Available online at www.ijournalse.org

Emerging Science Journal

(ISSN: 2610-9182)

Vol. 9, No. 6, December, 2025

Exploring Contextual and Behavioral Determinants of Environmental Auditing Adoption

Nguyen Thu Hoai [1*]

[1] *Institute of Accounting and Auditing, Thuongmai University, Hanoi, Vietnam.*

Abstract

This study's primary objective is to identify the determinants of environmental auditing (EA) adoption intention in environmentally sensitive industries. Its novelty lies in developing and testing an integrated model that extends the Theory of Planned Behavior (TPB) by incorporating four contextual factors: Coercive Pressure, Stakeholder Pressure, Internal Resources, and Corporate Culture. For its methodology, the research analyzed survey data from 336 senior managers using Structural Equation Modeling (SEM). The findings confirm that the three core TPB constructs - Attitude, Subjective Norms, and Perceived Behavioral Control - are all direct, positive, and significant predictors of EA intention, with Attitude emerging as the strongest. Crucially, the study finds that the four contextual factors only influence intention indirectly, as their effects are fully mediated by the TPB constructs; Corporate Culture and Internal Resources exhibited the greatest total indirect effects. This research provides a significant improvement over existing models by empirically demonstrating this dual-pathway mechanism, suggesting that efforts to promote EA in Vietnam must focus not only on external pressures but also on cultivating positive managerial attitudes and enhancing internal organizational capabilities.

Keywords:
Environmental Auditing;
Theory of Planned Behavior;
Intention to Adopt.

Article History:

Received:	28	July	2025
Revised:	15	November	2025
Accepted:	21	November	2025
Published:	01	December	2025

1- Introduction

The profound socio-environmental crises of the past three decades have firmly embedded the concept of Corporate Social Responsibility (CSR) into the business lexicon [1]. Consequently, companies whose operations impact the environment face mounting pressure from governments and society to not only adopt corrective measures but also to transparently report on these efforts [2]. However, as most sustainability reporting remains voluntary, stakeholders are increasingly concerned about the credibility of such disclosures, creating a "credibility gap" [3]. This gap underscores the critical need for independent, third-party verification to oversee corporate environmental activities, a role fulfilled by EA [4].

The term "environmental auditing" first emerged in the United States in the late 1970s and early 1980s [5]. By the mid-1980s, the Environmental Protection Agency (EPA) had recognized auditing as a critical tool for improving environmental performance [6], and by the end of the decade, audit organizations also acknowledged their responsibilities concerning environmental policy [7]. As Tomlinson & Atkinson [8] noted, the term "audit" was effectively transferred from the financial lexicon to the language of environmental science. Today, EA is recognized as a vital instrument for assessing and mitigating environmental crises, enhancing public oversight, saving costs, and improving management efficiency [2, 9-12]. For these reasons, EA has gained increasing prominence within the suite of environmental management tools [9].

* **CONTACT**: nguyenhoai@tmu.edu.vn

DOI: http://dx.doi.org/10.28991/ESJ-2025-09-06-06

In the context of its socio-economic integration and development, Vietnam is grappling with increasingly severe and complex environmental challenges, including air and water pollution, solid waste management, and the impacts of climate change. According to an IQAIR report [13], Vietnam ranked among the top 10 countries with the highest air pollution in Asia by the end of 2024 and was 36th out of 177 countries globally. Water pollution has become a major threat to the nation's economy and public health, with a World Bank [14] report estimating it could reduce the annual GDP by 3.5% by 2035. Concurrently, the volume of solid waste is surging, placing immense pressure on collection and treatment systems, with urban solid waste increasing by approximately 15% annually (National Environment Report, 2023). Vietnam is also heavily affected by climate change, with extreme weather events such as floods, droughts, and saltwater intrusion occurring with greater frequency and intensity.

In response to these pressing issues, the Vietnamese National Assembly enacted the 2020 Law on Environmental Protection (LEP), which replaced the 2014 version with several groundbreaking amendments. Notably, the 2020 LEP officially introduced the concept and certain provisions of EA into the legal framework. Crucially, however, the law merely encourages enterprises to conduct EA on a voluntary basis rather than mandating it. Due to this non-compulsory nature, EA has yet to realize its full potential as an effective, widely-used environmental management tool and remains a nascent concept in Vietnam.

To understand the drivers of such voluntary adoptions, academic literature has frequently turned to behavioral theories, with the TPB being a dominant framework. The TPB posits that an individual's intention to perform a behavior - in this case, a manager's intention to adopt EA - is determined by three core psychological constructs: their Attitude toward the behavior, the Subjective Norms surrounding it, and their Perceived Behavioral Control over its implementation. While the TPB has proven robust in explaining a significant portion of behavioral intention, a critical gap persists in the literature. The standard TPB model often overlooks the powerful contextual factors, both external and internal, that shape the organizational environment where decisions are made. It is argued that a manager's attitude, perceived norms, and sense of control do not form in a vacuum; they are heavily influenced by the institutional pressures and organizational realities they face.

For instance, existing research has often treated institutional forces (like coercive government pressure or stakeholder demands) and organizational factors (like the availability of internal resources or an existing corporate culture) as separate, direct drivers of adoption, rather than as upstream variables that influence a manager's psychological readiness. Few studies have attempted to integrate these external and internal contextual factors with the core TPB constructs to understand the mechanisms of their influence. It remains unclear whether these contextual factors impact adoption intention directly, or if their influence is mediated through the TPB's core beliefs.

Therefore, to address these gaps, this study develops and tests an integrated model that extends the TPB. The researcher investigates the determinants of EA adoption intention in Vietnam's environmentally sensitive industries by incorporating four crucial contextual factors: Coercive Pressure, Stakeholder Pressure, Internal Resources, and Corporate Culture. The primary objective is to determine how these external and internal factors interact with the established TPB constructs (Attitude, Subjective Norms, and Perceived Behavioral Control) to shape a manager's ultimate intention to adopt EA. This approach allows for a more nuanced understanding of the dual pathways - both psychological and contextual - that drive corporate environmental responsibility.

2- Literature Review and Hypotheses Development

2-1- Environmental Auditing

The concept of EA has been defined by various international and national bodies, each emphasizing a systematic approach to evaluating environmental performance and compliance. These definitions provide the foundational framework for understanding its purpose and process.

Prominent international organizations were the first to establish formal definitions. The International Chamber of Commerce (ICC, 1989) described EA as: "...a management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of helping to safeguard the environment by: (i) facilitating management control of environmental practices; and (ii) assessing compliance with company policies, which would include meeting regulatory requirements". This framing by the ICC has not been without criticism. Hillary [15], for instance, highlights a fundamental paradox. While the ICC promotes EA as an internal management tool intended for company use, it also aims to bolster its legitimacy and credibility among the public. The conflict arises because the former role implies confidentiality, whereas the latter necessitates transparency and disclosure. In essence, the conditions required to achieve public trust are directly undermined by the "internal use only" designation.

The International Organization for Standardization, in its ISO 14010 standard (1996), defined an EA as: "...a systematic, documented verification process of objectively obtaining and evaluating audit evidence to determine whether specified environmental activities, events, conditions, management systems, or information about these matters conform

with audit criteria, and communicating the results of this process to the client". While the ICC (1998) definition focuses more on the purpose (a management tool to help the company), the ISO definition focuses on the methodology (a rigorous verification process). Crucially, the ISO 14010 definition specifies that the results are communicated "to the client", which frames the audit as a confidential management service. This aligns with the critique from scholars like Hillary [15], who argue that such an internal focus conflicts with the broader goal of using EA to build public trust and ensure transparency.

In the national context of Vietnam, the concept has been formally integrated into its legal framework. According to Article 74, Clause 1 of the 2020 Law on Environmental Protection, EA is defined as "the systematic and comprehensive review and evaluation of the environmental management effectiveness and pollution control of production, business, and service establishments." The inclusion of an EA definition in the 2020 Law on Environmental Protection marks a pivotal moment, formally recognizing it as a legitimate environmental management tool within Vietnam's legal landscape. Notably, the definition's emphasis on "environmental management effectiveness" suggests a shift from mere compliance checking towards a more performance-oriented evaluation, which aligns with contemporary environmental management principles. However, when compared to international standards like ISO 14010, the legal definition lacks procedural specificity. It does not mandate critical components such as the objective collection of audit evidence or a documented verification process, creating ambiguity about how a "systematic" review should be conducted in practice. Furthermore, the definition leaves the "audit criteria" unspecified. It is unclear whether the evaluation of "effectiveness" should be benchmarked against national regulations, international standards like ISO 14001, or internal corporate goals. This ambiguity poses a challenge for standardized implementation and comparability across enterprises. These ambiguities are particularly salient given that Article 75 of the same law only encourages, rather than mandates, the adoption of EA. The combination of a broad, procedurally vague definition and a voluntary implementation framework creates a significant 'implementation gap. Sustainability auditing plays a critical role in enhancing environmental accountability and stakeholder trust, yet firms still face challenges in measuring environmental performance and designing effective audit mechanisms, particularly in emerging economies [16].These challenges underscore the importance of understanding the drivers that encourage firms to adopt environmental auditing systems..

