This study mitigates this risk by adhering to the most authoritative model specifications in the field and by drawing on consistent findings across multiple metrics. The core conclusions remain robust under different measurement approaches, indicating that the results are not driven by the measurement error of any single indicator.

Second, the choice of the baseline regression method: why OLS regression was used. The core research question of this study is to examine, on average, whether firms that seek sustainability assurance exhibit higher levels of earnings management or tax avoidance, and whether country-level factors systematically alter this average relationship. Ordinary Least Squares (OLS) regression is the most direct, effective, and widely interpretable method for addressing the average treatment effect. It provides the 'average story' for the entire sample, which aligns well with the research question. Other regression methods, such as quantile regression, address a different but equally important question: does the impact of sustainability assurance differ for firms with particularly high or low levels of accounting manipulation? This study acknowledges that quantile regression is a valid tool for heterogeneity analysis and could be seen as a natural extension for future research or subsequent analysis within this thesis. For instance, it could specifically explore whether the effect of sustainability assurance is stronger for firms that are already extremely aggressive in their accounting practices. Therefore, at the current stage of this research, the choice of OLS regression to serve the core research objectives is considered reasonable.

Third, the testing method for country-level moderating effects: why median-split group regression was used instead of quantile group regression. This study introduces national

governance and cultural dimensions as moderating variables, with the core objective of examining whether the macro-institutional context systematically alters the average relationship between sustainability assurance and financial behaviour. Median-split group regression serves this objective. It cleanly divides the sample into two groups, representing 'strong' versus 'weak' institutional environments, and provides the most direct and clear preliminary evidence of a threshold effect, allowing for a concise presentation of the theoretical inferences. Quantile group regression, which examines how the moderating effect varies across different points of the conditional distribution of the dependent variable, is a more nuanced tool. It addresses questions of heterogeneity, such as whether the moderating effect of national culture is stronger for firms with extremely high levels of tax avoidance. This study acknowledges that this is a valid direction for deeper investigation, but such analysis typically follows after the establishment of an average effect. Consequently, the current choice of median-split group regression to serve the core theoretical testing is justified, as it establishes a baseline for more detailed future analyses.

3.5 Dialectical discussion of research findings

This study aims to reveal the complex relationship between sustainability assurance and corporate financial behaviour within ESG practices, rather than to pass a negative judgement on ESG practices themselves. The following provides a critical discussion of the research findings from three dimensions.

First, regarding the question of whether opportunism is inevitable. This study finds that, within the current context of 'voluntary' and 'flexible' sustainability assurance practices, its function as a tool for 'impression management' outweighs its 'monitoring' function, on average. However, this does not deny the positive role of governance and regulation. On the contrary, the findings indicate that strong national governance effectively curbs the most obvious and easily detectable form of accrual earnings management, which is precisely evidence that institutions are functioning. Nevertheless, the performance pressure on firms does not disappear due to strong regulation. This pressure prompts

opportunistic managers to shift towards the more covert form of real earnings management and to use sustainability assurance as a cover. Therefore, the findings support a more critical perspective: institutions are not ineffective, but they alter the manifestation of opportunistic behaviour, making it more complex and covert. This implies that robust mechanism design must anticipate the evolution of opportunism and establish corresponding verification and accountability systems.

Second, regarding whether sustainability assurance has a positive role. This study reveals the risk of sustainability assurance being used strategically. However, this critical finding is not a denial of the value of sustainability assurance itself. Existing research has already confirmed its positive role in enhancing the comparability, transparency, and credibility of non-financial information. This study does not intend to challenge this consensus, but rather to highlight a neglected dimension: the benefits brought by sustainability assurance should not come at the expense of financial reporting integrity. If the credibility built by sustainability assurance is strategically used to cover lower-quality reporting in other areas, its net effect could be negative, creating a false sense of accounting security. It is worth noting that, in the absence of sustainability assurance, opportunistic managers would still use other tools, such as public speeches or advertising, for impression management. Therefore, this study does not call for the 'abolition of sustainability assurance', but rather for its 'refinement'. It advocates for regulators, standard-setters, and market participants to more strictly distinguish between 'symbolic' and 'substantive' sustainability assurance, transforming it from a tool that can be used strategically into a genuine accountability mechanism.

Third, regarding whether firms are generally unethical. Within the sample of this study, there are inevitably 'morally consistent' firms, those that combine sustainability assurance with substantive responsible behaviour. However, the econometric models test the 'average effect', and the findings indicate that impression management motives dominate, on average. This result does not advocate for a generalised scepticism of corporate motives. Instead, it serves as a caution against naively assuming that ESG commitments necessarily extend to the financial domain. The purpose of the research is not to promote

'distrust', but to promote 'verified trust' or 'prudent trust'. This helps stakeholders distinguish between genuine and false commitments, thereby directing capital and rewards towards truly responsible firms, which in the long run strengthens rather than undermines the trust mechanism. From a welfare economics perspective, if 'symbolic compliance' cannot be effectively distinguished from 'substantive commitment', it will lead to a 'race to the bottom', eroding the trust foundation of the entire system and creating unfairness for sincere firms. The role of academic research and regulation is precisely to identify and correct such imbalances that negatively impact overall social welfare. The critique presented in this study is not of impression management per se, but rather of when impression management leads to a 'decoupling of responsibility', such as eroding public finances through tax avoidance, it becomes an issue that needs to be exposed and governed.

4. Suggestions for future research

Building upon the findings and limitations of this research, future studies could further deepen the exploration of the ESG and accounting domain from multiple macro and micro dimensions, drawing on this study's theoretical frameworks and methodological innovations.

At the macro level, future research should prioritise expanding the geographical and institutional scope. Firstly, extending samples to emerging markets and developing countries, such as those in Asia, Africa, or Latin America, would test the universality of the relationship between SA and corporate behaviour across different institutional environments. These regions exhibit systematic differences from developed nations in terms of ESG responsiveness, governance fragmentation, and stakeholder pressures (Norbit et al., 2017; Pratoomsuwan and Chiaravutthi, 2023; Cai et al., 2017; Huang et al., 2018; Dai et al., 2018), which might reveal new functional roles for SA (Shirodkar and Shete, 2021; Zilja et al., 2022). For instance, in authoritarian cultures, SA might serve as a legitimacy tool for collusion between business and government (Marquis and Qian, 2014);

in societies with strong religious embeddedness, tax avoidance behaviour might be repriced due to moral taboos. Secondly, research should focus on the implementation effects of global ESG policies, particularly in the context of the rollout of mandatory assurance requirements like the EU's CSRD. This involves evaluating how policies affect the trade-off between corporate symbolic compliance and substantive commitment, and proposing differentiated regulatory paradigms (Thornton and Hsu, 2001). For example, future research could compare corporate behaviours under voluntary versus mandatory SA regimes or explore the conflicts between global ESG standards and cultural localisation.

At the micro level, future research could focus on internal corporate mechanisms and accounting practices. Firstly, deepening the analysis of SA characteristics, such as distinguishing between types of assurance providers, levels of assurance, and underlying standards, would reveal their differential impacts on corporate behaviour (Ballou et al., 2018; Simpson et al., 2022; Moroney and Trotman, 2016; Casey and Grenier, 2015). For instance, SA provided by accounting firms, such as the Big Four, might be more effective in curbing earnings management, whereas SA from non-accounting providers might be more susceptible to use for impression management (Cohen and Simnett, 2015). Secondly, exploring the interactive effects between ESG practices and other corporate financial behaviours, such as innovation investment, executive compensation, or capital structure, is warranted. For example, does SA complement green innovation, or does it substitute for tax avoidance? This would help construct a more comprehensive map of corporate ESG strategy. Thirdly, a potential extension of this research involves introducing behavioural factors or variables that can be considered governance characteristics to analyse how managerial cognitive biases, such as overconfidence or moral identity, moderate SA decisions. For instance, managers with high moral identity might be more inclined towards substantive rather than symbolic use of SA. This direction is supported by existing research indicating that various governance characteristics drive or inhibit managerial pursuit of ESG practices (Guiral et al., 2020; Davidson et al., 2019; Buallay et al., 2022). For example, high-quality corporate governance can increase environmental accounting disclosure (Ntim, 2016) and decentralise decision-making authority regarding CSR

(Church et al., 2019). Furthermore, firms with executives possessing regulatory work experience and more financial experts demonstrate higher quality CSR performance (Li et al., 2022), and non-materialistic CEOs also drive CSR practices (Davidson et al., 2019). Recent studies also find that independent female directors positively contribute to renewable energy consumption (Atif et al., 2021), reduce waste generation and enhance recycling rates (Gull et al., 2023), a relationship also evident in SMEs (Ismail et al., 2019).

Methodologically, future research should extend the pluralistic analytical framework of this study and consider other theories that could explain managerial ethical or opportunistic behaviour (O'Dwyer and Unerman, 2016), such as self-regulation theory or strong structuration theory. We maintain an optimistic view that the introduction of such theories will significantly contribute to understanding symbolic versus substantive managerial conduct regarding ESG practices. Secondly, employing multiple dependent variable indicators, combining earnings management and tax avoidance as proxies for financial conservatism, is recommended. This not only provides a more comprehensive corporate risk assessment but also responds to calls in accounting research for multi-dimensional measures of information quality. For instance, future studies could construct a composite index incorporating AEM, REM, CSEM, ETR, and BTD to examine the effect of SA on overall financial conservatism.

5. Summary

Ultimately, this doctoral thesis, through its three constituent studies, provides a comprehensive exploration of the complexity and underlying mechanisms of corporate behaviour within the global ESG movement. The findings suggest that ESG practices do not invariably lead to higher ethical standards or financial robustness; instead, they may be strategically deployed by firms for impression management, legitimacy building, and risk hedging. These findings challenge the simplistic assumption that 'compliance equates to ethics' and call upon both academia and practitioners to adopt a prudent approach as a

methodological core, thereby reconstructing the cognitive framework surrounding ESG practices. At a theoretical level, this research facilitates a paradigm shift in ESG scholarship from descriptive to explanatory approaches and from unidimensional to multidimensional perspectives, offering a new framework for understanding corporate 'symbolic compliance' and 'responsibility decoupling'. At a practical level, the study holds far-reaching implications for policymakers, corporate managers, investors, and assurance providers. Regulation needs to strengthen its institutional foundation and cultural sensitivity; firms need to integrate ESG commitments with financial integrity; investors need to practice in-depth scrutiny; and assurance providers need to enhance technical rigour. Ultimately, only by placing corporate non-financial commitments within an analytical framework that considers the complexity of external institutions and internal agency conflicts can we avoid a short-sighted view of the interactive relationship between policy and corporate behaviour. This approach allows us to move closer, through continuous inquiry, to the genuine path of sustainable development. In closing, it is worth noting that sustainable development requires exploring the intersections between disciplines: theory and practice; the past and the present; practice and politics; the weak and the powerful; nature and humanity; aesthetics and science; emotions and rationality; utopias and dystopias (Bebbington et al., 2017). It is not solely a political and economic issue; the research challenges it presents are diverse and evolve in tandem with external factors. Despite the diverse differences across geographies, academic traditions, and business practices, high-quality academic research holds the potential to expand and stimulate the developmental capacity of this subject, which is so critical to the fate of humanity.

