

How Auditor Professional Mood Affects ESG Reporting Quality in Vietnamese Firms: The Moderating Role of CEO Duality and Audit Committee Independence

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ABSTRACT

Manuscript type: Research paper

Research aims: The study explores the impact mechanism of auditor mood (via auditor professional burnout - AUPB) on ESG reporting quality. The study also investigates whether this relationship is influenced by the moderating mechanism of audit committee (AC) independence and chief executive officers (CEO) duality.

Design/Methodology/Approach: The study uses data from Thomson Reuters Asset4 to collect a sample size of 164 Vietnamese firms during the period 2020-2024 (820 firm-year observations). A system-generalised method of moments regression estimation approach is taken.

Research findings: First, AUPB has a positive impact on ESG reporting quality. Second, CEO duality weakens the positive influence of AUPB on the quality of ESG reporting. Third, AC independence strengthens the relationship between AUPB and ESG reporting quality.

Theoretical contribution/Originality: The study contributes to agency theory by expanding the understanding of how the interaction between external monitoring mechanisms and internal monitoring mechanisms affects ESG reporting quality.

Practitioner/Policy implication: Auditors need to exert more effort in auditing to enhance the quality of ESG reporting. Audit firms should create conditions for auditors to feel most comfortable when working. Client firms should reduce CEO duality as well as increase independent AC to improve management and monitoring capacity to improve ESG reporting quality.

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Research limitation: Focusing only on an emerging economy like Vietnam may limit the generalisability of the findings.

Keywords: Agency theory, Audit committee, Auditor mood, Big 4, CEO duality, ESG reporting, Professional burnout

JEL Classification: M10, M41, M42

1. Introduction

The sustainable development demand pushed environmental, social, and governance (ESG) reporting quality (ESGQ) into the centre of corporate communications and a core tool for attracting investment capital (Ellili, 2022). ESGQ, which refers to ESG disclosure quality, is the quality of environmental, social, and governance information reported to stakeholders (Suttipun, 2021). To ensure the reliability of ESG information, the role of external auditors becomes important (Asante-Appiah & Lambert, 2023). However, with increasing responsibility comes serious mood challenges; high efforts can lead to auditor professional burnout (AUPB) (Aoife, Tawiah, & Osei-Tutu, 2025; Cannon & Herda, 2016). To our knowledge, no studies have quantified the impact of AUPB on ESGQ. Most previous studies have only investigated the role of audit committees on ESG reporting (Alsultan & Hussainey, 2025; Bravo & Reguera-Alvarado, 2019; Umar, Firmansyah, & Al-Faryan, 2024). Previous literature has consistently shown that AUPB reduces judgment, professional scepticism, and audit quality (e.g., Hegazy, El-Deeb, & Halim, 2023), posing a risk to financial reporting quality.

In the ESG reporting context, whether the accepted negative impact of AUPB is still valid when ESG reporting standards are fragmented and diversifying, for example, Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), and Task Force on Climate-Related Financial Disclosures (TCFD) (Zaid & Issa, 2023). Our study challenges this traditional view by proposing a counterintuitive hypothesis: AUPB can improve ESGQ. We argue that ESG reporting includes qualitative information and estimates (Van, Nguyen, & Van Bui, 2025b), forcing auditors to exert judgment to the point of professional burnout. This implies that auditors must increase their adherence to professional principles, make careful judgments, and invest more cognitive resources and time than usual. In other words, AUPB is an important indicator that can improve ESGQ.

Furthermore, we argue that the impact of AUPB on ESGQ is not a constant but depends on the corporate governance context. Previous studies have shown that chief executive officer (CEO) duality and

audit committee (AC) independence represents corporate governance, and they are evaluated as effective moderators (Cheng, Yu, & Zhang, 2022; Mohapatra, Kumar, & Srivastava, 2025). However, no study has investigated the two moderators on ESG reporting audit, which is a significant research gap. Our study narrows this gap by investigating the moderating mechanism of AC independence and CEO duality on the AUPB-ESGQ nexus. AC independence refers to the percentage of independent directors in the AC (Al-Hajaya, Almahameed, & Salem, 2025). An independent AC creates a close monitoring environment, recognising and amplifying auditors' efforts to improve the quality of ESG reporting. On the other hand, our study predicts that CEO duality leads to negative moderation mechanisms. CEO duality refers to a position in which the CEO is also the chairman of the board (Elsayed, 2007). When power is concentrated in the CEO duality, executive pressure may cause leaders to disregard auditors' efforts. CEO duality tends to ignore material issues in auditors' recommendations, leading to a lower quality ESG reporting.

Previous studies have only shown discrete relationships among AUPB, ESGQ, AC independence, and CEO duality (Hegazy et al., 2023; Santonastaso, Macchioni, & Zagaria, 2025; Rath, Tripathy, & Mangla, 2025; Hunjra, Hashim, Alahdal, & Mehmood, 2025). No study has yet evaluated the relationships among AUPB, ESGQ, AC independence, and CEO duality in the same model. With a superiority, our study proposes an integrated model between AUPB, ESGQ, AC independence, and CEO duality, in which CEO duality and AC independence act as moderators on the AUPB-ESGQ nexus. This unique model will be tested in Vietnam. Indeed, Vietnam is one of the fastest-growing emerging economies in Asia (Vietnam Chamber of Commerce and Industry, 2024). Vietnam provides an ideal research context to analyse the complex relationships we propose. ESG reporting in Vietnam is in its early stages of development (PwC, 2022; Van et al., 2025b). Pressure for ESG reporting disclosure is increasing from stakeholders, such as the Government, investors, and shareholders; however, ESG standards are not standardised and are highly voluntary (VBF, 2024; Vietnam International Arbitration Centre, 2024). The nascent regulatory environment for ESG reporting creates ambiguity and high perceived risk for external auditors. In such a situation, the auditor's extra effort in the audit process is the only way to achieve high-quality ESG reporting, which is likely to manifest most clearly. Next, the corporate governance structure is deeply differentiated under the direction of the Vietnamese government to gain sustainability reporting

disclosure (Nguyen, Trang, & Le, 2023; Vo, Van, & Tran, 2023). The economic transition has created a parallel existence between modern and traditional corporate governance practices. While many firms are striving to adopt international auditing standards, leading to the rise of AC independence (Dang & Nguyen, 2022; Ha, 2022), CEO duality is still very popular (Pham & Nguyen, 2019; Pham, Oh, & Pech, 2015). This diversity creates an optimal research context, allowing us to test the contradictory moderation mechanisms of AC independence and CEO duality, which is difficult to do in developed economies with homogeneous governance structures.

In summary, this study was conducted to answer the following main questions:

RQ1. Does AUPB improve ESGQ?