2-2- Factors Influencing the Intention to Adopt Environmental Auditing

Ajzen's [17] TPB is one of the most influential social-psychological models, widely employed to explain and predict human behavioral intentions across numerous domains. It has proven particularly robust in explaining the adoption of environmental accounting and auditing by firms. According to the theory, intention is the immediate antecedent of behavior and is influenced by three core constructs: Attitude, Subjective Norms, and Perceived Behavioral Control.

2-2-1- The Core Constructs of the Theory of Planned Behavior

(1) Attitude (ATT): ATT refers to an individual's overall positive or negative evaluation of performing a specific behavior [17]. In the context of corporate environmentalism, a substantial body of research indicates that a more favorable attitude towards environmental protection corresponds with a higher likelihood of adopting pro-environmental practices. This attitude is often shaped by the firm's perception and assessment of how environmental issues might impact business performance or long-term sustainability [18]. Furthermore, ATT encompasses not only subjective feelings about environmental matters but also the perceived alignment between the firm's values and the outcomes of pro-environmental behaviors [19].

(2) Subjective Norms (SN): SN are defined as the perceived social pressure to engage or not to engage in a behavior [17]. This construct reflects the expectations of significant others, such as regulators, customers, investors, and the community. Empirical studies have consistently demonstrated the positive influence of SN on the implementation of environmental management accounting and auditing [20, 21]. For instance, Setthasakko [22], in a study of Thai enterprises, found that SN, alongside pressure from stakeholders and regulatory bodies, were critical determinants of environmental accounting implementation.

(3) Perceived Behavioral Control (PBC): PBC refers to the perceived ease or difficulty of performing the behavior, stemming from an individual's confidence and the availability of resources and opportunities [17]. Watson et al. [23] provided empirical evidence that PBC positively affects the intention to implement environmental accounting. This sense of control is influenced by factors such as the firm's strategic vision and environmental commitment, which are crucial for mobilizing the necessary resources [24]. Moreover, existing management structures and organizational frameworks determine how easily an innovation like EA can be deployed [25].

Accordingly, the following hypotheses are proposed:

H1.1: Attitude towards EA positively influences the intention to adopt EA.

H1.2: Subjective Norms regarding EA positively influences the intention to adopt EA.

H1.3: Perceived Behavioral Control over the adoption of EA positively influences the intention to adopt EA.

2-2-2- Contextual Antecedents to the TPB Framework

While the core TPB constructs are powerful predictors, research suggests their formation is significantly influenced by broader contextual factors. For a comprehensive understanding, especially within the Vietnamese context, it is crucial to examine the antecedents that shape attitudes, norms, and perceived control. While recent research has effectively demonstrated the outcomes of environmental audits, such as their role in improving corporate information disclosure in response to stakeholder concerns [26], less is understood about the psychological and contextual factors that determine a firm's initial intention to adopt these practices. These insights highlight the growing organizational motivations behind environmental auditing and provide a foundation for understanding determinants of EA adoption in emerging economies This study extends the TPB model by integrating four critical contextual factors: Coercive Pressure, Stakeholder Pressure, Corporate Culture, and Internal Resources.

(1) Coercive pressure (CP): Organizations are compelled to comply with environmental regulations to avoid legal sanctions, penalties, and fines [27]. The threat of such actions, even if infrequent, can severely damage a firm's public image and customer relations [28]. Consequently, firms may adopt EA as a defensive mechanism to mitigate these regulatory risks. Furthermore, governments may offer legal incentives to encourage voluntary EA adoption, motivating firms that might not otherwise consider it [29]. Research has consistently shown a strong link between robust environmental enforcement and EA implementation, with weak enforcement acting as a major barrier [30, 31]. Studies in emerging economies also highlight growing organizational efforts to integrate environmental auditing as part of sustainable development practices, particularly in environmentally sensitive industries such as oil and gas production in Iraq [32]. These findings support the relevance of environmental auditing as an essential governance tool in developing countries and reinforce the importance of understanding determinants of EA adoption in contexts like Vietnam.In addition, CP shapes ATT by encouraging managers to view environmental initiatives as beneficial for risk reduction and responsible conduct [33, 34]. It directly influences SN by creating a clear societal and legal expectation of compliance that managers feel pressured to adhere to [35, 36]. Thus, the hypotheses are formulated as follows:

H2.1: Coercive Pressure positively influences the Attitude towards adopting EA.

H2.2: Coercive Pressure positively influences Subjective Norms regarding the adoption of EA.

H2.3: Coercive Pressure positively influences Perceived Behavioral Control over the adoption of EA.

H2.4: Coercive Pressure is positively associated with the intention to adopt EA.

(2) Stakeholder Pressure (SP): In an era of global sustainability, firms face increasing pressure from a wide range of stakeholders including customers, partners, investors, and community groups to demonstrate environmental responsibility. A primary way to do this is by obtaining environmental management system (EMS) certifications like ISO 14001, which often require EA reports as part of their framework [37, 38]. EA serves as an effective tool to detect threats that could harm an organization's legitimacy, image, and customer relationships [39, 40]. Empirical studies confirm that pressure from customers and the public are primary drivers for adopting environmental practices [41, 42]. Li et al. [43] emphasize that firms implement environmental audits not only to comply with regulations but also to enhance transparency, stakeholder confidence, and long-term performance, particularly within sustainability-oriented management systems. Moreover, SP is a key determinant of SN, as it represents the explicit and implicit expectations of influential external groups [44, 45]. It can also indirectly foster a positive ATT, as firms that initially respond to pressure to manage their image may gradually internalize environmental values and integrate them into their core strategy [46]. Finally, it can impact PBC; clear frameworks promoted by stakeholders (e.g., ISO 14001) can enhance a firm's confidence in its ability to report, while complex demands can lower perceived control over sensitive data [47, 48]. Consequently, the study proposes the following hypotheses:

H3.1: Stakeholder Pressure positively influences the Attitude towards adopting EA.

H3.2: Stakeholder Pressure positively influences Subjective Norms regarding the adoption of EA.

H3.3: Stakeholder Pressure positively influences Perceived Behavioral Control over the adoption of EA.

H3.4: Stakeholder Pressure is positively associated with the intention to adopt EA.

(3) Corporate Culture (CC): An organization's underlying values and norms are critical in determining whether EA is embraced as a strategic tool or merely as a superficial administrative procedure. When EA aligns with an organization's core values, its adoption is prioritized and rapid [49]. Conversely, a surface-level culture can lead to EA being used simply for "greenwashing" without deep integration [50]. A long-term, efficiency-oriented culture positively influences the strategic adoption of EA [51]. Nevertheless, CC is a powerful internal antecedent. A pro-environmental culture fosters a positive Attitude among managers, who see EA as intrinsically valuable [52]. It is also the strongest source of internal SN, where commitment from senior leadership creates a powerful expectation for the rest of the organization to follow [53]. Finally, a supportive culture that provides robust information systems and clear structures enhances PBC by making the implementation process seem more feasible and manageable [54]. Based on the above discussion, the following hypotheses are developed:

H4.1: A supportive Corporate Culture positively influences the Attitude towards adopting EA.

H4.2: A supportive Corporate Culture positively influences Subjective Norms regarding the adoption of EA.

H4.3: A supportive Corporate Culture positively influences Perceived Behavioral Control over the adoption of EA.

H4.4: A supportive Corporate Culture is positively associated with the intention to adopt EA

(4) Internal Resources (IR): The implementation of EA requires significant financial and human resources. Costs can include hiring external auditors, investing in cleaner technology, and dedicating employee time to the process. Firms with greater financial resources are more likely to adopt environmental management practices like EA [55, 56]. A strong internal environmental control system and skilled human capital are also key enablers [51, 57]. This aligns with the Resource-Based View (RBV) of the firm, which posits that unique internal capabilities are essential for achieving competitive advantage [58]. The availability of resources directly impacts the TPB constructs. Financial slack and technical capabilities enhance PBC by giving firms the confidence and ability to undertake voluntary initiatives [59, 60]. Abundant resources also allow firms to adopt a proactive environmental strategy, which fosters a more positive and opportunity-seeking ATT toward EA, rather than a reactive, pressure-driven one [61]. In line with the theoretical reasoning presented, the hypotheses are stated as follows:

H5.1: Internal Resources positively influence the Attitude towards adopting EA.

