

Communicative Leadership and Dual Employee Outcomes in AI-Integrated Workplaces: The Mediating Role of Psychological Safety

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Abstract

The growing adoption of artificial intelligence in organizational settings has reshaped how leaders communicate and how employees respond behaviorally and cognitively. However, the joint effects of communicative leadership on employee voice behavior and individual learning outcomes through psychological safety remain underexplored, particularly in AI-integrated work contexts. This study develops and tests a dual-outcome mediation model grounded in the Communicative Constitution of Organizations theory, Edmondson's psychological safety framework, and Morrison's employee voice theory. Using a quantitative cross-sectional design, survey data were collected from 312 knowledge workers in public and private sector organizations in Indonesia. Partial Least Squares Structural Equation Modeling analysis revealed that communicative leadership positively and significantly predicts psychological safety, which in turn mediates the relationship between communicative leadership and both promotive voice behavior and individual learning outcomes. Prohibitive voice behavior was also positively influenced through the same mediating pathway. The intensity of AI tool adoption within the workplace further moderated the communicative leadership-psychological safety relationship, with moderate levels of AI integration strengthening the pathway and very high levels attenuating it. These findings advance theoretical understanding of how communicative leadership simultaneously shapes two distinct categories of employee outcomes within technologically transformed workplaces. Practical implications for organizational leaders navigating AI-integrated environments are discussed.

Keywords: communicative leadership; psychological safety; employee voice behavior; individual learning outcomes; AI-integrated workplace

JEL Classification: M12; M14; O33; J24

Introduction

Artificial intelligence has moved from the periphery of organizational life to its operational core, fundamentally altering the architecture of workplace communication and the nature of leadership itself. Organizations that once relied exclusively on human communicative channels now operate through hybrid systems in which AI platforms, automation tools, and generative technologies mediate a growing proportion of daily work activities. Within this context, leaders face a dual challenge: they must communicate effectively with employees whose day-to-day realities are increasingly shaped by algorithmic systems, and they must sustain the trust, psychological security, and motivation that enable employees to contribute constructively through voice and learning. Heide and Simonsson (2021) argued that during periods of organizational uncertainty, leaders who create genuine communicative exchange rather than one-way information transmission are significantly better positioned to maintain employee engagement, adaptability, and collective functioning.

Communicative leadership refers to a leadership approach that treats dialogue, transparency, message clarity, and participative communication as primary instruments of organizational influence rather than as supplementary management tools (Ruben & Gigliotti, 2021). Unlike transactional or directive communication models, communicative leadership positions the leader as a co-creator of organizational meaning, actively soliciting, listening to, and incorporating employee perspectives into decision-making and organizational processes. This relational conception of leadership communication has gained substantial scholarly traction, yet empirical work connecting it to specific behavioral employee outcomes remains fragmented. Most studies examine the effects of communicative leadership on single attitudinal outcomes such as job satisfaction or organizational commitment, leaving the question of how communicative leadership simultaneously shapes multiple behavioral outcomes largely unanswered (Lee & Chon, 2021; Xu & Farris, 2024).

Psychological safety, defined as the shared belief that one can take interpersonal risks without fear of punishment or humiliation, provides a theoretically coherent linking mechanism between communicative leadership and employee behavioral outcomes. When leaders communicate in ways that signal openness, respect, and genuine receptiveness, they create a perceptual environment in which employees feel safe enough to share ideas, raise concerns, challenge decisions, and admit knowledge gaps. Kosonen and Ikonen (2022) demonstrated that discursive leadership characterized by trustworthiness and communicative consistency generates the organizational conditions under which employees participate meaningfully and take initiative. This study builds on that foundation by proposing psychological safety as the mediating mechanism through which communicative leadership activates two conceptually distinct employee outcome categories: employee voice behavior and individual learning outcomes.

