

Managerial AI Use and Corporate Performance in Trucking Firms: The Role of Psychological Safety and Perceived Organizational Support

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ABSTRACT

The rapid diffusion of artificial intelligence in trucking operations has intensified expectations that fleet management systems, driver monitoring systems, predictive analytics, and AI-enabled dashboards will improve corporate performance. However, the performance value of AI may depend less on technological availability and more on the organizational conditions that support its use. Grounded in Socio-Technical Systems Theory, this study examines the relationships of psychological safety, perceived organizational support, and managerial AI use with managers' assessments of corporate performance in Jakarta trucking firms. Survey data from 350 senior managerial respondents were analyzed using Partial Least Squares Structural Equation Modeling. Psychological safety and perceived organizational support show positive and significant relationships with the Corporate Performance measure, whereas managerial AI use does not. The model explains 58.8% of the variance in respondents' corporate performance assessments. These findings show that continued managerial use of AI, by itself, is not associated with higher perceived corporate performance in the tested model. The study contributes by comparing a technical use behavior with psychological and organizational support conditions among managerial respondents in Jakarta's trucking sector.

JEL Classifications: M15, O33, L91

Keywords: managerial AI use; corporate performance; psychological safety; perceived organizational support; socio-technical systems theory; trucking industry

I. INTRODUCTION

The trucking industry is increasingly pressured to improve operational reliability, safety, customer responsiveness, and cost efficiency through digital transformation. In this setting, artificial intelligence is commonly embedded in Fleet Management Systems, Driver Monitoring Systems, route optimization tools, predictive analytics, and operational dashboards. Recent digital transformation and AI studies argue that technology can improve organizational performance when it is integrated into strategy, decision-making, and work routines rather than treated as a standalone investment (Verhoef et al., 2021; Borges et al., 2021; Enholm et al., 2022; Mikalef & Gupta, 2021). This issue is particularly relevant for trucking companies in Jakarta, where operational decisions are time-sensitive, cross-functional, and closely tied to fleet utilization, driver safety, service reliability, and customer retention. Therefore, corporate performance in this study is positioned as the outcome of how organizations align AI-enabled technologies with supportive social and organizational conditions.

Despite increasing interest in AI adoption, a persistent problem remains: the presence or use of AI does not necessarily translate into superior corporate performance. Many organizations adopt AI systems for monitoring, reporting, and analytics, yet fail to convert system outputs into disciplined operational decisions and measurable performance improvement. The related literature also shows that AI may produce mixed organizational consequences, including improved efficiency and creativity on one side, but uncertainty, distrust, job insecurity, and role ambiguity on the other (Makarius et al., 2020; Raisch & Krakowski, 2021; Braganza et al., 2021; Tang et al., 2022; Yam et al., 2023). This creates three research gaps. First, AI adoption studies often emphasize acceptance or capability while giving less attention to the social conditions that enable performance conversion. Second, psychological safety and perceived organizational support are often examined separately from AI-enabled performance models. Third, trucking firms in emerging-market logistics contexts remain underexplored, despite their operational dependence on real-time information, safety monitoring, and cross-functional coordination.

Motivated by these gaps, this study investigates whether psychological safety, perceived organizational support, and managerial AI use are directly related to managers' assessments of corporate performance in Jakarta trucking firms. The study is grounded in Socio-Technical Systems Theory, which provides a lens for considering both social and technical factors. The structural model estimates their separate direct effects rather than interaction or joint optimization effects. Managerial AI use represents the technical use behavior examined in managers' work, while psychological safety and perceived organizational support represent social conditions. Accordingly, the research question asks: To what extent are these three predictors related to managers' assessments of corporate performance in trucking firms?

This study contributes to the literature in several ways. First, it extends socio-technical AI research by examining managerial AI use together with psychological safety and perceived organizational support in relation to perceived corporate performance. Second, it contributes to organizational behavior research by positioning psychological safety and perceived organizational support as performance-relevant conditions in AI-enabled work, rather than merely as employee-attitude variables (Eisenberger et al., 2020; Edmondson & Bransby, 2023; Kim et al., 2022). Third, it provides contextual evidence from managerial respondents in trucking companies in Jakarta, a sector where AI-enabled systems

have direct implications for service quality, internal efficiency, and operational safety. The novelty of this study lies in its direct-effects framework, which compares managerial AI use with two social-system predictors while keeping the empirical interpretation at the respondent level represented by the measures.

II. LITERATURE REVIEW

A. Related Works

Recent research positions AI adoption as a strategic transformation process rather than a discrete technology investment. Digital transformation scholarship argues that performance effects depend on digital assets, organizational capabilities, business-model renewal, and changes in performance logic (Verhoef et al., 2021). Similarly, AI-focused reviews show that AI creates organizational value when it is integrated into strategy, decision processes, and work routines (Borges et al., 2021; Enholm et al., 2022). Empirical evidence also indicates that AI capability contributes to organizational creativity and firm performance when firms combine technical, human, and organizational resources (Mikalef & Gupta, 2021). These studies provide a basis for examining the performance relevance of AI, while the present study focuses specifically on managers' continued and routinized AI use rather than firm-level strategic AI adoption.

