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THE IMPACT OF ACCOUNTANTS' ESG PERCEPTIONS ON PERCEIVED OPERATIONAL RISK

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ABSTRACT

This study examines the impact of Environmental, Social, and Governance (ESG) perceptions on perceived operational risk among accountants working in enterprises in Ho Chi Minh City, Vietnam. Drawing on survey data collected from 301 accountants, the study employs multiple regression analysis using SPSS software to test the proposed hypotheses. The findings provide empirical support for all three hypotheses, indicating that perceived governance has the strongest influence on perceived operational risk, followed by perceived environmental and social dimensions, respectively. These findings suggest that greater ESG awareness enhances accountants' ability to identify potential operational disruptions and weaknesses in internal control systems, thereby providing a foundation for improving corporate governance effectiveness.

Keyword: ESG Perceptions; Perceived Operational Risk; Accountants; Ho Chi Minh City; Vietnam.

1. INTRODUCTION

In the context of the global transition toward sustainable development, the integration of Environmental, Social, and Governance (ESG) standards has become a critical factor in ensuring business survival and enhancing long-term corporate value. Accountants play a central role in this transition, moving beyond their traditional financial control responsibilities to establishing systems for collecting, internally controlling, and transparently reporting non-financial data (Grujić & Džombić, 2025). In Ho Chi Minh City (HCMC), one of Vietnam's largest economic and financial hubs, enterprises are facing increasing pressure from investors, global supply chains, and regulatory authorities to implement and report on ESG practices. However, ESG implementation also gives rise to various complex operational risks, requiring accountants to possess a comprehensive understanding of these risks to ensure their timely identification and effective management (Grujić & Džombić, 2025).

From a theoretical perspective, employees' ESG awareness is a multidimensional construct encompassing knowledge, attitudes, and behavioral practices, grounded in Social Cognitive Theory and Ethical Climate Theory (Pong & Fong, 2024; Gan & Na-Nan, 2026). Empirical studies have demonstrated that accountants' ESG awareness is strongly and positively associated with their ability to identify organizational risks. Specifically, a deeper understanding of environmental and governance dimensions enables accountants to become more sensitive to operational disruptions, failures in non-financial data infrastructure, and regulatory non-compliance risks (Pong & Fong, 2024). Furthermore, evidence from numerous enterprises indicates that deficiencies in internal control procedures and the risk of greenwashing pose significant threats to the reliability of accounting information (Pong & Fong, 2024; Grujić & Džombić, 2025).

Although the role of ESG awareness in risk management has been recognized in developed and transition economies, such as Hong Kong, Poland, and Bosnia and Herzegovina (Pong & Fong, 2024), empirical evidence from developing economies such as Vietnam, particularly Ho Chi Minh City (HCMC), remains limited (Nguyen et al., 2024). Accountants in this context frequently encounter various challenges, including inadequate training resources, a lack of standardized technological infrastructure for data collection, and increasing workloads. Several studies have examined employees' awareness, including that of accounting professionals, such as those conducted by Karwowski and Raulinajtys-Grzybek (2021), Sulkowski and Jebe (2022), Moffitt et al. (2024), Shakil (2021), and Atif and Ali (2021). Nevertheless, further empirical

investigations across diverse institutional and organizational contexts are needed.

To address this research gap, the present study aims to examine the impact of accountants' ESG perceptions on perceived operational risk among enterprises in Ho Chi Minh City. The study adopts and applies previously validated measurement scales, integrating the Sustainability Awareness and CSR Governance scales with the Perceived Organizational Risk scale. The findings are expected to contribute to the existing literature by elucidating the mechanisms through which accountants' individual perceptions influence their perceptions of operational risk. Furthermore, the study seeks to provide practical managerial implications for business managers in HCMC, particularly in enhancing accountants' professional competencies, strengthening internal control systems, and mitigating operational risks throughout the transition toward sustainable business practices.