H5.2: Internal Resources positively influence Subjective Norms regarding the adoption of EA.

H5.3: Internal Resources positively influence Perceived Behavioral Control over the adoption of EA.

H5.4: Internal Resources are positively associated with the intention to adopt EA.

Based on the literature review, this study proposes a research model depicted in Figure 1.

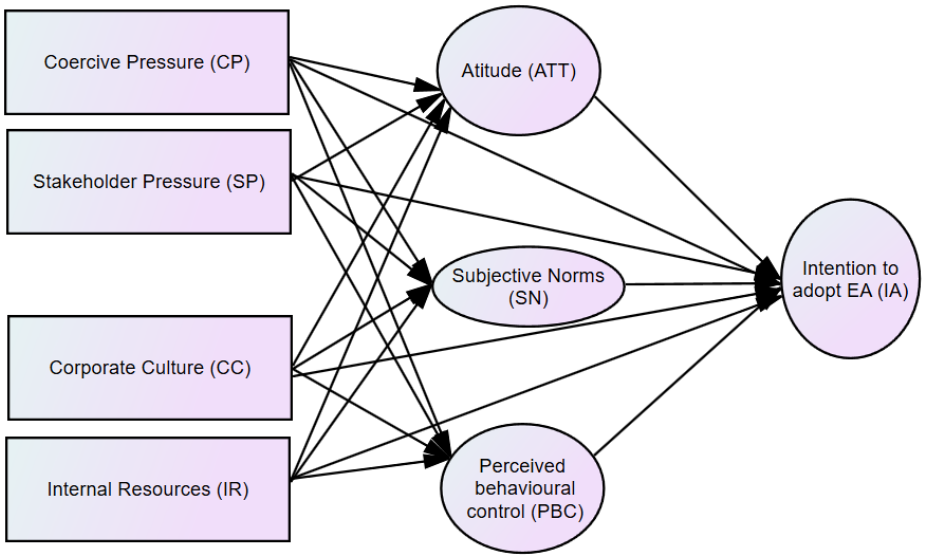

Figure 1. Research Model

3- Theoretical Framework

This study develops an integrated model grounded in several complementary theories. The TPB serves as the core framework explaining behavioral intention, while Institutional Theory, Stakeholder Theory, Organizational Culture Theory, and Resource-Based View provide the theoretical foundation for the contextual factors that influence the primary TPB constructs.

3-1- Theory of Planned Behavior (TPB)

Developed by Ajzen [17], TPB is a highly influential and robust framework for predicting and explaining deliberate human behavior across various fields. The theory posits that the intention to perform a behavior is the most direct determinant of that behavior and is shaped by three principal factors: ATT toward the behavior, SN, and PBC.

(1) ATT toward the behavior: refers to the degree of an individual's favorable or unfavorable evaluation of the behavior in question. It is formed from the individual's beliefs about the consequences of the behavior and their evaluation of these outcomes.

(2) SN are an individual's perception of social pressure from significant others (e.g., colleagues, superiors, peers) regarding whether to perform the behavior. These are shaped by normative beliefs (what others expect) and the individual's motivation to comply with those expectations.

(3) PBC is the extent to which an individual feels they possess the capabilities, resources, and opportunities necessary to perform the behavior. This construct is formed from control beliefs and the perceived power of those factors to facilitate or inhibit performance.

This theory is the foundational theory of this research model with the Intention to Adopt EA is the primary outcome variable that TPB seeks to predict, ATT, SN, and PBC act as the core mediating variables. The contextual factors are hypothesized to influence the intention to adopt EA through these three TPB constructs.

3-2- Institutional Theory

Developed by DiMaggio & Powell [62], Institutional Theory explains why organizations often act not just for economic efficiency but also to gain social legitimacy and acceptance. The theory posits that organizations within a field tend to become more similar over time (a process called isomorphism) through three mechanisms:

(1) Coercive Isomorphism: Pressure from other organizations upon which they are dependent and from cultural expectations in society (e.g., complying with laws and regulations).

(2) Mimetic Isomorphism: Imitating the structures and practices of other successful or legitimate organizations in response to uncertainty.

(3) Normative Isomorphism: Pressure brought about by professions, where professional bodies and industry associations promote certain norms and practices.

This theory explains the "why" behind external pressures. It provides the theoretical rationale for the coercive pressure. It also supports the Stakeholder Pressure variable, as pressure from industry associations (normative pressure) and the imitation of industry leaders (mimetic pressure) are key institutional forces.

3-3- Organizational Culture Theory

Systematized comprehensively by Schein [63], Organizational Culture Theory posits that the internal culture of an enterprise significantly influences its behavior, performance, and capacity for innovation. Culture is composed of three interconnected levels:

(1) Artifacts: Visible organizational structures and processes (e.g., dress code, symbols, office layout).

(2) Espoused Values: The stated goals, strategies, and philosophies of the organization.

(3) Basic Underlying Assumptions: The unconscious, taken-for-granted beliefs and values that are the ultimate source of behavior. The ability of a firm to adopt new changes or technologies like EA is therefore heavily influenced by its internal culture.

This theory directly underpins the Corporate Culture variable in the research model. It provides the framework for arguing that a firm's internal values and assumptions will shape managers' Attitude towards EA, create internal Subjective Norms (i.e., "the way we do things around here"), and influence Perceived Behavioral Control by either enabling or constraining innovative actions.

3-4- Resource Based View (RBV)

Pioneered by Wernerfelt [64] and later refined by Barney [65] with the VRIO (Value, Rarity, Inimitability, Organization) framework, the RBV conceptualizes the firm as a bundle of resources. It argues that a firm's sustainable competitive advantage is derived from owning and effectively deploying valuable, rare, and difficult to imitate internal resources (e.g., financial capital, physical assets, human capital, and organizational knowledge).

This theory is the basis for the Internal Resources variable. It explains why internal resources are critical. According to RBV, possessing sufficient financial, human, and technological resources is not just a facilitator but a strategic determinant of a firm's ability to undertake voluntary, value-creating initiatives like EA. This directly impacts PBC by giving managers the confidence and capability to implement the audit.

3-5- Stakeholder Theory

Initiated by Freeman [66], Stakeholder Theory revolutionized corporate governance thinking. It posits that a firm's long-term success depends not only on satisfying shareholders but also on managing and balancing the interests of all its stakeholders (e.g., employees, customers, suppliers, financiers, communities, and government bodies). The firm must create value for this entire network. In essence, EA is a tool for transparency and for verifying a firm's environmental activities to these external parties, serving as a mechanism to respond to stakeholder demands.

This theory is the primary foundation for the Stakeholder Pressure variable. While Institutional Theory explains the mechanisms of pressure, Stakeholder Theory identifies the actors who exert that pressure. It explains why a firm must be responsive to these groups to maintain its legitimacy and social license to operate. It therefore justifies why expectations from customers, communities, and partners directly influence the SN surrounding EA adoption. It works in tandem with Institutional Theory to provide a comprehensive view of external pressures.

4- Research Methodology

This study adopts a post-positivist approach, which supports using empirical methods to systematically investigate social phenomena [67]. The survey instrument was first developed based on an extensive literature review and then refined through two qualitative stages: semi-structured interviews with 12 academic and industry experts, followed by a pilot test with 15 senior managers to ensure clarity and validity (Table 1). Data for the main study were collected between January and February 2025 from manufacturing firms in Vietnam, chosen for their significant environmental impact. The study's sample was drawn purposively from Vietnam's manufacturing, mining, and processing sectors. These industries were prioritized as they are officially classified as "environmentally sensitive" and are the primary contributors to industrial pollution. Therefore, they are the key targets for environmental regulation and the most relevant population for studying EA adoption intention. Questionnaires were distributed to senior decision-makers (e.g., CEOs, Plant Managers, Heads of Legal/Environmental departments), yielding 336 valid responses from 390 surveys sent (an 86.2% response rate).

