E-ISSN: 3047-8774 P-ISSN: 3048-3794
Jurnal Inovasi Pajak Indonesia (JIPI), Vol. 2, No. 2, July 2025, pp. 83–91
https://doi.org/10.69725/jipi.v2i2.333

Contents lists available at Inovasi Analisis Data
Jurnal Inovasi Pajak Indonesia (JIPI)
journal homepage: https://analysisdata.co.id/index.php/JIPI

Audit Committee Strength and Environmental Tax Transparency in Dampening Public Fraud Perceptions in ASEAN

Laras Angelia Nirwana Sari[1,*], **M. Syahrudin**[2]

[1]Department of Accounting, STIE Gema Widya Bangsa, Bandung 40287, Indonesia
[2]Doctoral Program in Economics, Faculty of Economics, Universitas Katolik Parahyangan, Bandung 40141, Indonesia

ARTICLE INFO

Article history:
Received: 10 May 2025
Revised: 15 June 2025
Accepted: 01 July 2025

Correspondence:
Sari, L. A. N.

Keywords:
Fraud behavior; tax governance; audit committee; transparency; anti-fraud

ABSTRACT

Purpose – This research explores the dynamic influences of fraud-related behavioral drivers alongside taxation governance and audit oversight on anti-fraud intentions.
Design/methodology/approach – Based on a multilevel framework, the structural model of perceptions combines fraud behavior with tax governance mechanisms and audit oversight.
Findings – Results demonstrate that fraud drivers, perceived tax transparency and environmental tax compliance orientation are not likely to have both direct and indirect influences on anti-fraud intention. Objectively speaking, the mechanisms of oversight embedded in audit quality also fail to moderate these associations. The presence of formal governance systems and transparency tools is not enough to activate fraud awareness into intention to prevent behavior when enforcement credibility and personal contribution are minimized.
Originality/value – The paper provides a unique combination of fraud behavioral theory, taxation governance and audit oversight in an integrated framework and presents data-based discussions on the limitations of formal controls in perception-based anti-fraud environments.
Research implications – The results suggest that there is a need for theoretical expansion by including enforcement salience, institutional trust and moral engagement to further understand anti-fraud behaviour not only as the result of structural governance mechanisms.

1 Introduction

Swindles and governance failures are widespread in public and corporate institutions, where they have an even stronger presence in emerging economies characterized by varying levels of institutional development, budget transparency, and oversight structures. Recent worldwide studies indicate that fraud is corrosive to public confidence and tax morale; it hollows out the environmental taxes agenda (Rezaee, 2004; OECD, 2024). In Southeast Asia, the movement away from traditional tax systems and towards more digitalized ones has increased public scrutiny—perceptions of misuse, lack of control, and elite capture are significant factors shaping attitudes toward fraud and compliance (Baghdadi et al., 2022; Ngah et al., 2021; Tuinsma et al., 2025). These mechanisms are not limited to technical malfunctions and need to be recognized as a behavioral and governance issue within an organization.

Previous research has investigated fraud detection and prevention from various lenses, such as internal control structures, forensic accounting, and corporate governance procedures. Audit committee quality and transparency are found to be mitigating factors toward fraud risk across numerous studies (Abbott et al., 2004; Othman et al., 2015; Hassan et al., 2023). Parallel literature reports that tax transparency enhances compliance and diminishes opportunistic behavior when fiscal information is perceived as credible and accessible (Tuinsma et al., 2025). However, other research suggests that the effects of governance mechanisms on fraud-related outcomes tend to be mixed or not statistically significant, especially in contexts with low enforcement and symbolic compliance (Klein, 2002; Othman et al., 2015). This discrepancy hints at inconsistency in the actionability of governance tools across different contexts and populations.

This study is theoretically grounded in the Fraud Triangle and Fraud Diamond theories, which articulate fraud as emanating from pressure, opportunity, rationalization, and capability (Albrecht, 2012; Wolfe and Hermanson, 2004). These approaches highlight that fraud drivers are behavioral and situational, operating against institutional structures rather than in isolation. This concept of deterrence is reinforced by deterrence theory, which posits that credible oversight and punishment increase the perceived risk of detection and limit fraudulent behavior (Becker, 1968). Furthermore, institutional and stakeholder theories argue that transparency, taxation legitimacy, and audit oversight influence trust and compliance by signaling accountability and conformity to social norms.

However, the literature reveals gaps and inconsistencies. While some research documents that a high-quality audit committee significantly mitigates fraud and enhances reporting quality (Abbott et al., 2004; DeZoort and Pollard, 2023), other studies are inconclusive or find no effects when the committee lacks substantive independence or expertise (Klein, 2002; Rezaee, 2004). Similarly, tax transparency has been found to increase compliance and trust (Gallemore et al., 2014), but recent research indicates that its effects can be dampened or uneven when transparency actions are perceived as ceremonial or weakly enforced (Tuinsma et al., 2025). There is no clear consensus in environmental tax research regarding compliance outcomes: some find "no" to "mixed" results, suggesting that voluntary compliance can be driven by moral or sustainability norms (Koessler et al., 2019; OECD, 2024; Torgler, 2007), while others point to resistance or skepticism directly related to governance credibility. These emergent and sometimes divergent findings highlight the need to integrate behavioral fraud theory, taxation governance, and audit oversight in a unified framework.