A second stream emphasizes that AI's performance value is contingent on employee-level and organizational responses. Makarius et al. (2020) argue that AI integration requires sociotechnical socialization because employees must learn how to collaborate with intelligent systems. Raisch and Krakowski (2021) further explain that automation and augmentation are interdependent, making human judgment central to AI-enabled work. However, AI adoption may also weaken psychological contracts, job engagement, and trust when employees interpret it as threatening rather than enabling (Braganza et al., 2021). Tang et al. (2022) show that intelligent-machine use can reshape role clarity and self-efficacy, reinforcing the importance of psychologically safe and supportive work environments.

Recent organizational-behavior research provides further support for integrating psychological safety and perceived organizational support into studies of AI-enabled work. Edmondson and Bransby (2023) synthesize psychological safety as a condition for learning, voice, and adaptive work, while Eisenberger et al. (2020) conceptualize perceived organizational support as employees' belief that the organization values their contribution and well-being. At the organizational level, perceived support has been linked to profitability through workforce performance and turnover mechanisms (Kim et al., 2022). Yet AI studies report mixed employee consequences, including job-crafting benefits and insecurity risks (Cheng et al., 2023; Yam et al., 2023). This leaves room to examine whether these social conditions and managerial AI use each relate directly to corporate performance.

B. Theoretical Background

Socio-technical systems theory provides the central theoretical lens for this study because it treats organizational performance as related to both technological arrangements and the social system in which they are embedded. Rather than viewing technology as a self-acting source of productivity, this perspective emphasizes the role of work design, employee interaction, and organizational context (Cummings, 1978; Rousseau, 1979). In the present

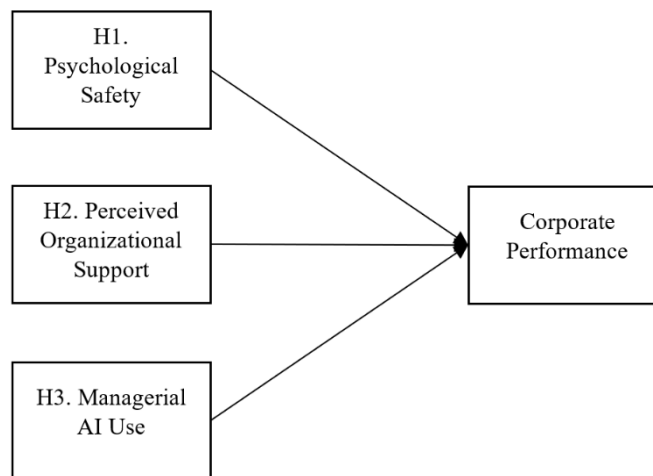
framework, managerial AI use represents the technical use behavior examined at the respondent level, whereas psychological safety and perceived organizational support represent the social conditions included in the model. Psychological safety enables speaking up and learning behavior under uncertainty (Edmondson, 1999), while perceived organizational support captures employees' belief that the organization values their contributions and cares about their well-being (Eisenberger et al., 1986).

Resource-based theory further clarifies why these conditions may relate to corporate performance. Competitive advantage arises when organizations develop valuable, rare, and difficult-to-imitate resources, and when managers orchestrate such resources into coherent capability configurations (Barney, 1991; Sirmon et al., 2011). AI adoption can strengthen analytical, operational, and decision capabilities, but realizing such value also depends on how AI is used in work. This argument is consistent with the automation-augmentation view of AI, which stresses the importance of combining machine intelligence with human judgment (Raisch & Krakowski, 2021). Accordingly, the empirical model evaluates whether managerial AI use, psychological safety, and perceived organizational support each have a direct relationship with corporate performance.

C. The Study's Focus Area and Framework

As illustrated in Figure 1, this study's conceptual framework examines corporate performance as an outcome related to three predictors: psychological safety, perceived organizational support, and managerial AI use. Psychological safety is positioned as a social condition that enables employees to express ideas, report mistakes, question existing routines, and participate in innovation-oriented activities without fear of negative consequences. Perceived organizational support reflects employees' belief that the organization values their contributions, provides adequate resources, and cares about their well-being, which may strengthen commitment, motivation, and work effectiveness.

Figure 1
The Study's Conceptual Framework



Managerial AI use represents the technical use dimension of the framework. It refers to managers' continued and routinized use of AI in their work and does not represent firm-level strategic deployment, organizational AI maturity, or the extent of company-wide AI integration. The framework therefore tests the direct relationship of managerial AI use with corporate performance alongside the direct relationships of psychological safety and perceived organizational support.