Table 1. Observed Variables in the research model

No.	Code	Content	Source
		FACTOR 1: COERCIVE PRESSURE (CP)	
1	CP1	We feel significant pressure from government agencies (e.g., Department of Natural Resources and Environment) to improve our environmental performance	[27, 31, 34, 62]
2	CP2	We anticipate that future legislation will make environmental auditing mandatory for our industry.	
3	CP3	To receive necessary permits or licenses, our company must demonstrate compliance with environmental regulations.	
4	CP4	We could face legal penalties or fines if we fail to comply with environmental laws and standards.	
		FACTOR 2: STAKEHOLDER PRESSURE (SP)	
5	SP1	The local community closely monitors our environmental activities and expects us to protect the local environment.	[27, 34, 41, 62, 66]
6	SP2	Leading competitors in our industry have set a standard for environmental performance that we feel pressured to follow.	
7	SP3	Our customers increasingly demand environmentally friendly products and expect us to be transparent about our environmental impact.	
8	SP4	Non-governmental organizations (NGOs) and environmental groups exert significant influence on our company's environmental policies.	
		FACTOR 3: CORPORATE CULTURE (CC)	
9	CC1	Our company's top management is strongly committed to environmental protection and sustainability	[31, 49, 50, 51, 57, 63]
10	CC2	Environmental responsibility is a core value that is deeply embedded in our company's identity	
11	CC3	Our company's mission and vision statements explicitly include a commitment to environmental sustainability	
12	CC4	In our company, protecting the environment is considered everyone's responsibility, not just the job of a specific department	
		FACTOR 4: INTERNAL RESOURCES (IR)	
13	IR1	Our company has sufficient financial resources to invest in environmental auditing activities.	[31, 42, 56-60, 65]
14	IR2	Our company possesses the necessary technology and information systems to monitor and report on our environmental performance.	
15	IR3	We can easily access external experts or consultants if we need assistance with environmental auditing	
		FACTOR 5: ATTITUDE (ATT)	
13	ATT1	Adopting Environmental Auditing would bring significant strategic benefits to our company	[17, 18, 21, 24, 36]
14	ATT2	I believe that adopting Environmental Auditing is a wise business decision for our company.	
15	ATT3	Implementing Environmental Auditing would help our company improve operational efficiency and reduce costs in the long run	
		FACTOR 6: SUBJECTIVE NORMS (SN)	
13	SN1	Our key customers and business partners think that we should adopt Environmental Auditing	[17, 18, 21, 36]
14	SN2	Our top management and board of directors believe that adopting Environmental Auditing is an important and expected action	
15	SN3	Companies in our industry are generally expected to be environmentally responsible and implement practices like Environmental Auditing	
16	SN4	Government regulatory bodies encourage and expect companies like ours to proactively adopt environmental practices like Environmental Auditing	
		FACTOR 7: PERCEIVED BEHAVIORAL CONTROL (PBC)	
13	PBC1	Our company has capabilities to successfully implement Environmental Auditing	[17, 18, 31, 36, 51]
14	PBC2	The decision to adopt Environmental Auditing is completely within our company's control.	
15	PBC3	We have sufficient knowledge and information about how to proceed with adopting Environmental Auditing.	
		FACTOR 8: INTENTION TO ADOPT ENVIRONMENTAL AUDITING (IA)	
13	IA1	We are actively planning to implement Environmental Auditing	[17, 18, 21, 36]
14	IA2	I will strongly recommend and support the decision to adopt Environmental Auditing in our company.	
15	IA3	Adopting Environmental Auditing is a high priority for our company going forward	
16	IA4	Our company will make a significant effort to adopt Environmental Auditing in the near future.	

The data were analyzed using SPSS and AMOS (version 25.). The analysis began with an assessment of the measurement model, testing for reliability (Cronbach's Alpha) and validity through both Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). Subsequently, the research model and its associated hypotheses were tested using Structural Equation Modeling (SEM).

5- Results and Discussion

5-1- Descriptive Statistics of the Sample

The descriptive statistics of the survey sample, summarized in Table 2, highlight the profile of the respondents and their respective firms, underscoring the sample's suitability for the research objectives.

Regarding the respondents' job positions, the sample is predominantly composed of senior level managers with direct decision-making authority or significant influence over corporate environmental strategies. Specifically, Chief Executive Officers (CEOs) constituted the largest group, accounting for 43.16% (n=145) of the respondents. This was followed by Plant and Production Managers at 34.52% (n=116). Cumulatively, these two key leadership groups represent 77.68% of the total sample, ensuring that the collected data provide a high-level perspective on the drivers of EA adoption.

In terms of industry sector, the sample was intentionally focused on industries with a substantial environmental footprint, where the adoption of EA is a particularly salient issue. Manufacturing enterprises represented the vast majority of the firms at 78.27% (n=263). Other environmentally significant sectors, such as Mining (10.71%) and Processing (6.85%), were also well-represented. This strategic focus on high impact industries ensures the practical relevance and applicability of the research findings to firms facing the most acute environmental pressures.

Table 2. Descriptive Statistics of the Sample

		Frequency	Percent (%)
Position	Chief Executive Officers	145	43.16
	Plant and Production Managers	116	34.52
	Quality Management Director	35	10.42
	Head/Deputy Head of the Legal Department	19	5.65
	Head/Deputy Head of the Environmental Department	21	6.25
Manufacturing sectors	Manufacturing industry	263	78.27
	Mining industry	36	10.71
	Processing industry	23	6.85
	Other	14	4.17
Total		**336**	**100**

5-2- Measurement Model Assessment

To evaluate the internal consistency and reliability of the measurement scales used in the research model, a reliability analysis was conducted using Cronbach's Alpha coefficient with the aid of SPSS 25. Following the widely accepted criterion in social science research, a Cronbach's Alpha value of 0.7 or higher is required for a scale to be considered reliable [68].

The reliability and convergent validity of the measurement model were rigorously assessed. Internal consistency was evaluated using both Cronbach's Alpha and Composite Reliability (CR). As detailed in Table 3, the Cronbach's Alpha values for all constructs ranged from 0.724 to 0.935. These values are well above the commonly accepted 0.70 threshold, indicating strong internal consistency. This was further supported by the Composite Reliability (CR) values, which ranged from 0.748 to 0.935 and also surpassed the 0.70 benchmark.

Convergent validity, which measures the extent to which items of a specific construct share a high proportion of variance, was assessed using factor loadings and the Average Variance Extracted (AVE). All individual item factor loadings were significant and ranged from 0.783 to 0.974, exceeding the recommended minimum of 0.70. The AVE values for each construct ranged from 0.527 to 0.818. All AVE values were above the suggested 0.50 threshold, signifying that each construct explains more than half of the variance of its corresponding indicators.

Additionally, the Kaiser-Meyer-Olkin (KMO) measure confirmed sampling adequacy, with all factors scoring above 0.60, confirming the data's appropriateness for factor analysis. In conclusion, these results provide robust evidence for the reliability and convergent validity of the measurement model, establishing a strong foundation for the subsequent structural model analysis.

Table 3. Factors loading, Cronbach's Alpha, Reliability and Convergent Validity

Factors	Items	Cronbach's Alpha	Factor loadings	KMO	Composite reliability	Average variance extracted
Coercive Pressure (CP)	CP1	0.935	0.904	0.858	0.935	0.784
	CP2		0.921			
	CP3		0.933			
	CP4		0.903			
Stakeholder Pressure (SP)	SP1	0.903	0.872	0.849	0.903	0.701
	SP2		0.884			
	SP3		0.896			
	SP4		0.869			
Internal Resources (IR)	IR1	0.931	0.906	0.857	0.931	0.818
	IR2		0.924			
	IR3		0.946			
Corporate Culture (CC)	CC1	0.844	0.818	0.766	0.846	0.580
	CC2		0.825			
	CC3		0.870			
	CC4		0.790			
Attitude (ATT)	ATT1	0.871	0.834	0.716	0.875	0.701
	ATT2		0.878			
	ATT3		0.906			
Subjective Norms (SN)	SN1	0.888	0.786	0.833	0.890	0.672
	SN2		0.888			
	SN3		0.897			
	SN4		0.888			
Perceived Behavioral Control (PBC)	PBC1	0.724	0.654	0.635	0.748	0.527
	PBC2		0.924			
	PBC3		0.841			
Intention to Adopt EA (IA)	IA1	0.929	0.892	0.856	0.903	0.757
	IA2		0.893			
	IA3		0.933			
	IA4		0.931			

Source: Results from SPSS 26.0 and AMOS 25.0

5-3- Correlation and Discriminant Validity Analysis

The correlation analysis results are presented in Table 4. All constructs show positive and statistically significant correlations at either the 0.01 or 0.05 level, indicating meaningful relationships among the variables. IR are positively correlated with CP ($r = 0.413$, $p < 0.001$), SP ($r = 0.369$, $p < 0.001$), CC ($r = 0.184$, $p < 0.01$), and ATT ($r = 0.624$, $p < 0.001$). IR also exhibits strong relationships with SN ($r = 0.548$, $p < 0.001$), PBC ($r = 0.660$, $p < 0.001$), and IA ($r = 0.668$, $p < 0.001$).

