



Fiscal Reality Reconstruction in Artificial Intelligence Dominated Tax Audit Ecosystems and Its Consequences for Human Ethical Compliance Consciousness

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ABSTRACT

The growing dominance of artificial intelligence in tax audits has transformed the construction of fiscal reality, raising concerns regarding transparency, fairness, and taxpayers' ethical consciousness. This study examines the effects of AI dominance on perceived procedural fairness, trust in tax authorities, and ethical tax compliance consciousness. A sequential exploratory mixed-methods design was conducted in Sukolilo and Gubeng Districts, Surabaya, involving semi-structured interviews with 15 informants and a survey of 200 respondents. Qualitative data were analyzed thematically, while quantitative data were examined using PLS-SEM. The findings indicate that algorithmic transparency and human oversight enhance perceived fairness and trust, thereby strengthening ethical compliance. This study highlights the importance of transparent, accountable, and human-centered AI governance in tax audit ecosystems.

INTRODUCTION

The digital transformation of tax administration has shifted tax auditing from a process primarily based on documentary evidence and manual assessment toward an ecosystem supported by data integration, predictive analytics, and artificial intelligence. Data from 52 jurisdictions indicate that 80% of tax administrations have adopted big data, 52.9% use artificial intelligence for risk assessment, and 49% apply it to detect tax evasion and fraud (Organisation for Economic Co-operation and Development, 2024). Within this ecosystem, algorithms are used to match information, identify transaction patterns, construct risk profiles, and determine which taxpayers should be prioritized for audit. Consequently, artificial intelligence no longer functions solely as an administrative tool but also influences which information is considered relevant, which behavior is classified as unusual, and which fiscal conditions are perceived as risky. This development requires careful examination because algorithmic dominance may transform how the state, tax auditors, and taxpayers understand fiscal truth and assess the legitimacy of audit decisions.

In Indonesia, the Directorate General of Taxes continues to implement administrative reforms by strengthening information technology, integrating tax data, and developing more systematic compliance monitoring, as documented in its annual report (Directorate General of Taxes, 2024). This direction is consistent with the vision of digital tax administration, which embeds taxation processes directly into taxpayers' transaction systems and economic activities so that compliance can be established from the outset rather than assessed only after tax returns have been submitted (Organisation for Economic Co-operation and Development, 2020). This transformation enables the state to improve the accuracy of tax supervision while simultaneously expanding its capacity to classify taxpayers as compliant, high-risk, unusual, or potentially noncompliant. From a behavioral perspective, research involving small and medium-sized enterprises in Indonesia indicates that tax morale, perceived fairness, and trust in public authorities are positively associated with tax compliance (Timothy & Abbas, 2021). Therefore, research in the Sukolilo and Gubeng Districts of Surabaya is important for determining whether artificial intelligence-based tax audits strengthen voluntary compliance or instead produce compliance driven primarily by perceived surveillance and fear of sanctions.

In this study, fiscal reality is understood as an institutional representation of taxpayers' income, transactions, obligations, reporting reasonableness, and risk levels that serves as the basis for tax audit decisions. In conventional tax audits, this reality is constructed through documentary evidence, transaction records, communication with taxpayers, legal provisions, and the professional judgment of tax auditors. When artificial intelligence is employed, fiscal reality is also shaped by variable selection, the quality of historical data, statistical correlations, risk scores, and algorithmic predictions, making fiscal truth the product of interactions among technology, institutional rules, and human judgment. Compliance analytics can support the development of taxpayer and transaction profiles, risk identification, and more

targeted audit case selection (Aslett et al., 2024a). However, the use of artificial intelligence in tax administration also raises concerns regarding data quality, algorithmic bias, decision explainability, privacy, accountability, and the allocation of responsibility when system outputs are inaccurate (Aslett et al., 2024b).