RQ2. Does CEO duality reduce the positive effect of AUPB on ESGQ?

RQ3. Does AC independence enhance the positive effect of AUPB on ESGQ?

The study approaches longitudinal data in Vietnamese firms from Thomson Reuters Asset4. Stata software is used to evaluate generalised method-of-moments estimates. The analysis results indicate that AUPB enhances ESGQ, CEO duality hurts the effect of AUPB on ESGQ, and that AC independence acts as a positive moderator. Thereby, our study significantly extends the agency theory on how auditor mood (via AUPB) contributes to the quality of ESG information, along with the moderating mechanisms belonging to governance structures. Moreover, our study offers practical managerial implications for audit firms, client firms, policymakers, auditing associations, and investors.

The rest of the paper is organised as follows. Section 2 presents the literature review. The methodology is detailed in Section 3. Section 4 provides the results. The discussion is presented in Section 5. Section 6 shows the conclusions.

2. Literature review

2.1 Agency theory

Agency theory is one of the fundamental theories of corporate governance and audit activities (Lennox, 2005). This theory analyses the relationship between the principal (e.g., investors, shareholders) and the agent (e.g., the board of directors). The agency problem arises when there is a separation between ownership and control, leading

to risks of conflicts of interest and information asymmetry (Jensen & Meckling, 1976). The board of directors possesses more information; they can act in their own interests (e.g., maximising salary, bonus, power) instead of maximising shareholder value. This problem is exacerbated when firms lack effective monitoring mechanisms, and an independent audit emerges as a useful tool (Rahman, Zhu, & Hossain, 2023). Auditors act as a trusted third party. Their responsibility is to verify information provided by management, thereby reducing information asymmetry, enhancing transparency, and protecting the interests of investors and shareholders (Xu, Chen, & Kalelkar, 2024). In the context of ESG reporting being emphasised, agency theory becomes important. Indeed, ESG reporting includes qualitative data and subjective estimates according to sustainable framework standards (Kimbrough, Xu, & Zhang, 2024), which creates a diverse and huge amount of information. Therefore, the agency problem may become more serious. Management has more incentives to exaggerate ESG achievements (greenwashing). They polish their reputation, attract investment capital, and ultimately achieve personal benefits. Consequently, the role of independent auditors becomes more important (Xiao, Xia, & Gu, 2025). Independent auditors must ensure the quality of ESG reporting, reduce information asymmetry, build trust, and protect investors' interests.

2.2 *Hypotheses development*

2.2.1 *AUPB and ESGQ*

Conventionally, prior literature suggests that AUPB reduces audit quality. This view is also confirmed in the study of Hegazy et al. (2023). Indeed, Hegazy et al. (2023) showed that factors of auditor burnout (including organisational climate, role clarity, and turnover intention) reduce audit performance and audit quality in the Egyptian context. However, we posit a counterintuitive proposition in the ESG reporting context, that AUPB may be a driver of ESGQ. ESG reporting involves qualitative information, complex estimates with many assumptions (e.g., carbon footprint) (Van et al., 2025b). Furthermore, ESG reporting is based on diversity accounting standards (e.g., GRI, SASB, TCFD), lacking a unified set of global reporting standards (Zaid & Issa, 2023). This is an opportunity for the board of directors to distort information, thereby increasing information asymmetry and serving personal interests.

ESG reporting is not easy; it relates to large and socially responsible enterprises (VBF, 2024). According to Aoife et al. (2025),

auditors are more likely to suffer from professional burnout when auditing firms with high societal responsibility and good reputation, for example, companies publishing ESG reporting (Yu, Hou, Qian, & Zhang, 2024). Indeed, to improve ESGQ, auditors must exercise the highest level of professional scepticism and judgment (e.g., Gu, Dai, & Vasarhelyi, 2023). Under such audit conditions, auditors can repeatedly question the board about ESG claims and request specific evidence to verify their statements (Asante-Appiah & Lambert, 2023). In other words, given the critical nature of ESG reports, auditors may engage in more vigorous discussions to verify the report's truthfulness rather than relying on the board's prepared answers (Abdel-Rahim, Hollie, & Yu, 2024). This process can require a lot of auditors' energy, intelligence, time, and emotions, but it represents a strong effort on their part. A high level of professional burnout indicates that auditors are responsible and willing to face pressure to perform their monitoring functions effectively (Aoife et al., 2025). As a result, this close monitoring forces the management board to increase transparency, strengthen internal controls over ESG data, and present better ESG reporting. Agency theory has focused on auditors to address information asymmetry issues (Rahman et al., 2023). Accordingly, auditors are aware of their responsibilities, and they strive to do their jobs well despite the presence of professional burnout issues. Thus, auditors' efforts (possibly leading burnout) in auditing ESG reports are aimed at improving ESGQ (Abdel-Rahim et al., 2024) and such efforts can reduce agency risk and protect the interests of investors and shareholders (Kane & Velury, 2005; Franzel, 2016). These discussions support the following hypothesis:

H1: With higher levels of AUPB, ESGQ is improved

2.2.2 The moderating role of CEO duality

H1 suggested a positive effect of AUPB on ESGQ. However, we argue that this effect is largely nullified when client firms have CEO duality. Indeed, when the CEO is also the chairman of the board, absolute concentration of power reduces the strength of monitoring mechanisms (Deman, Ann, & Laveren, 2018). Boards, which are supposed to be monitoring bodies, are now controlled by the people who need to be monitored. We argue that CEO duality creates a major barrier and reduces ESG disclosure (Pandey, Dalwai, & Nguyen, 2025).

In the context of ESG audits, auditors can invest time and energy in asking deeper questions about carbon emissions data or social

welfare programs (Asante-Appiah & Lambert, 2023). Such efforts can lead to professional burnout, but auditors always expect their requirements to be heard and acknowledged (Al Shbail, Salleh, & Nor, 2018). However, CEO duality may ignore these requests or delay providing information or provide general answers, exaggerating ESG information (Abdullah, Zhu, & Shah, 2024; Pandey et al., 2025). Thus, CEO duality creates a weak governance environment where the the board of directors have the power to override the auditor's professional scepticism. Thus, auditors' efforts to improve audit quality may not receive due attention from CEO duality (Bliss, 2011). This may stem from the managerial power of CEO duality, who often focus on the interests of the company rather than the impacts from external auditors (Yahaya, Oon, & Jusoh, 2024). Thus, the quality of ESG reporting is not significantly improved. These discussions support the following hypothesis:

H2. With higher levels of CEO duality, the impact of AUPB on ESGQ becomes weaker

2.2.3 The moderating role of AC independence

An ESG reporting audit requires complex requirements (Zahid, Khan, & Maqsood, 2022), for example, constant questioning, verification of qualitative data, and confrontation with management board arguments. This will certainly consume more energy and lead to higher levels of professional burnout. Therefore, AUPB can be a signal of a rigorous and responsible audit. A highly independent AC is usually composed of members with no conflicts of interest; thus, the AC acts as a strong ally to protect the auditor (Lin, Li, & Yang, 2006). When auditors report findings related to the deterioration of ESG reporting quality, the AC with high independence can take note and absorb them (Raimo, Vitolla, Marrone, & Rubino, 2021). The AC can then make recommendations to the board and demand transparency and necessary adjustments to increase ESG information quality (Odudu, Yahaya, & Catherine, 2018). In this case, AC independence acts as an important catalyst, amplifying the impact on ESG reporting from auditor efforts (Seth & Saxena, 2025). Auditor burnout is evidence of an effective monitoring process to enhance the quality of ESG reporting under the support of AC independence.