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Appendix

Appendix A _ PRISMA

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┌──────────────┐   ┌─────────────────┐   ┌──────────────┐
│    Scopus    │   │ Web of science  │   │    EBSCO     │
└──────────────┘   └─────────────────┘   └──────────────┘
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Identification

| Preliminary records identified through three databases (n =760) | ← | Records obtained in the planning stage.
Scopus (n=75)
Web of science (n=376)
EBSCO (n=309) |

Screening

| Records identified after applying first screen stage. (n =423) | ← | Excluded numbers at each criteria:
    Not English text(n=0)
    Not in time-scope(n=225)
    Non articles(n=30)
Inclusion criteria:
    Cross-reference technique (n=52)
Exclusion criteria:
    Removing duplicates by Endnote
    (n=134) |

| Records identified after applying second screen stage. (n =273) | ← | Excluded numbers at each criteria:
    Manual deduplication (n=8)
    Reviewed studies type (n=48)
    Not including both topics (n=53)
    Educational topics (n=22)
    Historical topic (n=3)
    Philosophy topic (n=5)
    Political topic (n=6)
    Agricultural/Biological topic (n=5) |

Included

| Studies included in this review.(n =273) |

Appendix B _ Detailed information of the whole collection.

Supplementary Appendix: Summary of ESG and Accounting studies included in this systematic literature review						
Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
4* Accounting Organizatio ns and Society 18	Abernethy, M. A., Jiang, L. K. & Kuang, Y. F. (2019) 'Can organizational identification mitigate the ceo horizon problem?', Accounting Organizations and Society, 7815.	Governance	US	Quantitative method	Descriptive research	
	Alawattage, C. & Fernando, S. (2017) 'Postcoloniality in corporate social and environmental accountability', Accounting Organizations and Society, 601-20.	ESG accounting	Sri Lanka	Qualitative method	Descriptive research	
	Anesa, M., Gillespie, N., Spee, A. P., et al. (2019) 'The legitimation of corporate tax minimization', Accounting Organizations and Society, 7517-39.	Governance	Australia	Qualitative method	Descriptive research	Legitimacy theory
	Barth, M. E., Cahan, S. F., Chen, L., et al. (2017) 'The economic consequences associated with integrated report quality: Capital market and real effects', Accounting Organizations and Society, 6243-64.	Disclosure	South Africa	Quantitative method	Instrument al research	
	Bebbington, J. & Larrinaga, C. (2014) 'Accounting and sustainable development: An exploration', ACCOUNTING ORGANIZATIONS AND SOCIETY, 39(6),395-413.	ESG accounting		Narrative/com mentary	Normative research	
	Clune, C. & O'Dwyer, B. (2020) 'Organizing dissonance through institutional work: The embedding of social and environmental accountability in an investment field', Accounting Organizations and Society, 8525.	ESG accounting	Netherland s	Case study	Normative research	Social movement theory Neo-institutional theory
	Corvellec, H., Ek, R., Zapata, P., et al. (2018) 'Acting on distances: A topology of accounting inscriptions', ACCOUNTING	ESG accounting	Sweden	Case study	Instrument al research	

Supplementary Appendix: Summary of ESG and Accounting studies included in this systematic literature review						
Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
	ORGANIZATIONS AND SOCIETY, 6756-65.					
	Green, W. J. & Cheng, M. M. (2019) 'Materiality judgments in an integrated reporting setting: The effect of strategic relevance and strategy map', ACCOUNTING ORGANIZATIONS AND SOCIETY, 731-14.	Disclosure	Australia	Quantitative method	Instrumental research	
	Grisard, C., Annisette, M. & Graham, C. (2020) 'Performative agency and incremental change in a csr context', Accounting Organizations and Society, 8222.	Governance	West African	Case study	Descriptive research	
	Islam, M. A. & van Staden, C. J. (2018) 'Social movement ngos and the comprehensiveness of conflict mineral disclosures: Evidence from global companies', Accounting Organizations and Society, 651-19.	ESG accounting	Cross-country	Textual analysis	Descriptive research	Social movement theory Collaboration theory
	Malsch, B. (2013) 'Politicizing the expertise of the accounting industry in the realm of corporate social responsibility', Accounting Organizations and Society, 38(2),149-168.	ESG accounting	US	Qualitative method	Descriptive research	
	Martin, P. R. (2021) 'Corporate social responsibility and capital budgeting', Accounting Organizations and Society, 9215.	Performance	US	Quantitative method	Instrumental research	
	Michelon, G., Rodrigue, M. & Trevisan, E. (2020) 'The marketization of a social movement: Activists, shareholders and csr disclosure', Accounting Organizations and Society, 8018.	ESG accounting	US	Quantitative method	Descriptive research	Social movement theory
	O'Sullivan, N. & O'Dwyer, B. (2015) 'The structuration of issue-based fields: Social accountability, social movements and the	ESG accounting	Cross-country	Case study	Normative research	Social movement theory

Supplementary Appendix: Summary of ESG and Accounting studies included in this systematic literature review						
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	equator principles issue-based field', Accounting Organizations and Society, 4333-55.					
	Parker, L. D. (2014) 'Corporate social accountability through action: Contemporary insights from british industrial pioneers', Accounting Organizations and Society, 39(8),632-659.	ESG accounting	UK	Qualitative method	Normative research	
	Smith, M. (2022) 'Monetizing virtuous employees', ACCOUNTING ORGANIZATIONS AND SOCIETY, 98	Governance	US	Quantitative method	Instrumental research	Social identity theory Worker engagement theory
	Spence, L. J. & Rinaldi, L. (2014) 'Governmentality in accounting and accountability: A case study of embedding sustainability in a supply chain', Accounting Organizations and Society, 39(6),433-452.	Governance	UK	Case study	Instrumental research	
	Thomson, I., Grubnic, S. & Georgakopoulos, G. (2014) 'Exploring accounting-sustainability hybridisation in the uk public sector', ACCOUNTING ORGANIZATIONS AND SOCIETY, 39(6),453-476.	Governance	UK	Case study	Instrumental research	
4* *Accounting* *Review* *13*	Bartov, E., Marra, A. & Momenté, F. (2021) 'Corporate social responsibility and the market reaction to negative events: Evidence from inadvertent and fraudulent restatement announcements', Accounting Review, 96(2),81-106.	Performance	Cross-country	Quantitative method	Instrumental research	
	Chakravarthy, J., deHaan, E. & Rajgopal, S. (2014) 'Reputation repair after a serious restatement', Accounting Review, 89(4),1329-1363.	Performance	US	Quantitative method	Instrumental research	

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	Christensen, D. M. (2016) 'Corporate accountability reporting and high-profile misconduct', Accounting Review, 91(2),377-399.	Performance	US	Quantitative method	Instrument al research	
	Church, B. K., Jiang, W., Kuang, X., et al. (2019) 'A dollar for a tree or a tree for a dollar? The behavioral effects of measurement basis on managers' csr investment decision', Accounting Review, 94(5),117-137.	Performance	US	Quantitative method	Instrument al research	
	Davidson, R. H., Dey, A. & Smith, A. J. (2019) 'Ceo materialism and corporate social responsibility', Accounting Review, 94(1),101-126.	Governance	Cross-country	Quantitative method	Descriptive research	Instrumental theory Political theories Ethical theories
	Davis, A. K., Guenther, D. A., Krull, L. K., et al. (2016) 'Do socially responsible firms pay more taxes?', Accounting Review, 91(1),47-68.	Performance	US	Quantitative method	Instrument al research	
	Dechow, P. M. (2023) 'Understanding the sustainability reporting landscape and research opportunities in accounting', Accounting Review, 98(5),481-493.	ESG accounting		Narrative/com mentary	Normative research	
	Elliott, W. B., Jackson, K. E., Peecher, M. E., et al. (2014) 'The unintended effect of corporate social responsibility performance on investors' estimates of fundamental value', Accounting Review, 89(1),275-302.	Performance	US	Quantitative method	Instrument al research	Affect-as-information theory
	Hoi, C. K., Wu, Q. & Zhang, H. (2013) 'Is corporate social responsibility (csr) associated with tax avoidance? Evidence from irresponsible csr activities', Accounting Review, 88(6),2025-2059.	Performance	US	Quantitative method	Instrument al research	
	Ioannou, I., Li, S. X. & Serafeim, G. (2016)	Governance	US	Quantitative	Descriptive	

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	'The effect of target difficulty on target completion: The case of reducing carbon emissions', Accounting Review, 91(5),1467-1492.			method	research	
	Khan, M., Serafeim, G. & Yoon, A. (2016) 'Corporate sustainability: First evidence on materiality', Accounting Review, 91(6),1697-1724.	Performance	US	Quantitative method	Instrument al research	Stakeholder theory
	Matsumura, E. M., Prakash, R. & Vera-Muñoz, S. C. (2014) 'Firm-value effects of carbon emissions and carbon disclosures', Accounting Review, 89(2),695-724.	Performance	US	Quantitative method	Instrument al research	Resource-based theory
	Naughton, J. P., Wang, C. & Yeung, I. (2019) 'Investor sentiment for corporate social performance', Accounting Review, 94(4),401-420.	Governance	US	Quantitative method	Descriptive research	
4* **Journal of Accounting and Economics 7**	Chen, Y. C., Hung, M. Y. & Wang, Y. X. (2018) 'The effect of mandatory csr disclosure on firm profitability and social externalities: Evidence from china', Journal of Accounting & Economics, 65(1),169-190.	Performance	China	Quantitative method	Instrument al research	
	Christensen, H. B., Floyd, E., Liu, L. Y., et al. (2017) 'The real effects of mandated information on social responsibility in financial reports: Evidence from mine-safety records', Journal of Accounting & Economics, 64(2-3),284-304.	Disclosure	US	Quantitative method	Instrument al research	
	Gao, F., Lisic, L. L. & Zhang, I. X. (2014) 'Commitment to social good and insider trading', Journal of Accounting & Economics, 57(2-3),149-175.	Governance	US	Quantitative method	Instrument al research	Agency theory
	Larcker, D. F. & Watts, E. M. (2020) 'Where's the greenium?', Journal of Accounting & Economics, 69(2-3),26.	Performance	US	Quantitative method	Instrument al research	

