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Beyond Leadership: What Drives Auditor Performance in Surabaya

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ABSTRACT
Purpose: *Public accounting firms depend on individual auditors to protect audit quality, yet Indonesian public accounting firms continue to report uneven auditor performance despite growing regulatory attention to competence and ethics. This study examines how leadership style, work motivation, and work discipline jointly shape the performance of auditors employed at public accounting firms in Surabaya City, a secondary hub for the profession outside Jakarta.*
Method: *A quantitative, explanatory survey design was used. Questionnaires containing five-point Likert-scale items were distributed to auditors working at public accounting firms registered in Surabaya, yielding 84 usable responses. Data were analyzed with partial least squares structural equation modeling, covering measurement model evaluation, discriminant validity assessment, and structural path testing supported by bootstrapping with 3,000 resamples.*
Findings: *Work motivation and work discipline each exerted a strong, statistically significant, positive influence on auditor performance and together explained an unusually large share of its variance. Leadership style, in contrast, showed a small and only marginally significant negative association with performance once motivation and discipline were controlled for. Motivation and discipline were also found to overlap substantially in how respondents perceived them, a pattern that qualifies the strong path estimates.*
Implication: *For public accounting firm leaders, the results suggest that day-to-day motivational practices and disciplined work routines may matter more for auditor output than leadership style framed in the abstract, and that firms should invest in structured motivation and discipline programs rather than assuming a single leadership approach will lift performance on its own.*
Originality: *Unlike prior studies that examine leadership, motivation, or discipline separately, this study models all three simultaneously against auditor performance using partial least squares structural equation modeling in an under-studied regional audit market, and it reports the discriminant validity limits of the motivation and discipline constructs transparently rather than presenting an artificially clean result.*

Keywords: *Leadership style, work motivation, work discipline, auditor performance, public accounting firms.*

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1. INTRODUCTION

The credibility of financial reporting rests, in the end, on the individual auditor who signs off on it. Capital markets, tax authorities, banks, and business owners all rely on the opinion an auditor forms after examining a client's records, so when that opinion is careless or poorly supported, the damage spreads well beyond the audited firm. Indonesia has expanded its public accounting profession steadily over the past decade, yet the number of registered public accountants remains small relative to the size of the economy, with only 1,464 active public accountants and 472 public accounting firms recorded nationwide as of early 2023, a ratio of roughly one accountant for every 121,792 people (Anggraeni, 2023). Surabaya, as the largest urban economy in East Java and the second largest metropolitan area in the country, hosts a meaningful share of these firms, yet it receives far less research attention than Jakarta, leaving firm leaders in the city with little locally grounded evidence to guide how they manage their audit staff.

Auditor performance, understood as the extent to which an auditor completes assigned engagements accurately, efficiently, and in accordance with professional standards, has been linked in the literature to a wide range of antecedents, from role conflict and role ambiguity to competence, independence, and organizational commitment (Sangkala et al., 2024; Hernando et al., 2024). Three antecedents in particular recur across human resource and organizational behavior research on knowledge-intensive professions: leadership style, work motivation, and work discipline. Leadership style shapes how audit teams are directed, coached, and held accountable; work motivation determines how much discretionary effort an auditor is willing to invest beyond the minimum required by a checklist; and work discipline governs whether audit procedures, deadlines, and documentation standards are actually followed under time pressure. Each of these three factors has been studied on its own, in relation to employee or auditor performance, but studies that model all three together, using a method suited to reflective multi-item constructs, remain comparatively rare in the Indonesian audit context.

Prior Indonesian studies present a mixed and sometimes contradictory picture of how leadership style relates to auditor performance. Some report a positive and significant effect of leadership style on auditor or audit-related outcomes (Khasanah et al., 2023), while others find that leadership style loses its explanatory power once variables such as workload, independence, or organizational commitment are considered, and even that leadership style has no significant direct effect on auditor performance at all (Hukom et al., 2024; Nurhayati et al., 2026). Motivation, by contrast, is consistently reported as a strong driver of auditor and employee performance, whether it operates directly or as a mediating mechanism between stressors such as workload and stress on one side and performance on the other (Jatnika & Yulianti, 2024; Kurnia, 2025; Arsandi & Latrini, 2025). Work discipline shows a similarly consistent, positive association with employee performance across manufacturing, public service, and audit settings (Sugiyardi et al., 2022; Susandi & Listiani, 2025; Nuryandi & Indiyati, 2026). What is missing from this literature is a study that places all three predictors side by side in a single structural model, tests them against a sample of practicing auditors rather than administrative or manufacturing employees, and evaluates the resulting measurement model rigorously enough to reveal whether these constructs are as empirically distinct as their labels suggest.

This study addresses that gap using data collected from 84 auditors working at public accounting firms in Surabaya City. It applies partial least squares structural equation modeling, a variance-based approach well-suited to models with multiple reflectively measured latent constructs and a moderate sample size (Hair et al., 2022; Hair & Alamer, 2022). Beyond estimating the three hypothesized paths, the study evaluates convergent validity, reliability, and discriminant validity in full, including the heterotrait monotrait ratio, recommended as a stricter alternative to the traditional Fornell-Larcker criterion (Henseler et al., 2015). This measurement level scrutiny matters because leadership, motivation, and discipline are conceptually related constructs that respondents may struggle to distinguish when answering a self-report questionnaire, and a study that skips this step risks reporting structural paths that look impressive but rest on a measurement model that does not actually separate the constructs it claims to compare.