To fill this gap, we test the direct and indirect effects of fraud drivers on anti-fraud intention via tax transparency perception and environmental tax compliance orientation, while accounting for the moderating role of audit committee strength. Drawing on a cross-country and cross-group design within ASEAN economies, this study contributes by: (i) applying behavioral fraud theory to fiscal and environmental governance; (ii) addressing conflicting prior findings through mediation and moderation analysis; and (iii) offering implications for policy makers, audit committees, and educators interested in enhancing fraud deterrence and tax legitimacy. The results can inform corporate governance reforms, improvements in audit oversight practices, and sustainable tax policy alternatives.

The remainder of this paper is structured as follows. Section 2 presents the literature review and hypotheses. Section 3 describes the research design, sample, measurement instruments, and data analysis. Section 4 reports the empirical findings. Section 5 discusses implications and concludes with limitations and directions for future research.

2 Literature Review

2.1 Theoretical foundation

The Fraud Triangle and Fraud Diamond theories are the mainstays of fraud theory research. These theories address fraudulent behaviours through pressure, opportunity, rationalisation, and capability (Preacher and Hayes, 2008a). Factors such as transparency, the tax system, and audit supervision, which are influenced by institutional governance, are the reason for these behaviours. According to deterrence theory, if monetary systems are transparent and monitoring is credible, then the incentive to engage in fraud will be reduced because the risk of being detected will be increased (Becker, 1968). Theories of governance and institutional theory argue that transparency of tax and legitimacy of governance increase institutional trust and voluntary compliance, especially in public sector and environmental accounting settings.

2.2 Fraud drivers and anti-fraud outcomes

The Fraud Diamond theory explains that the combination of pressure, opportunity, rationalization, and capability serves to reduce ethical inhibition and enhance tolerance for wrongdoing (Wolfe and Hermanson, 2004). Empirical evidence reveals that a high-pressure and low control environment inhibits the willingness to counteract or report fraudulent behavior, leading to lower anti-fraud intention (Albrecht, 2012; Preacher and Hayes, 2008a). According to deterrence theory, if the perception of being caught is low, then resistance to engage in fraud behavior will also be low (Becker, 1968). Yet, ethical decision-making research suggests that professional norms and moral intensity can offset situational motivators, especially for more educated participants (Rezaee, 2004). This tension suggests that the drivers of fraud have a net negative and context-specific impact on anti-fraud outcomes.

- **H1:** Fraud diamond drivers have a negative relationship with anti-fraud intention and perceived fraud deterrence.

2.3 Fraud drivers, tax transparency, and environmental tax orientation

Tax is seen as a governance mechanism that signals accountability and legitimacy through an institutional theory perspective. This signal is muddied by strong fraud drivers, which create a perception of misuse and opacity in tax systems (Gallemore, 2019; Gallemore et al., 2014). Previous works indicate that poor governance and the acceptance of non-compliance lower perceptions of tax transparency and undermine tax morale, which may be associated with taxpayers' support for environmental taxation (**?**Torgler, 2007). Transparency serves as a trust-building tool that converts institutional integrity into compliant behaviors (Rezaee, 2004). In contrast, formal programmes for transparency may persist despite fraud pressure, especially under mandatory disclosure systems (Tuinsma et al., 2025). Implicit in these contrasting perspectives are indirect routes through which fraud drivers impact anti-fraud outcomes via fiscal perceptions.

- **H2:** Fraud diamond drivers are negatively related to tax transparency perception.
- **H3:** Fraud diamond drivers are inversely related to environmental tax compliance orientation.
- **H4:** Tax transparency perception mediates the relationship between fraud diamond drivers and anti-fraud intention.
- **H5:** Environmental tax compliance orientation mediates the relationship between fraud diamond drivers and anti-fraud intention.

2.4 Moderating role of audit committee strength

Agency theory highlights the audit committee's importance in reducing information asymmetry and monitoring management. Strong audit committees may mitigate rationalization and opportunity by improving internal control and oversight effectiveness (Abbott et al., 2004; Klein, 2002). Governance studies also show that audit committee expertise and independence can reinforce reporting credibility and discourage opportunism (DeZoort and Pollard, 2023). In deterrence terms, competent monitoring strengthens detection risk and attenuates fraud motives. However, audit committees may exist more in form than in substance, where independence or expertise is superficial and operates symbolically, thus diminishing moderation power (Rezaee, 2004).

- **H6:** Audit committee strength diminishes the negative association of fraud diamond drivers with anti-fraud intention.
- **H7:** Audit committee strength attenuates the negative association between fraud diamond drivers and tax transparency perception.

2.5 Research framework

This study integrates fraud drivers, taxation governance, and audit oversight. Fraud drivers influence anti-fraud intention directly and indirectly via tax transparency and environmental tax orientation, while audit committee strength moderates key relationships. This multilevel governance framework explains how institutional powers and fiscal credibility complement each other to mitigate fraud motivations in developing countries.

2.6 Hypothesis development

Based on the theoretical foundation and literature review, this study proposes a research model linking fraud drivers, tax transparency perception, environmental tax compliance orientation, and anti-fraud intention, with audit committee strength as a moderating variable. The hypotheses form a cohesive framework for empirical testing, allowing analysis of direct effects (H1–H3), indirect effects (H4–H5), and boundary conditions imposed by governance quality (H6–H7).