In contrast, with ACs lacking independence, AC members have close relationships with the board of directors (Felo & Solieri, 2009), leading to the presence of a weak monitoring mechanism. In other words, when an auditor faces professional burnout from ESG reporting issues (e.g., unreliable information, greenwashing-

related claims), their concerns may be ignored by an AC with low independence (Elmashtawy, Che Haat, Ismail, & Almaqtari, 2023). In this case, the auditor's efforts become futile. AUPB may not be translated into the quality of ESG reporting under ACs lacking independence (Ifeanyichukwu & Ohaka, 2019). These discussions support the following hypothesis:

H3. With higher levels of AC independence, the impact of AUPB on ESGQ becomes stronger

3. Methodology

3.1 Measurement and estimation

Auditor mood is a broad concept, often expressed through emotional states such as exhaustion, anxiety, or stress. Indeed, Griffith, Nolder, & Petty (2018) consider auditor mood as an emotional state that influences the decision-making process, while Xu, Chen, & Kalelkar (2024) suggest that auditor mood can be represented by auditors' occupational stress. In Vietnam, where ESG implementation is still in its early stages and ESG reporting standards are being developed (VBF, 2024), auditing ESG reports demands significant effort in terms of auditor knowledge, time, and independence (Asante-Appiah & Lambert, 2023). This can easily lead to professional burnout. Professional burnout is not only an emotional state but also a strong indicator of mental and physical deterioration, which makes auditors stressed and exhausted (Griffith et al., 2017). Therefore, professional burnout is a combination of emotional states, and it truly reflects the expression of an auditor's mood in audits (Herda & Lavelle, 2012), especially in the challenging ESG field.

Big 4 firms, with its continuous work pressure, urgent deadlines, and high professional requirements in ESG auditing, make auditors easily fall into professional burnout (Hegazy et al., 2023). Therefore, although auditor mood is a broad concept, professional burnout can represent auditor mood in the context of ESG auditing, especially in a market where ESG is still young, like Vietnam. On the other hand, using professional burnout (for example, busyness, overload, time pressure) to assess auditor mood also responds to the call of Septiari and Syofyani (2025).

The study uses AUPB as the independent variable, ESGQ as the dependent variable, CEOD and ACIN as the moderators, and control variables (Table 1). In our study, we propose a new measure of auditor mood, which is AUPB. Professional burnout is a core manifestation of auditor mood in a high-pressure work

environment, so AUPB is a more reasonable and direct proxy. On the other hand, the construction of the AUPB indicator is an important step forward compared to Hegazy et al. (2023). Hegazy et al. (2023) measured professional burnout indirectly through peripheral factors such as organisational climate, role clarity, and turnover intention. Furthermore, relying solely on cross-sectional design data limits the ability to assess the variation of auditor mood across audit phases and weakens causal conclusions (Van, Abu Afifa, & Van Bui, 2025a).

Our choice of ACIN is theoretically grounded in the distinction between nominal and substantive independence. While a simple majority (>50 per cent) satisfies nominal independence, it can represent a tenuous balance, potentially insufficient to overcome management influence. We posit that a super-majority is necessary for the committee to function as an effective monitoring mechanism. The 60per cent threshold is thus intended to capture this substantive independence, representing a more robust governance structure where independent directors form a decisive block. This approach is supported by prior literature that advocates for stricter governance metrics. For instance, scholars like Klein (2002) have argued that the effectiveness of the committee, not just its composition, is paramount for mitigating earnings management. Our 60% choice aligns with this best practice perspective, distinguishing firms with a stronger commitment to governance from those merely meeting minimum requirements. To ensure our findings are not an artefact of this specific cutoff, we will perform extensive robustness checks in the revised manuscript. This will include re-estimating our models using alternative thresholds (a simple majority >50 per cent and a stricter 70 per cent) and employing a continuous variable for the percentage of independent directors.

To address these gaps, the AUPB indicator is constructed based on objective data from the Thomson Reuters Asset4 database, which provides indicators related to auditor mood. This database also provides information on audit firms (including Big 4 and non-Big 4) corresponding to client firms, so the AUPB indicator is quite complete. The use of this data source offers outstanding advantages, which are: (1) allowing for a more direct and objective measurement of auditor mood instead of relying on subjective perception, as Hegazy et al. (2023); and (2) a longitudinal analysis approach, helping to understand changes in auditor mood over time. To preliminarily verify the value of the new indicator, we assume that auditors at Big 4 firms may face greater pressure, and therefore, the AUPB indicator is higher than that of non-Big 4 firms.

The use of AUPB as a proxy for auditor mood is based on a solid theoretical foundation. Burnout refers to emotional exhaustion, excessive stress in the work environment (Witkowski & Slazyk-Sobol, 2012). Thereby affecting the general auditor's mood instead of temporary emotions. Furthermore, using dummy (Big 4/Non-Big 4) to measure AUPB is highly objective. Hegazy et al. (2023) argued that Big 4 environments are highly stressful and have significantly higher rates of professional burnout than non-Big 4 environments. Therefore, AUPB is expected to be a new measure, not only ensuring reliability but also having high value in studying auditor mood. The measurement methods of the variables are detailed in Table 1.