This study contributes to the literature in three concrete ways. First, it is among the first to model leadership style, work motivation, and work discipline simultaneously against auditor performance for a sample of practicing auditors outside Jakarta, extending a literature that has so far concentrated heavily on the capital and on government audit institutions. Second, it applies a full partial least squares structural equation modeling protocol, including bootstrapped significance testing and both the Fornell-Larcker and heterotrait monotrait discriminant validity criteria, rather than relying on simple regression of summed scores, which allows the measurement model itself, and not only the structural paths, to be scrutinized. Third, it reports the resulting discriminant validity concerns candidly, treating them as a substantive finding about how Indonesian auditors perceive motivation, discipline, and performance rather than as a technical nuisance to be hidden, which is a form of transparency still uncommon in the regional survey-based accounting literature.

The practical stakes of this question are not abstract for firm leadership. Human resource budgets at small and mid-sized public accounting firms are limited, and a partner deciding whether to invest scarce training funds in leadership workshops, in performance incentive schemes, or in stricter procedural controls needs some evidence, even locally grounded and imperfect evidence, about which lever is more likely to move auditor output. A study that tests all three levers together, in the same sample, using the same performance measure, offers firm leaders a more directly comparable basis for that decision than three separate studies conducted in three different settings with three different instruments.

The remainder of this article proceeds as follows. The next section reviews the theoretical and empirical literature on auditor performance, leadership style, work motivation, and work discipline, and develops three hypotheses together with a conceptual framework. The following section describes the research method, including the sample, measurement instrument, and the partial least squares structural equation modeling procedure. The results and discussion section then reports the measurement model, the discriminant validity assessment, and the structural model, and interprets each finding against the existing literature. The final section concludes with theoretical and practical implications, acknowledges the limitations of the study, most notably the discriminant validity concerns between motivation and discipline, and outlines directions for future research.

2. LITERATURE REVIEW

This section reviews the concepts underlying the four constructs examined in this study, namely auditor performance, leadership style, work motivation, and work discipline, and develops the hypotheses that connect them.

2.1. Auditor Performance

Auditor performance refers to the quality and quantity of work an auditor produces relative to professional standards and the responsibilities assigned by the engagement partner, including timely completion of fieldwork, accurate application of auditing standards, sound professional judgment, and clear documentation that would allow another auditor to follow the same reasoning. Because auditing is a judgment-intensive, largely unsupervised activity carried out under deadline pressure, performance depends not only on technical competence but also on how the individual is led, how motivated the individual feels, and how consistently the individual follows the firm's internal procedures (Sangkala et al., 2024). Recent Indonesian studies link auditor performance to role conflict, role ambiguity, ethical sensitivity, professionalism, independence, and professional ethics, generally finding that role-related stressors reduce performance while professionalism, independence, and ethical conduct raise it (Sangkala et al., 2024); (Isnaini et al., 2026); (Sari & Januarti, 2024). Government sector evidence points in a similar direction, showing that information technology use and role clarity, rather than competence or organizational commitment alone, are what significantly move auditor performance in some settings (Hernando et al., 2024), while human capital investment is repeatedly identified as a central lever for audit quality more broadly (Aswar et al., 2025). Outside Indonesia, job satisfaction built on both intrinsic factors, such as achievement and recognition, and extrinsic factors, such as company policy and supervisory relationships has been shown to raise auditor performance in the Saudi Arabian context, lending support to the idea that psychological and organizational conditions, not technical training alone, drive how well an auditor performs (Hakami, 2024).

Two implications follow from this body of work for the present study. First, auditor performance is best treated as a multiply determined outcome rather than the product of any single factor, which justifies including leadership style, motivation, and discipline together in one model rather than testing each in isolation. Second, because most of the studies cited above measure performance through the auditor's own self assessment, as this study also does, comparability with the existing literature requires accepting the same self report limitation that those studies carry, a point revisited in the limitations section once the measurement results are known.

2.2. Leadership Style

Leadership style describes the relatively stable pattern of behavior a supervisor or partner uses to direct, motivate, and coordinate subordinates, ranging from directive and task-oriented approaches to participative, coaching-oriented, and transformational approaches. Path goal theory frames the leader's role as clarifying the path to valued outcomes and removing obstacles along the way, implying that an effective leader adapts style to the follower's needs and the nature of the task, which in an audit setting means balancing structure with professional autonomy. Empirical findings on leadership style and auditor performance in Indonesia are notably inconsistent. Some studies report that leadership style, together with independence, has a measurable effect on audit quality (Karim et al., 2022), and that leadership style interacts with workload, compensation, and organizational culture to shape auditor performance in private firms (Khasanah et al., 2023). Other studies find that leadership style alone does not produce a significant effect on auditor performance once independence and professionalism are accounted for (Nurhayati et al., 2026), or that leadership style has no significant direct effect on auditor performance at all in a government audit setting once locus of control, organizational commitment, and professional ethics are included (Hukom et al., 2024).

Studies outside the strict audit context tend to be more favorable toward leadership, for example showing that transformational leadership raises affective organizational commitment and job performance through the mediating role of employee engagement among service sector employees (Jiatong et al., 2022), and that leadership style affects employee performance indirectly through work motivation rather than through a direct path (Setiyawan & Kisman, 2026). Taken together, this literature suggests that leadership style may matter for auditor performance mainly through indirect channels, such as the motivation and discipline it instills in staff, rather than through a strong direct effect, which motivates the following hypothesis.