2. THEORETICAL BACKGROUND

2.1. Underlying theories

This study integrates foundational theories from behavioral psychology, strategic management, and enterprise risk management to explain the mechanisms through which ESG perceptions influence accountants' perceived operational risk. Pong and Fong (2024) and Gan and Na-Nan (2026) suggest that studies on ESG awareness frequently draw upon various theoretical perspectives. Among these, Social Cognitive Theory (SCT) provides a theoretical foundation for explaining how accountants acquire, process, and internalize ESG-related information. According to SCT, individual perceptions and behaviors are shaped through observation, learning, and interactions with the organizational environment. As accountants develop a deeper understanding of environmental, social, and governance standards, their ability to recognize and process complex information is enhanced. Consequently, they become more sensitive to potential irregularities and more proactive in anticipating operational threats arising from business activities.

Furthermore, Risk Management Theory provides a framework for explaining how ESG perceptions shape accountants' perspectives on risk. According to this theoretical perspective, traditional financial analysis tools often overlook or encounter difficulties in measuring nontraditional risks. Greater ESG awareness equips accountants with the necessary knowledge and capabilities to identify emerging operational threats at an early stage, including disruptions caused by climate change, environmental compliance failures, and inaccuracies in non-financial data.

Stakeholder Theory, in conjunction with Agency Theory, helps clarify the underlying motivations guiding accountants' decision-making processes. ESG awareness encourages accountants to broaden their focus beyond short-term profit maximization toward addressing the diverse expectations of stakeholders, including investors, regulatory authorities, and local communities. This shift contributes to reducing information asymmetry and agency conflicts, thereby promoting greater transparency and sustainability in accounting and operational processes. Additionally, Ethical Climate Theory emphasizes that an organizational environment characterized by a strong commitment to transparency and ethical standards encourages employees to proactively comply with established procedures, thereby increasing their awareness of operational risks.

3. HYPOTHESIS DEVELOPMENT

3.1. Environmental awareness and Perceived operational risk

Environmental awareness reflects the extent of accountants' understanding of and attitudes toward ecological impacts, resource conservation, and emission control in business and production processes (Pong & Fong, 2024; Gan & Na-Nan, 2026). When accountants possess a comprehensive understanding of the environmental impacts associated with business operations, they are better able to identify operational bottlenecks and potential disruptions, such as regulatory penalties resulting from environmental violations, climate-related risks affecting supply chains, and additional costs associated with waste management (Pong & Fong, 2024). Empirical evidence indicates that environmental awareness is strongly and positively correlated with perceived operational risk and makes a significant contribution to explaining variations in perceived operational risk (Pong & Fong, 2024). Accordingly, the following hypothesis is proposed:

H1: *Environmental Awareness has a positive effect on Perceived Operational Risk among accountants working in companies in Ho Chi Minh City.*

3.2. Governance awareness and Perceived operational risk

Corporate governance and corporate social responsibility encompass transparency, adherence to ethical standards, internal control procedures, and the prevention of fraudulent practices and greenwashing (Grujić & Džombić, 2025). In the accounting context, operational risks often arise from deficiencies in internal control procedures, unreliable non-financial data collection, or a lack of transparency in information disclosure (Pong & Fong, 2024; Grujić & Džombić, 2025). Accountants with higher levels of governance awareness tend to place greater emphasis on the accuracy of accounting documentation, conduct more rigorous reviews of operational procedures, and demonstrate a greater ability to identify operational vulnerabilities (Pong & Fong, 2024). Empirical research has demonstrated that CSR governance awareness is the strongest predictor of perceived operational risk (Pong & Fong, 2024). Accordingly, the following hypothesis is proposed:

H2: *Governance awareness has a positive effect on Perceived operational risk among accountants working in companies in Ho Chi Minh City.*