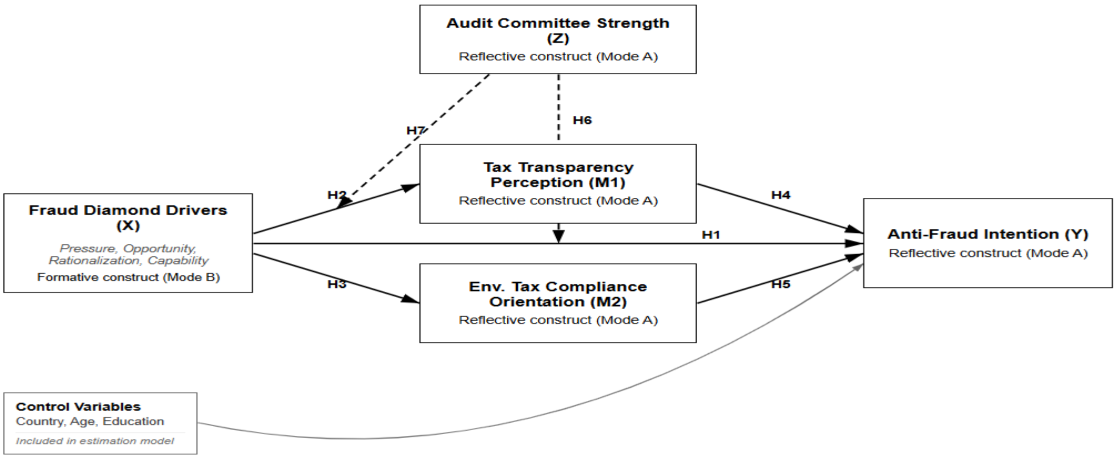

Figure 1. Conceptual Framework Model

Note: ACS denotes audit committee strength; FD represents fraud diamond components; TTP refers to tax transparency perception; ETCO indicates environmental tax compliance orientation; AFI denotes anti-fraud intention. Solid arrows indicate hypothesized relationships.

3 Methods Innovation

3.1 Research design

This study employs a quantitative cross-sectional survey design based on behavioral governance research (Hair et al., 2019). Perception-based surveys are suitable for fraud research as fraudulent acts are usually unobservable, and attitudes and intentions may better reflect their existence (Rezaee, 2004). The inclusion of tax and audit governance variables aligns with prior work on institutional and behavioral interactions in fraud prevention (Hassan et al., 2023; Othman et al., 2015).

3.2 Research object and sample

The research investigates the experiences of professionals working in public sector and environmental accounting contexts. Respondents were drawn from Malaysia, Brunei Darussalam, Thailand, and Indonesia. The sample includes lay individuals, students, academics, and accounting/auditing practitioners. Data were collected using snowball sampling via online platforms (Abbott et al., 2004)A. Demographics are presented in Appendix A.

3.3 Variable instruments

All constructs were measured using 5-point Likert-scale items adopted from prior literature. Fraud diamond drivers were specified formatively, while tax transparency perception, environmental tax compliance orientation, and anti-fraud intention were measured reflectively (Koessler et al., 2019; Hair et al., 2019; Albrecht, 2012). Conceptual equivalence across countries was assessed through content validity procedures. Full scales and sources are provided in Appendix B.

3.4 Data analysis

Hypotheses were tested using PLS-SEM, suitable for complex models with mediation and moderation, mixed indicator specifications, and non-normal data (Hair et al., 2019). The analysis assessed the measurement model first, then the structural model. Bootstrapping with 5,000 resamples was used to test significance and robustness (Preacher and Hayes, 2008b).

4 Results and Discussion

4.1 Measurement model assessment

All constructs were operationalized as single measures or composite scores prior to estimation, yielding outer loadings of 1.000. For single-item constructs and interaction terms, reliability is treated as given (Hair et al., 2019). Using means as composite indicators for ACS, TTP, ETCO, AFI, and FD is consistent with PLS-SEM guidance when validated scales are aggregated before analysis (Hair et al., 2019). Traditional reliability statistics are not applicable for formative or single/composite measures. Discriminant validity via HTMT is not reported because the model does not include higher-order reflective multi-item constructs; validity is addressed through theoretical specification (**?**).

Table 1. Outer Loadings and Indicator Reliability

Construct	Indicator	Outer Loading
ACS	ACS Composite	1.000
AFI	AFI	1.000
TTP	TTP Composite	1.000
ETCO	ETCO Composite	1.000
FD	FD Composite	1.000
Control	Age / Education / Country	1.000
Interaction	ACS × FD	1.000

Table 2. Collinearity Assessment (VIF)

Endogenous	Predictor	Inner VIF
AFI	ACS / FD / Interaction	1.014–1.028
AFI	Control (Age/Edu/Country)	1.015–1.026
TTP	ACS / FD / Interaction	1.003–1.012

Note: VIF < 3.3 indicates no multicollinearity concerns.

Table 3. Coefficient of Determination (R^2) and Predictive Relevance (Q^2)

Endogenous Construct	R^2	R^2 Adjusted	Q^2
AFI	0.016	0.003	−0.002
TTP	0.005	0.000	−0.005
ETCO	0.000	−0.001	−0.001

Table 4. Direct Effects and Hypothesis Testing Results

Path	β	t-value	p-value	Decision
ACS → AFI	0.046	1.081	0.280	Not supported
ACS → TTP	0.030	0.696	0.486	Not supported
FD → AFI	−0.010	0.259	0.796	Not supported
FD → TTP	−0.001	0.024	0.981	Not supported
ACS × FD → AFI	0.027	0.656	0.512	Not supported
Education Level → AFI	−0.087	2.113	0.035	Supported

Note: β = standardized path coefficient; $p < 0.05$ indicates significance.