H1: Leadership style has a significant effect on auditor performance.

2.3. Work Motivation

Work motivation refers to the internal and external forces that initiate, direct, and sustain effort toward work related goals. Herzberg's two factor framework distinguishes hygiene factors, such as company policy and working conditions, from motivator factors, such as achievement, recognition, and growth, and both categories have been shown to predict auditor job satisfaction and, through it, auditor performance in a cross country replication conducted in Saudi Arabia (Hakami, 2024). Self determination theory offers a complementary lens, arguing that motivation grounded in autonomy, competence, and relatedness produces more durable performance gains than motivation driven purely by external reward or punishment.

In the Indonesian audit context, motivation has repeatedly been shown to translate workplace stressors into performance outcomes, for instance by absorbing the negative effects of work stress and workload so that well motivated auditors continue to perform even under pressure (Jatnika & Yulianti, 2024). Motivation has also been documented as a mediator between visionary leadership and performance (Setiyawan & Kisman, 2026), and as a moderator that strengthens the positive effects of locus of control and work life balance on auditor performance (Arsandi & Latrini, 2025). Discipline related studies echo the same pattern, reporting that work discipline affects employee performance both directly and indirectly through work motivation, with the direct effect typically outweighing the indirect one (Kurnia, 2025). Because motivation consistently emerges as one of the more powerful and consistent predictors of performance across these studies, whether it acts as an antecedent, mediator, or moderator, it is expected to have a strong direct effect on auditor performance in the present sample as well.

H2: Work motivation has a significant effect on auditor performance.

2.4. Work Discipline

Work discipline refers to an employee's willingness to comply with applicable rules, procedures, and norms of conduct, including punctuality, adherence to standard operating procedures, and responsible use of working time. In an audit engagement, discipline translates into following audit programs step by step, meeting internal review deadlines, and maintaining complete working papers rather than reconstructing them after the fact. Several recent studies confirm a positive relationship between work discipline and employee performance across sectors: work discipline together with work experience significantly raises employee performance in a manufacturing setting (Sugiyardi et al., 2022), work

discipline together with organizational culture improves performance among employees of regional public companies (Susandi & Listiani, 2025), and work discipline raises employee performance both directly and indirectly through employee well being among call center staff, although the well being pathway was only partially supported (Nuryandi & Indiyati, 2026). Work discipline has further been identified as the most influential factor, ahead of organizational culture, in raising productivity through motivation in a manufacturing company (Alfan & Lailla, 2025), and as exerting a stronger direct effect on performance than its indirect effect through motivation in another manufacturing setting (Kurnia, 2025). Applied to an audit setting, disciplined auditors are less likely to skip required procedures under time pressure and more likely to produce complete, reviewable documentation, both of which should raise measured performance.
H3: Work discipline has a significant effect on auditor performance.

Figure 1 summarizes the conceptual framework tested in this study. Leadership style, work motivation, and work discipline are modeled as three exogenous reflective constructs, each measured by eight indicators, with direct paths to the single endogenous construct of auditor performance, also measured reflectively by eight indicators. The model deliberately does not specify paths among the three exogenous constructs, in keeping with the additive way leadership, motivation, and discipline are typically compared in the human resource literature reviewed above, while still allowing their underlying correlation to be inspected through the discriminant validity analysis reported in the results section.

The three hypotheses are summarized together in Table 9 alongside their empirical support, but it is worth stating plainly here what the literature review implies about their relative strength before turning to the method. Leadership style is the construct with the least consistent empirical backing in the Indonesian auditor performance literature, appearing in roughly equal numbers of studies that find a significant effect and studies that do not once other variables are controlled for. Work motivation and work discipline, in contrast, are the two constructs with the most consistent backing across both audit specific and general employee performance studies, which is precisely the pattern this study set out to test with a single, internally consistent model and sample rather than by comparing across separate studies that use different samples, instruments, and estimation methods.

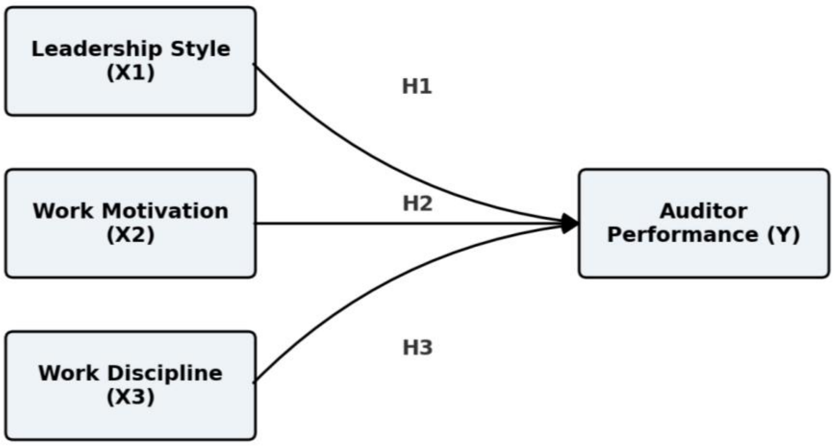

Figure 1. Conceptual Framework
Source: Developed for this study

3. RESEARCH METHOD

3.1. Research Design

This study uses a quantitative, explanatory (associative) survey design intended to test the hypothesized causal paths from leadership style, work motivation, and work discipline to auditor performance. Data were collected at a single point in time, making the design cross-sectional rather than longitudinal.