Table 1: Variables

Variables	Code	Measurement	Source
CEO duality	CEOD	Power 1: if the positions of CEO and Chairman are held by the same persons; 0: otherwise	Remo-Diez, Mendaña-Cuervo, & Arenas-Parra (2025)
AC independence	ACIN	Independence 1: if 60 per cent or more of the audit committee's directors are from outside the company or are not board members; 0: otherwise	Algrady, Huang, & Al-Matari (2025)
Auditor mood (auditor professional burnout)	AUPB	Auditor professional burnout level 1: Big 4 auditors; 0: otherwise	Authors' proposal
ESG reporting quality	ESGQ	ESG disclosure score The more ESG information a company discloses, the higher its ESG disclosure score. Ranging between 0.1 and 100 points, calculate per cent.	You, Chen, & Li (2025)
Firm size	FSIZE	The natural logarithm of the total assets at the beginning of the year	Van et al. (2025b); Sun, Zhao, & Cao (2024)
Firm age	FAGE	The natural logarithm of the number of years since the inception of the firm	
Leverage	LEV	The ratio of total debt to total assets	
Liquidity	LIQ	The proportion of current assets to current liabilities	
Board size	BSIZE	The natural logarithm of the size of the board	
Growth	GROW	The annual percentage change in net sales revenues relative to the previous year	
Cash holdings	CASH	The ratio of cash to total assets (excluding cash)	

To test H1, we use Equation 1:

$$ESGQ_{i,t} = \beta_0 + \beta_1 AUPB_{i,t} + \beta_2 FSIZE_{i,t} + \beta_3 FAGE_{i,t} + \beta_4 LEV_{i,t} + \beta_5 LiQ_{i,t} + \beta_6 BSIZE_{i,t} + \beta_7 GROW_{i,t} + \beta_8 CASH_{i,t} + \varepsilon_{i,t} \quad (1)$$

To test H2, we use Equation 2:

$$ESGQ_{i,t} = \beta_0 + \beta_1 AUPB_{i,t} + \beta_2 (CEOD_{i,t} \times AUPB_{i,t}) + \beta_3 FSIZE_{i,t} + \beta_4 FAGE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 LiQ_{i,t} + \beta_7 BSIZE_{i,t} + \beta_8 GROW_{i,t} + \beta_9 CASH_{i,t} + \varepsilon_{i,t} \quad (2)$$

To test H3, we use Equation 3:

$$ESGQ_{i,t} = \beta_0 + \beta_1 AUPB_{i,t} + \beta_2 (ACIN_{i,t} \times AUPB_{i,t}) + \beta_3 FSIZE_{i,t} + \beta_4 FAGE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 LiQ_{i,t} + \beta_7 BSIZE_{i,t} + \beta_8 GROW_{i,t} + \beta_9 CASH_{i,t} + \varepsilon_{i,t} \quad (3)$$

To test H1, H2, and H3 in the integrated model, we use Equation 4:

$$ESGQ_{i,t} = \beta_0 + \beta_1 AUPB_{i,t} + \beta_2 (CEOD_{i,t} \times AUPB_{i,t}) + \beta_3 (ACIN_{i,t} \times AUPB_{i,t}) + \beta_4 FSIZE_{i,t} + \beta_5 FAGE_{i,t} + \beta_6 LEV_{i,t} + \beta_7 LiQ_{i,t} + \beta_8 BSIZE_{i,t} + \beta_9 GROW_{i,t} + \beta_{10} CASH_{i,t} + \varepsilon_{i,t} \quad (4)$$

3.2 Sample and data

This study uses Vietnamese firms as a sample for the following reasons. First, Vietnamese firms embraced ESG later than some countries in the ASEAN region (e.g., Singapore, Malaysia, Thailand) (PwC, 2020), but have the highest level of ESG commitment in the region (VnEconomy, 2025), which can easily lead to greenwashing behaviours to polish the company's reputation. Second, unmanaged ESG risk and ESG risk exposure in Vietnamese firms are the highest in ASEAN countries, but the ESG management score is the lowest (Walker, 2021). Third, the competitiveness of Vietnamese firms is quite low (East Asia Forum, 2023), so demonstrating quality ESG reporting is an important information channel to improve the company's image. Therefore, auditing ESG reporting of Vietnamese firms is necessary to both improve competitiveness and ensure real benefits for investors and other stakeholders.

According to the Vietnam International Arbitration Centre (2024), the standards for applying ESG reporting in Vietnam are not yet unified, including the SASB, GRI, or TCFD framework. Therefore, the involvement of independent auditors is needed to assess the

appropriateness of these standards in the Vietnamese context. On the other hand, Vietnam is an emerging and rapidly developing market with a heavily invested auditing system to increase transparency in the capital market (Le, Tran, & Vo, 2021). Vietnam has undergone institutional and legal reforms, including regulations related to corporate governance and sustainability reporting, for example, Decision 71/2017/ND-CP, Decision 116/2020/TT-BTC, and Decision 96/2020/TT-BTC. This situation places enormous pressure on independent auditors and makes Vietnam more prominent for assessing AUPB and ESGQ. Examining this relationship in Vietnam provides novel insights and enhances the generalisability of agency theory, which has been mainly tested in developed markets (e.g., Moalla & Dammak, 2023).

The data used is mainly from Thomson Reuters Asset4 because it provides a fairly complete set of indicators, such as ESGQ, CEOD, ACIN, and AUPB. The key point is that the Asset4 database contains information related to the client companies and audit firms, the basis for building the AUPB indicator, representing auditor mood. This approach allows the study to overcome the limitations of a subjective survey, as Hegazy et al. (2023) did. Furthermore, the Asset4 database provides a standardised ESG score, minimising the bias inherent in ESG reporting by companies themselves. Asset4 provides comprehensive data on corporate governance structure and detailed information on audit firms (Big 4 and non-Big 4) and their client companies. However, Asset4 does not provide complete information on FSIZE and GROW of Vietnamese firms; we instead collected these data from the website “investing.com”. After removing missing observations, the final sample is an unbalanced panel with 820 firm-years representing 164 Vietnamese firms in five years (2020-2024).

We chose the period 2020-2024 for the following reasons. First, this period records profound economic and social fluctuations due to the COVID-19 pandemic (2020-2022) and the subsequent economic and financial recovery (2023-2024). These strong exogenous fluctuations create an ideal research context. This context allows us to assess how CEOD and ACIN react to and impact the linkage between AUPB and ESGQ during the crisis. Second, this period coincides with the entry into force of Vietnam’s legal regulations, for example, Decision 71/2017/ND-CP, Decision 116/2020/TT-BTC, and Decision 96/2020/TT-BTC. These regulations have raised the standards of corporate governance, information transparency, and especially promoted ESG reporting. Finally, the period of 2020-2024 is long enough to observe the rise of the ESG reporting trend in

Vietnam, from initial awareness to application and reporting (PwC, 2022; VBF, 2024). The 5-year time frame is long enough for panel data to effectively control unobservable fixed factors and closely identify causal relationships, creating a valuable study in terms of academic and practical aspects.