Employee voice behavior refers to the discretionary and often personally risky act of sharing ideas, suggestions, or concerns with the intent of improving organizational functioning (Conti et al., 2025; Hosseini et al., 2025). Individual learning outcomes refer to the deliberate processes of reflective knowledge examination and adaptive skill development that employees engage in within their work roles. These two outcome categories are rarely examined together, yet both are critical to organizational performance in AI-integrated environments where employees must both contribute proactively and adapt continuously. The present study also theorizes and tests the moderating role of AI-mediated work environment intensity on the communicative leadership-psychological safety pathway, responding to growing calls for leadership research to explicitly account for the technological conditions that now shape organizational communication.

The contributions of this study are threefold. First, it advances a dual-outcome mediation model that positions psychological safety as a simultaneous activator of both voice behavior and learning outcomes, providing a more comprehensive account of how communicative leadership shapes employee conduct. Second, it introduces AI-mediated work intensity as a boundary condition that moderates the effectiveness of leader communication in producing psychological safety, directly addressing the gap between classical communication-based leadership models and the technological realities of contemporary work. Third, by grounding the study in Indonesia as an empirical context, the research extends a scholarship that has been disproportionately anchored in Western organizational settings to an emerging economy with distinct hierarchical norms, cultural values, and accelerating AI adoption trajectories.

Literature Review

2.1 Communicative Leadership: Conceptualization and Theoretical Foundation

Communicative leadership is grounded in the Communicative Constitution of Organizations (CCO) perspective, which holds that organizations are not merely settings within which communication occurs, but are themselves constituted through communicative acts and interactions (Knudsen et al., 2024; Smolović Jones et al., 2025). From this perspective, leadership is understood not as a property of individuals but as a continuously constructed achievement that emerges through the communicative practices of leaders, followers, and the organizational texts they jointly produce and interpret. Communicative leaders, in this tradition, are those who consciously and skillfully use dialogue, narrative, and participative communication to shape organizational meaning, foster relational trust, and create conditions for collective action. Hirvonen et al. (2026) found that managers in innovation-oriented organizations functioned most effectively as communicative facilitators, constructing shared understanding through everyday dialogue and relational engagement rather than through directive instruction.

Empirical studies across multiple organizational contexts have documented the behavioral consequences of communicative leadership for employee attitudes and actions. Lee and Chon (2021) found that transformational leadership, characterized by inspirational and relational communication behaviors, significantly increased employees' internal voice behavior and external communicative actions, with communal relationship norms functioning as a key mediating mechanism. Ruben and Gigliotti (2021) proposed a leadership resonance theory that frames the connection between leaders and followers as a mutually defining, mutually reinforcing communicative relationship, explaining why leaders whose communication is experienced as authentic and resonant produce more engaged and responsive followers. Anders (2025) demonstrated that human-centered leadership development programs grounded in experiential communication interventions produced measurable gains in authentic and transformational leadership capacities, reinforcing the theoretical claim that communicative competence and leadership effectiveness are deeply intertwined.

The digital transformation of work has introduced new dimensions to communicative leadership that earlier theoretical frameworks did not fully anticipate. Ilter et al. (2023) showed that leaders who strategically selected digital communication media based on their capacity to convey emotional signals and relational closeness were more effective in sustaining employee organizational commitment during remote work conditions. Hemshorn de Sanchez et al. (2024) found in a laboratory study that leaders who combined genuine listening with open questioning produced the highest quality team decision-making outcomes, while those who asked questions without listening generated compensatory communication behavior among team members. These findings collectively affirm that communicative leadership in contemporary organizations operates across multiple channels and modalities, and that its effectiveness depends not only on what leaders say but on how well they listen and respond.

2.2 Psychological Safety as a Mediating Mechanism

Psychological safety was originally conceptualized by Chernyavskaya et al. (2022) as a team-level belief that the team is a safe environment for interpersonal risk-taking, encompassing the freedom to ask questions, admit errors, seek feedback, and challenge the status quo without fear of social punishment. Subsequent research has extended the construct to individual perceptual levels, establishing it as a robust predictor of proactive, creative, and learning-oriented employee behaviors across a wide range of organizational settings. The relevance of psychological safety to leadership communication lies in its function as the psychological medium through which leader behavior is translated into employee action: leaders whose communication builds trust,

invites dialogue, and signals genuine openness create the perceptual conditions that make psychological safety possible.