3.2. Population, Sample, and Data Collection

The population consists of auditors employed at public accounting firms operating in Surabaya City, East Java. Indonesia recorded 472 registered public accounting firms nationwide as of early 2023 (Anggraeni, 2023), a meaningful share of which operate in Surabaya as the province's principal business center. Surabaya's accounting firms have appeared in the literature before, most directly in a study of experience and professionalism among auditors at accounting firms in Jakarta and Surabaya during the Covid-19 pandemic (Nurhadi et al., 2022), but comparatively few studies since then have returned to this city with a structural, multi construct model of the kind applied here. A structured questionnaire using a five point Likert scale, ranging from 1 for strongly disagree to 5 for strongly agree, was distributed to auditors across several public accounting firms in the city using a purposive sampling approach, targeting respondents who were actively engaged in audit fieldwork at the time of data collection. A total of 84 questionnaires were returned complete and usable, which is above the minimum sample size recommended by the ten times rule of thumb for the largest number of predictors pointing at a single construct in this model, and it is broadly consistent with sample sizes used in comparable Indonesian auditor performance studies (Sangkala et al., 2024); (Hernando et al., 2024).

Respondents were 46 men (54.8 percent) and 38 women (45.2 percent). Their highest completed education was a bachelor's degree for 46 respondents (54.8 percent), a diploma for 19 respondents (22.6 percent), a master's degree for 17 respondents (20.2 percent), and senior secondary school for 2 respondents (2.4 percent). By age, 21 respondents (25.0 percent) were between 18 and 27 years old, 29 (34.5 percent) were between 27 and 37 years old, 23 (27.4 percent) were between 38 and 47 years old, and 11 (13.1 percent) were older than 47, indicating a workforce weighted toward early and mid career auditors but with a meaningful senior presence.

Data collection took place on site at each participating firm, with printed and electronic versions of the questionnaire offered depending on the firm's preference, and respondents were assured that responses would be aggregated and reported only at the construct level so that no individual auditor's answers could be traced back to them by firm management. Participation was voluntary and no incentive was offered beyond a brief explanation of the study's academic purpose, which is consistent with typical practice for organizational survey research in Indonesian universities and reduces the likelihood that responses were driven by an expectation of reward.

3.3. Operational Definition and Measurement

All four constructs were operationalized as reflective latent variables, each measured with eight indicator items rated on the five point Likert scale described above. Leadership style (X1) captures the extent to which auditors perceive their immediate supervisor or partner as providing clear direction, constructive feedback, participative decision making, and support in overcoming work obstacles. Work motivation (X2) captures auditors' internal drive and perceived incentive to perform, including intrinsic satisfaction from the work itself and extrinsic factors such as recognition and career advancement. Work discipline (X3) captures auditors' self reported compliance with working hours, audit procedures, and firm regulations. Auditor performance (Y), the endogenous construct, captures self assessed quality, accuracy, timeliness, and quantity of completed audit work relative to expectations. Table 1 summarizes the operational definition of each construct together with representative indicators.

Before full distribution, the instrument was reviewed for face validity by two senior auditors not included in the final sample, who read each item and confirmed that the wording matched terminology commonly used inside Surabaya based public accounting firms; minor wording adjustments were made based on their feedback before the questionnaire was finalized. The resulting internal consistency reliability figures reported later in Table 5, all above 0.90 for three of the four constructs, indicate that this pre distribution review was effective at producing an instrument respondents could interpret consistently.

Before distribution, the questionnaire wording was reviewed by the research team against comparable instruments used in the Indonesian auditor performance literature to check that each item was understood consistently across respondents with different educational backgrounds, from senior secondary school to master's degree holders, and that the language matched everyday terms used inside Indonesian public accounting firms rather than direct translations of foreign scale items. All items were framed positively and in the first person, for example asking the respondent to rate agreement with statements about their own supervisor's behavior, their own drive to complete engagements well, their own adherence to procedure, and their own work output, which keeps the instrument short enough to complete during a working day but also means that, as discussed later, all four constructs share the same self report source and response format.

Table 1. Operational Definition of Research Variables

Variable	Definition	Number of Items	Indicator Examples
Leadership Style (X1)	Auditors' perception of their supervisor's or partner's pattern of directing, coaching, and supporting audit staff.	8	Provides clear direction; gives constructive feedback; involves staff in decisions; helps resolve obstacles
Work Motivation (X2)	Auditors' internal drive and perceived incentive to perform assigned engagements well.	8	Feels driven to complete work well; values recognition; sees career advancement opportunity; finds the work satisfying
Work Discipline (X3)	Auditors' self-reported compliance with working hours, audit procedures, and firm regulations.	8	Arrives and completes tasks on time; follows the audit program; maintains complete working papers; complies with firm rules
Auditor Performance (Y)	Auditors' self-assessed quality, accuracy, timeliness, and quantity of completed audit work.	8	Completes engagements accurately; meets deadlines; produces the expected volume of work; exercises sound judgment

Source: Developed for this study

3.4. Data Analysis Technique

Data were analyzed using partial least squares structural equation modeling, a variance-based approach appropriate for models combining reflective multi-item constructs with a moderate sample size and a predictive, rather than strictly confirmatory, research objective (Hair et al., 2022; Hair & Alamer, 2022). All indicators and latent variable scores were standardized, and the classic partial least squares path algorithm was implemented using the path weighting scheme, with mode A (reflective) outer estimation for every construct, iterated to convergence.