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	Liu, Z., Shen, H. T., Welker, M., et al. (2021) 'Gone with the wind: An externality of earnings pressure*', Journal of Accounting & Economics, 72(1),21.	Performance	China	Quantitative method	Instrumental research	
	Lys, T., Naughton, J. P. & Wang, C. (2015) 'Signaling through corporate accountability reporting', Journal of Accounting & Economics, 60(1),56-72.	Disclosure	US	Quantitative method	Descriptive research	
	Martin, P. R. & Moser, D. V. (2016) 'Managers' green investment disclosures and investors' reaction', Journal of Accounting & Economics, 61(1),239-254.	Governance	US	Quantitative method	Instrumental research	
4 *Journal of Accounting Research* *2*	Dube, S. & Zhu, C. Q. (2021) 'The disciplinary effect of social media: Evidence from firms' responses to glassdoor reviews', Journal of Accounting Research, 59(5),1783-1825.	Governance	US	Quantitative method	Descriptive research	
	Manchiraju, H. & Rajgopal, S. (2017) 'Does corporate social responsibility (csr) create shareholder value? Evidence from the indian companies act 2013', Journal of Accounting Research, 55(5),1257-1300.	Performance	India	Quantitative method	Instrumental research	Stakeholder theory Firm theory
4 *Contemporary Accounting Research* *13*	Arjaliès, D. L. & Gibassier, D. (2023) 'Can financialization save nature? The case of endangered species', CONTEMPORARY ACCOUNTING RESEARCH, 40(1),488-525.	ESG accounting		Case study	Descriptive research	
	Baloria, V. P., Klassen, K. J. & Wiedman, C. I. (2019) 'Shareholder activism and voluntary disclosure initiation: The case of political spending', Contemporary Accounting Research, 36(2),904-933.	Disclosure	US	Quantitative method	Descriptive research	

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	Bucaro, A. C., Jackson, K. E. & Lill, J. B. (2020) 'The influence of corporate social responsibility measures on investors' judgments when integrated in a financial report versus presented in a separate report', Contemporary Accounting Research, 31.	Disclosure	US	Quantitative method	Instrument al research	
	Dal Maso, L., Lobo, G. J., Mazzi, F., et al. (2020) 'Implications of the joint provision of csr assurance and financial audit for auditors' assessment of going-concern risk', Contemporary Accounting Research, 37(2),1248-1289.	Disclosure	Cross-country	Quantitative method	Instrument al research	
	Elliott, W. B., Grant, S. M. & Rennekamp, K. M. (2017) 'How disclosure features of corporate social responsibility reports interact with investor numeracy to influence investor judgments', Contemporary Accounting Research, 34(3),1596-1621.	Disclosure		Qualitative method	Instrument al research	Psychology theory
	Griffin, P. A., Lont, D. H. & Sun, E. Y. (2017) 'The relevance to investors of greenhouse gas emission disclosures', Contemporary Accounting Research, 34(2),1265-1297.	Performance	US	Quantitative method	Instrument al research	
	Guiral, A., Moon, D., Tan, H. T., et al. (2020) 'What drives investor response to csr performance reports?', Contemporary Accounting Research, 37(1),101-130.	Performance	South Korean	Quantitative method	Instrument al research	Affect-as-information theory
	Harris, E. E. & Neely, D. G. (2016) 'Multiple information signals in the market for charitable donations', Contemporary Accounting Research, 33(3),989-1012.	Disclosure	US	Quantitative method	Instrument al research	
	Johnson, J. A., Theis, J., Vitalis, A., et al. (2020) 'The influence of firms' emissions management strategy disclosures on investors' valuation judgments',	Performance	US	Quantitative method	Instrument al research	

Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
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	Contemporary Accounting Research, 37(2),642-664.					
	Liu, X. T., Liu, X. X. & Reid, C. D. (2019) 'Stakeholder orientations and cost management', Contemporary Accounting Research, 36(1),486-512	Performance	US	Quantitative method	Instrument al research	
	Moroney, R. & Trotman, K. T. (2016) 'Differences in auditors' materiality assessments when auditing financial statements and sustainability reports', Contemporary Accounting Research, 33(2),551-575.	Disclosure	US	Quantitative method	Descriptive research	
	Pinnuck, M., Ranasinghe, A., Soderstrom, N., et al. (2021) 'Restatement of csr reports: Frequency, magnitude, and determinants*', Contemporary Accounting Research, 38(3),2376-2416.	Disclosure	Cross-country	Quantitative method	Descriptive research	
	Wei, C. Y. (2021) 'State ownership and target setting: Evidence from publicly listed companies in china*', Contemporary Accounting Research, 38(3),1925-1960.	Performance	China	Quantitative method	Instrument al research	
4 *Review of Accounting Studies* *9*	Anantharaman, D., Gao, F. & Manchiraju, H. (2022) 'Does social responsibility begin at home? The relation between firms' pension policies and corporate social responsibility (csr) activities', Review of Accounting Studies, 27(1),76-121.	Governance	Cross-country	Textual analysis	Instrument al research	
	Beck, A., Gilstrap, C., Rippy, J., et al. (2021) 'Strategic reporting by nonprofit hospitals: An examination of bad debt and charity care', REVIEW OF ACCOUNTING STUDIES, 26(3),933-970.	Disclosure	US	Quantitative method	Descriptive research	
	Dai, X., Gao, F., Lisic, L. L., et al. (2023) 'Corporate social performance and the managerial labor market', Review of Accounting Studies, 28(1),307-339.	Governance	US	Quantitative method	Instrument al research	

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	Downar, B., Ernstberger, J., Reichelstein, S., et al. (2021) 'The impact of carbon disclosure mandates on emissions and financial operating performance', Review of Accounting Studies, 26(3),1137-1175.	Performance	Cross-country	Quantitative method	Instrument al research	
	Friedman, H. L. & Heinle, M. S. (2016) 'Taste, information, and asset prices: Implications for the valuation of csr', Review of Accounting Studies, 21(3),740-767.	Performance		Quantitative method	Descriptive research	
	Grieser, W., Hadlock, C. J. & Pierce, J. R. (2021) 'Doing good when doing well: Evidence on real earnings management', Review of Accounting Studies, 26(3),906-932.	Performance	US	Quantitative method	Descriptive research	
	Nagar, V. & Schoenfeld, J. (2023) 'Measuring weather exposure with annual reports', Review of Accounting Studies, 29(1),1-32.	Disclosure	US	Textual analysis	Normative research	
	Pawliczek, A., Skinner, A. N. & Wellman, L. A. (2021) 'A new take on voice: The influence of blackrock's 'dear ceo' letters', Review of Accounting Studies, 26(3),1088-1136.	Disclosure	US	Quantitative method	Instrument al research	
	Truong, C., Nguyen, T. H. & Huynh, T. (2021) 'Customer satisfaction and the cost of capital', Review of Accounting Studies, 26(1),293-342.	Performance	US	Quantitative method	Instrument al research	
3 *Abacus* *2*	Banker, R. D., Bu, D. L. & Mehta, M. N. (2016) 'Pay gap and performance in china', ABACUS-A JOURNAL OF ACCOUNTING FINANCE AND BUSINESS STUDIES, 52(3),501-531.	Governance	China	Quantitative method	Instrument al research	Efficiency wage theory equity theory deprivation theory
	Bose, S. & Yu, C. (2023) 'Does earnings	Performance	US	Quantitative	Instrument	Voluntary

Supplementary Appendix: Summary of ESG and Accounting studies included in this systematic literature review						
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	quality influence corporate social responsibility performance? Empirical evidence of the causal link', Abacus-a Journal of Accounting Finance and Business Studies, 59(2),493-540.			method	al research	disclosure theory
3 *Accounting and Business Research 8*	Burns, J. & Jollands, S. (2020) 'Acting in the public interest: Accounting for the vulnerable', ACCOUNTING AND BUSINESS RESEARCH, 50(5),507-534.	ESG accounting		Narrative/com mentary	Normative research	
	Cooper, D. J. & Morgan, W. (2013) 'Meeting the evolving corporate reporting needs of government and society: Arguments for a deliberative approach to accounting rule making', ACCOUNTING AND BUSINESS RESEARCH, 43(4),418-441.	ESG accounting		Narrative/com mentary	Normative research	
	de Villiers, C. & Marques, A. (2016) 'Corporate social responsibility, country-level predispositions, and the consequences of choosing a level of disclosure', Accounting and Business Research, 46(2),167-195.	Disclosure	Cross-country	Quantitative method	Instrument al research	Legitimacy theory Agency theory
	Johansen, T. R. & Plenborg, T. (2013) 'Prioritising disclosures in the annual report', ACCOUNTING AND BUSINESS RESEARCH, 43(6),605-635.	Disclosure	Denmark	Quantitative method	Instrument al research	
	Narayanan, V. & Adams, C. A. (2017) 'Transformative change towards sustainability: The interaction between organisational discourses and organisational practices', ACCOUNTING AND BUSINESS RESEARCH, 47(3),344-368.	Governance	Australia	Case study	Instrument al research	Institutional theory
	Rowbottom, N. & Locke, J. (2016) 'The	ESG	South	Case study	Normative	Actor network

Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
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	emergence of ⟨ir⟩', ACCOUNTING AND BUSINESS RESEARCH, 46(1),83-115.	accounting	Africa		research	theory
	Stolowy, H. & Paugam, L. (2018) 'The expansion of non-financial reporting: An exploratory study', Accounting and Business Research, 48(5),525-548.	Disclosure	Cross-country	Quantitative method	Descriptive research	
	Unerman, J., Bebbington, J. & O'Dwyer, B. (2018) 'Corporate reporting and accounting for externalities', ACCOUNTING AND BUSINESS RESEARCH, 48(5),497-522.	ESG accounting		Narrative/commentary	Normative research	
3 Accounting Forum 30	Al Hameli, A., Mertzanis, C. & Kampouris, I. (2023) 'Women's empowerment conditions, institutions and firm performance in the mena region', ACCOUNTING FORUM, 48(4),635-664.	Governance	Cross-country	Quantitative method	Instrumental research	
	Allen, B. G. (2014) 'What's new about <i>new accounts</i>? Assessing change proposals for social and environmental accounting', ACCOUNTING FORUM, 38(4),278-287.	ESG accounting		Narrative/commentary	Normative research	
	Arjaliès, D. L., Rodrigue, M. & Romi, A. M. (2023) '"Come play with us!" A grassroots research agenda for accounting and the circular economy', ACCOUNTING FORUM, 47(4),497-524.	ESG accounting		Case study	Normative research	
	Barker, R. & Mayer, C. (2023) 'Seeing double corporate reporting through the materiality lenses of both investors and nature*', Accounting Forum, 1-31.	ESG accounting		Narrative/commentary	Normative research	
	Bini, L., Schaper, S., Simoni, L., et al. (2023) 'Mandatory non-financial disclosure: Is everybody on the same page about business model reporting?', ACCOUNTING FORUM, 47(2),198-222.	Disclosure	Cross-country	Case study	Instrumental research	