III. HYPOTHESIS

A. Corporate Performance

Corporate performance has progressively moved from a finance-dominant indicator to a multidimensional construct that captures economic outcomes, operational effectiveness, and strategic resilience. Recent construct-validity work shows that organizational performance is better represented through related dimensions—profitability, liquidity, growth, and stock-market performance, then by a single undifferentiated measure (Hamann & Schiemann, 2021). In digital and AI-enabled settings, the construct has further progressed toward explaining how firms convert digital assets, AI capability, and organizational routines into superior performance outcomes (Verhoef et al., 2021; Mikalef & Gupta, 2021). Accordingly, this study conceptualizes corporate performance as the extent to which firms achieve improved financial, operational, adaptive, and strategic results through social and technological organizational conditions.

Socio-Technical Systems Theory provides the conceptual basis for considering social and technical factors in relation to corporate performance. Recent AI-related socio-technical scholarship argues that intelligent technologies create value when employees understand, collaborate with, and socially integrate AI into work systems rather than merely being exposed to technological tools (Makarius et al., 2020). The automation-augmentation perspective similarly explains the importance of combining machine intelligence with human judgment (Raisch & Krakowski, 2021). In this research, psychological safety and perceived organizational support represent the social conditions, while managerial AI use represents the technical use behavior measured among respondents. In the empirical model, these factors are examined through separate direct paths to corporate performance; joint optimization and interaction effects are not tested.

B. Psychological Safety

Psychological safety is conceptualized in this study as employees' perception that they can speak up, admit mistakes, ask for help, and take interpersonal risks without fear of negative interpersonal consequences. The construct therefore reflects a work climate centered on voice, learning, and interpersonal risk-taking. Recent scholarship explains psychological safety as a climate in which employees can speak up, raise concerns, and engage in learning without fear of interpersonal punishment, while perceived organizational support reflects employees' belief that the organization values their contribution and well-being (Eisenberger et al., 2020; Edmondson & Bransby, 2023). Within Socio-Technical Systems Theory, psychological safety represents the social subsystem that enables employees to engage effectively with organizational processes, work systems, and technological change (Makarius et al., 2020).

The relationship between psychological safety and corporate performance is grounded in the assumption that organizational outcomes improve when employees experience supportive social conditions that enhance commitment, collaboration, learning, and adaptive behavior. Employees who perceive greater psychological safety are more likely to contribute discretionary effort, share knowledge, report problems, and participate in improvement-oriented activities, thereby strengthening productivity and organizational effectiveness. Recent evidence shows that organizational-level perceived support enhances profitability through workforce performance and retention mechanisms (Kim et al., 2022). In AI-enabled organizations, psychological safety is also important because technological value depends on employees' readiness to understand, question, and collaborate with intelligent systems (Makarius et al., 2020; Raisch & Krakowski, 2021). Therefore, this study proposes:

H1: Psychological safety has a positive and significant effect on corporate performance.

C. Perceived Organizational Support

Perceived organizational support refers to employees' generalized belief that the organization values their contributions and cares about their well-being. Contemporary organizational support theory conceptualizes this construct not merely as managerial kindness, but as a socio-emotional and instrumental resource developed through fair treatment, supervisor support, recognition, development opportunities, and responsive organizational practices. Within Socio-Technical Systems Theory, perceived organizational support represents a social-system condition that enables employees to participate productively in evolving work systems. In AI-enabled organizations, such support becomes especially important because employees require assurance, resources, and learning opportunities to integrate intelligent technologies into work routines without perceiving technological change as a threat or abandonment (Eisenberger et al., 2020; Makarius et al., 2020).

At the firm level, perceived organizational support can strengthen corporate performance by converting organizational care into workforce capability, discretionary effort, and lower withdrawal behavior. Employees who perceive strong organizational support are more likely to reciprocate through commitment, task persistence, knowledge sharing, and cooperation, which can improve operational reliability, service quality, and organizational effectiveness. Recent evidence extends perceived organizational support beyond individual attitudes, showing that organization-level support predicts profitability through workforce performance and turnover-related mechanisms (Kim et al., 2022). In this study, perceived organizational support is examined alongside managerial AI use as a separate predictor of corporate performance. Therefore,

H2: Perceived organizational support has a positive and significant effect on corporate performance.

D. Managerial AI Use

Managerial AI use refers to the extent to which managers intend to continue using AI and have incorporated AI use into their regular work routines. The construct therefore represents managerial use behavior rather than firm-level strategic AI adoption, deployment, or AI

maturity. This distinction follows the content of the indicators, which reflect continued use intention, frequency, habit, and automaticity. It is also consistent with continuance and use-behavior research that treats post-adoption use as distinct from initial technology acceptance or organization-wide implementation (Bhattacharjee, 2001; Venkatesh et al., 2012).