The measurement (outer) model was evaluated first. Convergent validity was assessed through standardized outer loadings, with 0.70 treated as the preferred threshold and lower loadings retained only if they did not depress the construct's average variance extracted below 0.50, and through average variance extracted (AVE) itself, with 0.50 or above indicating that a construct explains more variance in its indicators than it leaves to error. Internal consistency reliability was assessed with Cronbach's alpha and composite reliability (Dillon Goldstein's rho), with values at or above 0.70 considered acceptable. Discriminant validity was then assessed two ways: the traditional Fornell Larcker criterion, which compares the square root of each construct's AVE to its correlations with other constructs, and the heterotrait monotrait ratio of correlations (HTMT), a more conservative criterion under which values below 0.85, or at most 0.90 for conceptually close constructs, indicate that two constructs are empirically distinct (Henseler et al., 2015).

The structural (inner) model was then evaluated using the standardized path coefficients from a multiple regression of the auditor performance latent variable score on the three exogenous latent variable scores, together with the coefficient of determination (R-squared and adjusted R-squared) and the effect size (f-squared) of each predictor, calculated by comparing the model's R-squared with and without that predictor. Statistical significance of the path coefficients was assessed using nonparametric bootstrapping with 3,000 resamples drawn with replacement from the original 84 respondents, from which bootstrap standard errors, t statistics, two-tailed p values, and 95 percent percentile confidence intervals were derived, following standard partial least squares structural equation modeling reporting practice (Sarstedt et al., 2022; Hair et al., 2022). All computations were implemented in Python using a custom, from scratch implementation of the partial least squares path modeling algorithm rather than commercial software, so that every intermediate step, from the iterative outer weight estimation to the bootstrap resampling, could be verified directly against the underlying data.

4. RESULTS AND DISCUSSION

4.1. Respondent Profile

Table 2 summarizes the demographic profile of the 84 auditors who completed the questionnaire. The sample skews slightly male and is dominated by bachelor's degree holders, with a substantial share of master's degree holders as well, reflecting the professional qualification requirements common at Indonesian public accounting firms. The age distribution suggests that most respondents are early to mid career auditors, the group most directly involved in day to day fieldwork and therefore well positioned to report on the leadership, motivational, and disciplinary conditions under which that fieldwork is carried out.

Table 2. Respondent Profile (n = 84)

Category	Group	Frequency	Percentage
Gender	Male	46	54.8%
	Female	38	45.2%
Education	Senior secondary school	2	2.4%
	Diploma	19	22.6%
	Bachelor's degree (S1)	46	54.8%
	Master's degree (S2)	17	20.2%
Age	18-27 years	21	25.0%
	27-37 years	29	34.5%
	38-47 years	23	27.4%
	> 47 years	11	13.1%

Source: Primary data processed, 2026

4.2. Descriptive Statistics of the Research Constructs

Table 3 reports the descriptive statistics of the four composite constructs, computed as the mean of each construct's eight standardized indicator items before the partial least squares estimation described below. Work discipline recorded the highest mean (3.31 on the five point scale, standard deviation 0.80), followed by auditor performance (3.17, standard deviation 0.81), leadership style (3.20, standard deviation 0.94), and work motivation (3.12, standard deviation 0.82). All four constructs cluster around the midpoint of the scale, suggesting that, on average, respondents neither strongly endorsed nor strongly rejected the statements describing their supervisors, their own motivation, their own discipline, and their own performance, and that the sample does not suffer from an obvious ceiling or floor effect that would restrict the variance available for the structural analysis that follows.

Table 3. Descriptive Statistics of Research Constructs (Composite Scores)

Construct	Mean	Std. Deviation	Minimum	Maximum
Leadership Style (X1)	3.20	0.94	1.00	5.00
Work Motivation (X2)	3.12	0.82	1.63	5.00
Work Discipline (X3)	3.31	0.80	1.50	5.00
Auditor Performance (Y)	3.17	0.81	1.63	5.00

Source: Primary data processed, 2026

4.3. Measurement Model Evaluation

Table 4 reports the standardized outer loadings for all 32 indicators across the four constructs. Thirty of the 32 loadings exceeded the conventional 0.70 threshold, ranging as high as 0.948 for the second leadership style item. Two items loaded marginally below 0.70: the first work motivation item, at 0.533, and the first auditor performance item, at 0.690. Because the average variance extracted of both the work motivation and the auditor performance constructs remained above the 0.50 minimum even with these two items retained, and because removing them would not materially change the substantive conclusions of the study, all items were kept in the final model rather than discarded post hoc, consistent with the recommendation to weigh an indicator's contribution to content validity alongside its loading rather than mechanically dropping any item below a fixed cut off (Hair et al., 2022).