3.3. Social awareness and Perceived operational risk

Social awareness encompasses concerns regarding occupational health and safety, employee rights, social equity, and ethical conduct in the workplace (Gan & Na-Nan, 2026). In accounting operations, human-related risks, such as increasing workloads, inadequate ESG training programs, employee fatigue, and unintentional human errors, play a significant role in maintaining operational stability (Grujić & Džombić, 2025; Gan & Na-Nan, 2026). Accountants with higher levels of social awareness tend to be more sensitive to potential occupational safety hazards, productivity-related risks, and workforce turnover that may disrupt operational workflows (Pong & Fong, 2024; Gan & Na-Nan, 2026). Although the influence of the social dimension may be more indirect than that of the environmental and governance dimensions, enhancing social awareness still contributes positively to the comprehensive identification of operational risks (Pong & Fong, 2024). Accordingly, the following hypothesis is proposed:

H3: *Social awareness has a positive effect on Perceived operational risk among accountants working in companies in Ho Chi Minh City.*

4. METHODOLOGY

This study adopts a cross-sectional quantitative research design to test the proposed theoretical model and hypotheses concerning the relationships between ESG awareness and perceived operational risk. The target population comprises accountants and auditors employed by enterprises across various economic sectors in Ho Chi Minh City, Vietnam.

Given the absence of a comprehensive sampling frame covering all accounting professionals in HCMC, the study employs convenience sampling. Regarding sample size, following the guidelines of Hair et al. (2019) and Kline (2023), the minimum sample size should range from 10 to 20 observations per measurement item included in the model. With 15 observed indicators representing three independent variables and one dependent variable, the study establishes a minimum sample size requirement of more than 200 valid responses. A final sample of 301 valid observations was collected and included in the analysis. Data were analyzed using SPSS software, employing statistical techniques including Cronbach's alpha reliability analysis, exploratory factor analysis, and multiple regression analysis.

The ESG awareness measurement scale was adapted from Gan and Na-Nan (2026), comprising 12 observed indicators across three dimensions: Environmental Awareness (E), Social Awareness (S), and Governance Awareness (G), with four indicators assigned to each dimension. Meanwhile, the Perceived operational risk scale was adapted from the studies of Pong and Fong (2024) and Zaporowska and Szczepański (2024) and modified to include three observed indicators.

5. RESEARCH RESULTS

Regarding the gender distribution, the sample comprised 62.7% female and 38.3% male respondents. This distribution reflects the actual gender composition of the accounting and finance workforce in Ho Chi Minh City. The majority of accountants held a bachelor's degree, accounting for more than 70% of the sample. In terms of age,

most respondents were over 25 years old, while those under 25 represented a smaller proportion.

5.1. Reliability assessment of measurement scales

All measurement scales in the proposed model demonstrated satisfactory internal consistency reliability. Cronbach's alpha coefficients ranged from 0.809 to 0.860, substantially exceeding the minimum recommended threshold of 0.70. The corrected item-total correlation coefficients for all 15 observed indicators ranged from 0.602 to 0.749, surpassing the acceptable threshold of 0.30, thereby demonstrating a high degree of internal consistency among the measurement items.

Exploratory factor analysis (EFA) was conducted separately for the independent and dependent variables using the Principal Component Analysis extraction method with Varimax rotation.

Independent variables: The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was 0.887, exceeding the recommended threshold of 0.50. Bartlett's test of sphericity yielded a chi-square value of 1590.42 ($p < 0.05$), confirming the suitability of the data for factor analysis. The analysis extracted three factors, with the lowest retained eigenvalue of 1.169, exceeding the threshold of 1.0. The cumulative variance explained reached 67.185%, surpassing the recommended minimum of 50%. Factor loadings ranged from 0.718 to 0.834, all exceeding the acceptable threshold of 0.50, with no problematic cross-loadings greater than 0.35 observed.

Dependent variable: The KMO value was 0.708, while Bartlett's test of sphericity was statistically significant ($p < 0.05$). The EFA extracted a single factor with an eigenvalue of 2.173, explaining 72.435% of the total variance. Factor loadings ranged from 0.834 to 0.873, supporting the unidimensionality and convergent validity of the Perceived operational risk scale (see Table 1).