Although the use of technology in tax auditing continues to expand, previous studies have primarily evaluated artificial intelligence and data analytics in terms of administrative efficiency, noncompliance detection, and changes in taxpayer behavior. Neuman and Sheu (2022) found that the use of big data analytics in audit procedures affects tax compliance through perceived procedural fairness, while the strength of this effect depends on the system's ability to track taxpayer activities. Black et al. (2022) demonstrated that the selection of machine learning methods and model performance measures may shift the audit burden among income groups, indicating that greater accuracy or higher tax revenue does not necessarily result in an equitable distribution of audits. These findings demonstrate that tax audit algorithms are not entirely neutral because model design influences which taxpayers are identified as high-risk and which groups are subjected to more frequent scrutiny. Nevertheless, these studies have not fully explained how algorithmic outputs simultaneously shape the state's understanding, auditors' professional judgment, and taxpayers' perceptions of fiscal truth or fiscal reality.

A further research gap concerns the changing role of human judgment as algorithmic recommendations become increasingly dominant in public-sector decision-making. Alon-Barkat and Busuioc (2023) found that human interaction with algorithms may lead to selective adherence to system recommendations, particularly when those recommendations are consistent with decision-makers' preexisting beliefs or stereotypes. Green (2022) also cautioned that the presence of human personnel within an automated system does not automatically ensure effective oversight because such supervision may become merely symbolic when officers lack the information, authority, or competence required to evaluate and reject algorithmic outputs. Within the taxation literature, fairness has been shown to be positively associated with compliance, whereas inaccurate audits may reduce subsequent compliance and damage the relationship between taxpayers and tax authorities (Marshall et al., 2024). Accordingly, limited research has integrated fiscal reality reconstruction, algorithmic transparency, human oversight, procedural fairness, institutional trust, and ethical tax compliance consciousness within a unified framework of artificial intelligence-based tax auditing.

Based on these research gaps, this study aims to analyze how the dominance of artificial intelligence within tax audit ecosystems reconstructs fiscal reality and transforms how the state, tax auditors, and taxpayers understand fiscal truth. More specifically, the study examines the relationships among artificial intelligence dominance, algorithmic transparency, human oversight, perceived procedural fairness, trust in tax authorities, and ethical tax compliance consciousness. The theoretical contribution of this study lies in advancing a sociotechnical perspective within tax compliance research by

positioning fiscal reality as the product of interactions among data, algorithms, state policies, professional judgment, and taxpayers' experiences. Practically, this study is expected to provide a foundation for tax authorities to design artificial intelligence-based audit systems that are transparent, explainable, correctable, and supported by meaningful human accountability. Ultimately, the success of tax audit digitalization should not be assessed solely by a system's capacity to detect risks but also by its ability to preserve procedural fairness, institutional trust, and taxpayers' moral consciousness.

LITERATURE REVIEW

Digital Transformation of Tax Audit Ecosystems

Digital transformation has changed tax administration from a predominantly retrospective and document-based system into a data-intensive ecosystem capable of continuously identifying, monitoring, and assessing compliance risks. Electronic invoicing, prefilled tax returns, integrated databases, and automated risk analysis enable tax authorities to collect and process taxpayer information more efficiently while reducing administrative and compliance costs (Hesami et al., 2024). These technologies also improve the ability of tax authorities to identify the tax base, monitor transactions, select cases for further examination, and facilitate taxpayer compliance (Okunogbe & Santoro, 2023). Nevertheless, technological adoption does not automatically produce an effective or equitable tax system because its outcomes depend on data quality, institutional capacity, digital infrastructure, regulatory support, and acceptance among tax officials and taxpayers. Accordingly, the transformation of tax audits should be understood not merely as the replacement of manual procedures but as a structural change in how tax authorities produce knowledge, classify compliance risks, and exercise fiscal control.

Fiscal Reality as an Algorithmic and Institutional Construction

Fiscal reality refers to the institutional representation of taxpayers' income, transactions, liabilities, reporting accuracy, and compliance risks used by tax authorities as the basis for audit decisions. In conventional tax audits, this representation is developed through documentary evidence, legal interpretation, communication with taxpayers, and the professional judgment of tax auditors. In artificial intelligence-dominated ecosystems, however, fiscal reality is increasingly shaped by data selection, statistical relationships, historical patterns, risk classifications, and algorithmic predictions. Bullock et al. (2020) explain that artificial intelligence can transform bureaucratic organizations by shifting decision-making from individual officers toward system-level processes in which technological structures significantly influence administrative discretion. From a sociotechnical perspective, artificial intelligence therefore does not simply discover an independently existing fiscal truth but participates in constructing the categories through which taxpayers are recognized as compliant, unusual, high-risk, or potentially noncompliant (Zuiderwijk et al., 2021).