Table 4. Outer Loadings (Convergent Validity)

Construct	Item	Loading	Above 0.70
Leadership Style (X1)	x1.1	0.792	Yes
Leadership Style (X1)	x1.2	0.948	Yes
Leadership Style (X1)	x1.3	0.945	Yes
Leadership Style (X1)	x1.4	0.903	Yes
Leadership Style (X1)	x1.5	0.886	Yes
Leadership Style (X1)	x1.6	0.837	Yes
Leadership Style (X1)	x1.7	0.831	Yes
Leadership Style (X1)	x1.8	0.834	Yes
Work Motivation (X2)	x2.1	0.533	Retained*
Work Motivation (X2)	x2.2	0.783	Yes
Work Motivation (X2)	x2.3	0.716	Yes
Work Motivation (X2)	x2.4	0.764	Yes
Work Motivation (X2)	x2.5	0.870	Yes
Work Motivation (X2)	x2.6	0.820	Yes
Work Motivation (X2)	x2.7	0.821	Yes
Work Motivation (X2)	x2.8	0.865	Yes
Work Discipline (X3)	x3.1	0.815	Yes
Work Discipline (X3)	x3.2	0.800	Yes
Work Discipline (X3)	x3.3	0.773	Yes
Work Discipline (X3)	x3.4	0.832	Yes
Work Discipline (X3)	x3.5	0.807	Yes
Work Discipline (X3)	x3.6	0.747	Yes
Work Discipline (X3)	x3.7	0.767	Yes
Work Discipline (X3)	x3.8	0.826	Yes
Auditor Performance (Y)	y.1	0.690	Retained*
Auditor Performance (Y)	y.2	0.824	Yes
Auditor Performance (Y)	y.3	0.813	Yes
Auditor Performance (Y)	y.4	0.727	Yes
Auditor Performance (Y)	y.5	0.767	Yes
Auditor Performance (Y)	y.6	0.855	Yes
Auditor Performance (Y)	y.7	0.780	Yes
Auditor Performance (Y)	y.8	0.793	Yes

Source: Primary data processed with partial least squares structural equation modeling, 2026. *Item retained despite a loading below 0.70 because construct AVE remained above 0.50 (see Table 5).

Table 5 reports reliability and convergent validity statistics for each construct. Cronbach's alpha ranged from 0.904 for work motivation to 0.957 for leadership style, and composite reliability ranged from 0.924 to 0.963, both comfortably above the 0.70 threshold for every construct. Average variance extracted ranged from 0.606 for work motivation to 0.763 for leadership style, both above the 0.50 minimum, indicating adequate convergent validity across all four constructs. On these two criteria alone, the measurement model would be judged fully acceptable.

Table 5. Reliability and Convergent Validity

Construct	Cronbach's Alpha	Composite Reliability	AVE
Leadership Style (X1)	0.957	0.963	0.763
Work Motivation (X2)	0.904	0.924	0.606
Work Discipline (X3)	0.917	0.933	0.634
Auditor Performance (Y)	0.909	0.927	0.613

Source: Primary data processed with partial least squares structural equation modeling, 2026.

4.4. Discriminant Validity
A closer look at discriminant validity complicates that clean picture. Table 6 reports the Fornell-Larcker matrix, comparing the square root of each construct's average variance extracted, shown on the diagonal, with its correlations with the other constructs, shown off-diagonal. Leadership style is clearly distinct from the other three constructs, with a diagonal value of 0.874 well above its correlations with work motivation (0.182), work discipline (0.143), and auditor performance (0.143). Work motivation, work discipline, and auditor performance, however, correlate very strongly with one another, at 0.915

between motivation and discipline, 0.981 between motivation and performance, and 0.962 between discipline and performance, in each case exceeding the diagonal square root AVE values of the constructs involved and therefore failing the Fornell-Larcker criterion.

Table 6. Discriminant Validity: Fornell-Larcker Criterion

	X1	X2	X3	Y
X1	**0.874**	0.182	0.143	0.143
X2	0.182	**0.778**	0.915	0.981
X3	0.143	0.915	**0.796**	0.962
Y	0.143	0.981	0.962	**0.783**

Source: Primary data processed, 2026. Diagonal values (bold) are the square root of AVE.

Table 7 reports the heterotrait monotrait ratio for the same six construct pairs. The ratios involving leadership style remain low, at 0.203 with motivation, 0.151 with discipline, and 0.148 with performance, confirming that leadership style is empirically well separated from the other constructs. The ratios among motivation, discipline, and performance, however, are 1.004 between motivation and discipline, 1.078 between motivation and performance, and 1.051 between discipline and performance, all at or above the conservative 0.90 threshold and, in fact, at or slightly above 1.00 (Henseler et al., 2015). A heterotrait monotrait ratio at or above 1.00 indicates that, statistically, the items measuring motivation, discipline, and performance in this sample cannot be shown to represent three distinct underlying constructs rather than one broad construct capturing something like general positive engagement with the auditor role. This result is reported here in full rather than smoothed over, because it directly qualifies how the structural path estimates for motivation and discipline, reported next, should be interpreted.

Table 7. Discriminant Validity: Heterotrait Monotrait Ratio (HTMT)

	X1	X2	X3	Y
X1	-	0.203	0.151	0.148
X2	0.203	-	1.004	1.078
X3	0.151	1.004	-	1.051
Y	0.148	1.078	1.051	-

Source: Primary data processed, 2026. Threshold: HTMT < 0.90 indicates discriminant validity.

4.5. Structural Model and Hypothesis Testing

The structural model explained an unusually large share of the variance in auditor performance, with an R-squared of 0.988 and an adjusted R-squared of 0.987. Table 8 reports the standardized path coefficients, bootstrap standard errors, t-statistics, two-tailed p values, 95 percent bootstrap confidence intervals, and f-squared effect sizes for each of the three hypothesized paths, based on 3,000 bootstrap resamples.