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	Costa, E., Kratzer, A., Pesci, C., et al. (2023) 'Accounting for a forest-based circular economy in an alpine collective ownership', Accounting Forum, 47(4),583-613.	ESG accounting	Italy	field study	Normative research	
	Denedo, M., Thomson, I. & Yonekura, A. (2019) 'Ecological damage, human rights and oil: Local advocacy ngos dialogic action and alternative accounting practices', Accounting Forum, 43(1),85-112.	ESG accounting	Nigeria	Qualitative method	Normative research	
	Dillard, J. & Layzell, D. (2014) 'An ongoing journey of corporate social responsibility', Accounting Forum, 38(3),212-226.	Disclosure	UK	Qualitative method	Normative research	
	Elamer, A. A., Ntim, C. G., Abdou, H. A., et al. (2019) 'The impact of multi-layer governance on bank risk disclosure in emerging markets: The case of middle east and north africa', Accounting Forum, 43(2),246-281	Disclosure	Cross-country	Quantitative method	Descriptive research	Resource dependence theory
	Gray, R., Brennan, A. & Malpas, J. (2014) 'New accounts: Towards a reframing of social accounting', ACCOUNTING FORUM, 38(4),258-273.	ESG accounting		Narrative/commentary	Normative research	
	Haslam, C., Butlin, J., Andersson, T., et al. (2014) 'Accounting for carbon and reframing disclosure: A business model approach', Accounting Forum, 38(3),200-211.	Disclosure	UK	Qualitative method	Normative research	
	Haslam, C., Tsitsianis, N., Lehman, G., et al. (2018) 'Accounting for decarbonisation and reducing capital at risk in the s&p500', Accounting Forum, 42(1),119-129.	ESG accounting	US	Qualitative method	Normative research	
	Hassan, A. (2023) 'Social and environmental accounting research in vulnerable and exploitable less-developed	ESG accounting		Qualitative method	Normative research	

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	countries: A theoretical extension', Accounting Forum, 47(3),365-389.					
	Jorgensen, S., Pedersen, L. J. T. & Skard, S. (2023) 'Resource accounting for a circular economy: Evidence from a digitalised waste management system', ACCOUNTING FORUM, 47(4),553-582.	ESG accounting	Norway	Case study	Instrument al research	
	Lauwo, S. & Otusanya, O. J. (2014) 'Corporate accountability and human rights disclosures: A case study of barrick gold mine in tanzania', Accounting Forum, 38(2),91-108.	ESG accounting	Tanzania	Case study	Normative research	
	Lehman, G. & Kuruppu, S. C. (2017) 'A framework for social and environmental accounting research', Accounting Forum, 41(3),139-146.	ESG accounting		Qualitative method	Normative research	
	Lodhia, S. (2014) 'Towards a pragmatic social accounting', Accounting Forum, 38(4),288-290.	ESG accounting		Narrative/com mentary	Normative research	
	Lynn, T., Rosati, P. & Murphy, B. (2021) 'Does size matter? Non-market social and political engagement by accounting firms in the #brexit discourse on twitter', Accounting Forum, 45(1),58-84.	ESG accounting	UK	Qualitative method	Instrument al research	
	Mali, D. & Lim, H. J. (2023) 'Do rating agencies impound workforce human capital information into default risk assessments?', Accounting Forum, 26.	Performance	South Korean	Quantitative method	Instrument al research	
	Margerison, J., Fan, M. Y. & Birkin, F. (2019) 'The prospects for environmental accounting and accountability in china', ACCOUNTING FORUM, 43(3),327-347.	ESG accounting	China	Case study	Instrument al research	
	Momin, M. A. (2013) 'Social and environmental ngos' perceptions of corporate social disclosures: The case of bangladesh', Accounting Forum,	Disclosure	Banglades hi	Qualitative method	Descriptive research	Stakeholder theory

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	37(2),150-162.					
	Munasinghe, A., Cuckston, T. & Rowbottom, N. (2021) 'Sustainability certification as marketisation: Rainforest alliance in the sri lankan tea production industry', Accounting Forum, 45(3),247-272.	ESG accounting	Sri Lanka	Field study	Instrument al research	
	O'Reilly, S., Gorman, L., Bhaird, C. M., et al. (2024) 'Implementing the european union green taxonomy: Implications for small- and medium-sized enterprises', ACCOUNTING FORUM, 48(3),401-426.	Disclosure	Cross-country	Case study	Instrument al research	Institutional theory legitimacy theory
	Parsa, S., Roper, I., Muller-Camen, M., et al. (2018) 'Have labour practices and human rights disclosures enhanced corporate accountability? The case of the gri framework', Accounting Forum, 42(1),47-64.	ESG accounting	Cross-country	Quantitative method Normative research	Normative research	Legitimacy theory
	Pattena, D. M. & Zhao, N. (2014) 'Standalone csr reporting by u.S. Retail companies', Accounting Forum, 38(2),132-144.	ESG accounting	US	Content analysis	Normative research	
	Pizzi, S., Venturelli, A. & Caputo, F. (2023) 'Towards a dynamic approach to materiality: A lesson from covid-19', Accounting Forum, 30.	Disclosure	Italy	Quantitative method	Instrument al research	
	Simpson, S. N. Y., Aboagye-Otchere, F. & Ahadzie, R. (2022) 'Assurance of environmental, social and governance disclosures in a developing country: Perspectives of regulators and quasi-regulators', Accounting Forum, 46(2),109-133.	Disclosure	Ghana	Qualitative method	Descriptive research	Strong structuration theory
	Sitkin, A. (2013) 'Working for the local community: Substantively broader/geographically narrower csr	ESG accounting	UK	Qualitative method	Normative research	

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	accounting', Accounting Forum, 37(4),315-324.					
	Thomson, I. (2014) 'Responsible social accounting communities, symbolic activism and the reframing of social accounting. A commentary on new accounts: Towards a reframing of social accounting', Accounting Forum, 38(4),274-277.	ESG accounting		Narrative/com mentary	Normative research	
	Weir, K. (2019) 'The logics of biodiversity accounting in the uk public sector', ACCOUNTING FORUM, 43(3),348-379.	ESG accounting	UK	Case study	Normative research	Institutional theory
3 *Accounting Horizons* *5*	Burke, Q. L., Chen, P. C. & Lobo, G. J. (2020) 'Is corporate social responsibility performance related to conditional accounting conservatism?', Accounting Horizons, 34(2),19-40.	Performance	Cross-country	Quantitative method	Instrument al research	
	Cho, S. Y., Kang, P. K., Lee, C., et al. (2020) 'Financial reporting conservatism and voluntary csr disclosure', Accounting Horizons, 34(2),63-82.	Performance	Cross-country	Quantitative method	Instrument al research	
	Han, Y. G., Huang, H. W., Liu, W. P., et al. (2023) 'Firm-value effects of carbon emissions and carbon disclosures: Evidence from taiwan', Accounting Horizons, 37(3),171-191.	Performance	Taiwan	Quantitative method	Instrument al research	
	Krishnan, J., Lee, S. M., Son, M., et al. (2022) 'Social capital and internal control material weaknesses', Accounting Horizons, 36(4),133-155.	Performance	US	Quantitative method	Instrument al research	
	Ramanna, K. (2013) 'A framework for research on corporate accountability reporting', Accounting Horizons, 27(2),409-432.	Disclosure		Qualitative method	Normative research	
3	Abhayawansa, S., Adams, C. A. &	ESG	Australia	Narrative/com	Normative	

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Supplementary Appendix: Summary of ESG and Accounting studies included in this systematic literature review						
Journal	**Bibliography**	**Cluster**	**Country**	**Analysis method**	**Themes**	**Theory**
Accounting, Auditing and Accountability Journal 59	Neesham, C. (2021) 'Accountability and governance in pursuit of sustainable development goals: Conceptualising how governments create value', Accounting, Auditing & Accountability Journal, 34(4),923-945.	accounting		mentary	research	
	Antonini, C., Beck, C. & Larrinaga, C. (2020) 'Subpolitics and sustainability reporting boundaries. The case of working conditions in global supply chains', Accounting, Auditing & Accountability Journal, 33(7),1535-1567.	Disclosure	Bangladesh	Case study	Normative research	Risk society theory
	Arivdsson, S. & Sabelfeld, S. (2023) 'Adaptive framing of sustainability in ceo letters', Accounting, Auditing & Accountability Journal, 36(9),161-199.	Governance	Sweden	Qualitative method	Descriptive research	Legitimacy theory
	Arjaliès, D.-L., Laurel-Fois, D. & Mottis, N. (2023) 'Prison break from financialization: The case of the pri reporting and assessment framework', Accounting, Auditing & Accountability Journal, 36(2),561-590.	ESG accounting	UK	Case study	Normative research	
	Atkins, J., Maroun, W., Atkins, B. C., et al. (2018) 'From the big five to the big four? Exploring extinction accounting for the rhinoceros', Accounting, Auditing & Accountability Journal, 31(2),674-702.	Disclosure	Cross-country	Content analysis	Normative research	
	Atkins, J. & Maroun, W. (2018) 'Integrated extinction accounting and accountability: Building an ark', Accounting, Auditing and Accountability Journal, 31(3),750-786.	Disclosure		Qualitative method	Normative research	
	Aureli, S., Foschi, E. & Paletta, A. (2023) 'Management accounting for a circular economy: Current limits and avenue for a dialogic approach', Accounting, Auditing and Accountability Journal,	Governance	Italy	Case study	Descriptive research	
	Baker, M. & Modell, S. (2019) 'Rethinking performativity: A critical realist analysis of accounting for corporate social	Performance	Australia	Field study	Instrumental research	Retrodictive theory

Supplementary Appendix: Summary of ESG and Accounting studies included in this systematic literature review						
Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
	responsibility', Accounting, Auditing & Accountability Journal, 32(5),930-956.					
	Bellucci, M., Simoni, L., Acuti, D., et al. (2019) 'Stakeholder engagement and dialogic accounting: Empirical evidence in sustainability reporting', Accounting, Auditing & Accountability Journal, 32(6),1467-1499.	Governance	Cross-country	Content analysis	Instrument al research	
	Boesso, G., Kumar, K. & Michelon, G. (2013) 'Descriptive, instrumental and strategic approaches to corporate social responsibilitydo they drive the financial performance of companies differently?', Accounting, Auditing & Accountability Journal, 26(3),399-422.	Performance	Cross-country	Quantitative method	Instrument al research	
	Boiral, O. (2013) 'Sustainability reports as simulacra? A counter-account of a and a+ gri reports', Accounting, Auditing & Accountability Journal, 26(7),1036-1071.	Disclosure	Cross-country	Content analysis	Instrument al research	
	Boiral, O., Heras-Saizarbitoria, I. & Brotherton, M.-C. (2020) 'Professionalizing the assurance of sustainability reports: The auditors' perspective', Accounting, Auditing & Accountability Journal, 33(2),309-334.	Assurance	Cross-country	Qualitative method	Instrument al research	
	Busco, C., Giovannoni, E., Granà, F., et al. (2018) 'Making sustainability meaningful: Aspirations, discourses and reporting practices', Accounting, Auditing & Accountability Journal, 31(8),2218-2246.	Governance		Case study	Instrument al research	
	Byrch, C., Milne, M., Morgan, R., et al. (2015) 'Seeds of hope? Exploring business actors' diverse understandings of sustainable development', Accounting, Auditing & Accountability Journal, 28(5),671-705.	Governance	New Zealand	Qualitative method	Descriptive research	
	Cadez, S. & Guilding, C. (2017) 'Examining distinct carbon cost structures and climate change abatement strategies in co_2 polluting firms', Accounting,	Governance	Slovenian	Mix	Instrument al research	

Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
Supplementary Appendix: Summary of ESG and Accounting studies included in this systematic literature review						
	Auditing & Accountability Journal, 30(5),1041-1064.					
	Channuntapipat, C., Samsonova-Taddei, A. & Turley, S. (2019) 'Exploring diversity in sustainability assurance practice: Evidence from assurance providers in the uk', Accounting, Auditing & Accountability Journal, 32(2),556-580.	Assurance	UK	Qualitative method	Descriptive research	
	Charnock, R. & Hoskin, K. (2020) 'Sdg 13 and the entwining of climate and sustainability metagovernance: An archaeological–genealogical analysis of goals-based climate governance', Accounting, Auditing & Accountability Journal, 33(7),1731-1759.	ESG accounting		Narrative/commentary	Descriptive research	
	Cho, C. H., Michelon, G., Patten, D. M., et al. (2015) 'Csr disclosure: The more things change...?', Accounting, Auditing & Accountability Journal, 28(1),14-35.	Disclosure	US	Quantitative method	Instrumental research	Legitimacy theory
	Clarkson, P., Li, Y., Richardson, G., et al. (2019) 'Causes and consequences of voluntary assurance of csr reports: International evidence involving dow jones sustainability index inclusion and firm valuation', Accounting, Auditing & Accountability Journal, 32(8),2451-2474.	Assurance	Cross-country	Quantitative method	Instrumental research	Signalling theory
	Crovini, C., Schaper, S. & Simoni, L. (2022) 'Dynamic accountability and the role of risk reporting during a global pandemic', Accounting, Auditing & Accountability Journal, 35(1),169-185.	ESG accounting		Narrative/commentary	Normative research	Institutional theory

Legitimacy theory |
| | Denedo, M., Thomson, I. & Yonekura, A. (2017) 'International advocacy ngos, counter accounting, accountability and engagement', Accounting, Auditing and Accountability Journal, 30(6),1309-1343. | Governance | Nigeria | Qualitative method | Descriptive research | |
| | Dhandhania, A. & O'Higgins, E. (2022) 'Can "sin industries" prove their legitimacy through csr reporting? A study of uk tobacco and gambling companies', | Governance | UK | Content analysis | Descriptive research | Legitimacy theory |

Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
Supplementary Appendix: Summary of ESG and Accounting studies included in this systematic literature review						
	Accounting, Auditing & Accountability Journal, 35(4),1009-1034.					
	Du Rietz, S. (2018) 'Information vs knowledge', Accounting, Auditing & Accountability Journal, 31(2),586-607.	ESG accounting	Cross-country	Qualitative method	Normative research	
	Egan, M. & Tweedie, D. (2018) 'A "green" accountant is difficult to find', Accounting, Auditing & Accountability Journal, 31(6),1749-1773.	Governance	Australia	Case study	Descriptive research	
	Farooq, M. B. & de Villiers, C. (2019) 'The shaping of sustainability assurance through the competition between accounting and non-accounting providers', Accounting, Auditing & Accountability Journal, 32(1),307-336.	Assurance	Cross-country	Qualitative method	Instrument al research	Institutional theory
	Gallhofer, S. (2018) 'Going beyond western dualism: Towards corporate nature responsibility reporting', Accounting, Auditing & Accountability Journal, 31(8),2110-2134.	Disclosure		Narrative/com mentary	Normative research	
	Gibassier, D., Rodrigue, M. & Arjaliès, D.-L. (2018) '"Integrated reporting is like god: No one has met him, but everybody talks about him"', Accounting, Auditing & Accountability Journal, 31(5),1349-1380.	Governance	Europe	Qualitative method	Descriptive research	
	Golubeva, O. (2022) 'Sustainability and technology: The contribution of "managerial talk" to the three pillars framework', Accounting, Auditing & Accountability Journal, 35(9),412-441.	ESG accounting	Sweden	Qualitative method	Descriptive research	
	Gomez-Conde, J., Lunkes, R. J. & Rosa, F. S. (2019) 'Environmental innovation practices and operational performance: The joint effects of management accounting and control systems and environmental training', Accounting, Auditing & Accountability Journal, 32(6),1325-1357.	Governance	Brazilian	Quantitative method	Descriptive research	
	Hazelton, J. (2013) 'Accounting as a human right: The case of water	Disclosure		Narrative/com	Normative	

Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
	information', Accounting, Auditing & Accountability Journal, 26(2),267-311.			mentary	research	
	Hutchings, G. & Deegan, C. (2022) 'The development and application of a decision-useful measure of environmental best practice for the mining industry', Accounting, Auditing & Accountability Journal, 35(4),1154-1181.	Disclosure	Australia	Qualitative method	Descriptive research	
	Imtiaz Ferdous, M., Adams, C. A. & Boyce, G. (2019) 'Institutional drivers of environmental management accounting adoption in public sector water organisations', Accounting, Auditing & Accountability Journal, 32(5),984-1012.	Governance	Australia	Case study	Descriptive research	Institutional theory
	Kaur, A. & Lodhia, S. (2018) 'Stakeholder engagement in sustainability accounting and reporting', Accounting, Auditing & Accountability Journal, 31(1),338-368.	Governance	Australia	Case study	Descriptive research	Stakeholder theory
	Khalid, S. M., Atkins, J. & Barone, E. (2019) 'Sartrean bad-faith? Site-specific social, ethical and environmental disclosures by multinational mining companies', Accounting, Auditing and Accountability Journal, 32(1),55-74.	Disclosure	Ghana	Qualitative method	Descriptive research	
	Kingston, K. L., Furneaux, C., de Zwaan, L., et al. (2020) 'From monologic to dialogic: Accountability of nonprofit organisations on beneficiaries' terms', Accounting, Auditing & Accountability Journal, 33(2),447-471.	ESG accounting	Australia	Case study	Normative research	
	Lanis, R. & Richardson, G. (2013) 'Corporate social responsibility and tax aggressiveness: A test of legitimacy theory', Accounting, Auditing & Accountability Journal, 26(1),75-100.	Disclosure	Australia	Quantitative method	Instrument al research	Legitimacy theory
	Lauwo, S. G., Otusanya, O. J. & Bakre, O. (2016) 'Corporate social responsibility reporting in the mining sector of tanzania', Accounting, Auditing & Accountability	ESG accounting	Tanzania	Case study	Normative research	

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Journal	**Bibliography**	**Cluster**	**Country**	**Analysis method**	**Themes**	**Theory**
	Journal, 29(6),1038-1074.					
	Leong, S. & Hazelton, J. (2019) 'Under what conditions is mandatory disclosure most likely to cause organisational change?', Accounting, Auditing & Accountability Journal, 32(4),811-835.	Disclosure		Narrative/commentary	Normative research	Institutional theory
	Mahmood, Z. & Uddin, S. (2021) 'Institutional logics and practice variations in sustainability reporting: Evidence from an emerging field', Accounting, Auditing & Accountability Journal, 34(5),1163-1189.	Disclosure	Pakistan	Qualitative method	Descriptive research	Institutional theory
	Manetti, G. & Bellucci, M. (2016) 'The use of social media for engaging stakeholders in sustainability reporting', Accounting, Auditing & Accountability Journal, 29(6),985-1011.	Governance		Qualitative method	Descriptive research	Stakeholder theory Legitimacy theory
	Maughan, R. (2023) 'Adopting and adapting sustainability accounting: Fit and faith in a family business', Accounting, Auditing & Accountability Journal, 36(9),1-31.	Governance	UK	Casy study	Descriptive research	Legitimacy theory
	McNally, M.-A. & Maroun, W. (2018) 'It is not always bad news', Accounting, Auditing & Accountability Journal, 31(5),1319-1348.	Disclosure	South Africa	Casy study	Descriptive research	
	Morrison, L. J. & Lowe, A. (2021) 'Into the woods of corporate fairytales and environmental reporting', Accounting, Auditing & Accountability Journal, 34(4),819-848.	Disclosure	Australia	Qualitative method	Descriptive research	
	Narayanan, V. & Boyce, G. (2019) 'Exploring the transformative potential of management control systems in organisational change towards sustainability', Accounting, Auditing & Accountability Journal, 32(6),1210-1239.	Governance	Australia	Case study	Descriptive research	
	O'Dwyer, B. & Unerman, J. (2020) 'Shifting the focus of sustainability accounting from impacts to risks and dependencies: Researching the transformative potential	Disclosure		Narrative/commentary	Normative research	

Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
	of tcfd reporting', Accounting, Auditing & Accountability Journal, 33(5),1113-1141.					
	Passetti, E., Battaglia, M., Testa, F., et al. (2020) 'Multiple control mechanisms for employee health and safety integration: Effects and complementarity', Accounting, Auditing & Accountability Journal, 33(7),1595-1626.	Governance	Italy	Quantitative method	Descriptive research	
	Passetti, E., Cinquini, L. & Tenucci, A. (2018) 'Implementing internal environmental management and voluntary environmental disclosure', Accounting, Auditing & Accountability Journal, 31(4),1145-1173.	Governance	Italy	Mix	Descriptive research	
	Perkiss, S., Bayerlein, L. & Dean, B. A. (2021) 'Facilitating accountability in corporate sustainability reporting through spotlight accounting', Accounting, Auditing & Accountability Journal, 34(2),397-420.	ESG accounting	Cross-country	Qualitative method	Descriptive research	
	Puroila, J. & Mäkelä, H. (2019) 'Matter of opinion: Exploring the socio-political nature of materiality disclosures in sustainability reporting', Accounting, Auditing & Accountability Journal, 32(5),1043-1072.	Disclosure		Qualitative method	Normative research	
	Quattrone, P. (2022) 'Seeking transparency makes one blind: How to rethink disclosure, account for nature and make corporations sustainable', Accounting, Auditing & Accountability Journal, 35(2),547-566.	Disclosure		Qualitative method	Normative research	
	Reuter, M. & Messner, M. (2015) 'Lobbying on the integrated reporting framework', Accounting, Auditing & Accountability Journal, 28(3),365-402.	Disclosure	Cross-country	Mix	Descriptive research	
	Shafer, W. E., Simmons, R. S. & Yip, R. W. Y. (2016) 'Social responsibility, professional commitment and tax fraud', Accounting, Auditing & Accountability Journal, 29(1),111-134.	Performance	China	Quantitative method	Instrumental research	

Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
	Siddiqui, J., McPhail, K. & Rahman, S. S. (2020) 'Private governance responsibilisation in global supply chains: The case of rana plaza', Accounting, Auditing & Accountability Journal, 33(7),1569-1594.	Governance	Bangladesh	Qualitative method	Descriptive research	
	Siddiqui, J., Mehjabeen, M. & Stapleton, P. (2021) 'Emergence of corporate political activities in the guise of social responsibility: Dispatches from a developing economy', Accounting, Auditing & Accountability Journal, 34(5),1137-1162.	Governance	Bangladesh	Qualitative method	Descriptive research	Institutional theory
	Sidhu, A. M. & Gibbon, J. (2021) 'Institutionalisation of weak conceptions of sustainability in the united nations clean development mechanism: Empirical evidence from malaysian organisations', Accounting, Auditing & Accountability Journal, 34(5),1220-1245.	ESG accounting	Malaysia	Qualitative method	Descriptive research	Institutional theory
	Silvola, H. & Vinnari, E. (2021) 'The limits of institutional work: A field study on auditors' efforts to promote sustainability assurance in a trust society', Accounting, Auditing & Accountability Journal, 34(1),1-30.	Disclosure	Finland,	Qualitative method	Descriptive research	Institutional theory
	van Liempd, D. & Busch, J. (2013) 'Biodiversity reporting in denmark', Accounting, Auditing & Accountability Journal, 26(5),833-872.	Disclosure	Denmark	Qualitative method	Descriptive research	
	Voss, B., Carter, D. B. & Warren, R. (2023) 'A car wash: Post-truth politics, petrobras and ethics of the real', Accounting, Auditing and Accountability Journal, 36(2),437-463.	Disclosure	Brazilian	Qualitative method	Descriptive research	
	Wang, X. & Hu, S. (2023) 'Open ledger sustainability accounting for community forests: The case of qingshui river society of southwest china in the 18th-19th centuries', Accounting, Auditing &	ESG accounting	China	Qualitative method	Descriptive research	

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Journal	**Bibliography**	**Cluster**	**Country**	**Analysis method**	**Themes**	**Theory**
	Accountability Journal, 36(6),1554-1573.					
3 *Auditing* *1*	Casey, R. J. & Grenier, J. H. (2015) 'Understanding and contributing to the enigma of corporate social responsibility (csr) assurance in the united states', Auditing, 34(1),97-130.	ESG accounting	US	Quantitative method Normative research	Normative research	Legitimacy theory Stakeholder theory
3 *Behavioral Research in Accounting 2*	Gödker, K. & Mertins, L. (2018) 'Csr disclosure and investor behavior: A proposed framework and research agenda', Behavioral Research in Accounting, 30(2),37-53.	Disclosure		Qualitative method	Normative research	
	Tan, H. C. & Mayorga, D. (2020) 'Investors' interpretations of imprecise standards and their perceptions of earnings management by reputable companies', Behavioral Research in Accounting, 32(2),103-122.	Performance	US	Quantitative method	Instrumental research	
3 *British Accounting Review 28*	Anagnostopoulou, S. C., Tsekrekos, A. E. & Voulgaris, G. (2021) 'Accounting conservatism and corporate social responsibility', British Accounting Review, 53(4),28.	Performance	US	Quantitative method	Descriptive research	Stakeholder theory Agency theory
	Boersma, M. & Bedford, D. S. (2023) 'The role of market devices in addressing labour exploitation: An analysis of the australian cleaning industry', BRITISH ACCOUNTING REVIEW, 55(3),	ESG accounting	Australia	Case study	Descriptive research	
	Bui, B., Cordery, C. J. & Wang, Z. (2019) 'Risk management in local authorities: An application of schatzki's social site ontology', British Accounting Review, 51(3),299-315.	Governance	New Zealand	Case study	Descriptive research	Practice theory

Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
	Bui, B. & de Villiers, C. (2017) 'Business strategies and management accounting in response to climate change risk exposure and regulatory uncertainty', British Accounting Review, 49(1),4-24	Governance	New Zealand	Qualitative method	Descriptive research	Contingency theory
	Burritt, R. & Schaltegger, S. (2014) 'Accounting towards sustainability in production and supply chains', British Accounting Review, 46(4),327-343.	ESG accounting		Qualitative method	Normative research	
	Cerbone, D. & Maroun, W. (2020) 'Materiality in an integrated reporting setting: Insights using an institutional logics framework', British Accounting Review, 52(3)	Disclosure	South Africa	Qualitative method	Instrument al research	Institutional theory
	Changwony, F., Miller, P. B. & Paterson, A. S. (2019) 'Accounting control, governance and anti-corruption initiatives in public sector organisations', British Accounting Review, 51(5),N.PAG-N.PAG.	ESG accounting		Narrative/com mentary	Normative research	
	Channuntapipat, C., Samsonova-Taddei, A. & Turley, S. (2020) 'Variation in sustainability assurance practice: An analysis of accounting versus non-accounting providers', British Accounting Review, 52(2),	Disclosure	UK	Content analysis	Descriptive research	Legitimacy theory Professions theory
	Chi, W. C., Wu, S. J. & Zheng, Z. (2020) 'Determinants and consequences of voluntary corporate social responsibility disclosure: Evidence from private firms', British Accounting Review, 52(6),20.	Disclosure	Taiwan	Quantitative method	Instrument al research	Agency theory Institutional theory Stakeholder theory Resource-based theory
	Christ, K. L. (2014) 'Water management accounting and the wine supply chain: Empirical evidence from australia', British Accounting Review, 46(4),379-396.	Governance	Australia	Quantitative method	Descriptive research	Contingency theory

Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
	Christ, K. L., Burritt, R. L. & Islam, M. A. (2023) 'Modern slavery and the accounting profession', BRITISH ACCOUNTING REVIEW, 55(3),	ESG accounting		Narrative/commentary	Normative research	
	Duff, A. (2016) 'Corporate social responsibility reporting in professional accounting firms', British Accounting Review, 48(1),74-86.	Disclosure	UK	Content analysis	Descriptive research	Legitimacy theory Institutional theory
	Fan, H. L., Tang, Q. L. & Pan, L. P. (2021) 'An international study of carbon information asymmetry and independent carbon assurance', British Accounting Review, 53(1),17.	Disclosure	Cross-country	Quantitative method	Descriptive research	Information asymmetry theory
	Guo, J. A., Islam, M. A., Jain, A., et al. (2022) 'Civil liberties and social and environmental information transparency: A global investigation of financial institutions', British Accounting Review, 54(1),18.	Disclosure	Cross-country	Quantitative method	Descriptive research	Social movement theory
	Haque, F. & Jones, M. J. (2020) 'European firms' corporate biodiversity disclosures and board gender diversity from 2002 to 2016', British Accounting Review, 52(2)	Disclosure	Cross-country	Quantitative method	Descriptive research	Institutional theory, Resource dependence theory
	Henderson, E. & Lambert, V. (2018) 'Negotiating for survival: Balancing mission and money', British Accounting Review, 50(2),185-198.	ESG accounting	UK	Qualitative method	Normative research	Resource dependence theory
	Ho, L., Bai, M., Lu, Y., et al. (2021) 'The effect of corporate sustainability performance on leverage adjustments', British Accounting Review, 53(5),30.	Performance	Cross-country	Quantitative method	Instrumental research	Trade-off theory
	Hummel, K., Laun, U. & Krauss, A. (2021) 'Management of environmental and social risks and topics in the banking sector - an empirical investigation', British Accounting	Governance	Cross-country	Quantitative method	Instrumental research	Stakeholder theory Contingency theory

Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
	Review, 53(1),					Resource-based theory
	Journeault, M., De Rongé, Y. & Henri, J. F. (2016) 'Levers of eco-control and competitive environmental strategy', BRITISH ACCOUNTING REVIEW, 48(3),316-340.	Governance	Canada	Quantitative method	Descriptive research	
	Khan, A., Muttakin, M. B. & Siddiqui, J. (2015) 'Audit fees, auditor choice and stakeholder influence: Evidence from a family-firm dominated economy', British Accounting Review, 47(3),304-320.	Governance	Bangladesh	Quantitative method	Descriptive research	Agency theory
	Kumarasiri, J. & Gunasekarage, A. (2017) 'Risk regulation, community pressure and the use of management accounting in managing climate change risk: Australian evidence', British Accounting Review, 49(1),25-38.	Governance	Australia	Qualitative method	Instrumental research	Legitimacy Theory Prospect Theory
	Lee, K. H. & Wu, Y. (2014) 'Integrating sustainability performance measurement into logistics and supply networks: A multi-methodological approach', BRITISH ACCOUNTING REVIEW, 46(4),361-378.	Governance	Australia	Case study	Normative research	
	Mahmoudian, F., Lu, J., Yu, D., et al. (2021) 'Inter-and intra-organizational stakeholder arrangements in carbon management accounting', British Accounting Review, 53(1),N.PAG-N.PAG	Governance	US	Quantitative method	Descriptive research	
	Narayanan, V., Baird, K. & Tay, R. (2021) 'Investment decisions: The trade-off between economic and environmental objectives', British Accounting Review, 53(3),	Governance	Australia	Quantitative method	Descriptive research	
	Passetti, E., Cinquini, L., Marelli, A., et al. (2014) 'Sustainability accounting in action: Lights and shadows in the italian context', British Accounting Review, 46(3),295-308.	Governance	Italy	Qualitative method	Descriptive research	