Broader AI adoption and capability research remains relevant for explaining why AI use may matter for organizational outcomes, but these concepts are not treated as the measured construct in this study. AI capability involves data infrastructure, analytics competence, technological resources, managerial skills, and process redesign around AI-enabled insights (Mikalef & Gupta, 2021; Borges et al., 2021; Enholm et al., 2022). Empirical studies show that such capabilities can support firm performance through organizational creativity, data-driven decision-making, automation, knowledge sharing, and business-model innovation (Olan et al., 2022; Sjödin et al., 2021; Mikalef et al., 2023; Wamba et al., 2024). The present model asks a narrower question: whether managers' continued and routinized use of AI has a direct relationship with corporate performance.

Recent research also cautions that the consequences of AI use can vary across work settings. Algorithmic systems can affect control, trust, role clarity, and employee discretion, making the way employees engage with AI relevant to work outcomes (Glikson & Woolley, 2020; Kellogg et al., 2020). Strategic-management evidence further suggests that performance increasingly depends on the human and AI interface rather than on either human expertise or AI alone (Krakowski et al., 2023). In this framework, managerial AI use is hypothesized to have a positive direct effect on corporate performance, independently of the two social predictors. Therefore:

H3: Managerial AI use has a positive and significant effect on corporate performance.

IV. METHODS

A. Operationalization and Measures

The four constructs in this study were operationalized using established measurement sources and adapted to the AI-enabled organizational context. In the final PLS-SEM specification, Psychological Safety, Perceived Organizational Support, Managerial AI Use, and Corporate Performance were each estimated as single first-order constructs; no higher-order construct or second-order measurement model was specified.

Psychological Safety and Perceived Organizational Support were operationalized as social system conditions in AI-supported work. Psychological Safety was represented by four indicators (PSY.1 to PSY.4) adapted from Edmondson's psychological safety scale and contextualized to AI use (Edmondson, 1999; Edmondson & Bransby, 2023). Perceived Organizational Support was represented by five indicators (POS.1 to POS.5) capturing recognition, organizational care, work assistance, AI-related support, and tolerance for reasonable learning errors (Eisenberger et al., 1986; Eisenberger et al., 2020; Kim et al., 2022).

Managerial AI Use was represented by four indicators (AI.1 to AI.4) capturing continued and routinized AI use, including continuance intention, frequency, habit, and automaticity (Bhattacharjee, 2001; Venkatesh et al., 2003; Venkatesh et al., 2012). Corporate Performance was represented by five indicators (CP.1 to CP.5) in the final measurement model (Hamann & Schiemann, 2021; Xie et al., 2022). These indicators are the measures analyzed in Tables 2 through 5. The earlier descriptions of eight Managerial AI Use items,

eight Perceived Organizational Support items, and six Corporate Performance items referred to the broader initial item pool and have been removed so that Section 4.1 reports the final analyzed measurement structure consistently.

B. Sampling and Data Collection Procedures

The target population comprised top management and senior managerial personnel in trucking companies operating in Jakarta. The unit of analysis is the individual managerial respondent. Managerial AI Use captures each manager's continued and routinized use of AI, while Corporate Performance captures that respondent's assessment of firm outcomes. Eligible respondents included Directors, General Managers, Operations or Fleet Managers, Logistics Digital/IT Managers, and HR Managers who had worked in the company for at least one year, were involved in decision-making or supervision related to AI, Fleet Management System, or Driver Monitoring System, and had access to corporate performance information. Purposive sampling was used to obtain responses from individuals with relevant strategic, operational, and technological knowledge.

Data were collected using a structured online questionnaire distributed through Google Forms via formal company channels. The analytic dataset contains 350 individual responses but does not retain company identifiers. Therefore, the number of unique firms, the number of respondents per firm, and possible dependence among respondents from the same firm cannot be assessed. The observations are analyzed as individual managerial responses, and the results are interpreted at the respondent level rather than as aggregated firm level estimates. The sample size was reassessed using statistical power rather than the 10 times rule. Corporate Performance has three direct predictors in the final structural model, so the power analysis was specified for three predictors, a significance level of 0.05, and target power of 0.80. Because the original design did not prespecify an expected effect size, a conventional medium effect size of $f^2 = 0.15$ was used as a transparent benchmark. This specification requires a minimum sample of 77 observations. The final sample of 350 therefore exceeds the minimum requirement. A sensitivity calculation further shows that 350 observations can detect an effect of approximately $f^2 = 0.032$ with 80% power under the same significance level and number of predictors. Thus, the achieved sample provides adequate statistical power for the structural model, although very small effects below this level may remain difficult to detect (Sarstedt et al., 2021; Hair et al., 2022). Before full distribution, the questionnaire was pilot-tested with eligible respondents to assess item clarity and initial reliability, while confidentiality, voluntary participation, and scheduled reminders were maintained throughout data collection.