4.2 Mediation effects

Table 5 reports the indirect effects and mediating roles of tax transparency perception (TTP) and environmental tax compliance orientation (ETCO). All indirect path coefficients are negligible ($|\beta| \leq 0.002$), with t-values below 1.96 and p-values exceeding 0.05. All bias-corrected confidence intervals include zero, indicating the absence of statistically significant mediation effects.

Table 6 compares direct, indirect, and total effects. Indirect effects are uniformly small and non-significant, and total effects do not differ meaningfully from direct effects. These results confirm that neither partial nor full mediation is supported.

Table 7 presents the f^2 effect sizes. All values are below 0.02, indicating small effects. The strongest relationship is Education Level → AFI ($f^2 = 0.008$), which remains substantively weak.

Table 5. Specific Indirect Effects

Indirect path	β	t	p	95% CI (BC)	Result
ACS → TTP → AFI	−0.001	0.354	0.723	[−0.012; 0.002]	Not significant
FD → ETCO → AFI	−0.001	0.267	0.790	[−0.010; 0.002]	Not significant
FD → TTP → AFI	0.000	0.015	0.988	[−0.004; 0.005]	Not significant
ACS × FD → TTP → AFI	−0.002	0.602	0.547	[−0.014; 0.002]	Not significant

Note: β = standardized indirect effect; BC = bias-corrected confidence interval.

Table 6. Total Effects and Mediation Type

Relationship	Direct β	Indirect β	Total β	Mediation
FD → AFI	−0.010	−0.001	−0.010	No mediation
ACS → AFI	0.046	−0.001	0.045	No mediation
ACS × FD → AFI	0.027	−0.002	0.025	No mediation

Table 7. Effect Size (f^2)

Structural path	f^2
FD → AFI	0.000
TTP → AFI	0.001
ETCO → AFI	0.001
ACS → AFI	0.002
Education Level → AFI	0.008