CP correlates significantly with ATT ($r = 0.543$, $p < 0.001$), SN ($r = 0.442$, $p < 0.001$), PBC ($r = 0.310$, $p < 0.01$), and IA ($r = 0.455$, $p < 0.001$). Similarly, SP shows significant positive correlations with ATT ($r = 0.599$, $p < 0.001$), SN ($r = 0.421$, $p < 0.001$), PBC ($r = 0.417$, $p < 0.001$), and IA ($r = 0.484$, $p < 0.001$). CC has strong positive correlations with ATT ($r = 0.801$, $p < 0.001$), SN ($r = 0.440$, $p < 0.001$), PBC ($r = 0.539$, $p < 0.001$), and IA ($r = 0.538$, $p < 0.001$).

As expected, the three TPB components are strongly interrelated: ATT correlates highly with SN ($r = 0.542$, $p < 0.001$) and PBC ($r = 0.612$, $p < 0.001$). SN and PBC are also strongly associated ($r = 0.633$, $p < 0.001$). The outcome variable, IA, shows strong correlations with ATT ($r = 0.744$, $p < 0.001$), SN ($r = 0.777$, $p < 0.001$), and PBC ($r = 0.809$, $p < 0.001$).

Overall, the results indicate strong and positive associations across all constructs. These findings provide preliminary support for the hypothesized relationships and justify further testing through structural equation modeling.

Table 4. Correlation coefficient among core variables

	IR	CP	SP	CC	ATT	SN	PBC	IA
IR	**0.905**							
CP	0.413***	**0.885**						
SP	0.369***	0.494***	**0.837**					
CC	0.184**	0.202**	0.220***	**0.953**				
ATT	0.624***	0.543***	0.599***	0.801***	**0.941**			
SN	0.548***	0.442***	0.421***	0.440***	0.542***	**0.820**		
PBC	0.660***	0.310***	0.417***	0.539***	0.612***	0.633***	**0.839**	
IA	0.668***	0.455***	0.484***	0.538***	0.744***	0.777***	0.809***	**0.870**

*Note: In the table, *** denotes a significance level of p<0.001, and ** denotes p<0.01*

Source: Results from AMOS 25.0

5-4- Structural Model and Hypothesis Testing

5-4-1- Assessment of Structural Model Fit

As presented in Table 5 and Figure 2, the results indicate an excellent fit between the model and the empirical data. The chi-square to degrees of freedom ratio (CMIN/DF) was 1.537, which is well below the recommended threshold of <3. Other fit indices also met or exceeded the established criteria: the Goodness-of-Fit Index (GFI) was 0.901 (>0.8), the Comparative Fit Index (CFI) was 0.975 (>0.9), and the Tucker-Lewis Index (TLI) was 0.971(>0.9). Finally, the Root Mean Square Error of Approximation (RMSEA) was 0.040, comfortably below the <0.08 threshold. Collectively, these indices confirm that the structural model is robust and provides a strong basis for testing the proposed hypotheses.

Table 5. Model fitting results

Fit index	Recommended Threshold	Observed Value	Evaluation Result
CMIN/DF	<3	1.848	Excellent
GFI	>0.8	0.882	Excellent
CFI	>0.9	0.961	Excellent
TLI	>0.9	0.955	Excellent
RMSEA	<0.08	0.050	Excellent

Source: Results from SPSS 26.0 and AMOS 25.0

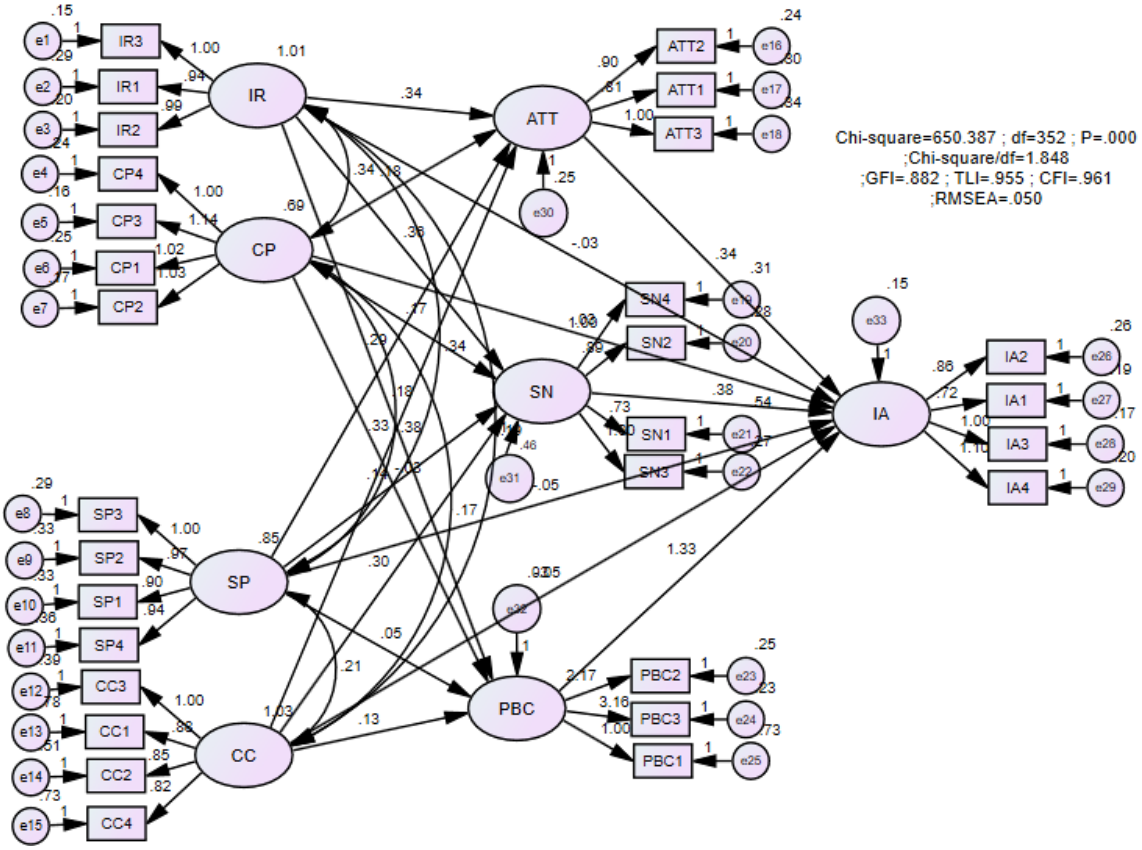

Figure 2. Results of the Structural Equation Modeling Analysis

5-4-2- Hypothesis Testing Results

The results of hypothesis testing are summarized in Table 6. The findings indicate that ATT, SN, PBC all exert significant positive effects on the IA, supporting H1.1, H1.2, and H1.3 ($\beta = 0.428$, 0.401, and 0.395, respectively; $p < 0.001$). This confirms the central role of TPB constructs in predicting adoption behavior.

Regarding CP, the results show significant positive effects on ATT ($\beta = 0.169$, $p < 0.001$), SN ($\beta = 0.151$, $p < 0.01$), supporting H2.1, H2.2. However, CP does not significantly influence PBC ($\beta = -0.086$, $p > 0.1$), IA ($\beta = 0.004$, $p > 0.1$), leading to rejection of H2.3 and H2.4. These findings suggest that while regulatory pressure enhances positive attitudes and social expectations toward environmental auditing, it does not necessarily enhance perceived control over adoption.

SP was found to positively influence ATT ($\beta = 0.276$, $p < 0.001$), SN ($\beta = 0.136$, $p < 0.05$), and PBC ($\beta = 0.163$, $p < 0.01$), supporting H3.1, H3.2, and H3.3. However, the effect of SP on IA was not significant ($\beta = 0.063$, $p > 0.2$), resulting in rejection of H3.4. This indicates that stakeholder expectations shape beliefs and perceived capability, yet do not directly translate into adoption intention.

CC positively influences ATT ($\beta = 0.383$, $p < 0.001$), SN ($\beta = 0.317$, $p < 0.001$), and PBC ($\beta = 0.434$, $p < 0.001$), supporting H4.1, H4.2, and H4.3. However, CC does not show a direct significant effect on IA ($\beta = 0.088$, $p > 0.1$), leading to rejection of H4.4. These results imply that a supportive culture strengthens psychological readiness, though its influence on intention is indirect.