C. Analysis Technique

This study uses Structural Equation Modeling (SEM), specifically the Partial Least Squares SEM approach, to examine the direct relationships of Psychological Safety, Perceived Organizational Support, and Managerial AI Use with Corporate Performance. SEM is appropriate because the research model consists of latent constructs measured by multiple indicators and requires simultaneous assessment of measurement quality and structural relationships. The analysis begins with descriptive statistics to explain respondent profiles and response tendencies, followed by evaluation of the measurement model through indicator loadings, Cronbach's alpha, composite reliability, average variance extracted, and discriminant validity using the Fornell-Larcker criterion and HTMT. These procedures

ensure that the constructs are measured reliably and validly before testing the structural model (Hair et al., 2020; Sarstedt et al., 2021; Hair et al., 2022).

After the measurement model satisfies validity and reliability requirements, the structural model is evaluated to test the hypothesized direct effects. The analysis includes path coefficients, coefficient of determination, effect size, predictive relevance, and model-fit indicators where applicable. Hypothesis testing is conducted using bootstrapping to determine whether each direct relationship is statistically significant, with decisions based on t-values and p-values at the 5% significance level. In this study, Managerial AI Use is treated as a direct predictor of Corporate Performance, not as a mediating variable. Therefore, the analysis does not estimate indirect effects or mediation paths; it focuses only on the direct effects of each exogenous construct on the endogenous construct, consistent with a direct-effects SEM specification (Benitez et al., 2020; Becker et al., 2023).

V. RESULTS

A. Sample Profile

The sample consisted of 350 individual managerial respondents from trucking companies in Jakarta. Based on functional area, the largest proportion came from IT or Digital functions, representing 16.9% of the sample, followed by Fleet at 16.0%. Other functional areas were also represented, including Commercial, Operations, Human Resources, and Finance. The profiles describe individual respondents across functions rather than the number of unique firms represented. Because company identifiers were not retained, firm counts and respondents per firm cannot be reported.

Table 1
Sample Profile

Profile Variable	Category	Number of Respondents	Percentage
Main Functional Area	IT or Digital	59	16.9%
	Fleet	56	16.0%
	Others	52	14.9%
	Commercial	48	13.7%
	Operations	46	13.1%
	Human Resources	45	12.9%
	Finance	44	12.6%
Position	Director	66	18.9%
	General Manager	61	17.4%
	HR Manager	58	16.6%
	IT Manager	56	16.0%
	Others	56	16.0%
	Operations or Fleet Manager	53	15.1%
Gender	Male	186	53.1%
	Female	164	46.9%
Length of Service in the Company	11–15 years	81	23.1%
	Less than 2 years	74	21.1%
	2–5 years	66	18.9%
	6–10 years	66	18.9%
	More than 15 years	63	18.0%

In terms of position, the sample was dominated by managerial and strategic decision-making roles, with Director's accounting for 18.9% and General Managers for 17.4%, followed by HR Managers, IT Managers, and Operations or Fleet Managers. The gender distribution was relatively balanced, with male respondents representing 53.1% and female respondents 46.9%. Regarding length of service, the largest group had worked for 11–15 years, while respondents with less than 2 years of tenure also formed a substantial proportion. This combination suggests that the sample captured both experienced organizational members and newer respondents who may be more recently exposed to digital and AI-enabled work systems.

B. Common Method Variance

To assess potential common method variance (CMV) in the self-reported questionnaire data, this study applied Harman's single-factor test and collinearity diagnostics. Harman's single-factor analysis showed that the first unrotated factor explained only 15.38% of the total variance, which is far below the commonly used 50% threshold for indicating serious CMV concerns. Because recent methodological literature cautions that Harman's test should not be used as the sole basis for CMV assessment, variance inflation factor (VIF) values were also examined. The VIF values ranged from 1.256 to 2.993, remaining below the conservative 3.3 full-collinearity benchmark and below the range in which SEM collinearity concerns typically begin to emerge. These results indicate that neither a dominant common factor nor problematic collinearity was present; therefore, CMV is unlikely to substantially bias the estimated relationships, and the data were considered suitable for subsequent SEM analysis.

C. Validity and Reliability Assessment

Convergent validity and internal consistency were assessed using outer loadings, Cronbach's alpha, composite reliability, and Average Variance Extracted. As shown in Table 2, all outer loading values exceeded the recommended threshold of 0.70, ranging from 0.729 to 0.864. Cronbach's alpha values also met the minimum criterion of 0.70, ranging from 0.794 for Managerial AI Use to 0.889 for Corporate Performance. Composite reliability values were similarly satisfactory, with ρ_a values ranging from 0.802 to 0.890 and ρ_c values ranging from 0.866 to 0.919. In addition, all AVE values exceeded 0.50, ranging from 0.619 to 0.694. These results indicate that the constructs achieved adequate indicator reliability, internal consistency reliability, and convergent validity, consistent with contemporary SEM-PLS measurement standards (Hair et al., 2020; Sarstedt et al., 2021; Hair et al., 2022).