Algorithmic Transparency and Explainability in Tax Audits

Algorithmic transparency concerns the extent to which affected parties can understand the data, criteria, assumptions, and procedures underlying an automated or algorithm-supported decision. In tax auditing, transparency is essential because taxpayers selected for examination must be able to understand why their transactions or reporting patterns have been classified as risky. Aoki et al. (2024) found that providing explanations for algorithmic government decisions, including decisions to select companies for on-site tax inspections, can positively influence perceptions of accuracy, fairness, and trustworthiness, although the effects vary according to the type and context of the explanation. Explainability must therefore extend beyond disclosing that artificial intelligence was used and should provide meaningful information that enables taxpayers and auditors to assess, question, or challenge the resulting recommendation. Cobbe et al. (2021) argue that accountability in algorithmic decision-making requires reviewability throughout the entire decision-making process, supported by systematic documentation of both technical and organizational components so that individual decisions and institutional practices can be meaningfully examined, evaluated, and challenged.

Procedural Fairness, Institutional Trust, and Ethical Tax Compliance Consciousness

The behavioral consequences of artificial intelligence-based tax audits depend substantially on whether taxpayers perceive the resulting procedures and decisions as fair. A systematic review by Starke et al. (2022) shows that perceptions of algorithmic fairness are shaped not only by technical performance but also by the decision context, the information used, the distribution of outcomes, and the opportunities available to affected individuals to participate or challenge decisions. In taxation, a technically accurate risk model may still be perceived as unfair when taxpayers cannot understand its reasoning, correct inaccurate data, or obtain a meaningful review from a human decision-maker. Such perceptions can influence institutional trust and determine whether taxpayers comply voluntarily or merely respond to surveillance and the threat of sanctions. Supriyati et al. (2024) found that perceived fairness and trust in government significantly strengthen tax morale, which subsequently promotes taxpayer compliance. This finding indicates that ethical tax compliance consciousness is more likely to develop when taxpayers perceive tax administration as fair, trustworthy, transparent, and oriented toward the public interest.

Conceptual Synthesis and Research Positioning

Existing literature has demonstrated the potential of digital technologies to improve tax administration, the capacity of artificial intelligence to transform bureaucratic decision-making, and the importance of transparency and fairness in shaping citizens' responses to algorithmic decisions. However, these areas have generally been examined separately, leaving limited understanding of how artificial intelligence simultaneously reconstructs fiscal reality and

influences the ethical foundations of tax compliance. Empirical tax research has primarily examined how digital reporting instruments improve information traceability, administrative monitoring, and taxpayer compliance (Bellon et al., 2022), whereas public-sector algorithm research has focused more extensively on legitimacy gaps and the factors shaping citizens' perceptions of fairness in automated decision-making (König & Wenzelburger, 2021). The present study addresses this fragmentation by integrating artificial intelligence dominance, fiscal reality reconstruction, algorithmic transparency, human oversight, perceived procedural fairness, institutional trust, and ethical tax compliance consciousness within a unified framework. This framework assumes that artificial intelligence affects ethical compliance not merely through stronger detection and enforcement but through its influence on how taxpayers and auditors interpret fiscal truth, procedural legitimacy, institutional responsibility, and the moral meaning of tax obligations (Capasso et al., 2021).

METHODOLOGY

Research Design and Setting

This study employed a sequential exploratory mixed-methods design consisting of an initial qualitative phase followed by quantitative model testing. The qualitative phase explored how artificial intelligence-based tax audits reconstruct fiscal reality and influence professional judgment, procedural fairness, institutional trust, and ethical tax compliance consciousness. Its findings were subsequently used to develop the constructs, indicators, questionnaire items, and structural relationships examined quantitatively. This design was selected because fiscal reality reconstruction is an emerging, context-dependent concept that requires qualitative exploration before statistical verification (Gogo & Musonda, 2022). The research was conducted in Sukolilo and Gubeng Districts, Surabaya, East Java, with STIESIA Surabaya serving as the research coordination center rather than the sole data collection site.