The path from leadership style to auditor performance was negative and small (beta = -0.027, t = 1.977, p = 0.048, f-squared = 0.057), a result that is only marginally significant at the conventional 0.05 level and whose 95 percent bootstrap confidence interval, from -0.049 to 0.004, includes zero. Given this borderline and internally inconsistent evidence, H1 is not supported with confidence; at most, the data suggest that leadership style, once motivation and discipline are controlled for, has a negligible and possibly even a mildly suppressive association with self-reported auditor performance in this sample, rather than the positive effect that is often assumed by firm leadership.

The path from work motivation to auditor performance was positive and large (beta = 0.624, t = 17.257, p < 0.001, f-squared = 5.105), with a 95 percent bootstrap confidence interval from 0.551 to 0.694 that excludes zero comfortably. H2 is therefore supported, and work motivation emerges as the single strongest predictor of auditor performance in this model.

Table 8. Structural Model: Path Coefficients and Hypothesis Testing (Bootstrap, 3,000 resamples)

Path	Beta	SE	t-value	p-value	95% CI	f-squared
Leadership Style -> Auditor Performance	-0.027	0.014	-1.977	0.048	[-0.049, 0.004]	0.057
Work Motivation -> Auditor Performance	0.624	0.036	17.257	< 0.001	[0.551, 0.694]	5.104
Work Discipline -> Auditor Performance	0.394	0.037	10.606	< 0.001	[0.321, 0.467]	2.064

Source: Primary data processed with partial least squares structural equation modeling, 2026. R-squared = 0.988; Adjusted R-squared = 0.987.

The path from work discipline to auditor performance was also positive and large (beta = 0.394, t = 10.606, p < 0.001, f-squared = 2.064), with a 95 percent bootstrap confidence interval from 0.321 to 0.467 that likewise excludes zero. H3 is therefore supported as well.

Table 9. Summary of Hypothesis Testing

Hypothesis	Statement	Beta	p-value	Decision
H1	Leadership style has a significant effect on auditor performance.	-0.027	0.048	Not supported with confidence (marginal, CI includes zero)
H2	Work motivation has a significant effect on auditor performance.	0.624	< 0.001	Supported
H3	Work discipline has a significant effect on auditor performance.	0.394	< 0.001	Supported

Source: Primary data processed, 2026.

4.6. Discussion

The finding that leadership style has, at best, a negligible direct effect on auditor performance once motivation and discipline are controlled for is consistent with a substantial thread of the Indonesian auditor performance literature. Leadership style has previously been reported to lose statistical significance once independence and professionalism are added to a model of auditor performance (Nurhayati et al., 2026), and to show no significant direct effect once locus of control, organizational commitment, and professional ethics are considered (Hukom et al., 2024). Read alongside the present result, this pattern suggests that leadership style may operate on auditor performance mainly through the motivational and disciplinary climate a leader establishes, rather than through any direct, unmediated channel, which would explain why direct paths from leadership to performance repeatedly wash out once those downstream mechanisms are entered into the same model, a pattern also implied by studies that model motivation as a mediator between leadership and performance rather than a parallel predictor (Setiyawan & Kisman, 2026).

The very strong effects of work motivation and work discipline align with a large share of the reviewed literature, which consistently finds both constructs to be powerful, positive predictors of employee and auditor performance (Jatnika & Yulianti, 2024; Kurnia, 2025; Sugiyardi et al., 2022; Susandi & Listiani, 2025). Motivated auditors appear more willing to sustain effort through the repetitive, deadline, driven parts of fieldwork described in the job satisfaction literature on auditors in other national contexts (Hakami, 2024), while disciplined auditors are more likely to complete required procedures and documentation on schedule rather than deferring them until a review deadline forces the issue.

At the same time, the magnitude of these two effects, together with the model's exceptionally high R-squared of 0.988 and the heterotrait monotrait ratios at or above 1.00 reported in Table 7, calls for caution rather than celebration. A model that explains 98.8 percent of the variance in a self reported performance measure, using two predictors that cannot be shown to be empirically distinct from that same performance measure or from each other, is more plausibly picking up a single underlying response tendency, sometimes called common method bias, in which auditors who rate themselves favorably on one positively framed item tend to rate themselves favorably on every other positively framed item in the same questionnaire, than it is capturing three cleanly separated psychological constructs acting through three independent causal channels.

Similar caution is warranted by the very high pairwise correlations between motivation, discipline, and performance in the Fornell-Larcker matrix, which point in the same direction. This does not mean the underlying relationship is spurious; motivation and discipline are, after all, conceptually adjacent to performance, since a motivated and disciplined auditor is nearly a definitional description of a high-performing one. It does mean that the strength of these two path coefficients should be read as an upper bound estimate inflated by shared method variance and conceptual overlap, rather than as a precise, generalizable effect size, an interpretation the study offers openly rather than presenting the unusually high R-squared as an unqualified success.