Discriminant validity was evaluated through the Fornell-Larcker criterion, HTMT, and the cross-loading matrix. As reported in Table 3, the square roots of AVE on the diagonal were higher than the correlations among constructs. The HTMT values in Table 4 were also below 0.90, although the value between Managerial AI Use and Perceived Organizational Support was relatively high at 0.886. The three indicators identified in Table 5 were reassessed individually. AI.3 loaded 0.810 on Managerial AI Use and 0.797 on Perceived Organizational Support, while POS.1 loaded 0.797 on Perceived Organizational Support and 0.791 on Managerial AI Use; both remained marginally highest on their intended constructs. AI.2 showed a different pattern, loading 0.729 on Managerial AI Use and 0.760 on Psychological Safety, indicating an item-level discriminant-validity concern. AI.2 was retained in the reported model because its outer loading remained above 0.70 and Managerial

AI Use continued to meet internal consistency and convergent-validity criteria ($CA = 0.794$, $\rho_a = 0.802$, $\rho_c = 0.866$, $AVE = 0.619$), while the construct-level HTMT values remained below 0.90. Accordingly, discriminant validity is interpreted more cautiously. The results indicate acceptable construct-level separation overall, but not uniformly strong indicator-level distinction, particularly for AI.2 and the close cross-loadings of AI.3 and POS.1. These overlaps should be considered when interpreting the structural results (Benítez et al., 2020; Becker et al., 2023).

Table 2
Convergent Validity and Reliability

Constructs	Items	OL	CA	CR (ρ_a)	CR (ρ_c)	AVE
Managerial AI Use	AI.1	0.824	0.794	0.802	0.866	0.619
	AI.2	0.729				
	AI.3	0.810				
	AI.4	0.781				
Corporate Performance	CP.1	0.835	0.889	0.890	0.919	0.694
	CP.2	0.822				
	CP.3	0.808				
	CP.4	0.835				
	CP.5	0.864				
Perceived Organizational Support	POS.1	0.797	0.881	0.883	0.913	0.678
	POS.2	0.856				
	POS.3	0.821				
	POS.4	0.82				
	POS.5	0.822				
Psychological Safety	PSY.1	0.741	0.806	0.814	0.873	0.633
	PSY.2	0.838				
	PSY.3	0.823				
	PSY.4	0.778				

Notes: The threshold for OL, Outer Loadings > 0.70; Cronbach's Alpha > 0.70; Composite Reliability > 0.70 and Average Variance Extracted > 0.50.

Table 3
Fornell-Larcker Criterion

Constructs	Managerial AI Use	Corporate Performance	Perceived Organizational Support	Psychological Safety
Managerial AI Use	0.787			
Corporate Performance	0.692	0.833		
Perceived Organizational Support	0.765	0.708	0.824	
Psychological Safety	0.665	0.697	0.678	0.796

Table 4
HTMT

Constructs	Managerial AI Use	Corporate Performance	Perceived Organizational Support	Psychological Safety
Managerial AI Use	1			

Corporate Performance	0.818	1		
Perceived Organizational Support	0.886	0.797	1	
Psychological Safety	0.847	0.813	0.802	1

Table 5
Cross-Loading Matrix

Items	Managerial AI Use	Corporate Performance	Perceived Organizational Support	Psychological Safety
AI.1	0.824	0.619	0.594	0.782
AI.2	0.729	0.489	0.494	0.760
AI.3	0.810	0.546	0.797	0.573
AI.4	0.781	0.510	0.747	0.533
CP.1	0.558	0.835	0.656	0.515
CP.2	0.562	0.822	0.597	0.507
CP.3	0.599	0.808	0.530	0.683
CP.4	0.574	0.835	0.573	0.625
CP.5	0.586	0.864	0.591	0.562
POS.1	0.791	0.540	0.797	0.565
POS.2	0.805	0.581	0.856	0.599
POS.3	0.671	0.542	0.821	0.553
POS.4	0.583	0.626	0.820	0.537
POS.5	0.608	0.615	0.822	0.543
PSY.1	0.530	0.534	0.562	0.741
PSY.2	0.643	0.548	0.541	0.838
PSY.3	0.795	0.636	0.576	0.823
PSY.4	0.700	0.479	0.468	0.778

D. Hypothesis Testing

Hypothesis testing was conducted using SEM with bootstrapping to evaluate the direction, magnitude, and statistical significance of the proposed direct relationships. The decision criteria followed the conventional threshold of $t\text{-value} > 1.96$ and $p\text{-value} < 0.05$, while effect size was interpreted using f^2 , where values around 0.02 indicate a small effect, 0.15 a medium effect, and 0.35 a large effect (Hair et al., 2022; Sarstedt et al., 2021). As shown in Table 6, two hypotheses were supported, while one hypothesis was not supported. The findings indicate that Psychological Safety and Perceived Organizational Support have stronger direct relationships with Corporate Performance than Managerial AI Use in the tested model.