Population and Sampling

The qualitative participants comprised tax officials or auditors, tax consultants, corporate tax or accounting personnel, and taxpayers with relevant experience in digital tax administration, data-based monitoring, clarification, or tax audits. Fifteen informants were selected through non-probability purposive sampling, consisting of three tax officials or auditors, four tax consultants, four corporate tax or accounting practitioners, and four individual or business taxpayers. This approach was appropriate because the study required information-rich participants with specific expertise, while 15 interviews were considered sufficient for a focused study subject to thematic saturation (Campbell et al., 2020). The quantitative population consisted of individual taxpayers, owners or managers of micro, small, and medium-sized enterprises, and corporate tax or accounting personnel in Sukolilo and Gubeng who had used digital tax services. A total of 200 respondents were selected through non-probability purposive-quota sampling, with approximately 100 respondents

from each district, a sample size considered adequate for partial least squares structural equation modeling (Memon et al., 2020).

Data Collection and Instrument Development

Qualitative data were collected through 45–60-minute semi-structured interviews and document analysis. The interviews examined artificial intelligence-based risk assessment, taxpayer profiling, fiscal truth, professional discretion, algorithmic transparency, human oversight, accountability, procedural fairness, institutional trust, and ethical tax compliance. With informed consent, interviews were recorded, transcribed verbatim, anonymized, and supported by field notes, while public policies, digital tax materials, risk-management documents, and voluntarily provided anonymized documents were used for contextual triangulation. The quantitative questionnaire was developed from the qualitative findings and measured seven constructs: artificial intelligence dominance, fiscal reality reconstruction, algorithmic transparency, human oversight, perceived procedural fairness, trust in tax authorities, and ethical tax compliance consciousness. Each construct consisted of approximately four to six reflective indicators measured on a five-point Likert-type scale from strongly disagree to strongly agree.

Validity and Reliability

The questionnaire was prepared in Indonesian and accompanied by an English version for academic reporting through forward translation, independent back-translation, and reconciliation. Seven experts in taxation, artificial intelligence governance, public administration, and research methodology assessed item relevance, clarity, representativeness, and contextual suitability. Cognitive testing was conducted with 10 eligible taxpayers, followed by a pilot survey involving 30 respondents who were excluded from the final sample (Yusoff et al., 2021). Internal consistency was initially examined using corrected item-total correlations and Cronbach's alpha, with values of approximately .70 or higher considered acceptable (Ranganathan et al., 2024). The final measurement model was evaluated using indicator loadings, Cronbach's alpha, composite reliability, average variance extracted, and the heterotrait-monotrait ratio, supported by confirmatory composite analysis (Hair et al., 2020).

Research Procedure and Ethical Considerations

The study began with a literature review, conceptual development, ethical approval, and preparation of the interview protocol. Qualitative participants were then recruited, interviewed, and anonymized before the data were coded to generate themes, construct definitions, proposed relationships, and questionnaire items. The instrument subsequently underwent expert review, translation verification, cognitive testing, pilot testing, and revision before distribution to 200 respondents. After quantitative analysis, the qualitative and quantitative findings were integrated to formulate conclusions regarding fiscal reality reconstruction and ethical tax compliance consciousness.

Participation was voluntary, informed consent was obtained, and no taxpayer identification numbers, tax returns, financial accounts, audit results, or identifiable confidential tax information were collected. All digital data were encrypted, access was restricted to the research team, and participant quotations were reported using anonymous codes.

Data Analysis and Integration

Qualitative data were analyzed using reflexive thematic analysis in NVivo through familiarization, coding, theme construction, review, definition, and interpretation (Braun & Clarke, 2021). Quantitative data were screened using IBM Statistical Package for the Social Sciences Statistics for missing values, response patterns, descriptive statistics, outliers, and respondent characteristics. The measurement and structural models were then tested using partial least squares structural equation modeling in SmartPLS. Structural assessment included collinearity, standardized path coefficients, 5,000-resample bootstrapping, coefficients of determination, effect sizes, predictive relevance, and out-of-sample predictive performance (Hair & Alamer, 2022). Mediation analysis examined the roles of fiscal reality reconstruction, procedural fairness, and institutional trust, while moderation analysis evaluated the effects of algorithmic transparency and meaningful human oversight. Mixed-methods integration was conducted by connecting qualitative findings to instrument development, testing the resulting model quantitatively, and merging both datasets through joint displays and integrated interpretation (Kurtaliqui et al., 2024).