Finally, IR significantly impacts ATT ($\beta = 0.436$, $p < 0.001$), SN ($\beta = 0.381$, $p < 0.001$), and PBC ($\beta = 0.565$, $p < 0.001$), supporting H5.1, H5.2, and H5.3. In contrast, IR does not significantly affect IA directly ($\beta = 0.078$, $p > 0.2$), resulting in rejection of H5.4. This suggests that resource availability enhances readiness and perceived capability, yet intention depends more strongly on mediating psychological factors.

Overall, the results demonstrate that ATT, SN, and PBC play a central role in shaping the intention to adopt environmental auditing, while CP, SP, CC, and IR mainly exert indirect effects through these behavioral antecedents.

Table 6. Results of Hypothesis Testing

Hypotheses	Path	S.ES	Sig.	Conclusion
H1.1	IA ← ATT	0.428	0.000	Accepted
H1.2	IA ← SN	0.401	0.000	Accepted
H1.3	IA ← PBC	0.395	0.000	Accepted
H2.1	ATT ← CP	0.169	0.000	Accepted
H2.2	SN ← CP	0.151	0.008	Accepted
H2.3	PBC ← CP	0.086	0.111	Rejected
H2.4	IA ← CP	0.004	0.928	Rejected
H3.1	ATT ← SP	0.276	0.000	Accepted
H3.2	SN ← SP	0.136	0.017	Accepted
H3.3	PBC ← SP	0.163	0.008	Accepted
H3.4	IA ← SP	0.063	0.208	Rejected
H4.1	ATT ← CC	0.383	0.000	Accepted
H4.2	SN ← CC	0.317	0.000	Accepted
H4.3	PBC ← CC	0.434	0.000	Accepted
H4.4	IA ← CC	0.088	0.180	Rejected
H5.1	ATT ← IR	0.436	0.000	Accepted
H5.2	SN ← IR	0.381	0.000	Accepted
H5.3	PBC ← IR	0.565	0.000	Accepted
H5.4	IA ← IR	0.078	0.293	Rejected

Source: Author compiled from AMOS 25.0

The results in Table 7 show that the model explains a substantial proportion of variance in the dependent constructs. ATT has an R-square value of 0.698, indicating that 69.8% of its variance is explained by the predictors, with an adjusted R-square of 0.694. SN recorded an R-square of 0.480 and an adjusted value of 0.473, suggesting a moderate level of explanatory power. PBC demonstrated an R-square of 0.645 and an adjusted R-square of 0.641, reflecting strong predictive accuracy. Finally, IA achieved the highest explanatory power with an R-square of 0.826 and an adjusted value of 0.822, indicating that the model explains 82.2% of the variance in adoption intention. Overall, the R-square coefficients confirm that the structural model has strong explanatory capability, particularly for IA and ATT.

Table 7. R-square Coefficients

	R-Square	R-square adjusted
ATT	0.698	0.694
SN	0.480	0.473
PBC	0.645	0.641
IA	0.826	0.822

Source: Results from AMOS 25.0

5-5- Discussion of Findings

This research developed and tested an extended TPB model to explain managers' intention to adopt environmental auditing in Vietnam. The findings confirm the central role of the TPB constructs and highlight the importance of contextual forces that shape beliefs rather than exert direct influence. These results provide meaningful theoretical and practical insights into voluntary environmental governance in a developing economy.

First, attitude, subjective norms, and perceived behavioral control all positively and significantly influence intention. This aligns with the foundational assertions of Ajzen [17] and supports evidence from prior studies that applying TPB is effective in predicting environmental and sustainability-related decisions [18, 21, 23]. Attitude emerged as the strongest predictor, reinforcing earlier findings that perceived strategic value plays a decisive role in sustainability adoption, particularly in emerging markets where environmental initiatives are often discretionary rather than mandated. This result also echoes Yakhou & Dorweiler [24], who emphasized the strategic importance of environmental systems for operational improvement.

Second, the contextual variables - coercive pressure, stakeholder pressure, internal resources, and corporate culture - did not directly influence intention but instead operated through the TPB constructs. My findings show that these contextual factors explain a significant portion of the variance in Attitude, Subjective Norms, and Perceived Behavioral Control. Therefore, the model doesn't "merely shift" variance; it explains that variance, providing a much richer understanding of how managerial intentions are formed. We have clarified this in the "Discussion" section. This finding is consistent with research in similar institutional settings that highlights the indirect nature of institutional and resource conditions in shaping managerial decision-making [27, 34]. It suggests that external pressure alone is insufficient to trigger adoption unless it also alters managers' beliefs, confidence, and social expectations. The strong influence of corporate culture and internal resources on perceived behavioral control and attitude also aligns with the RBV and organizational culture theory, confirming that firms with stronger internal capabilities and sustainability-oriented values are more ready to adopt advanced environmental practices [57, 58].

Third, the insignificant direct effects of coercive and stakeholder pressures contrast with findings from several studies in developed contexts where regulatory systems and external stakeholders decisively shape environmental behavior [6, 37]. The difference may stem from Vietnam's voluntary regulatory approach and evolving enforcement mechanisms, which reduce the power of external forces to compel immediate action. Instead, the pressures appear to influence perceptions gradually, consistent with institutional theory's view that legitimacy concerns in developing economies often evolve through normative rather than strictly coercive channels. This result also resonates with Setthasakko [22], who found that weak enforcement environments limit direct compliance behavior in Southeast Asian markets.

Together, these findings suggest that environmental auditing adoption in Vietnam depends primarily on internal belief development and capability building rather than direct policy pressure. This reinforces the importance of both raising awareness and strengthening institutional support structures to translate social expectations into tangible organizational commitment.

6- Conclusions

This study has successfully identified the factors influencing the intention to adopt EA in Vietnam through an integrated structural model. The results not only reinforce the value of the TPB but also expand the understanding of the role contextual factors play in shaping this intention.

Theoretical Contributions: Theoretically, this research contributes to the body of knowledge by testing and validating an extended TPB model within the context of a developing economy. It demonstrates that exogenous factors, such as institutional pressures and organizational characteristics, influence intention indirectly, thereby providing a more comprehensive and nuanced picture of the mechanisms of behavior formation.

Practical Implications: From a practical standpoint, the study offers important implications for both corporate managers and policymakers:

For Corporate Managers: To promote EA adoption, a dual strategy is recommended. First, directly influence the psychological antecedents by clearly communicating the strategic benefits of EA to foster a positive Attitude, while actively engaging in dialogue with stakeholders to meet social expectations and strengthen Subjective Norms. Second,

build a solid foundation by investing in resources (human, financial, technological) to enhance Perceived Behavioral Control, and most critically, by fostering a Corporate Culture that views sustainable development as a core value. In addition, the most powerful (indirect) lever identified in this study is Corporate Culture. To practically reshape culture to be more supportive of EA, managers can: (1) Demonstrate Leadership Commitment: Integrate environmental performance into the official corporate mission and values, signaled consistently from the C-suite; (2) Link EA to Core Strategy: Frame EA not as a compliance "cost" but as a tool for efficiency, risk management, and long-term value creation. This directly builds a positive *Attitude*; (3) Embed in KPIs: Include environmental performance metrics in managerial performance reviews and key performance indicators (KPIs) to align incentives.

For Policymakers: A crucial finding in this research is that legal coercion, while effective in shaping norms, does not enhance managers' Perceived Behavioral Control. This suggests that a policy of "sticks" (fines, penalties) without "carrots" (support) is insufficient. Regulators must understand that coercion creates pressure to act, but not the capacity to act. Therefore, to be effective, regulations should be two-pronged:

Enforcement (the "Stick"): Continue to apply clear, consistent coercive pressure to signal the importance of compliance, which strengthens Subjective Norms.

Enablement (the "Carrot"): Simultaneously launch supportive programs that directly build PBC. This includes providing technical workshops, clear implementation guidelines, and financial subsidies for EA adoption, particularly for small and medium-sized enterprises.

6-1- Limitations and Directions for Future Research

This study is subject to certain limitations which should be acknowledged:

First, the data was collected using a cross-sectional design, which limits the ability to establish definitive causal relationships. Second, my findings are specific to environmentally sensitive, high-impact industries. The drivers of EA adoption in service-based sectors (such as banking, IT, or tourism) may differ, as their environmental footprint is less direct. Future research should test this model in those contexts, where stakeholder pressure and corporate image (Attitude) may play an even more dominant role than coercive pressure. A well-documented "intention - behavior gap" may exist, meaning that stated intentions do not always translate perfectly into action.