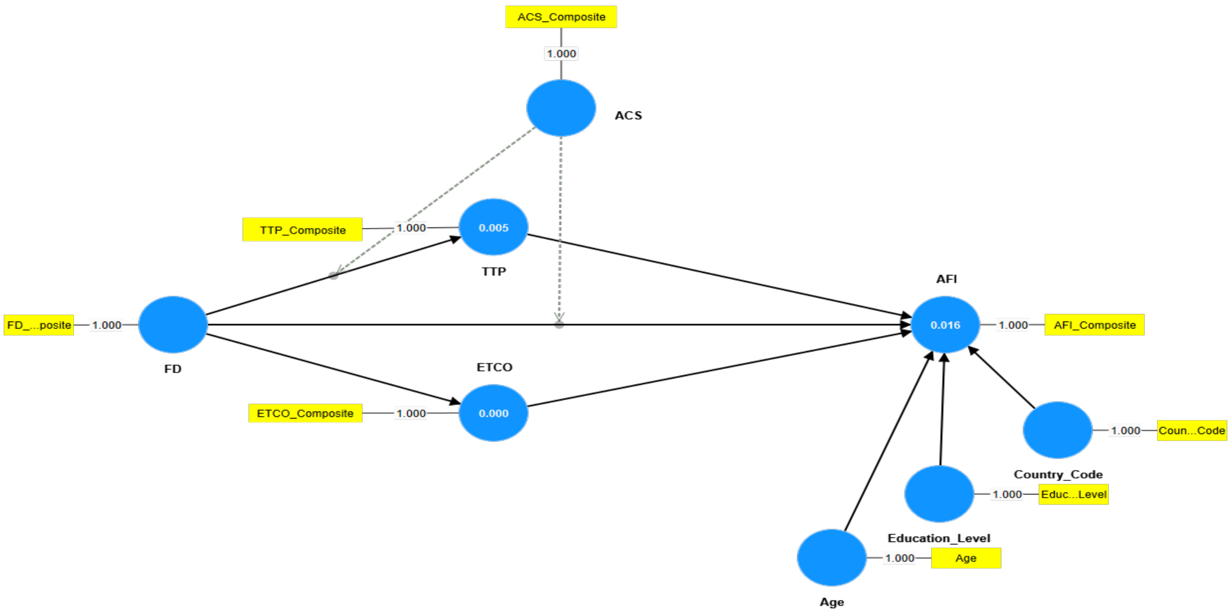

Figure 2. Measurement Model (Outer Model) Analysis from SmartPLS

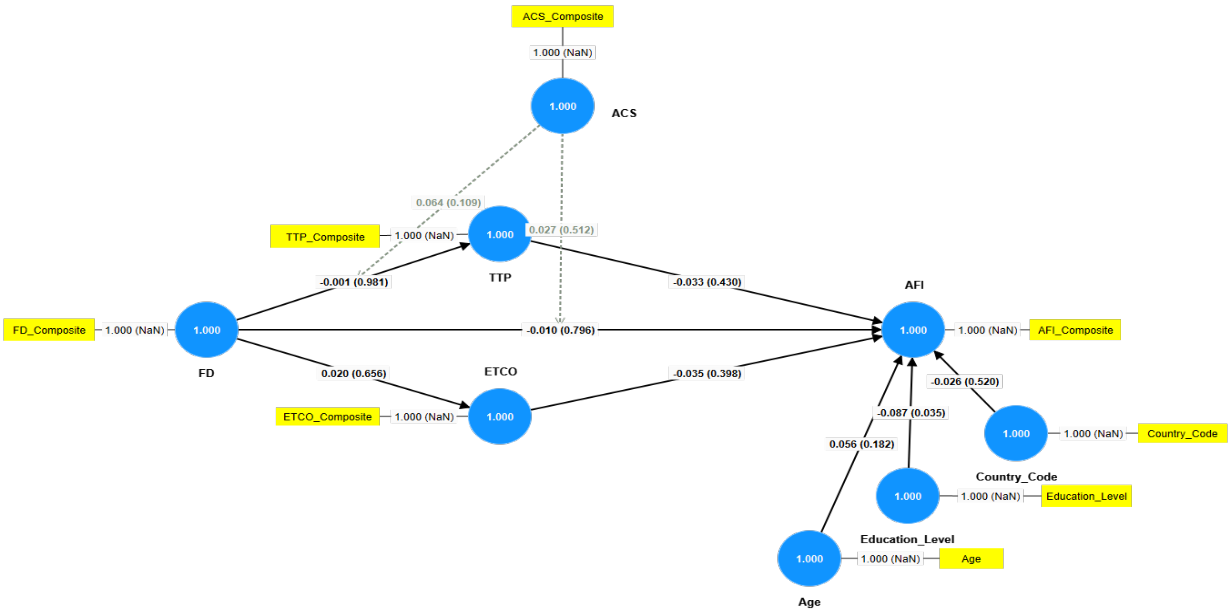

Figure 3. Structural Model (Inner Model) Path Coefficients

4.3 Moderation and multi-group analysis

The integrated results of the moderation analysis, simple slope test, and multi-group analysis are presented in Table 8. Overall, the moderation analysis indicates that audit committee strength does not serve as a significant moderator in the relationships between fraud diamond components and both anti-fraud intention and tax transparency perception. Although the estimated interaction coefficients are positive, their effects are not statistically significant, suggesting that stronger audit committees alone are insufficient to alter perceptions of fraud-related behavior.

This finding is further supported by the results of the simple slope analysis. Comparisons between high and low levels of audit committee strength reveal no significant differences in the associations between fraud drivers and either anti-fraud intention or tax transparency perception. This implies that variations in audit committee strength do not amplify or weaken the underlying behavioral mechanisms related to fraud awareness.

Moreover, the results of the multi-group analysis demonstrate a high degree of structural stability across different respondent categories, including public participants, students, and professionals. Similarly, no substantial structural differences are observed across the ASEAN countries examined. This consistent pattern suggests that the relatively low explanatory power of the model cannot be attributed to institutional, demographic, or national variations. Taken together, the findings indicate that audit committee strength does not function as an effective boundary condition in mitigating fraud-related behavioral perceptions within the studied context.

Table 8. Moderation effects

Analysis type	Path / Comparison	β (O)	t	p	95% CI (BC)	Result
Moderation	ACS × FD → AFI	0.027	0.656	0.512	[−0.057; 0.103]	Not supported
Moderation	ACS × FD → TTP	0.064	1.603	0.109	[−0.008; 0.145]	Not supported
Simple slope	FD → AFI (High vs Low ACS)	—	—	—	—	Weak, non-significant
Simple slope	FD → TTP (High vs Low ACS)	—	—	—	—	Weak, non-significant
MGA (Group)	Public vs Students	—	—	—	—	No difference
MGA (Group)	Public vs Professionals	—	—	—	—	No difference
MGA (Group)	Students vs Professionals	—	—	—	—	No difference
MGA (Country)	Indonesia vs Malaysia	—	—	—	—	No difference
MGA (Country)	Indonesia vs Thailand	—	—	—	—	No difference
MGA (Country)	Indonesia vs Brunei	—	—	—	—	No difference

Note: ACS = audit committee strength; FD = fraud diamond; AFI = anti-fraud intention; TTP = tax transparency perception; BC = bias-corrected confidence interval; MGA = multi-group analysis.

4.4 Discussion

The present study has two aims. Firstly, it seeks to investigate whether diamond drivers have a direct influence on anti-fraud intention, or whether this influence is indirect. The latter option would be through perceived tax transparency and environmental tax compliance orientation. Secondly, it will take into account the moderating effect of audit committee strength. The data demonstrate that the majority of direct, indirect and moderation effects are not statistically significant, which contradicts predictions based on fraud behaviour theory. Recent fraud perception literature suggests that fraud awareness does not necessarily lead to action, particularly in public sector and tax-related contexts. In these areas, responsibility is shared among many individuals and accountability is more collective than individual (Hassan et al., 2023; Othman et al., 2015; Rezaee, 2004). This can make people more aware of the risks involved, but this doesn't always lead to people actually taking action. People who have been asked about this sometimes say that they don't have much say in situations where the organisation they work for is doing something dishonest.

Ultimately, the negligible correlation between fraud diamond drivers and anti-fraud intention calls into question the causal logic inherent in traditional fraud theory, which posits that behavioural drivers directly result in outcomes. The findings are in line with the criticisms of the fraud triangle and fraud diamond models. The models do not describe how people react to fraud prevention. Instead, they simply describe the conditions or ways a fraud may occur (Albrecht et al., 2015; Preacher and Hayes, 2008a; Pincus, 1989). In contexts involving perception-based surveys, respondents might perceive concepts like fraud pressure, opportunity, rationalisation and ability as abstract constructs at the organisational level. This is in contrast to the individual context of decision-making. Thus, factors directly related to the commission of fraud are no longer as relevant. This is because the dependent construction is a measure of intention rather than behaviour. This is consistent with previous contentions. These have claimed that theories of fraud ought to be supplemented by institutional or moral constructs. This is in order to explain preventative motivation (Rezaee, 2004).