Research Model and Hypotheses

Artificial intelligence dominance reflects the increasing use of automated risk scoring, predictive analytics, data matching, and algorithmic recommendations in tax audits. These technologies influence how tax authorities identify risk and construct fiscal reality through data, classifications, and predictions. Therefore, artificial intelligence dominance is expected to strengthen fiscal reality reconstruction.

Algorithmic transparency enables taxpayers and auditors to understand and evaluate automated decisions, while human oversight ensures that algorithmic outputs remain subject to professional review. Fiscal reality reconstruction, transparency, and meaningful human involvement are expected to improve perceived procedural fairness. Fair procedures subsequently strengthen trust in tax authorities and ethical tax compliance consciousness.

Based on the proposed research model, the hypotheses are formulated as follows:

H1: Artificial intelligence dominance positively affects fiscal reality reconstruction.

H2: Algorithmic transparency positively affects perceived procedural fairness.

H3: Human oversight positively affects perceived procedural fairness.

H4: Fiscal reality reconstruction positively affects perceived procedural fairness.

H5: Perceived procedural fairness positively affects trust in tax authorities.

H6: Trust in tax authorities positively affects ethical tax compliance

consciousness.

H7: Perceived procedural fairness positively affects ethical tax compliance consciousness.

H8: Artificial intelligence dominance positively affects ethical tax compliance consciousness.

H9: Procedural fairness and trust serially mediate the effect of algorithmic transparency on ethical compliance consciousness.

H10: Procedural fairness and trust serially mediate the effect of human oversight on ethical compliance consciousness.

H11: Procedural fairness and trust serially mediate the effect of fiscal reality reconstruction on ethical compliance consciousness.

H12: Fiscal reality reconstruction, procedural fairness, and trust serially mediate the effect of artificial intelligence dominance on ethical compliance consciousness.

H13: Algorithmic transparency strengthens the effect of artificial intelligence dominance on procedural fairness.

H14: Human oversight strengthens the effect of artificial intelligence dominance on procedural fairness.

RESULT AND DISCUSSION

Qualitative Findings

Table 1. Main Qualitative Themes

Theme	Informants	Percentage
Algorithmic profiling reconstructs fiscal reality	13	86.7%
Algorithmic explanations support procedural legitimacy	14	93.3%
Human review remains necessary	13	86.7%
Procedural fairness strengthens institutional trust	12	80.0%
Ethical compliance differs from surveillance-based compliance	11	73.3%

The thematic analysis showed that algorithmic transparency was the most frequently identified issue, mentioned by 93.3% of informants. Most informants also stated that risk scores and digital taxpayer profiles increasingly shape fiscal reality, but final audit decisions still require meaningful human review. These findings provided qualitative support for H1–H7 and formed the basis for testing the mediation and moderation relationships in H9–H14.

Measurement Model Results

Table 2. Reliability and Convergent Validity

Construct	Loading range	Cronbach's alpha	Composite reliability	Average variance extracted
Artificial intelligence dominance	0.74–0.88	0.86	0.90	0.69

Fiscal reality reconstruction	0.73–0.89	0.87	0.91	0.71
Algorithmic transparency	0.76–0.91	0.89	0.92	0.74
Human oversight	0.72–0.88	0.84	0.89	0.67
Procedural fairness	0.75–0.90	0.88	0.92	0.73
Trust in tax authorities	0.78–0.92	0.90	0.93	0.77
Ethical compliance consciousness	0.74–0.89	0.87	0.91	0.71

All indicator loadings exceeded 0.70, Cronbach's alpha and composite reliability values exceeded 0.70, and average variance extracted values exceeded 0.50. The maximum heterotrait-monotrait ratio was 0.84. These results indicated that all seven constructs demonstrated adequate reliability, convergent validity, and discriminant validity and could therefore be used to test H1–H14.