Second, methodologically, this study employed Covariance-Based SEM (CB-SEM), as its primary aim was theory testing and model fit confirmation. Given our robust sample size (N=336), this choice is well-justified. However, we acknowledge that Partial Least Squares SEM (PLS-SEM) is a viable alternative, particularly for predictive modeling or if the data violated assumptions of multivariate normality. Future research could replicate this study using PLS-SEM to validate the predictive relevance of the proposed model.

Therefore, these limitations suggest several avenues for future inquiry. A longitudinal study could be conducted to track the transition from intention to behavior over time, offering a more dynamic view of the adoption process. Furthermore, future research could expand the model by examining the moderating role of contextual factors, such as firm size or industry sector, to yield more specific and in-depth conclusions.

Finally, unlike some international studies that indicate a diminished role for Subjective Norms, this research reveals it to be a direct and significant predictor in Vietnam, a result that is consistent with recent local research [21]. This may reflect the unique characteristics of the Vietnamese business environment, where relationships and pressures from the community, business partners, and regulatory bodies play a crucial role in shaping corporate behavior.

7- Declarations

7-1- Data Availability Statement

The data presented in this study are available in the article.

7-2- Funding

The author received no financial support for the research, authorship, and/or publication of this article.

7-3- Institutional Review Board Statement

Not applicable.

7-4- Informed Consent Statement

Not applicable.

7-5- Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the author.

8- References

[1] Ajayi, O. A., & Mmutle, T. (2020). Corporate reputation through strategic communication of corporate social responsibility. Corporate Communications, 26(5), 1–15. doi:10.1108/CCIJ-02-2020-0047.

[2] Patriarca, R., Di Gravio, G., Costantino, F., & Tronci, M. (2017). The Functional Resonance Analysis Method for a systemic risk based environmental auditing in a sinter plant: A semi-quantitative approach. Environmental Impact Assessment Review, 63, 72–86. doi:10.1016/j.eiar.2016.12.002.

[3] Boyce, G. (2000). Public discourse and decision making: Exploring possibilities for financial, social and environmental accounting. Accounting, Auditing & Accountability Journal, 13(1), 27–64. doi:10.1108/09513570010316135.

[4] Ferry, L., & Lehman, G. (2018). Trends in corruption, environmental, ethical and social accounting. Accounting Forum, 42(1), 1–2. doi:10.1016/j.accfor.2018.01.002.

[5] Hillary, R. (1995). Developments in environmental auditing. Managerial Auditing Journal, 10(8), 34–39. doi:10.1108/02686909510093606.

[6] Evans, M. F., Liu, L., & Stafford, S. L. (2011). Do environmental audits improve long-term compliance? Evidence from manufacturing facilities in Michigan. Journal of Regulatory Economics, 40(3), 279–302. doi:10.1007/s11149-011-9163-2.

[7] Van Leeuwen, S. (2004). Developments in Environmental Auditing by Supreme Audit Institutions. Environmental Management, 33(2), 163–172. doi:10.1007/s00267-003-0063-9.

[8] Tomlinson, P., & Atkinson, S. F. (1987). Environmental audits: Proposed terminology. Environmental Monitoring and Assessment, 8(3), 187–198. doi:10.1007/BF00404264.

[9] Cook, W., van Bommel, S., & Turnhout, E. (2016). Inside environmental auditing: Effectiveness, objectivity, and transparency. Current Opinion in Environmental Sustainability, 18, 33–39. doi:10.1016/j.cosust.2015.07.016.

[10] He, G., Yang, J., Lu, Y., Wang, S., Chen, B., Hayat, T., Alsaedi, A., & Ahmad, B. (2017). Ternary emergetic environmental performance auditing of a typical industrial park in Beijing. Journal of Cleaner Production, 163, 128–135. doi:10.1016/j.jclepro.2015.03.040.

[11] Jain, R. K., Cui, Z., & Domen, J. K. (2015). Environmental Impact of Mining and Mineral Processing: Management, Monitoring, and Auditing Strategies. In Environmental Impact of Mining and Mineral Processing: Management, Monitoring, and Auditing Strategies. Butterworth-Heinemann. doi:10.1016/C2014-0-05174-X.

[12] Wang, J., Zhang, B., & Chen, T. (2011). The case study of China's environmental audit: Taking the Taihu Lake as an example. Energy Procedia, 5, 2108–2113. doi:10.1016/j.egypro.2011.03.364.

[13] IQAir. (2024). 2024 World Air Quality Report. IQAir, Gallen, Switzerland. Available online: https://www.iqair.com/world-air-quality-report (accessed on November 2025).

[14] World Bank Group. (2019). Vietnam: Toward a Safe, Clean, and Resilient Water System. World Bank Group, Washington, D.C., United States. Available online: https://www.worldbank.org/en/country/vietnam/publication/vietnam-toward-a-safe-clean-and-resilient-water-system (accessed on November 2025).

[15] Hillary, R. (1998). Environmental Auditing: Concepts, Methods and Developments. International Journal of Auditing, 2(1), 71–85. doi:10.1111/1099-1123.00031.

[16] Sari, R. (2025). Challenges in Sustainability Auditing: Measuring Environmental and Social Impacts in Modern Enterprises. Advances in Managerial Auditing Research, 3(1), 1–14. doi:10.60079/amar.v3i1.416.

[17] Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179–211. doi:10.1016/0749-5978(91)90020-T.

[18] Maama, H., & Appiah, K. O. (2019). Green accounting practices: lesson from an emerging economy. Qualitative Research in Financial Markets, 11(4), 456–478. doi:10.1108/QRFM-02-2017-0013.

[19] Modell, S. (2014). The societal relevance of management accounting: An introduction to the special issue. Accounting and Business Research, 44(2), 83–103. doi:10.1080/00014788.2014.882741.

[20] Kwakye, T. O., Welbeck, E. E., Owusu, G. M. Y., & Anokye, F. K. (2018). Determinants of intention to engage in Sustainability Accounting & Reporting (SAR): the perspective of professional accountants. International Journal of Corporate Social Responsibility, 3(1), 11. doi:10.1186/s40991-018-0035-2.

[21] Nguyen, T. M. A. (2024). Adoption of environmental management accounting in Vietnamese enterprises: An empirical analysis of influencing determinants. PLoS ONE, 19(7), 0304902. doi:10.1371/journal.pone.0304902.

[22] Setthasakko, W. (2009). Barriers to implementing corporate environmental responsibility in Thailand: A qualitative approach. International Journal of Organizational Analysis, 17(3), 169–183. doi:10.1108/19348830910974905.

[23] Watson, K., Klingenberg, B., Polito, T., & Geurts, T. G. (2004). Impact of environmental management system implementation on financial performance: A comparison of two corporate strategies. Management of Environmental Quality: An International Journal, 15(6), 622–628. doi:10.1108/14777830410560700.

[24] Yakhou, M., & Dorweiler, V. P. (2004). Environmental accounting: An essential component of business strategy. Business Strategy and the Environment, 13(2), 65–77. doi:10.1002/bse.395.

[25] Molina-Azorín, J. F., Claver-Cortés, E., López-Gamero, M. D., & Tarí, J. J. (2009). Green management and financial performance: A literature review. Management Decision, 47(7), 1080–1100. doi:10.1108/00251740910978313.

[26] Wang, S., & Xiong, Y. (2025). Environmental audit and corporate environmental information disclosure: evidence from external stakeholder concerns. Journal of Environmental Planning and Management, 1–35. doi:10.1080/09640568.2025.2549935.

[27] Henriques, I., & Sadorsky, P. (1996). The determinants of an environmentally responsive firm: An empirical approach. Journal of Environmental Economics and Management, 30(3), 381–395. doi:10.1006/jeem.1996.0026.

[28] Power, M. (1999). The Audit Society: Rituals of Verification. Oxford University Press. Oxford, United Kingdom. doi:10.1093/acprof:oso/9780198296034.001.0001.

[29] Stafford, S. L. (2003). Does Self-Policing Help the Environment? EPA's Audit Policy and Hazardous Waste Compliance Sarah L. Stafford* October, 2003. Policy, 6, 1–30.

[30] De Marchi, V., Cainelli, G., & Grandinetti, R. (2022). Multinational subsidiaries and green innovation. International Business Review, 31(6), 102027. doi:10.1016/j.ibusrev.2022.102027.