It is also implied that corporate governance-related perceptions alone may not be enough to mediate the impact of fraud drivers on anti-fraud intentions, since there is a lack of similar mediation effects via tax transparency perception and environmental tax compliance orientation. Transparency measures are often more symbolic of legitimacy than directly influencing behaviour, especially in new and developing institutional environments (Gallemore and Jacob, 2025; Gallemore, 2019; Kirchler et al., 2008). Tax transparency statements may be viewed by respondents as being too technical or unrealistic, and therefore not motivational. When it comes to environmental taxation, people are more likely to comply if they believe in moral standards, the influence of society, and trust in institutions, rather than if they think there is a risk of fraud which would explain why these mediating effects are weak in this paper (Deleidi et al., 2020; Glass and Newig, 2019; Hanlon and Heitzman, 2022).

The Audit Committee appears to have limited influence on perceptions of fraud. Although audit committees are widely recognised as key governance mechanisms, their effectiveness depends on visibility, power, and perceived independence (Albrecht, 2012; DeZoort and Pollard, 2023; Klein, 2002). Individuals may not be sufficiently exposed to the operations of audit committees in samples of public perceptions from multiple countries, such as the one used in this study, so that this governance mechanism has low salience. Therefore, the ways in which fraud drivers affect transparency perceptions or anti-fraud intentions are not significantly impacted by AC strength. The institutional theory of claims is supported by this, which states that formal governance structures will not directly lead to perceived legitimacy without enforcement credibility and public communication Rezaee (2004).

The lack of difference observed across countries and various respondent groups provides further evidence that small effects are structural rather than sample-based. When compared with other groups of undergraduates in ASEAN, the results for tax and governance fraud are strikingly similar, suggesting a consistent public opinion. It has been suggested that the regulation increases auditors' local liability risk, but I can find no evidence to support this. The findings of this investigation are consistent with those of other studies that have indicated a link between globalisation and the implementation of uniform audit standards worldwide, as well as a consistent digital reporting framework. This system is considered to minimise differences in reporting practices worldwide (Gallemore and Jacob, 2025; Tuinsma et al., 2025). The null findings do not detract from this study's contribution; instead, they have important theoretical significance. Consequently, the resolution of tax and environmental finance fraud can be accomplished through the implementation of conventional governance processes. However, more support may be needed, especially as the situation is still developing. To improve support, it is recommended that behavioural, cultural, and enforcement-based policies be employed. .

5 Conclusion

This study examined fraud diamond drivers, tax transparency perception, environmental tax compliance orientation, and audit committee strength in explaining anti-fraud intention in ASEAN contexts. Results indicate that fraud drivers, governance perceptions, and audit oversight do not exert statistically significant direct, mediating, or moderating effects on anti-fraud intention.

Implications

This study highlights the limited explanatory power of fraud drivers and formal governance mechanisms in perception-based public taxation contexts. Enforcement credibility, ethical leadership, public engagement, and trust-building initiatives may be necessary to translate transparency and oversight into effective anti-fraud outcomes.

Limitations and Future Research

This study is limited by its cross-sectional design and reliance on perception-based measures. Future research should adopt longitudinal or experimental designs and incorporate institutional trust, enforcement strength, cultural values, and moral identity.

Ethical and Transparency Statements

Ethical approval and consent. The study was conducted in accordance with generally accepted research ethics standards. Ethical clearance was obtained prior to data collection, and all participants provided informed consent.

Data and code availability. The data and analytical procedures supporting the findings are available from the corresponding author upon reasonable request.

Declaration of AI use. Generative artificial intelligence tools were used exclusively for language editing and grammatical refinement. All data processing, statistical analyses, and empirical interpretations were conducted by the authors without the use of AI-based analytical or decision-making systems.

Appendix A. Sample Profile and Demographic Characteristics

Table 9. Sample Profile and Demographic Characteristics ($N = 600$)

No	Variable	Category	Code	*n*	%
A. Country of Respondents					
1	Country	Indonesia	ID	150	25
2		Malaysia	MY	150	25
3		Brunei Darussalam	BN	150	25
4		Thailand	TH	150	25
	Total			**600**	**100**
B. Education Level					
5	Education	Senior High School (SMA/SMK)	EDU1	72	12
6		Diploma (D3)	EDU2	78	13
7		Bachelor's Degree (S1)	EDU3	270	45
8		Master's Degree (S2)	EDU4	150	25
9		Doctoral Degree (S3)	EDU5	30	5
	Total			**600**	**100**
C. Age Group					
10	Age	18–24 years	AGE1	168	28
11		25–34 years	AGE2	204	34
12		35–44 years	AGE3	126	21
13		45–54 years	AGE4	72	12
14		$\geq$ 55 years	AGE5	30	5
	Total			**600**	**100**
D. Occupation					
15	Occupation	Student (Accounting)	OCC1	180	30
16		Academic (Lecturer/Researcher)	OCC2	108	18
17		Auditor / Internal Auditor	OCC3	72	12
18		Accountant / Finance Staff	OCC4	72	12
19		Government Employee	OCC5	78	13
20		Private Employee	OCC6	60	10
21		SME / Entrepreneur	OCC7	24	4
22		Others	OCC8	6	1
	Total			**600**	**100**
E. Tax Experience					
23	Filing Status	Ever filed tax return (Yes)	TAXEXP1	438	73
24		Ever filed tax return (No)	TAXEXP2	162	27
	Total			**600**	**100**
25	Experience (Yrs)	0–1 years	TAXYR1	132	22
26		2–5 years	TAXYR2	216	36
27		6–10 years	TAXYR3	162	27
28		$>$ 10 years	TAXYR4	90	15
	Total			**600**	**100**
F. Environmental Accounting Exposure					
29	Training	Attended course/training (Yes)	ENVEXP1	246	41
30		Attended course/training (No)	ENVEXP2	354	59
	Total			**600**	**100**