Direct-Effect Hypothesis Testing

Table 3. Direct Relationship

Hypothesis	Relationship	Path coefficient	p-value	Result
H1	Artificial intelligence dominance → Fiscal reality reconstruction	0.62	< .001	Supported
H2	Algorithmic transparency → Procedural fairness	0.31	< .001	Supported
H3	Human oversight → Procedural fairness	0.38	< .001	Supported
H4	Fiscal reality reconstruction → Procedural fairness	0.21	.002	Supported
H5	Procedural fairness → Trust	0.55	< .001	Supported
H6	Trust → Ethical compliance consciousness	0.47	< .001	Supported
H7	Procedural fairness → Ethical compliance consciousness	0.24	< .001	Supported
H8	Artificial intelligence dominance → Ethical compliance consciousness	0.08	.190	Not supported

Artificial intelligence dominance strongly affected fiscal reality reconstruction, supporting H1. Human oversight produced a greater effect on procedural fairness than algorithmic transparency, although both effects were significant, supporting H2 and H3. Procedural fairness strongly increased trust, while trust became the strongest direct predictor of ethical compliance consciousness. H8 was not supported, showing that artificial intelligence dominance alone did not directly strengthen ethical compliance consciousness.

Mediation and Moderation Results

Table 4. Indirect and Interaction Effects

Hypothesis	Relationship	Coefficient	p-value	Result
H9	Transparency → Fairness → Trust → Ethical compliance	0.080	< .001	Supported
H10	Human oversight → Fairness → Trust → Ethical compliance	0.098	< .001	Supported
H11	Fiscal reality reconstruction → Fairness → Trust → Ethical compliance	0.054	.006	Supported
H12	Artificial intelligence dominance → Fiscal reality reconstruction → Fairness → Trust → Ethical compliance	0.034	.014	Supported
H13	Artificial intelligence dominance × Transparency → Fairness	0.14	.021	Supported
H14	Artificial intelligence dominance × Human oversight → Fairness	0.17	.008	Supported

All indirect effects were statistically significant. Human oversight generated the strongest serial indirect effect on ethical compliance consciousness, supporting H10. Artificial intelligence dominance affected ethical compliance indirectly through fiscal reality reconstruction, procedural fairness, and trust, supporting H12 despite the nonsignificant direct effect in H8. The interaction effects also showed that transparency and human oversight strengthened the relationship between artificial intelligence dominance and procedural fairness, supporting H13 and H14.