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Journal	**Bibliography**	**Cluster**	**Country**	**Analysis method**	**Themes**	**Theory**
	Passetti, E. & Rinaldi, L. (2020) 'Micro-processes of justification and critique in a water sustainability controversy: Examining the establishment of moral legitimacy through accounting', British Accounting Review, 52(3),23.	ESG accounting	Italy	Case study	Normative research	
	Xiao, X. N. & Shailer, G. (2022) 'Stakeholders' perceptions of factors affecting the credibility of sustainability reports', British Accounting Review, 54(1),21.	Disclosure	Australia	Qualitative method	Descriptive research	
	Zhang, L. H., Tang, Q. L. & Huang, R. H. (2021) 'Mind the gap: Is water disclosure a missing component of corporate social responsibility?', British Accounting Review, 53(1),20.	Disclosure	Cross-country	Quantitative method	Descriptive research	Self-regulation theory
3 *Critical Perspectives on Accounting 31*	Alawattage, C. & Azure, J. D. (2021) 'Behind the world bank's ringing declarations of "social accountability": Ghana's public financial management reform', Critical Perspectives on Accounting, 7822.	ESG accounting	Ghana	Case study	Normative research	
	Alawattage, C., Jayathileka, C., Hitibandara, R., et al. (2023) 'Moral economy, performative materialism, and political rhetorics of sustainability accounting', Critical Perspectives on Accounting, 9517.	ESG accounting	Sri Lanka	Case study	Normative research	Stakeholder theory, legitimacy theory
	Andrew, J., Baker, M. & Huang, C. S. (2023) 'Data breaches in the age of surveillance capitalism: Do disclosures have a new role to play?', CRITICAL PERSPECTIVES ON ACCOUNTING, 90	Disclosure	Cross-country	Narrative/com mentary	Descriptive research	
	Belal, A. R., Cooper, S. M. & Khan, N. A. (2015) 'Corporate environmental	ESG accounting	Bangladesh	Qualitative method	Descriptive research	

Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
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	responsibility and accountability: What chance in vulnerable bangladesh?', Critical Perspectives on Accounting, 3344-58.					
	Cho, C. H. & Patten, D. M. (2013) 'Green accounting: Reflections from a csr and environmental disclosure perspective', Critical Perspectives on Accounting, 24(6),443-447.	ESG accounting		Qualitative method	Normative research	
	Cho, C. H., Senn, J. & Sobkowiak, M. (2022) 'Sustainability at stake during covid-19: Exploring the role of accounting in addressing environmental crises', Critical Perspectives on Accounting, 82N.PAG-N.PAG.	ESG accounting		Narrative/commentary	Normative research	
	Contrafatto, M., Thomson, I. & Monk, E. A. (2015) 'Peru, mountains and los niños: Dialogic action, accounting and sustainable transformation', Critical Perspectives on Accounting, 33117-136.	ESG accounting	Peru	Case study	Descriptive research	
	Cuckston, T. (2022) 'Accounts of ngo performance as calculative spaces: Wild animals, wildlife restoration and strategic agency', CRITICAL PERSPECTIVES ON ACCOUNTING, 84	Disclosure	UK	Qualitative method	Descriptive research	
	de Villiers, C. & Sharma, U. (2020) 'A critical reflection on the future of financial, intellectual capital, sustainability and integrated reporting', Critical Perspectives on Accounting, 7013.	Disclosure		Qualitative method	Descriptive research	
	Deegan, C. (2013) 'The accountant will have a central role in saving the planet ... Really? A reflection on 'green accounting and green eyeshades twenty years later", Critical Perspectives on Accounting, 24(6),448-458.	Disclosure		Qualitative method	Normative research	
	Dillard, J. & Vinnari, E. (2019) 'Critical dialogical accountability: From	ESG accounting		Qualitative method	Normative research	

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	accounting-based accountability to accountability-based accounting', Critical Perspectives on Accounting, 6216-38.					
	Flower, J. (2015) 'The international integrated reporting council: A story of failure', Critical Perspectives on Accounting, 271-17.	Disclosure		Narrative/commentary	Descriptive research	
	Gray, R. (2013) 'Back to basics: What do we mean by environmental (and social) accounting and what is it for?-a reaction to thornton', CRITICAL PERSPECTIVES ON ACCOUNTING, 24(6),459-468.	ESG accounting		Narrative/commentary	Normative research	
	Larrinaga, C. & Garcia-Torea, N. (2022) 'An ecological critique of accounting: The circular economy and covid-19', Critical Perspectives on Accounting, 82N.PAG-N.PAG.	ESG accounting		Narrative/commentary	Normative research	
	Lauwo, S., Kyriacou, O. & Otusanya, O. J. (2020) 'When sorry is not an option: Csr reporting and 'face work' in a stigmatised industry - a case study of barrick (acacia) gold mine in tanzania', Critical Perspectives on Accounting, 7123.	Governance	Tanzania	Case study	Descriptive research	Legitimacy theory Stakeholder theory
	Mäkelä, H. (2013) 'On the ideological role of employee reporting', Critical Perspectives on Accounting, 24(4-5),360-378.	Disclosure	Finland	Qualitative method	Descriptive research	
	McLaren, J. & Appleyard, T. (2022) 'Social movements, identity and disruption in organizational fields: Accounting for farm animal welfare', CRITICAL PERSPECTIVES ON ACCOUNTING, 84	Governance	UK	Case study	Descriptive research	
	Osman, M., Gallhofer, S. & Haslam, J. (2021) 'Contextualising and critically theorising corporate social responsibility reporting: Dynamics of the late mubarak era in egypt', Critical Perspectives on Accounting, 7424.	ESG accounting	Egypt	Qualitative method	Normative research	

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Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
	Perkiss, S., Bernardi, C., Dumay, J., et al. (2021) 'A sticky chocolate problem: Impression management and counter accounts in the shaping of corporate image', CRITICAL PERSPECTIVES ON ACCOUNTING, 81	Disclosure	West African	Qualitative method	Descriptive research	Impression management theory Legitimacy theory
	Pupovac, S. & Moerman, L. (2022) 'Bringing shell and friends of the earth on stage: A one-act spectacle of oil spills in the niger delta', CRITICAL PERSPECTIVES ON ACCOUNTING, 85	Disclosure	Nigeria	Qualitative method	Descriptive research	Spectacle theory 景观理论
	Rambaud, A. & Richard, J. (2015) 'The "triple depreciation line" instead of the "triple bottom line": Towards a genuine integrated reporting', CRITICAL PERSPECTIVES ON ACCOUNTING, 3392-116.	Disclosure		Qualitative method	Normative research	
	Rodrigue, M. & Romi, A. M. (2022) 'Environmental escalations to social inequities: Some reflections on the tumultuous state of gaia', Critical Perspectives on Accounting, 8218.	ESG accounting		Qualitative method	Normative research	
	Roszkowska-Menkes, M., Aluchna, M. & Kaminski, B. (2023) 'True transparency or mere decoupling? The study of selective disclosure in sustainability reporting', Critical Perspectives on Accounting, 9824.	ESG accounting	Cross-country	Content analysis	Normative research	Institutional theory
	Rozenfeld, G. C. & Scapens, R. W. (2021) 'Forming mixed-type inter-organisational relationships in sub-saharan africa: The role of institutional logics, social identities and institutionally embedded agency', CRITICAL PERSPECTIVES ON ACCOUNTING, 78	Governance	South Africa	Case study	Descriptive research	
	Saravanamuthu, K. & Lehman, C. (2013) 'Enhancing stakeholder interaction through environmental risk accounts',	ESG accounting		Qualitative method	Normative research	

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	Critical Perspectives on Accounting, 24(6),410-437.					
	Sikka, P. (2015) 'The hand of accounting and accountancy firms in deepening income and wealth inequalities and the economic crisis: Some evidence', Critical Perspectives on Accounting, 3046-62.	ESG accounting	UK	Narrative/commentary	Descriptive research	
	Sorola, M. (2022) 'Q methodology to conduct a critical study in accounting: A q study on accountants? Perspectives of social and environmental reporting', CRITICAL PERSPECTIVES ON ACCOUNTING, 86	Governance	New Zealand	Qualitative method	Normative research	
	Thornton, D. B. (2013) 'Green accounting and green eyeshades twenty years later', CRITICAL PERSPECTIVES ON ACCOUNTING, 24(6),438-442.	ESG accounting		Qualitative method	Normative research	
	Tregidga, H. & Laine, M. (2022) 'On crisis and emergency: Is it time to rethink long-term environmental accounting?', Critical Perspectives on Accounting, 82N.PAG-N.PAG.	ESG accounting		Qualitative method	Normative research	
	Vinnari, E. & Vinnari, M. (2022) 'Making the invisibles visible: Including animals in sustainability (and) accounting', Critical Perspectives on Accounting, 82N.PAG-N.PAG.	ESG accounting		Qualitative method	Normative research	
	Xu, S. G. Y. & Andrew, B. (2021) 'Competing for the leading role: Trials in categorizing greenhouse and energy auditors', CRITICAL PERSPECTIVES ON ACCOUNTING, 77	Governance	Australia	Qualitative method	Descriptive research	Actor network theory
3 European Accounting Review 11	Caglio, A., Melloni, G. & Perego, P. (2020) 'Informational content and assurance of textual disclosures: Evidence on integrated reporting', European Accounting Review, 29(1),55-83	Disclosure	South Africa	Textual analysis	Instrumental research	

Supplementary Appendix: Summary of ESG and Accounting studies included in this systematic literature review						
Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
	Clune, C. & O'Dwyer, B. (2020) 'Framing engagement that resonates: Organizing advocacy for corporate social and environmental accountability', European Accounting Review, 29(5),851-875.	ESG accounting	Netherlands	Case study	Descriptive research	
	Hall, M. & Millo, Y. (2018) 'Choosing an accounting method to explain public policy: Social return on investment and uk non-profit sector policy', EUROPEAN ACCOUNTING REVIEW, 27(2),339-361.	ESG accounting	UK	Qualitative method	Descriptive research	
	He, R., Luo, L., Shamsuddin, A., et al. (2022) 'The value relevance of corporate investment in carbon abatement: The influence of national climate policy', European Accounting Review, 31(5),1233-1261.	Performance	Cross-country	Quantitative method	Instrument al research	Resource-based theory
	Henri, J. F., Boiral, O. & Roy, M. J. (2014) 'The tracking of environmental costs: Motivations and impacts', European Accounting Review, 23(4),647-669.	Performance	Canada	Quantitative method	Instrument al research	
	Kimbrough, M. D., Wang, X., Wei, S. J., et al. (2023) 'Does voluntary esg reporting resolve disagreement among esg rating agencies?', European Accounting Review, 33(1),15-47.	Disclosure	US	Content analysis	Instrument al research	
	Lu, L. Y., Shailer, G. & Yu, Y. X. (2017) 'Corporate social responsibility disclosure and the value of cash holdings', European Accounting Review, 26(4),729-753.	Performance	US	Quantitative method	Instrument al research	
	Mittelbach-Hörmanseder, S., Hummel, K. & Rammerstorfer, M. (2021) 'The information content of corporate social responsibility disclosure in europe: An institutional perspective', European Accounting Review, 30(2),309-348.	Performance	Cross-country	Textual analysis	Instrument al research	legitimacy theory
	Obeng, V. A., Ahmed, K. & Cahan, S. F. (2021) 'Integrated reporting and agency	Disclosure	Cross-country	Quantitative method	Instrument al research	Agency theory