Appendix B. Measurement Items and Construct Operationalization

Table 10. Measurement Items and Sources

No	Variable	Abbr.	Code	Measurement Item	Source
A. Fraud Diamond Drivers (FD – Formative)					

Continued on the next page.

Table 10 continued.

No	Variable	Abbr.	Code	Measurement Item	Source
1	Fraud Diamond Drivers	FD	FD1	Financial pressure increases individuals' tolerance toward fraudulent behavior.	Wolfe & Hermanson (2004)
2			FD2	Unrealistic performance targets encourage manipulation or fraud.	Albrecht et al. (2012)
3			FD3	Lifestyle and social status pressures motivate fraudulent actions.	Moyes et al. (2006)
4			FD4	Weak internal controls create opportunities for fraud to occur undetected.	COSO (2013); Othman et al. (2015)
5			FD5	Weak governance oversight increases fraud opportunities.	Abbott et al. (2004)
6			FD6	Information system weaknesses facilitate fraud concealment.	Hassan et al. (2025)
7			FD7	Fraud is justified when it becomes a common practice in organizations.	Albrecht et al. (2012)
8			FD8	Fraud can be rationalized for organizational or social benefits.	Pincus (1989)
9			FD9	Individuals with authority and expertise are more capable of committing fraud.	Wolfe & Hermanson (2004)
B. Tax Transparency Perception (TTP – Reflective)					
10	Tax Transparency Perception	TTP	TTP1	Tax information is disclosed clearly and understandably to the public.	Gallemore et al. (2014)
11			TTP2	I can trace how tax revenues are allocated to public programs.	Tuinsma et al. (2025)
12			TTP3	Government tax reporting reflects strong accountability.	Rezaee (2004)
13			TTP4	Audit results related to tax usage are publicly accessible.	Othman et al. (2015)
14			TTP5	Transparency of environmental tax spending reduces perceived fraud risk.	Rahman & Anwar (2014)
15			TTP6	Transparent tax reporting increases my trust in public institutions.	Rezaee (2004)
C. Environmental Tax Compliance Orientation (ETCO – Reflective)					
16	Environmental Tax Compliance	ETCO	ETCO1	Paying taxes is a moral responsibility.	Torgler (2007)
17			ETCO2	Compliance increases when tax systems are fair and equitable.	Kirchler et al. (2008)
18			ETCO3	Environmental taxes encourage responsible environmental behavior.	OECD (2019)
19			ETCO4	I intend to comply with tax regulations accurately and timely.	Ajzen (1991)
20			ETCO5	Tax evasion undermines environmental and public welfare programs.	Hanlon & Heitzman (2010)
21			ETCO6	People around me support honest tax compliance.	Torgler (2007)
D. Audit Committee Strength (ACS – Reflective)					
22	Audit Committee Strength	ACS	ACS1	The audit committee is independent from management influence.	Klein (2002)
23			ACS2	Audit committee members possess sufficient financial expertise.	Abbott et al. (2004)
24			ACS3	The audit committee meets regularly to address risk issues.	DeZoort et al. (2002)
25			ACS4	The audit committee actively oversees internal control effectiveness.	COSO (2013)
26			ACS5	The audit committee supports fraud reporting mechanisms.	Othman et al. (2015)
27			ACS6	Audit findings are followed up effectively.	Rezaee (2004)
E. Anti-Fraud Intention (AFI – Reflective)					
28	Anti-Fraud Intention	AFI	AFI1	I am willing to report suspected fraud if detected.	Near & Miceli (1995)
29			AFI2	I support strengthening internal controls to prevent fraud.	Othman et al. (2015)
30			AFI3	Forensic accounting should be used to investigate fraud cases.	Albrecht et al. (2012)
31			AFI4	Fraud should not be tolerated under any circumstances.	Rezaee (2004)
32			AFI5	Anti-fraud efforts increase my trust in public institutions.	Rezaee (2004)

Continued on the next page.

Table 10 continued.

No	Variable	Abbr.	Code	Measurement Item	Source
33			AFI6	Fraud in environmental tax programs must be strictly sanctioned.	OECD (2019)

References

Abbott, L.J., Parker, S., Peters, G.F., 2004. Audit committee characteristics and restatements. AUDITING: A Journal of Practice & Theory 23, 69–87. doi:doi:10.2308/aud.2004.23.1.69.

Albrecht, C., Holland, D., Malagueño, R., Dolan, S., Tzafrir, S., 2015. The role of power in financial statement fraud schemes. Journal of Business Ethics 131, 803–813. doi:doi:10.1007/s10551-013-2019-1.

Albrecht, S.L., 2012. The influence of job, team and organizational level resources on employee well-being, engagement, commitment and extra-role performance. International Journal of Manpower 33, 840–853. doi:doi:10.1108/01437721211268357.