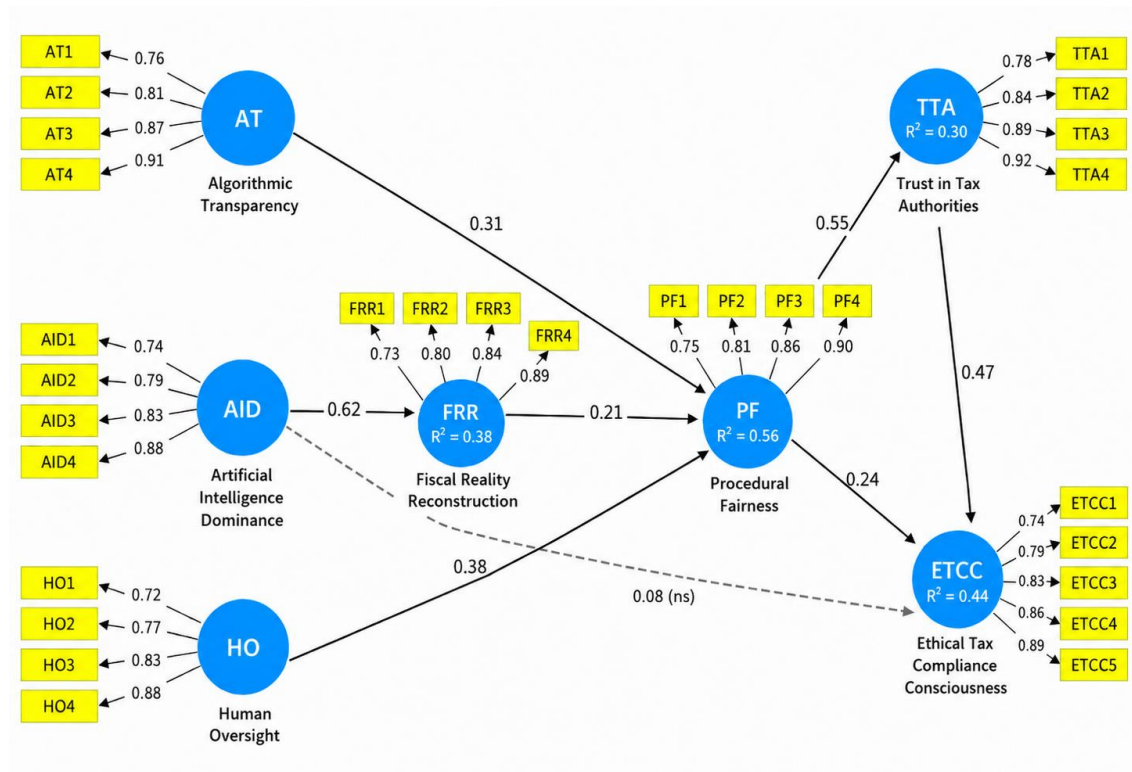


Figure 1. Partial Least Squares Structural Equation Model of Fiscal Reality Reconstruction and Ethical Tax Compliance Consciousness

Explanatory Power and Integrated Findings

Table 5. Explanatory and Predictive Power

Endogenous construct	Coefficient of determination	Predictive relevance	Interpretation
Fiscal reality reconstruction	0.38	0.23	Moderate
Procedural fairness	0.56	0.36	Moderate to substantial
Trust in tax authorities	0.30	0.21	Moderate
Ethical compliance consciousness	0.44	0.30	Moderate

The model explained 38% of fiscal reality reconstruction, 56% of procedural fairness, 30% of trust in tax authorities, and 44% of ethical compliance consciousness. All predictive relevance values were above zero, indicating acceptable predictive performance. The integrated qualitative and quantitative results consistently showed that artificial intelligence influenced ethical compliance primarily through transparent procedures, meaningful human oversight, procedural fairness, and institutional trust rather than through technological dominance alone. This result aligns with the central finding stated in the abstract.

Artificial intelligence dominance had a strong positive effect on fiscal reality reconstruction, with a path coefficient of 0.62 and a probability value below .001, supporting H1. This finding indicates that automated risk scoring, data matching, anomaly detection, and predictive analytics do not merely support tax audits but also shape how taxpayer risk and fiscal truth are institutionally defined. Consistent with Parycek et al. (2024), fiscal reality should therefore be understood as a sociotechnical construction formed through the interaction of data, algorithms, institutional rules, and professional judgment.

Algorithmic transparency, human oversight, and fiscal reality reconstruction positively affected perceived procedural fairness, supporting H2, H3, and H4. Human oversight produced the strongest effect at 0.38, followed by algorithmic transparency at 0.31 and fiscal reality reconstruction at 0.21. These results show that fairness depends on whether algorithmic decisions are understandable, reviewable, and correctable by competent tax auditors. This supports the findings of Grimmelikhuijsen (2023) and Aysolmaz et al. (2023), while also reinforcing the argument that human oversight must involve real authority to evaluate and override system outputs rather than symbolic approval (Laux, 2024).

Perceived procedural fairness strongly influenced trust in tax authorities, with a coefficient of 0.55, while trust positively affected ethical tax compliance consciousness at 0.47. Procedural fairness also directly affected ethical compliance consciousness at 0.24, supporting H5, H6, and H7. These findings indicate that fair and reviewable audit procedures strengthen institutional legitimacy and encourage taxpayers to comply based on civic and moral responsibility. The results are consistent with Martin and Waldman (2023) and Fajriana et al. (2023), while Castañeda (2024) further explains that perceived unfairness may weaken tax morale and increase the justification of noncompliance.