Table 6
Summary of Hypothesis Testing

Hypothesis	β	f^2	t-value	p-value	Decision
H1. Psychological Safety $\rightarrow$ Corporate Performance	0.435	0.131	6.018	0.000	Supported
H2. Perceived Organizational Support $\rightarrow$ Corporate Performance	0.467	0.159	9.282	0.000	Supported
H3. Managerial AI Use $\rightarrow$ Corporate Performance	-0.065	0.002	0.908	0.364	Non-Supported

H1 and H2 were supported. Psychological Safety had a positive and significant direct effect on Corporate Performance ($\beta = 0.435$, $t = 6.018$, $p < 0.001$; $f^2 = 0.131$). Perceived Organizational Support also had a positive and significant direct effect on Corporate Performance ($\beta = 0.467$, $t = 9.282$, $p < 0.001$; $f^2 = 0.159$).

H3 was not supported. Managerial AI Use had a negative and statistically nonsignificant direct effect on Corporate Performance ($\beta = -0.065$, $t = 0.908$, $p = 0.364$; $f^2 = 0.002$). The analysis does not establish why this relationship is nonsignificant because AI integration, AI maturity, human capability, and human AI coordination were not measured. Prior research suggests that these conditions may influence how AI use contributes to organizational outcomes (Makarius et al., 2020; Raisch & Krakowski, 2021). They are therefore treated as possible explanations from the literature that require separate empirical testing, rather than as mechanisms demonstrated by the present study. Accordingly, H1 and H2 are supported, while H3 is not supported, as summarized in Table 6.

E. Structural Model Assessment

The structural model was assessed using the coefficient of determination and available model fit indices. The R-square value for Corporate Performance was 0.588, indicating that Psychological Safety, Perceived Organizational Support, and Managerial AI Use together explain 58.8% of the variance in Corporate Performance. This value is interpreted as explanatory power rather than evidence of model robustness. The saturated model produced an SRMR value of 0.098, which is above the more conservative 0.08 benchmark and close to the 0.10 upper guideline, while the NFI value of 0.582 indicates limited comparative fit. These indices therefore do not support a claim of strong global fit and should be interpreted cautiously. The previously reported d_{ULS} and d_{G} values were omitted because bootstrap reference values were not available in the retained analysis output; without those reference values, the discrepancy measures cannot be evaluated meaningfully. Accordingly, the structural model is interpreted primarily from the estimated path coefficients and R-square, while the global fit indices are treated as a limitation rather than as evidence of robustness.

VI. DISCUSSION

The findings show that managers' assessments of corporate performance are more strongly related to the two social predictors than to managerial AI use. Psychological Safety (H1) and Perceived Organizational Support (H2) were supported, whereas Managerial AI Use (H3) was not supported as a direct predictor in the tested model. Because the model estimates separate direct effects, the results do not establish alignment or interaction between the subsystems. The model shows adequate explanatory capacity, although the global fit indicators require caution. These relationships are estimated from individual managerial responses and should not be interpreted as aggregated firm-level results.

The nonsignificant relationship between Managerial AI Use and Corporate Performance indicates that continued or habitual AI use by managers, as measured in this study, is not directly associated with higher Corporate Performance. The current analysis does not identify the reason for this result. Prior AI capability and socio-technical research suggests that organizational integration, human capability, work system redesign, and human-AI coordination may shape the performance value of AI use (Mikalef & Gupta, 2021; Makarius et al., 2020; Raisch & Krakowski, 2021; Uren & Edwards, 2023). Because these factors were not included in the model, they are considered possible explanations from the

literature rather than mechanisms supported by the present data. Future research should measure these conditions directly to determine whether they explain when managerial AI use is associated with corporate performance.

The supported effect of Psychological Safety indicates that performance improves when employees and managers feel safe to raise operational problems, admit errors in digital or AI use, ask for assistance, and experiment with new work routines. This finding aligns with Edmondson and Bransby (2023), who position psychological safety as a foundation for voice, learning, and adaptive work. It also complements algorithmic-management research showing that digital systems can generate resistance when employees experience them primarily as surveillance or control rather than as support for better work (Glikson & Woolley, 2020; Kellogg et al., 2020). In the present sample, the presence of Directors, General Managers, HR Managers, IT Managers, and Operations/Fleet Managers makes this finding especially relevant: senior actors can normalize error reporting, while newer employees require safe channels to learn AI-enabled processes. For example, when a Driver Monitoring System flags risky driving behavior, a psychologically supportive climate allows the incident to become a coaching and process-improvement opportunity rather than a blame episode.

Perceived Organizational Support showed the largest positive direct coefficient in the model ($\beta = 0.467$, $f^2 = 0.159$), while Psychological Safety was close in magnitude ($\beta = 0.435$, $f^2 = 0.131$). The difference is modest, and no formal comparison of the two coefficients was conducted, so it should be treated as a descriptive difference rather than evidence that Perceived Organizational Support is statistically stronger. This pattern suggests that organizational support is particularly relevant in this sample alongside Psychological Safety. Because the Perceived Organizational Support measure captures recognition, organizational care, work assistance, AI-related support, and tolerance for reasonable learning errors, the result links Corporate Performance to employees' experience of these forms of support as well as to a work climate in which they can speak up and ask for help.