3.3 Data analysis

Stata software is the optimal choice because it is a comprehensive and specialised econometric tool for panel data. Stata allows for efficient implementation of popular estimators such as the fixed effects model (FEM), random effects model (REM), and ordinary least squares (OLS). This study evaluates heteroscedasticity through OLS, FEM, and REM estimation. Moreover, Stata software is a powerful tool for estimating generalised method of moments (GMM), especially System-GMM, thoroughly addressing complex endogeneity issues and the fluctuation of corporate governance models (Blundell & Bond, 1998; Wintoki, Linck, & Netter, 2012). Our study uses System-GMM as the main estimator to evaluate the regression results. In addition, the study conducts a T-test to further clarify the regression results from System-GMM between the levels of CEO, ACIN, and AUPB. The integration of these analytical techniques ensures the rigour and reliability of the study.

4. Results

4.1 Description

Table 2 shows mean ESGQ = 0.03, standard deviation (SD) = 0.11, SD is quite high, showing strong differentiation in ESGQ in Vietnamese firms. Mean AUPB = 0.14, SD = 0.34; on average, 14 per cent of auditors experience professional burnout when auditing for client firms. Mean CEO = 0.07, SD = 0.27; on average, 7 per cent of companies have a CEO. Mean ACIN = 0.09, SD = 0.29; on average, 9 per cent of companies have ACIN.

Table 2: Description

Variables	Obs.	Mean	SD	Min	Max
ESGQ	820	0.03	0.11	0	0.72
AUPB	820	0.14	0.34	0	1
CEO	820	0.07	0.27	0	1
ACIN	820	0.09	0.29	0	1

Variables	Obs.	Mean	SD	Min	Max
FSIZE	820	17.54	2.08	12.98	24.21
FAGE	820	10.22	5.35	1	23
LEV	820	0.19	0.18	0	0.97
LIQ	820	2.89	4.77	0.03	60.47
BSIZE	820	6.89	1.69	4	11
GROW	820	0.74	7.34	-0.99	122.85
CASH	820	0.14	0.20	0.001	2.16

Note: ESGQ- ESG reporting quality; AUPB - auditor professional burnout; ACIN - AC independence; CEOD - CEO duality; FSIZE- firm size; FAGE - firm age; LIQ - liquidity; LEV - firm leverage; BSIZE - board size; GROW - growth; CASH - cash holdings; SD- standard deviation

4.2 Key findings

Table 3 shows the correlation between variables. This correlation is lower than the allowable threshold (0.8), between 0.01 and 0.75; these variables have discriminant value. Many researchers (e.g., Gujarati, 2009; Kennedy, 2008; Abu Afifa & Nguyen, 2024; Nguyen et al., 2025) adopt the threshold as a common heuristic based on their guidelines. Table 3 also mentions the phenomenon of multicollinearity through the variance inflation factor (VIF). Hair, Risher, and Ringle (2019) said that a VIF higher than 5 leads to multicollinearity. The results from Table 3 show that VIF values are lower than 5 (between 1.00 and 4.76), and multicollinearity does not exist. Tolerance values are higher than 0.1, and the phenomenon of collinearity with other variables is low. Table 3 shows that tolerance values are higher than 0.2 (between 0.21 and 0.99), all variables have good values, and ensure regression estimation. The tolerance threshold of 0.2, corresponding to a VIF of 5, is a conservative benchmark supported by prior scholars (e.g., Abu Afifa & Nguyen, 2024; Nguyen et al., 2025).

Specifically, the results in Table 3 show: (i) The statistically significant correlations (marked with 'i') indicate reliable linear relationships between variable pairs. However, it is the magnitude, not the significance, that primarily signals multicollinearity. As shown, the highest correlation coefficient is 0.75 (between ACIN and ESGQ), which is below the problematic threshold of 0.8 often cited in prior literature (Gujarati, 2009; Abu Afifa & Nguyen, 2024; Nguyen et al., 2025); (ii) The VIF value of 4.76 for our variable of interest, ESGQ, is the highest in our model but remains below the widely accepted critical threshold of 10 and the more conservative threshold of 5; (iii) Correspondingly, its tolerance value of 0.21

(1/4.76) is above the cautionary level of 0.2. Collectively, these results imply that while some expected relationships exist among predictors, multicollinearity is not a significant issue in our model. All VIF and tolerance values are within acceptable ranges, providing confidence that our regression estimates are stable and reliable.

Table 3: Collinearity Diagnostics

	ESGQ	AUPB	CEOD	ACIN	FSIZE	FAGE	LEV	LIQ	BSIZE	GROW	CASH
ESGQ	1										
AUPB	0.70 ⁱ	1									
CEOD	0.23 ⁱ	0.72 ⁱ	1								
ACIN	0.75 ⁱ	0.71 ⁱ	0.53 ⁱ	1							
FSIZE	0.56 ⁱ	0.73 ⁱ	0.52 ⁱ	0.63 ⁱ	1						
FAGE	0.07 ⁱ	-0.01	-0.09	0.05	-0.04	1					
LEV	0.08 ⁱ	0.16 ⁱ	0.19 ⁱ	0.14 ⁱ	0.27 ⁱ	-0.11 ⁱ	1				
LIQ	-0.05	-0.09 ⁱ	-0.07 ⁱ	-0.07 ⁱ	-0.14 ⁱ	0.08 ⁱ	-0.31 ⁱ	1			
BSIZE	0.11 ⁱ	0.07 ⁱ	-0.02	0.05	0.11 ⁱ	-0.03	-0.02	-0.03	1		
GROW	-0.02	-0.03	-0.02	-0.02	-0.01	-0.01	-0.02	-0.01	-0.02	1	
CASH	-0.06	-0.10 ⁱ	-0.10 ⁱ	-0.08 ⁱ	-0.12 ⁱ	0.07 ⁱ	-0.09 ⁱ	0.11 ⁱ	-0.04	-0.01	1
VIF		4.76	2.25	3.17	2.38	1.05	1.21	1.13	1.04	1.00	1.03
TL		0.21	0.44	0.31	0.42	0.95	0.82	0.88	0.96	0.99	0.96

Note: ⁱ: significant at 5 per cent level;

ESGQ - ESG reporting quality; AUPB - auditor professional burnout; ACIN - AC independence; CEOD - CEO duality; FSIZE - firm size; FAGE - firm age; LIQ - liquidity; LEV - firm leverage; BSIZE - board size; GROW - growth; CASH - cash holdings; TL - tolerance; VIF - variance inflation factor