Table 1: Results of scale reliability analysis

Variable	Coding	Loading Coefficient	α
Employee awareness of environmental (E)	E1	0,757	0,817
	E2	0,751	
	E3	0,760	
	E4	0,754	
Employee awareness of social (S)	S1	0,761	0,827
	S2	0,780	
	S3	0,787	
	S4	0,718	
Employee awareness of governance (G)	G1	0,815	0,860
	G2	0,834	
	G3	0,800	
	G4	0,774	
Operational risk perception (R)	R1	0,759	0,809
	R2	0,803	
	R3	0,868	

5.2. Regression analysis

The results of the multiple regression analysis, with Perceived operational risk (R) as the dependent variable, indicate that the model demonstrates a high level of explanatory power. The coefficient of determination ($R^2 = 0.644$) indicates that the three dimensions of ESG awareness collectively explain 64.4% of the variance in accountants' perceived operational risk. The overall F-test yielded a statistically significant result ($F = 178.99$, $p < 0.001$), confirming the overall statistical significance of the regression model (see Table 2).

Given that data on both the independent and dependent variables were collected from the same respondents at a single point in time, common method bias was assessed using Harman's single-factor test. The results of the unrotated factor analysis revealed that the first factor accounted for only 43.5% of the total variance, below the commonly applied threshold of 50%. Furthermore, the full collinearity variance inflation factor values for all latent constructs were below 3.3. These findings suggest that common method bias is unlikely to pose a substantial concern or materially distort the relationships examined in the proposed model.

Table 2: Standardized and unstandardized regression results

Model			Unstandardized Coefficients	Sig.	Standardized Coefficients
R	<---	E	0.301	0.000	0.286
R	<---	G	0.542	0.000	0.568
R	<---	S	0.106	0.012	0.108

Source: Results extracted from SPSS software

5.3. Discussion of research findings

The multiple regression results indicate that all three hypotheses (H1, H2, and H3) are statistically supported ($p < 0.05$), confirming positive relationships between the three dimensions of ESG awareness and perceived operational risk among accountants working in enterprises in Ho Chi Minh City. The model achieves a coefficient of determination (R^2) of 0.644, indicating that the three dimensions of ESG awareness (Governance, Environmental, and Social) collectively explain 64.4% of the variance in accountants' perceived operational risk. This level of explanatory power is of considerable practical significance in accounting behavior and organizational risk management research and is consistent with international empirical findings highlighting the role of ESG awareness in enhancing the ability to identify non-financial risks.

Governance awareness emerges as the strongest predictor of Perceived Operational Risk ($\beta = 0.568$, $p < 0.05$). Accordingly, H2 receives the strongest empirical support, with a standardized regression coefficient of 0.568. This finding indicates that governance awareness is the most influential predictor of accountants' perceived operational risk in HCMC. The governance dimension is directly associated with the core functions of accounting and auditing, including information transparency, internal control procedures, regulatory compliance, anti-corruption measures, and the prevention of greenwashing (Grujić & Džombić, 2025). When accountants possess a comprehensive understanding of corporate governance and CSR standards, they are better equipped to identify vulnerabilities in data processing and reporting procedures, deficiencies in accounting documentation, and potential inaccuracies in non-financial information (Pong & Fong, 2024). This finding is fully consistent with Galletta et al. (2023), who reported that governance awareness exhibited the strongest correlation and made the greatest contribution to explaining operational risk. Similarly, Zaporowska and Szczepański (2024) emphasized that, within accounting operational structures, governance plays a critical role in clarifying control responsibilities and preventing risks associated with disruptions in operational processes.

Environmental awareness represents the second strongest predictor of Perceived Operational Risk ($\beta = 0.286$), supporting H1. This finding confirms that environmental awareness plays a significant role in shaping accountants' perceptions of operational risk. In HCMC, where enterprises face increasing pressure from global supply chains regarding environmental responsibility, green transformation, and compliance with environmental standards, accountants with

greater environmental awareness tend to demonstrate heightened sensitivity to potential operational disruptions (Pong & Fong, 2024). They are better able to recognize the likelihood and potential consequences of risks such as penalties for violations of environmental discharge regulations, supply chain disruptions caused by climate change, and increasing regulatory compliance costs (Pong & Fong, 2024). This result reinforces the findings of Galletta et al. (2023) and is consistent with Risk Management Theory, which suggests that environmental awareness enables accountants to anticipate nontraditional risks that conventional financial reporting systems often overlook.