Baghdadi, G., Podolski, E.J., Veeraraghavan, M., 2022. Ceo risk-seeking and corporate tax avoidance: Evidence from pilot ceos. Journal of Corporate Finance 76, 102282. doi:doi:10.1016/j.jcorpfin.2022.102282.

Becker, G.S., 1968. Crime and punishment: An economic approach. Journal of political economy 76, 169–217.

Deleidi, M., Iafrate, F., Levrero, E.S., 2020. Public investment fiscal multipliers: An empirical assessment for european countries. Structural Change and Economic Dynamics 52, 354–365. doi:doi:10.1016/j.strueco.2019.12.004.

DeZoort, F.T., Pollard, T.J., 2023. An evaluation of root cause analysis use by internal auditors. Journal of Accounting and Public Policy 42, 107081. doi:doi:10.1016/j.jaccpubpol.2023.107081.

Gallemore, J., 2019. Banks as tax planning intermediaries. Journal of Accounting Research 57, 169–209. doi:doi:10.1111/1475-679X.12246.

Gallemore, J., Jacob, M., 2025. Corporate tax enforcement and business activity. The Accounting Review 100, 231–260. doi:doi:10.2308/TAR-2023-0011.

Gallemore, J., Maydew, E.L., Thornock, J.R., 2014. The reputational costs of tax avoidance. Contemporary Accounting Research 31, 1103–1133. doi:doi:10.1111/1911-3846.12055.

Glass, L.M., Newig, J., 2019. Governance for achieving the sustainable development goals: How important are participation, policy coherence, reflexivity, adaptation and democratic institutions? Earth System Governance 2, 100031. doi:doi:10.1016/j.esg.2019.100031.

Hair, J.F., Risher, J.J., Sarstedt, M., Ringle, C.M., 2019. When to use and how to report the results of pls-sem. European Business Review 31, 2–24. doi:doi:10.1108/EBR-11-2018-0203.

Hanlon, M., Heitzman, S., 2022. Corporate debt and taxes. Annual Review of Financial Economics 14, 509–534. doi:doi:10.1146/annurev-financial-101221-103806.

Hassan, S.W.U., Kiran, S., Gul, S., Khatatbeh, I.N., Zainab, B., 2023. The perception of accountants/auditors on the role of corporate governance and information technology in fraud detection and prevention. Journal of Financial Reporting and Accounting 23, 5–29. doi:doi:10.1108/JFRA-05-2023-0235.

Kirchler, E., Hoelzl, E., Wahl, I., 2008. Enforced versus voluntary tax compliance: The "slippery slope" framework. Journal of Economic Psychology 29, 210–225. doi:doi:10.1016/j.joep.2007.05.004.

Klein, A., 2002. Audit committee, board of director characteristics, and earnings management. Journal of Accounting and Economics 33, 375–400. doi:doi:10.1016/S0165-4101(02)00059-9.

Koessler, A.K., Torgler, B., Feld, L.P., Frey, B.S., 2019. Commitment to pay taxes: Results from field and laboratory experiments. European Economic Review 115, 78–98. doi:doi:10.1016/j.euroecorev.2019.02.006.

Ngah, Z.A., Ismail, N., Abd Hamid, N., 2021. A cohesive model of predicting tax evasion from the perspective of fraudulent financial reporting amongst small and medium sized enterprises. Accounting Research Journal 35, 349–363. doi:doi:10.1108/ARJ-09-2020-0315.

OECD, 2024. Tax Challenges Arising from the Digitalisation of the Economy – Administrative Guidance on the Global Anti-Base Erosion Model Rules (Pillar Two). Technical Report. OECD/G20 Inclusive Framework on BEPS.

Othman, R., Aris, N.A., Mardziyah, A., Zainan, N., Amin, N.M., 2015. Fraud detection and prevention methods in the malaysian public sector: Accountants' and internal auditors' perceptions. Procedia Economics and Finance 28, 59–67. doi:doi:10.1016/S2212-5671(15)01082-5.

Pincus, K.V., 1989. The efficacy of a red flags questionnaire for assessing the possibility of fraud. Accounting, Organizations and Society 14, 153–163. doi:doi:10.1016/0361-3682(89)90039-1.

Preacher, K.J., Hayes, A.F., 2008a. Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. Behavior Research Methods 40, 879–891. URL: `https://doi.org/10.3758/BRM.40.3.879`, doi:doi:10.3758/BRM.40.3.879.

Preacher, K.J., Hayes, A.F., 2008b. Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. Behavior Research Methods 40, 879–891. doi:doi:10.3758/BRM.40.3.879.

Rezaee, Z., 2004. Restoring public trust in the accounting profession. Managerial Auditing Journal 19, 134–148. doi:doi:10.1108/02686900410509857.

Torgler, B., 2007. Tax Compliance and Tax Morale: A Theoretical and Empirical Analysis. Edward Elgar Publishing. doi:doi:10.4337/9781847207203.

Tuinsma, T., De Witte, K., Janský, P., Palanský, M., Titl, V., 2025. Effects of corporate transparency on tax avoidance: evidence from country-by-country reporting. International Tax and Public Finance 32, 1366–1398. doi:doi:10.1007/s10797-025-09885-w.

Wolfe, D.T., Hermanson, D.R., 2004. The fraud diamond: Considering the four elements of fraud. The CPA Journal 74, 38–42.