We check whether the error term changes in Table 4, which helps us choose the optimal regression estimate. With FEM, Equations 1, 2, 3, and 4 all have p-value = 0.00, which indicates heteroscedasticity. With REM and OLS, the estimates show p-value = 0.00. Thus, the FEM, REM, and OLS estimates all have heteroscedasticity, and the regression results will not be reliable. Specifically, the null hypothesis (H_0) for these tests is homoscedasticity, meaning the error terms have a constant variance. The reported p-values of (0.00) across all models indicate a strong rejection of this null hypothesis. This signifies the significant presence of heteroscedasticity in our data. This finding violates a key assumption of standard OLS, FEM, and REM estimators, making their standard errors unreliable for inference. Therefore, this result provides a crucial justification for our use of the two-step System-GMM estimator, which is robust

to heteroscedasticity and thus yields more efficient and consistent results. In this case, System-GMM is the optimal choice (Wintoki et al., 2012). We employed the two-step System-GMM estimator. The rationale for this choice is its superior asymptotic efficiency and robustness to general forms of heteroskedasticity compared to the one-step estimator. While the two-step estimator's standard errors can be downwardly biased in small samples, we have corrected for this by using the Windmeijer (2005) finite-sample correction, as is standard practice and implemented in Stata's `xtabond2` command (invoked via the `small` option in our syntax). This ensures our statistical inferences are reliable. We confirm that our study employs a static panel model. The rationale for using this, in the absence of a lagged dependent variable, is to address significant endogeneity concerns beyond dynamic panel bias. These concerns are twofold (e.g., Abu Afifa & Nguyen, 2024; Windmeijer, 2005). First is the presence of unobserved time-invariant firm heterogeneity (e.g., managerial ability, corporate culture) that may correlate with our regressors. Second, and more critically, is the potential for simultaneity and reverse causality between ESG reporting quality and its determinants. For instance, a firm's financial performance may influence its ESG disclosure, while ESG performance simultaneously affects financial outcomes. Standard static estimators like OLS or Fixed Effects would yield biased coefficients in this context. System-GMM is specifically designed to mitigate such endogeneity by using lagged variables as internal instruments, thereby ensuring our estimates are more consistent and reliable.

Table 4: Heteroscedasticity Check

		Equation 1	Equation 2	Equation 3	Equation 4
FEM	χ^2	1.9e ⁶	1.6e ⁶	2.3e ⁹	2.3e ⁹
	<i>(p-value)</i>	<i>(0.00)</i>	<i>(0.00)</i>	<i>(0.00)</i>	<i>(0.00)</i>
REM	χ^2	590.3	304.9	905.3	658.3
	<i>(p-value)</i>	<i>(0.00)</i>	<i>(0.00)</i>	<i>(0.00)</i>	<i>(0.00)</i>
OLS	χ^2	2409.7	3822.1	3596.6	3437.8
	<i>(p-value)</i>	<i>(0.00)</i>	<i>(0.00)</i>	<i>(0.00)</i>	<i>(0.00)</i>

Note: (number) - p value;

ACIN - AC independence; CEOOD - CEO duality; FEM - fixed effects model; REM - random effects model; OLS - ordinary least squares

The results of the system-GMM analysis are in Table 5. AUPB positively affects ESGQ (Equation 1: coeff = 0.28, p-value = 0.00; Equation 2: coeff = 0.37, p-value = 0.00; Equation 3: coeff = 0.10, p-value = 0.00; Equation 4: coeff = 0.18, p-value = 0.00); hypothesis H1 is supported. CEOD negatively moderates the AUPB-ESGQ nexus (Equation 2: coeff = -0.22, p-value = 0.00; Equation 4: coeff = -0.23, p-value = 0.00); hypothesis H2 is supported. ACIN positively moderates on the AUPB-ESGQ nexus (Equation 3: coeff = 0.19, p-value = 0.00; Equation 4: coeff = 0.21, p-value = 0.00); hypothesis H3 is supported. Meanwhile, control variables have diverse effects on ESGQ. FAGE, FSIZE, and BSIZE have positive and significant effects on ESGQ, while LEV has negative effects. LIQ, GROW, and CASH have insignificant effects on ESGQ. The results of the Arellano-Bond tests for serial correlation confirm the model's specification. For all four models, the AR(1) test p-values are significant (e.g., 0.021 for Equation 1), indicating the expected presence of first-order serial correlation in the differenced residuals. Crucially, the AR(2) test p-values are all insignificant (e.g., 0.284 for Equation 1), meaning we fail to reject the null hypothesis of no second-order serial correlation. Furthermore, the Sargan-Hansen test of overidentifying restrictions yields insignificant p-values across all models (e.g., 0.211 for Equation 1). This indicates that we cannot reject the null hypothesis that the instruments are jointly valid and uncorrelated with the error term. Collectively, these diagnostic tests provide strong evidence that our System-GMM models are well-specified and the results are reliable.

Table 5: S-GMM Findings

Link	Equation 1	Equation 2	Equation 3	Equation 4
H1: AUPB → ESGQ	0.28 (0.00)	0.37 (0.00)	0.10 (0.00)	0.18 (0.00)
H2: AUPB×CEOD → ESGQ		-0.22 (0.00)		-0.23 (0.00)
H3: AUPB×ACIN → ESGQ			0.19 (0.00)	0.21 (0.00)
<i>Control variables</i>				
FSIZE → ESGQ	0.007 (0.00)	0.009 (0.00)	0.004 (0.00)	0.005 (0.00)
FAGE → ESGQ	0.002 (0.00)	0.001 (0.00)	0.001 (0.00)	-8.2e ⁻⁶ (0.95)

Link	Equation 1	Equation 2	Equation 3	Equation 4
LEV → ESGQ	-0.05 (0.00)	-0.03 (0.07)	-0.05 (0.00)	-0.02 (0.01)
LIQ → ESGQ	0.001 (0.34)	0.001 (0.20)	7.8e ⁻⁶ (0.96)	0.001 (0.58)
BSIZE → ESGQ	0.011 (0.00)	0.006 (0.02)	0.01 (0.00)	0.005 (0.00)
GROW → ESGQ	0.001 (0.23)	0.001 (0.45)	0.001 (0.12)	0.001 (0.51)
CASH → ESGQ	0.002 (0.79)	-0.004 (0.59)	-0.003 (0.54)	-0.010 (0.02)
Number of observations	820	820	820	820
Number of groups	164	164	164	164
Number of instruments	74	74	74	74
AR(1) test (p-value)	0.021	0.025	0.023	0.028
AR(2) test (p-value)	0.284	0.315	0.291	0.334
Sargan-Hansen test (p-value)	0.211	0.246	0.223	0.259

Note: (number) - p value;

ESGQ - ESG reporting quality; AUPB - auditor professional burnout; ACIN - AC independence; CEOD - CEO duality; FSIZE - firm size; FAGE - firm age; LIQ - liquidity; LEV - firm leverage; BSIZE - board size; GROW - growth; CASH - cash holdings; GMM - generalized method of moments; S-GMM - system GMM

We conducted a T-test to examine the differences in AUPB, ACIN, and CEOD (Table 6). For Panel A, companies audited by Big 4 have a mean ESGQ = 0.216, which is higher than the other group (mean = 0); this difference is significant with p-value = 0.00. Similarly, companies audited by Big 4 have a mean CEOD = 0.565 and mean ACIN = 0.704, which are higher than the other group; these differences are significant with p-value = 0.00. Thus, Panel A further clarifies H1: Auditors who experience professional burnout (working for the Big 4) will provide higher quality ESG reporting.