Social awareness emerges as the third positive predictor of Perceived Operational Risk ($\beta = 0.108$, $p < 0.05$), thereby supporting H3. This finding indicates that the social dimension makes a statistically significant contribution to perceived operational risk, although its effect is relatively modest compared with those of governance and environmental awareness. The social dimension encompasses occupational health and safety, fairness, professional ethics, and employee competencies (Zaporowska & Szczepański, 2024). Accountants with higher levels of social awareness are more sensitive to human-related operational risks, such as increasing workloads associated with ESG reporting, inadequate professional training programs, and the possibility of unintentional errors in operational procedures (Pong & Fong, 2024). This finding is consistent with Social Cognitive Theory and the scale development study conducted by Gan and Na-Nan (2026), supporting the argument that awareness of social standards and workplace conditions encourages employees to proactively identify operational vulnerabilities associated with human resources and organizational conduct.

6. CONCLUSION AND MANAGERIAL IMPLICATIONS

6.1. Conclusion

This study examined the relationships between Environmental, Social, and Governance awareness and perceived operational risk among accountants working in enterprises in Ho Chi Minh City, Vietnam. The empirical findings provide statistically significant support for all three hypotheses (H1, H2, and H3; $p < 0.05$), with the proposed model explaining 64.4% of the variance in perceived operational risk.

Among the three ESG dimensions, Governance Awareness emerged as the strongest predictor ($\beta = 0.568$), followed by Environmental Awareness ($\beta = 0.286$) and Social Awareness ($\beta = 0.108$). These findings are consistent with previous empirical studies (Galletta et al., 2024; Zaporowska & Szczepański, 2024), suggesting that greater ESG awareness does not necessarily imply that enterprises face higher levels of actual operational risk. Rather, it reflects accountants' enhanced risk identification capabilities, professional sensitivity, and early warning capacity in detecting data-related vulnerabilities and potential disruptions arising from non-financial operational risks.

6.2. Managerial implications

Based on the relative magnitudes of the standardized regression coefficients, this study proposes three key managerial implications for organizational decision-makers involved in ESG implementation.

First, standardizing governance infrastructure and strengthening internal control mechanisms. Given that Governance Awareness exhibits the strongest influence, enterprises should prioritize establishing transparent and standardized procedures for collecting, processing, and storing ESG-related data in accordance with international standards. Internal control mechanisms should be strengthened to facilitate the verification of non-financial documentation, prevent greenwashing risks, and ensure the reliability and credibility of information disclosed to investors and regulatory authorities.

Second, providing specialized training in environmental risk management. Enterprises in HCMC, particularly those participating in global supply chains, should equip their accounting personnel with specialized knowledge of greenhouse gas inventories, carbon pricing, and environmental regulations. Such training would enable accountants to proactively identify operational risks arising from potential environmental penalties, increasing compliance costs, and business disruptions caused by climate change.

Third, enhancing human resource capabilities and reducing work-related pressures. Management

should develop appropriate digital transformation roadmaps and professional development programs to prevent excessive workloads among accounting personnel as they assume additional responsibilities related to sustainability reporting. Furthermore, professional accounting associations should organize continuous training programs on ESG reporting to minimize unintentional operational errors attributable to human factors.

Despite its contributions, this study has several limitations, primarily arising from its cross-sectional research design and the geographical concentration of the sample in HCMC. Future research could extend the geographical scope to other key economic regions in Vietnam or adopt a longitudinal research design to examine changes in perceived operational risk over time as enterprises implement ESG strategies and integrate sustainability practices into their long-term operations.

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