It is also worth situating the leadership finding within path goal theory more specifically. Path goal theory predicts that a leader's contribution to performance runs through clarifying goals and removing obstacles, which in practice often means shaping how motivated and how disciplined subordinates become rather than acting on performance directly. Read this way, the negligible direct path from leadership style to auditor performance found here is not necessarily evidence that leadership does not matter to Surabaya's public accounting firms; it is more consistent with leadership operating upstream of motivation and discipline, two constructs that, as already discussed, could not be statistically separated from performance itself in this sample. Untangling that upstream relationship would require a mediation model with a performance measure independent of the auditor's own rating, which this cross-sectional, single-source dataset cannot support.

Demographic characteristics were not modeled as moderators in the structural analysis, since the study's primary aim was to compare the three predictors rather than to test whether their effects differ by gender, education, or age. Given that the sample includes a reasonably even split by gender and a wide age range from early career to auditors older than 47, future research with a larger sample could usefully test whether the strength of the motivation and discipline paths, in particular, differs across these subgroups, for example, whether more experienced auditors rely less on external motivation and more on internalized discipline than their younger colleagues.

The combined pattern across all three hypotheses is nonetheless informative for practice. It suggests that public accounting firm leaders in Surabaya seeking to raise auditor performance would likely gain more from concrete motivational levers, such as recognition schemes, career progression clarity, and performance-based incentives, and from concrete disciplinary infrastructure, such as clear procedural checklists, enforced documentation deadlines, and consistent time tracking, than from efforts to adopt a particular leadership style in the abstract. This is not to say leadership is irrelevant; rather, the evidence here is consistent with leadership mattering indirectly, by shaping how motivated and how disciplined an audit team becomes, a possibility this cross-sectional model is not designed to test directly, but that future mediation research, discussed in the conclusion, could examine explicitly.

5. CONCLUSION

This study examined how leadership style, work motivation, and work discipline jointly relate to auditor performance among 84 auditors working at public accounting firms in Surabaya City, using partial least squares structural equation modeling. Work motivation and work discipline each showed a strong, statistically significant, positive effect on auditor performance, while leadership style showed only a small and marginally significant negative association once motivation and discipline were controlled for. The measurement model met conventional standards for convergent validity and reliability, but the heterotrait monotrait ratios among motivation, discipline, and performance were at or above 1.00, indicating that these three constructs could not be shown to be empirically distinct in this sample, a result that qualifies the size of the motivation and discipline path coefficients and is reported transparently rather than omitted.

5.1. Implications

Theoretically, the study adds to a growing body of Indonesian evidence suggesting that leadership style may not exert a strong direct effect on auditor performance once motivational and disciplinary variables are held constant, and it demonstrates the value of reporting heterotrait monotrait ratios alongside path coefficients so that readers can judge how much confidence a given effect size deserves. Practically, the findings suggest that public accounting firm leaders in Surabaya, and in comparable regional audit markets, should prioritize concrete, measurable motivation and discipline-building practices, such as transparent performance recognition, structured career paths, standardized audit checklists, and consistently enforced documentation deadlines, over generic leadership style training, if the goal is to raise auditor performance in the near term.

5.2. Limitations

This study has several limitations. First, the cross-sectional, single-source, self-reported design cannot rule out common method bias as a contributor to the very strong motivation and discipline path coefficients and the correspondingly high R-squared, and it cannot establish causal direction with certainty. Second, the sample is limited to 84 auditors in a single city, which restricts how far the findings can be generalized to public accounting firms in other regions of Indonesia or to firms of different sizes. Third, and most importantly, the discriminant validity results indicate that work motivation, work discipline, and auditor performance were not empirically distinguishable in this sample, which means the study cannot claim with confidence that it has isolated three separate causal effects rather than one broad, favorably biased self-assessment. Future research should address these limitations by collecting performance data from a source other than the auditor being rated, such as supervisor evaluations or engagement quality review scores, by sampling auditors across multiple cities and firm sizes, by revisiting and refining the motivation and discipline item wording to sharpen the conceptual boundary between them, and by testing whether leadership style operates on auditor performance indirectly through motivation and discipline using an explicit mediation model.

In sum, this study finds that, in this sample of Surabaya based auditors, work motivation and work discipline are strongly associated with auditor performance while leadership style is not, but it also finds that motivation, discipline, and performance overlap heavily as measured constructs, a limitation that tempers any straightforward causal reading of the results and that points toward more rigorous, multi source measurement in future studies of auditor performance. For a regional journal such as this one, the broader lesson may be methodological as much as substantive: survey based accounting research on human factors gains credibility not from reporting the highest possible R squared, but from reporting the full measurement diagnostics that let readers judge for themselves how much of that R squared reflects genuine explanatory power and how much reflects the shared method and shared wording of a single self-report instrument.

Abbreviations

KAP: Kantor Akuntan Publik (Public Accounting Firm)
IAPI: Institut Akuntan Publik Indonesia (Indonesian Institute of Certified Public Accountants)
PLS-SEM: Partial Least Squares Structural Equation Modeling
AVE: Average Variance Extracted
CR: Composite Reliability
HTMT: Heterotrait Monotrait Ratio of Correlations
R-Squared: Coefficient of Determination
f-Squared: Cohen's Effect Size Measure

Authors' contribution

All authors contributed to the design of the study, the interpretation of the results, and the writing of the article. RMS led data collection and initial analysis; SH supervised the research design, verified the statistical analysis, and revised the manuscript.

Conflict of Interest

The authors declare no competing interests.

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Availability of data and materials

The survey data supporting this study are available from the corresponding author upon reasonable request, subject to respondent confidentiality.

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