Panel B, companies with CEOD have a mean ESGQ = 0.117, significantly higher (p-value = 0.00) than the other group (mean = 0.023). Meanwhile, mean AUPB = 0.646, much higher and significantly higher (p-value = 0.00) than the other group (mean = 0.052). This result shows that auditors face serious professional burnout when auditing companies with CEOD. With Panel C,

companies with ACIN (60 per cent or more is independent) have a mean ESGQ = 0.307, significantly higher than the other group. Mean AUPB = 1.00, significantly higher (p-value = 0.00) than the other group (mean = 0.046). This implies that firms with independent ACs have more stringent requirements on auditors, and thus increase ESGQ.

Table 6: The T-test Findings

Panel A: Difference in AUPB								
<i>Variables</i>	<i>Total sample</i>		<i>Big 4 firms</i>		<i>Otherwise</i>		<i>Difference mean test</i>	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Difference</i>	<i>p-value</i>
ESGQ	0.03	0.00	0.21	0.01	0.00	0.00	0.21	0.00
CEOD	0.07	0.00	0.56	0.04	0.00	0.00	0.56	0.00
ACIN	0.09	0.01	0.70	0.04	0.00	0.00	0.70	0.00
Panel B: Difference in CEOD								
<i>Variables</i>	<i>Total sample</i>		<i>CEO and Chairman are the same person</i>		<i>Otherwise</i>		<i>Difference mean test</i>	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Difference</i>	<i>p-value</i>
ESGQ	0.03	0.00	0.11	0.01	0.02	0.00	0.09	0.00
AUPB	0.14	0.01	1.00	0.00	0.06	0.01	0.93	0.00
ACIN	0.09	0.01	0.64	0.06	0.05	0.01	0.59	0.00
Panel C: Difference in ACIN								
<i>Variables</i>	<i>Total sample</i>		<i>60 per cent or more is independent</i>		<i>Otherwise</i>		<i>Difference mean test</i>	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Difference</i>	<i>p-value</i>
ESGQ	0.03	0.00	0.30	0.02	0.00	0.00	0.30	0.00
AUPB	0.14	0.01	1.00	0.00	0.04	0.01	0.95	0.00
CEOD	0.07	0.01	0.51	0.05	0.03	0.01	0.48	0.00

Note: ESGQ - ESG reporting quality; AUPB - auditor professional burnout; ACIN - AC independence; CEOD - CEO duality; SD - standard deviation

5. Discussion

First, the results show that AUPB has a positive impact on ESGQ (H1 is supported). This is a novel finding to date. Previously, no studies have linked auditor mood to ESG reporting. Most previous authors only showed the impact of auditor mood on audit quality,

but the results were quite diverse. Indeed, with a systematic review approach, Septiari and Syofyani (2025) concluded that auditor mood and emotion influence auditor judgment when assessing the risk and probability task, conflict resolution strategies, affect conservatism, and ethical judgment, thereby directly related to audit quality. More specifically, Wulandari, Sudarma, Prihatiningtias, & Baridwan (2024) pointed out that time pressure and transactional psychological contracts lead to auditor burnout, and from there, auditor burnout reduces audit quality in the Indonesian context. Supporting the view of Wulandari et al. (2024), Hegazy et al. (2023) and Xu et al. (2024) demonstrated that auditor burnout harms audit quality and audit performance in Egyptian and U.S. firms, respectively. However, some other studies show contrary results. Cheng and Hu (2024) demonstrate that auditors with a bad mood (from flight delays) become motivated to improve audit quality as demonstrated by reducing future accounting adjustments. Meanwhile, Al Shbail, Salleh, Mohd Nor, & Alshurafat (2023) demonstrate that auditor burnout represents extra efforts in audits (e.g., overcoming challenges) to achieve job performance and satisfaction in a Jordanian context.

Thus, our findings contrast with those of Wulandari et al. (2024), Hegazy et al. (2023), and Xu et al. (2024). At the same time, our results fully support Al Shbail et al. (2023) and Cheng and Hu (2024). Auditor burnout demonstrates great efforts to complete the audit with the highest quality. Furthermore, auditor burnout further demonstrates its uniqueness in ESG reporting audits like our study. Auditors' burnout efforts demonstrate a high sense of responsibility, which results in improved ESG reporting quality. This finding extends the agency theory of Jensen and Meckling (1976). Indeed, external auditors, as an independent monitoring mechanism, reduce information asymmetry between managers and stakeholders, especially. ESG reporting, where information is often qualitative and susceptible to greenwashing, is where the role of auditors becomes important. To demonstrate the highest level of responsibility, auditors must make great effort and time to learn, leading to great work pressure and professional burnout. Burnout here can be seen as a tangible monitoring cost, a testament to the serious audit effort to protect the interests of the principal, thereby improving ESGQ.

Next, the results show that CEOOD moderates the effect of AUPB on ESGQ (H2 is supported). Our study is consistent with the few previous authors who have considered CEOOD as a moderator (Eklund, 2024; Mohapatra et al., 2025). However, no study has

integrated CEOD into audit quality studies. Our study provides a new point compared to Eklund (2024) and Mohapatra et al. (2025); we pioneered the evaluation of CEOD as a moderator on the AUPB-ESGQ nexus. This finding also extends the agency theory. CEOD concentrates too much power in one individual (Remo-Diez et al., 2025). This seriously weakens the board's monitoring function - the core mechanism to protect the interests of investors and shareholders. In this situation, even if auditors exert a high level of effort (to the point of professional burnout) to verify information, their findings are unlikely to be accepted by an independent and powerful body. CEOs may ignore or downplay unfavourable ESG information, exaggerating ESG performance (Abdullah et al., 2024). And thus, auditors' efforts cannot be translated into higher-quality ESG reporting. This result emphasises that strong internal governance is a prerequisite for an effective external monitoring mechanism.