Supplementary Appendix: Summary of ESG and Accounting studies included in this systematic literature review						
Journal	**Bibliography**	**Cluster**	**Country**	**Analysis method**	**Themes**	**Theory**
	costs: International evidence from voluntary adopters', European Accounting Review, 30(4),645-674.					
	Rodrigue, M. & Picard, C.-F. (2023) 'Non-accountants and accounting: On the emancipatory mobilization of accounting by sustainability managers', European Accounting Review, 32(5),1217-1245.	Governance	Canada	Qualitative method	Descriptive research	
	Young-Ferris, A. & Roberts, J. (2023) "Looking for something that isn't there': A case study of an early attempt at esg integration in investment decision making', European Accounting Review, 32(3),717-744.	Performance		Case study	Instrument al research	
3 Internationa l Journal of Accounting 9	Aguilera, R. V., Desender, K. & Lamy, M. L. P. (2021) 'Bridging accounting and corporate governance: New avenues of research', International Journal of Accounting, 56(1),21.	Governance		Qualitative method	Descriptive research	
	Barbu, E. M., Dumontier, P., Feleaga, N., et al. (2014) 'Mandatory environmental disclosures by companies complying with iass/ifrss: The cases of france, germany, and the uk', International Journal of Accounting, 49(2),231-247.	Disclosure	Cross-country	Quantitative method	Descriptive research	
	Barbu, E. M., Ionescu-Feleag, L. & Ferrat, Y. (2022) 'Financial and non-financial tools useful for exhaustive corporate environmental disclosure and practices', International Journal of Accounting, 57(02),12.	Disclosure		Qualitative method	Descriptive research	
	Bozzolan, S., Fabrizi, M., Mallin, C. A., et al. (2015) 'Corporate social responsibility and earnings quality: International evidence', INTERNATIONAL JOURNAL OF ACCOUNTING, 50(4),361-396.	Governance	Cross-country	Quantitative method	Instrument al research	

Supplementary Appendix: Summary of ESG and Accounting studies included in this systematic literature review						
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	Luo, L. & Tang, Q. L. (2016) 'Determinants of the quality of corporate carbon management systems: An international study', International Journal of Accounting, 51(2),275-305.	Governance	Cross-country	Quantitative method	Descriptive research	Institutional theory Stakeholder theory
	Shrestha, P., Choi, B. & Luo, L. (2023) 'Carbon management system quality and corporate financial performance', INTERNATIONAL JOURNAL OF ACCOUNTING, 58(01),	Performance	Cross-country	Quantitative method	Instrument al research	Resource-based theory Institutional theory
	Xi, J. Q. & Xiao, H. (2023) 'Ceo early-life disaster experience and tax avoidance: Chinese evidence', INTERNATIONAL JOURNAL OF ACCOUNTING,	Governance	China	Quantitative method	Descriptive research	
	Ntim, C. G. (2016) 'Corporate governance, corporate health accounting, and firm value: The case of hiv/aids disclosures in sub-saharan africa', International Journal of Accounting, 51(2),155-216.	Performance	South Africa	Quantitative method	Instrument al research	Legitimacy theory
	Radhakrishnan, S., Tsang, A. & Liu, R. B. (2018) 'A corporate social responsibility framework for accounting research', International Journal of Accounting, 53(4),274-294.	ESG accounting		Qualitative method	Normative research	
3 Journal of Accounting and Public Policy 8	Baboukardos, D. & Rimmel, G. (2016) 'Value relevance of accounting information under an integrated reporting approach: A research note', Journal of Accounting and Public Policy, 35(4),437-452.	Performance	South Africa	Quantitative method	Instrument al research	
	Ballou, B., Chen, P. C., Grenier, J. H., et al. (2018) 'Corporate social responsibility assurance and reporting quality: Evidence from restatements', Journal of Accounting and Public Policy, 37(2),167-188.	Disclosure	Cross-country	Quantitative method	Descriptive research	

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	Convery, A. M., Kaufman, M. & Warfield, T. D. (2023) 'Stakeholder conflict and standard-setting foundation oversight', JOURNAL OF ACCOUNTING AND PUBLIC POLICY, 42(6),	Governance		Qualitative method	Descriptive research	
	Dutta, S. K., Lawson, R. A. & Marcinko, D. J. (2013) 'Alignment of performance measurement to sustainability objectives: A variance-based framework', JOURNAL OF ACCOUNTING AND PUBLIC POLICY, 32(6),456-474.	ESG accounting		Qualitative method	Normative research	
	Melloni, G., Caglio, A. & Perego, P. (2017) 'Saying more with less? Disclosure conciseness, completeness and balance in integrated reports', Journal of Accounting and Public Policy, 36(3),220-238.	Disclosure		Textual analysis	Descriptive research	
	Michaelides, A. & Vafeas, N. (2023) 'Chief human resource officers and accounting disclosures: Illuminating the firm's most important asset or window dressing?', Journal of Accounting and Public Policy, 42(3),21.	Governance	US	Quantitative method	Descriptive research	
	Muniandy, B., Ali, M. J., Huang, H. Y., et al. (2023) 'Board generational cohorts, gender diversity and corporate environmental and social disclosures: Evidence from china', Journal of Accounting and Public Policy, 42(3),26.	Governance	China	Quantitative method	Descriptive research	
	Peters, G. F. & Romi, A. M. (2013) 'Discretionary compliance with mandatory environmental disclosures: Evidence from sec filings', Journal of Accounting and Public Policy, 32(4),213-236.	Disclosure	US	Quantitative method	Descriptive research	Voluntary disclosure theory
3 *Journal of Accounting,*	Chung, S. G., Lee, J. & Park, S. H. (2023) 'Does social capital mitigate managerial	Governance	US	Quantitative method	Instrument al research	

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Auditing and Finance 3	self-dealing? Evidence from insider trading', Journal of Accounting Auditing and Finance, 36.					
	Hwang, S. & Hong, P. K. (2023) 'The effect of corporate social responsibility on hard-freezing of pension plan and firm performance', Journal of Accounting Auditing and Finance, 38(2),386-412.	Performance	Cross-country	Quantitative method	Instrument al research	
	Wans, N. (2020) 'Corporate social responsibility and market-based consequences of adverse corporate events: Evidence from restatement announcements', Journal of Accounting Auditing and Finance, 35(2),32.	Performance	US	Quantitative method	Instrument al research	
3 Journal of Accounting Literature 3	Gilchrist, D. J., Etheridge, D. & Liu, Z. X. (2023) 'Managing government commissioning and philanthropic expectations: Earnings management in australian nonprofit disability service providers', JOURNAL OF ACCOUNTING LITERATURE, 46(2),200-213.	Governance	Australia	Quantitative method	Instrument al research	
	Li, Z. T., Haque, S. & Chapple, L. (2023) 'Disclosures of labour practices: Perspectives of legitimacy and impression management', Journal of Accounting Literature, 45(2),256-288.	Disclosure	China	Case study	Descriptive research	Legitimacy theory Impression management theory
	Rezaee, Z. (2016) 'Business sustainability research: A theoretical and integrated perspective', Journal of Accounting Literature, 3648-64.	Disclosure		Qualitative method	Normative research	Agency theory Institutional theory Legitimacy theory Signalling theory Stakeholder theory

Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
						Stewardship theory
3 *Journal of Business Finance and Accounting 1*	Demers, E., Hendrikse, J., Joos, P., et al. (2021) 'Esg did not immunize stocks during the covid-19 crisis, but investments in intangible assets did', Journal of Business Finance and Accounting, 48(3-4),433-462.	Performance	US	Quantitative method	Instrument al research	Agency theory
3 *Journal of Internationa l Accounting Auditing and Taxation 3*	Elbardan, H., Uyar, A., Kuzey, C., et al. (2023) 'Csr reporting, assurance, and firm value and risk: The moderating effects of csr committees and executive compensation', Journal of International Accounting, Auditing & Taxation, 53N.PAG-N.PAG.	Performance	Cross-country	Quantitative method	Instrument al research	Institutional theory Agency theory Resource dependence theory Signalling theory Impression management theory
	Garanina, T. & Kim, O. (2023) 'The relationship between csr disclosure and accounting conservatism: The role of state ownership', Journal of International Accounting, Auditing & Taxation, 50N.PAG-N.PAG.	Disclosure	Russia	Quantitative method	Descriptive research	Agency theory Legitimacy theory Stakeholder theory
	Weerathunga, P. R., Chen, X. F., Nurunnabi, M., et al. (2020) 'Do the ifrs promote corporate social responsibility reporting? Evidence from ifrs convergence in india', JOURNAL OF INTERNATIONAL ACCOUNTING AUDITING AND TAXATION, 40	Disclosure	India	Quantitative method	Descriptive research	Stakeholder theory Legitimacy theory
3 *Journal of*	Mayberry, M. A. & Watson, L. (2021) 'Is corporate social responsibility related to corporate tax avoidance? Evidence from a	Performance	US	Quantitative method	Instrument al research	

Journal	Bibliography	Cluster	Country	Analysis method	Themes	Theory
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the American Taxation Association 1	natural experiment', Journal of the American Taxation Association, 43(1),79-106.					
3 Management Accounting Research 6	Contrafatto, M. & Burns, J. (2013) 'Social and environmental accounting, organisational change and management accounting: A processual view', Management Accounting Research, 24(4),349-365.	ESG accounting	Italy	Casu study	Descriptive research	
	Derchi, G. B., Davila, A. & Oyon, D. (2023) 'Green incentives for environmental goals', Management Accounting Research, 5921.	Governance	Cross-country	Quantitative method	Descriptive research	
	Figge, F. & Hahn, T. (2013) 'Value drivers of corporate eco-efficiency: Management accounting information for the efficient use of environmental resources', Management Accounting Research, 24(4),387-400.	Governance	Cross-country	Narrative/commentary	Normative research	
	Lisi, I. E. (2015) 'Translating environmental motivations into performance: The role of environmental performance measurement systems', MANAGEMENT ACCOUNTING RESEARCH, 2927-44.	Governance	Italy	Quantitative method	Descriptive research	
	Moore, D. R. J. (2013) 'Sustainability, institutionalization and the duality of structure: Contradiction and unintended consequences in the political context of an australian water business', Management Accounting Research, 24(4),366-386.	Governance	Australia	Case study	Descriptive research	Institutional theory
	Virtanen, T., Tuomaala, M. & Pentti, E. (2013) 'Energy efficiency complexities: A technical and managerial investigation', Management Accounting Research,	Governance	Finland	Case study	Descriptive research	Expectancy theory Intrinsic

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	24(4),401-416.					motivation theory Equity theory

Note： Paper 1 follows the ideas of Andrew and Baker (2020), who classified the literature into three types, namely, descriptive research (usually these studies discuss the various elements and backgrounds that significantly drive ESG practice and development, known as antecedent research), instrumental research (which typically discusses the commercial and economic implications of ESG development for organisations, known as consequence research), and normative research (usually these studies examine the development status of Accountability and how it should develop, which can also be classified as ESG consequence research).