[31] Jabbour, C. J. C., Jugend, D., De Sousa Jabbour, A. B. L., Gunasekaran, A., & Latan, H. (2015). Green product development and performance of Brazilian firms: Measuring the role of human and technical aspects. Journal of Cleaner Production, 87(1), 442–451. doi:10.1016/j.jclepro.2014.09.036.

[32] Hashmi, S. C. Environmental Auditing Practices in Iraqi Oil Companies for Sustainable Development: Praktik Audit Lingkungan di Perusahaan Minyak Irak untuk Pembangunan Berkelanjutan. Indonesian Journal of Law and Economics Review, 20(1), 1285. doi:10.21070/ijler.v20i1.1285.

[33] Ahmad, N. N. N., & Mohamad, N. A. (2014). Environmental Disclosures by the Malaysian Construction Sector: Exploring Extent and Quality. Corporate Social Responsibility and Environmental Management, 21(4), 240–252. doi:10.1002/csr.1322.

[34] Wang, S., Li, J., & Zhao, D. (2018). Institutional Pressures and Environmental Management Practices: The Moderating Effects of Environmental Commitment and Resource Availability. Business Strategy and the Environment, 27(1), 52–69. doi:10.1002/bse.1983.

[35] Chang, E. C. (1998). Hope, problem-solving ability, and coping in a college student population: Some implications for theory and practice. Journal of Clinical Psychology, 54(7), 953–962. doi:10.1002/(SICI)1097-4679(199811)54:7<953::AID-JCLP9>3.0.CO;2-F.

[36] Chen, M. F., & Tung, P. J. (2014). Developing an extended Theory of Planned Behavior model to predict consumers' intention to visit green hotels. International Journal of Hospitality Management, 36, 221–230. doi:10.1016/j.ijhm.2013.09.006.

[37] Alvarez-Larrauri, R., & Fogel, I. (2008). Environmental audits as a policy of state: 10 years of experience in Mexico. Journal of Cleaner Production, 16(1), 66–74. doi:10.1016/j.jclepro.2006.11.006.

[38] Zeng, C., Zhang, L., & Li, J. (2020). The impact of top management's environmental responsibility audit on corporate environmental investment: evidence from China. Sustainability Accounting, Management and Policy Journal, 11(7), 1271–1291. doi:10.1108/SAMPJ-09-2018-0263.

[39] Mobus, J. L. (2005). Mandatory environmental disclosures in a legitimacy theory context. Accounting, Auditing and Accountability Journal, 18(4), 492–517. doi:10.1108/09513570510609333.

[40] Fallan, E., & Fallan, L. (2019). Corporate tax behaviour and environmental disclosure: Strategic trade-offs across elements of CSR? Scandinavian Journal of Management, 35(3). doi:10.1016/j.scaman.2019.02.001.

[41] Hahn, R., & Kühnen, M. (2013). Determinants of sustainability reporting: A review of results, trends, theory, and opportunities in an expanding field of research. Journal of Cleaner Production, 59(15), 5–21. doi:10.1016/j.jclepro.2013.07.005.

[42] Russo, M. V., & Harrison, N. S. (2005). Organizational design and environmental performance: Clues from the electronics industry. Academy of Management Journal, 48(4), 582–593. doi:10.5465/AMJ.2005.17843939.

[43] Li, X., Dong, B., Li, S., Xie, B., & Xie, L. (2025). Accelerating Green Growth: The Impact of Government Environmental Audits on Urban Green Economy. Sustainability (Switzerland), 17(12), 5289. doi:10.3390/su17125289.

[44] Bui, B., & de Villiers, C. (2017). Carbon emissions management control systems: Field study evidence. Journal of Cleaner Production, 166, 1283–1294. doi:10.1016/j.jclepro.2017.08.150.

[45] Neu, D., Warsame, H., & Pedwell, K. (1998). Managing Public Impressions: Environmental Disclosures in Annual Reports. Accounting, Organizations and Society, 23(3), 265–282. doi:10.1016/S0361-3682(97)00008-1.

[46] Larrinaga-Gonzalez, C., & Bebbington, J. (2001). Accounting change or institutional appropriation? - A case study of the implementation of environmental accounting. Critical Perspectives on Accounting, 12(3), 269–292. doi:10.1006/cpac.2000.0433.

[47] Bouten, L., Everaert, P., Van Liedekerke, L., De Moor, L., & Christiaens, J. (2011). Corporate social responsibility reporting: A comprehensive picture? Accounting Forum, 35(3), 187–204. doi:10.1016/j.accfor.2011.06.007.

[48] Herremans, I. M., Herschovis, M. S., & Bertels, S. (2009). Leaders and laggards: The influence of competing logics on corporate environmental action. Journal of Business Ethics, 89(3), 449–472. doi:10.1007/s10551-008-0010-z.

[49] Bansal, P. (2003). From Issues to Actions: The Importance of Individual Concerns and Organizational Values in Responding to Natural Environmental Issues. Organization Science, 14(5), 510–527. doi:10.1287/orsc.14.5.510.16765.

[50] Harris, L. C., & Crane, A. (2002). The greening of organizational culture: Management views on the depth, degree and diffusion of change. Journal of Organizational Change Management, 15(3), 214–234. doi:10.1108/09534810210429273.

[51] Henri, J. F., & Journeault, M. (2010). Eco-control: The influence of management control systems on environmental and economic performance. Accounting, Organizations and Society, 35(1), 63–80. doi:10.1016/j.aos.2009.02.001.

[52] Jamil, C. Z. M., Mohamed, R., Muhammad, F., & Ali, A. (2015). Environmental Management Accounting Practices in Small Medium Manufacturing Firms. Procedia - Social and Behavioral Sciences, 172, 619–626. doi:10.1016/j.sbspro.2015.01.411.

[53] Gunarathne, A. D. N., & Lee, K. H. (2019). Environmental and managerial information for cleaner production strategies: An environmental management development perspective. Journal of Cleaner Production, 237. doi:10.1016/j.jclepro.2019.117849.

[54] Burritt, R. L., & Saka, C. (2006). Environmental management accounting applications and eco-efficiency: case studies from Japan. Journal of Cleaner Production, 14(14), 1262–1275. doi:10.1016/j.jclepro.2005.08.012.

[55] Boiral, O., & Paillé, P. (2012). Organizational Citizenship Behaviour for the Environment: Measurement and Validation. Journal of Business Ethics, 109(4), 431–445. doi:10.1007/s10551-011-1138-9.

[56] González-Benito, J., & González-Benito, Ó. (2006). A review of determinant factors of environmental proactivity. Business Strategy and the Environment, 15(2), 87–102. doi:10.1002/bse.450.

[57] Daily, B. F., & Huang, S. C. (2001). Achieving sustainability through attention to human resource factors in environmental management. International Journal of Operations and Production Management, 21(12), 1539-1552. doi:10.1108/01443570110410892.

[58] Hart, S. L. (2017). A natural-resource-based view of the firm. Corporate Environmental Responsibility, 20(4), 17–45. doi:10.5465/amr.1995.9512280033.

[59] Bansal, P. (2005). Evolving sustainably: A longitudinal study of corporate sustainable development. Strategic Management Journal, 26(3), 197–218. doi:10.1002/smj.441.

[60] Christmann, P. (2000). Effects of "best practices" of environmental management on cost advantage: The role of complementary assets. Academy of Management Journal, 43(4), 663–680. doi:10.2307/1556360.

[61] Aragón-Correa, J. A., & Sharma, S. (2003). A contingent resource-based view of proactive corporate environmental strategy. Academy of Management Review, 28(1), 71–88. doi:10.5465/AMR.2003.8925233.

[62] Dimaggio, P. J., & Powell, W. W. (2021). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. The New Economic Sociology: A Reader, 48(2), 111–134. doi:10.2307/2095101.

[63] Schein, E. H. (2010). Organizational Culture and Leadership. John Wiley & Sons, New Jersey, United States.

[64] Wernerfelt, B. (1984). A resource-based view of the firm. Strategic Management Journal, 5(2), 171–180. doi:10.1002/smj.4250050207.

[65] Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. Journal of Management, 17(1), 99–120. doi:10.1177/014920639101700108.

[66] Freeman, R. E. (1984). Strategic Management: A Stakeholder Approach. Cambridge University Press, Cambridge, United Kingdom.

[67] Lim, W. M. (2023). Philosophy of science and research paradigm for business research in the transformative age of automation, digitalization, hyperconnectivity, obligations, globalization and sustainability. Journal of Trade Science, 11(2/3), 3–30. doi:10.1108/jts-07-2023-0015.

[68] Bernstein, I. H., & Nunnally, J. C. (1994). The Assessment of Reliability. Psychometric Theory, 3, 248–292.