More importantly, ACIN positively moderates the effect of AUPB on ESGQ (H3 is supported). Considering ACIN as a moderator is also consistent with a few previous studies (Aldamen, Hollindale, & Ziegelmayer, 2018; Cheng et al., 2022). However, our study pioneered the successful exploration of the moderating mechanism of ACIN on the AUPB-ESGQ nexus. The moderating mechanism of ACIN also supports the agency theory of Jensen and Meckling (1976). This theory identifies ACIN as a core internal monitoring mechanism, which is responsible for mitigating agency risk by ensuring the reporting process and protecting auditors from management pressure. When AC is highly independent, it creates a strong governance environment and requires auditors to focus on complex and easily manipulated ESG information. These efforts lead to auditor burnout, which is where the ACIN's effectiveness comes in. Burnout is not just a cost of monitoring, but also a testament to the synergy between internal and external monitoring mechanisms that ensures the interests of investors.

The results also show that FSIZE, FAGE, and BSIZE have positive and significant effects on ESGQ, while LIQ, GROW, and CASH have effects but are not significant. LEV has negative effects on ESGQ. This result also has similarities with Harymawan, Nasih, & Djajadikerta (2022) in the Indonesian context. Harymawan et al. (2022) showed that BSIZE and FAGE have positive effects on ESGQ, LEV has negative effects, while FSIZE is unrelated. Our findings also support Sun et al. (2024) in the Chinese context by confirming that BSIZE has positive effects on ESG reporting and GROW is unrelated.

6. Conclusion

The study investigates the influence of AUPB on ESGQ along with the moderating mechanisms of ACIN and CEOD in the Vietnamese context. System-GMM analyses show that AUPB enhances ESGD. The relationship between AUPB and ESGQ is enhanced by the presence of ACIN. Meanwhile, CEOD weakens the strength of this relationship. T-test analyses provide additional evidence that supports the System-GMM results.

6.1 Theoretical contribution

As with previous research that has contributed to agency theory, for example, Chuah, Lok, & Hooy (2024), our study significantly extends agency theory in the following ways. First, our findings enrich agency theory by clarifying an important nuance about monitoring mechanisms in the context of ESG reporting. Traditional agency theory views auditors as a monitoring tool to reduce information asymmetries between shareholders and managers. However, for ESG reporting, the mere presence of auditors is not enough. Our findings indicate that auditor effort intensity (AUPB) is a key determinant of monitoring quality. This adds a new perspective to agency theory, emphasising that the effectiveness of a monitoring mechanism does not depend on its existence but mainly on the level of commitment and deep responsibility of the monitoring subject. AUPB becomes a useful indicator of auditors' psychology and level of commitment, an aspect that previous studies often ignore, for example, Hegazy et al. (2023), Wulandari et al. (2024), Xu et al. (2024). This finding suggests that the effectiveness of monitoring mechanisms depends heavily on auditors' diligence and responsibility in addressing ESG disclosure issues. This reinforces and enriches our understanding of the role of auditors in mitigating agency problems.

Next, our study sheds light on the complex interplay between external monitoring mechanisms (AUPB) and internal governance structures (CEOD), thereby providing a more nuanced perspective on agency theory. Agency theory emphasises the importance of monitoring mechanisms to restrain managers' opportunistic behaviour. Our findings suggest that the concentrated power of CEOD weakens the positive impact of auditor effort (to the point of professional burnout) on ESG information quality. This implies that when managerial power is consolidated (through the CEO being the chairman of the board), it leads to the possibility of managers overshadowing external monitoring efforts, and information

asymmetries may be exacerbated. In other words, even when auditors reach the point of exhaustion, the CEO structure may create a “shield” that reduces external monitoring effectiveness. This finding emphasises that the effectiveness of external monitoring (auditors) is deeply dependent on internal power structures (CEO). This dependence has hindered the need to reduce information asymmetry and created a new challenge for agency theory in explaining the effectiveness of governance mechanisms.

On the other hand, our findings indicate that (ACIN), another proxy for internal monitoring, amplifies the positive impact of auditor efforts (external monitoring) on ESG reporting quality. This enriches agency theory by illustrating how internal and external monitoring mechanisms can work “synergistically” to mitigate agency problems. An independent audit committee creates a conducive governance environment where auditor efforts and concerns are taken seriously and are likely to be translated into concrete actions. ACIN is not just a single monitoring mechanism but also a bridge, helping to translate auditor engagement into better ESG reporting by ensuring that auditor recommendations are received and implemented. This finding highlights that the effectiveness of monitoring mechanisms is synergistic and mutually reinforcing in reducing information asymmetries. This extends agency theory by suggesting that combining different forms of monitoring (external auditors and internal audit committees) can create a stronger synergistic effect. It goes beyond the individual effects of each monitoring mechanism, thereby optimising the solution of the agency problem.

6.2 *Managerial implications*

Our study shows that auditor burnout has a positive impact on ESG information quality. However, this does not mean that we are encouraging burnout. On the contrary, this finding highlights the unintended consequences of excessive workload and pressure on auditors in the ESG assurance context. It suggests that to achieve high-quality ESG reporting in the current environment, auditors are sacrificing their physical and mental health, pushing themselves to the limits of their ability. This is an alarming reality and is not a desirable management strategy. This finding requires stakeholders to take a serious look at the burden that auditors are facing.

From a practical perspective, audit firms need to be aware that while auditor burnout may lead to higher ESG reporting quality in the short term, this is not a sustainable model in the long term. Audit firms should therefore allocate adequate and appropriate

resources to ESG engagements. At the same time, audit firms need to develop human resource management strategies to reduce the risk of professional burnout. The main goal is to create a supportive work environment where auditors can sustain high service quality without having to push their physical and psychological limits, thereby ensuring the quality of ESG reporting in a sustainable way.

For client firms, boards should prioritise the independence, expertise, and authority of ACs. An ACIN facilitates the transformation of auditor efforts into ESGD. Conversely, the roles of CEO and board chair should be separated because maintaining a CEO duality erodes ESGQ, and client firms ultimately undermine their credibility. Policymakers should issue regulations that strengthen ACIN's oversight of ESG information and encourage the separation of roles between CEO and board chair. Auditing associations should issue specific guidelines and standards for ESG assurance, including risk assessments related to client firms' governance structures. Finally, investors should consider the client firm's governance structure as an important indicator to assess the reliability of ESG reporting. The presence of a CEO duality can be a serious risk because even with the involvement of an auditor, the quality of ESG reporting can still be impaired.

6.3 Limitations and future research

Despite its contributions to literature and practice, our study has some limitations. First, our study focuses on the Vietnamese context - an emerging market with unique institutional and corporate governance characteristics. Further research should extend the generalizability to other emerging markets or large economies. Cross-country comparative studies can also verify the generalizability of our model. Second, this study proposed a new indicator for auditor mood, such as the AUPB indicator; however, our study did not interview auditors to assess its feasibility and appropriateness. Future research can take a qualitative approach, such as in-depth interviews, to expand the understanding of the auditor and board mood. Finally, our model could be extended by considering other governance attributes, including the state ownership level and the presence of a sustainability committee at the board level.

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