VII. IMPLICATIONS

A. Implication for Theory

Theoretically, this study applies Socio-Technical Systems Theory to compare the direct contributions of social conditions and managerial AI use to Corporate Performance. The results should therefore be interpreted as evidence about separate direct relationships, not as an empirical test of subsystem alignment. The Related Works section positions organizational AI adoption as a strategic transformation process in which value emerges when digital assets, organizational capabilities, routines, and decision processes are integrated (Verhoef et al., 2021; Borges et al., 2021; Enholm et al., 2022; Mikalef & Gupta, 2021). The present findings address a narrower construct and show that Managerial AI Use, measured through continued and routinized use, does not significantly explain Corporate Performance as a direct predictor. This distinction separates the behavioral measure tested in this study from broader organizational AI adoption and capability concepts.

The second theoretical implication concerns the role of Psychological Safety and Perceived Organizational Support in AI-enabled work. The Related Works section highlights that psychological safety enables learning, voice, and adaptive work, while perceived organizational support captures the extent to which employees believe the

organization values their contributions and well-being (Eisenberger et al., 2020; Edmondson & Bransby, 2023; Kim et al., 2022). The findings show that these two social conditions have stronger direct relationships with Corporate Performance than Managerial AI Use. This also relates to AI-at-work studies reporting mixed consequences of AI, including job crafting, role uncertainty, insecurity, and trust concerns (Braganza et al., 2021; Cheng et al., 2023; Yam et al., 2023). Because the sample represents cross-functional managerial roles in trucking firms, the results provide evidence about managerial perceptions of AI use and support conditions across different functions.

B. Implication for Practice

The first practical implication is that trucking companies should distinguish frequent managerial AI use from organizational performance. Managerial AI Use did not show a significant direct relationship with Corporate Performance, so encouraging repeated use alone should not be treated as evidence of performance improvement. This interpretation is consistent with the respondent-level measure of continued and habitual AI use and avoids treating that measure as firm-level AI maturity or strategic adoption.

The second implication concerns the need to strengthen psychological safety during AI-enabled operational change. In trucking companies, AI systems often make operational deviations more visible, including route delays, driver behavior risks, system errors, or process inefficiencies. Managers should therefore create a work climate in which employees and supervisors can report AI-related errors, question system recommendations, admit mistakes, and request assistance without fear of blame. This can be implemented through non-punitive incident reviews, post-trip learning sessions, open discussion of dashboard findings, and root-cause analysis meetings. This implication is consistent with recent psychological safety research, which emphasizes learning, voice, and adaptation under uncertainty, and with AI-at-work research showing that algorithmic systems may create resistance when employees experience them as surveillance rather than support (Edmondson & Bransby, 2023; Glikson & Woolley, 2020; Kellogg et al., 2020).

The third implication concerns Perceived Organizational Support. Its standardized coefficient was slightly larger than that of Psychological Safety ($\beta = 0.467$ versus $\beta = 0.435$), and its effect size was also somewhat larger ($f^2 = 0.159$ versus $f^2 = 0.131$). Because the study did not test whether the two coefficients differ statistically, this pattern should be read descriptively. In practice, the result gives particular importance to support that employees can experience directly, including recognition of their contributions, concern for their well-being, accessible work assistance during AI-related tasks, and tolerance for reasonable learning errors. These actions correspond closely to the Perceived Organizational Support measure used in the study and can be implemented alongside efforts to maintain Psychological Safety.

The fourth implication is that companies should establish clear governance routines for acting on AI outputs. AI alerts, route recommendations, driver-monitoring signals, and predictive analytics should have defined process owners and follow-up responsibilities. For example, a Driver Monitoring System fatigue alert can be linked to a clear response involving fleet supervisors and operations managers, while route recommendations can be reviewed against delivery reliability, response time, and efficiency. These routines provide a practical way to connect managerial AI use with operational decision processes without assuming that such integration was tested as a mechanism in the present model.

VIII. CONCLUSION, LIMITATION AND FUTURE RESEARCH AVENUES

This study concludes that, among the 350 managerial respondents, the Corporate Performance measure is more strongly related to Psychological Safety (H1) and Perceived Organizational Support (H2) than to Managerial AI Use (H3). H1 and H2 are supported, while H3 is not supported. Managerial AI Use captures respondents' continued and routinized use of AI, and Corporate Performance represents managers' assessments of firm outcomes. Because company identifiers were not retained, the number of unique firms, respondents per firm, and possible within-firm dependence could not be assessed; the findings are therefore interpreted at the respondent level. The results also do not test interaction, joint optimization, or alignment between the social and technical factors. Other limitations include the cross-sectional design, self-reported perceptions, the Jakarta trucking context, and indicator-level overlap, particularly AI.2, AI.3, and POS.1. Future research should use identifiable firm-level sampling when organizational inference is intended and incorporate objective performance indicators and longitudinal designs.

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