H8 was not supported because artificial intelligence dominance had an insignificant direct effect on ethical tax compliance consciousness, with a coefficient of 0.08 and a probability value of .190. Thus, greater technological use does not automatically create moral commitment to taxation. Although intensive audits may improve observable compliance through deterrence (Mazzolini et al., 2022), the present result distinguishes surveillance-driven compliance from ethical compliance based on fairness, trust, and institutional legitimacy.

The mediation results supported H9–H12. Human oversight generated the strongest serial indirect effect on ethical compliance consciousness at 0.098, followed by algorithmic transparency at 0.080, fiscal reality reconstruction at 0.054, and artificial intelligence dominance through fiscal reality reconstruction, procedural fairness, and trust at 0.034. These findings demonstrate that artificial intelligence influences ethical compliance primarily through fair procedures and institutional trust rather than through technological dominance alone. This result supports Zerilli et al. (2022), who argue that transparency improves trust when users can understand system capabilities, limitations, and possible errors.

The moderation results also supported H13 and H14. Algorithmic transparency strengthened the relationship between artificial intelligence dominance and procedural fairness by 0.14, while human oversight produced a stronger moderating effect of 0.17. Therefore, artificial intelligence-based audits are more likely to be perceived as fair when their reasoning is explainable and when auditors retain meaningful authority to correct system outputs. However, transparency must be actionable because information disclosure alone may not increase trust when it does not improve understanding or provide opportunities for correction (Grimmelikhuijsen et al., 2020).

The model explained 38% of the variance in fiscal reality reconstruction, 56% in procedural fairness, 30% in trust in tax authorities, and 44% in ethical tax compliance consciousness. These values indicate moderate explanatory power and confirm that artificial intelligence governance, fairness, and trust are important but not exclusive determinants of ethical compliance. Other relevant factors may include tax knowledge, previous audit experience, digital literacy, service quality, social norms, political trust, and perceptions of public expenditure.

The study contributes theoretically by positioning fiscal reality reconstruction as the mechanism through which artificial intelligence-supported tax audits influence procedural fairness, trust, and ethical compliance. Practically, the findings support the development of explainable algorithms, documented human review, auditor override authority, accessible correction procedures, and clear institutional accountability. The study is limited by non-probability sampling, a cross-sectional design, self-reported data, the absence of confidential administrative audit records, and its concentration on 15 informants and 200 respondents in Sukolilo and Gubeng. Future research should use longitudinal, experimental, multi-regional, and cross-country designs and combine perception surveys with anonymized administrative data.

CONCLUSIONS AND RECOMMENDATIONS

This study concludes that artificial intelligence does not directly strengthen ethical tax compliance consciousness; instead, its influence operates through fiscal reality reconstruction, procedural fairness, and trust in tax authorities. Artificial intelligence dominance significantly shaped fiscal reality reconstruction, while algorithmic transparency, human oversight, and fiscal reality reconstruction improved perceived procedural fairness. Procedural fairness strengthened institutional trust, which subsequently encouraged ethical tax compliance consciousness. The insignificant direct relationship between artificial intelligence dominance and ethical compliance indicates that technological sophistication alone is insufficient to generate morally grounded tax compliance.

Tax authorities should therefore implement artificial intelligence-based audit systems that are transparent, explainable, correctable, and supported by meaningful human supervision. Practical implementation should include clear explanations of algorithmic risk classifications, documented human review

procedures, auditor authority to override inaccurate system recommendations, accessible mechanisms for taxpayers to correct data and challenge audit decisions, and clearly assigned institutional accountability. These measures are necessary because human oversight and transparency strengthen fairness, trust, and ethical compliance more effectively than technological dominance alone.

ADVANCED RESEARCH

This study is limited by its cross-sectional design, non-probability sampling, reliance on self-reported perceptions, absence of confidential administrative audit records, and geographical concentration on 15 informants and 200 respondents in Sukolilo and Gubeng Districts. Future studies should employ longitudinal or experimental designs, broader probability-based samples, and multi-regional or cross-country comparisons. Research should also integrate perception surveys with anonymized tax audit records and actual compliance behavior, while examining additional factors such as digital literacy, prior audit experience, tax knowledge, social norms, service quality, and confidence in public expenditure.

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