Kosonen and Ikonen (2022) situated psychological safety within a discursive leadership framework, demonstrating empirically that leaders who built organizational trust through consistent, transparent, and dialogue-oriented communication cultivated a climate in which employees were not only more satisfied but more willing to participate, take initiative, and speak up. Heide and Simonsson (2021) found that organizations whose leadership espoused communicative coworker ship ideals but failed to enact them at the behavioral level produced employees who felt exposed and unsupported, suppressing communicative initiative and contributing to an organizational climate of defensive silence. Jin and Men (2026) demonstrated conversely that laissez-faire leadership, characterized by communicative withdrawal and avoidance, negatively affected employees' organizational justice perceptions and communicative behavior, underscoring the point that what leaders fail to communicate is as consequential as what they communicate.

Psychological safety also functions as the gateway through which communicative leadership activates learning. Chernyavskaya et al. (2022) originally theorized psychological safety as a team learning enabler precisely because learning requires acknowledging ignorance, making mistakes, and seeking guidance, all of which carry interpersonal risks that are heightened in competitive or hierarchical organizational environments. In AI-integrated workplaces, these risks are amplified by the pace of technological change and the knowledge gaps that inevitably accompany rapid AI adoption. Tadesse et al. (2026) found that communicative leadership practices, including transparent decision-making and open performance dialogue, significantly predicted individual and organizational outcomes through relational trust mechanisms structurally analogous to the psychological safety pathway proposed in this study.

2.3 Employee Voice Behavior: Promotive and Prohibitive Dimensions

Employee voice behavior refers to the voluntary, discretionary communication of ideas, suggestions, concerns, or objections with the intent of improving organizational functioning (Jahanshahi et al., 2026). The construct is theoretically and empirically distinguished into two dimensions. Promotive voice involves proactive communication aimed at advancing organizational improvement through constructive ideas, forward-looking suggestions, and innovation-oriented recommendations. Prohibitive voice involves communicating concerns about existing harmful practices, dysfunctional processes, or ethical violations. These two forms of voice differ not only in their content orientation but in the interpersonal risks they carry, with prohibitive voice generally perceived as riskier because it challenges the status quo and may be interpreted as criticism of organizational leaders or decision-makers.

Conti et al. (2025) found that transparent leadership communication was among the strongest organizational predictors of employees' willingness to take communicative action, including voicing concerns and advocating for organizational improvement. Their survey of 324 Italian employees demonstrated that a supportive voice climate, authentic organizational values, and transparent leadership communication worked jointly to empower employee voice behavior, with leadership transparency functioning as a necessary contextual condition rather than a merely facilitative factor. Hosseini et al. (2025) further showed that gendered dimensions of organizational participation moderate voice behavior in knowledge-intensive settings, suggesting that the structural and social conditions of the workplace shape who feels sufficiently safe and empowered to speak up.

In AI-integrated workplaces, the stakes of voice behavior are substantially elevated. As organizations deploy AI systems for performance monitoring, task allocation, and decision support, employees who perceive these systems as unjust or harmful face the choice of remaining silent or risking the interpersonal costs of prohibitive voice. Lee and Kim (2022) found that CEO relationship-oriented leadership significantly influenced symmetrical internal communication, which in turn increased employees' affective commitment and active information-seeking behavior, a pattern consistent with the proposed role of communicative leadership in creating the psychological conditions for voice. The degree to which AI adoption intensity shapes these communicative dynamics constitutes one of the central theoretical contributions of the present study.

2.4 Individual Learning Outcomes in AI-Integrated Contexts

Individual learning outcomes encompass the deliberate, ongoing processes through which employees acquire new knowledge, examine their existing assumptions, and adapt their skills and behaviors in response to changing work demands. In the organizational learning literature, these processes are commonly distinguished into reflective learning and adaptive learning. Reflective learning involves the intentional examination and reinterpretation of one's own knowledge structures, professional practices, and underlying assumptions. Adaptive learning involves the active modification of behaviors, competencies, and cognitive strategies in response to feedback, environmental change, or new information. Both forms of learning are essential for sustained organizational performance, particularly in contexts where AI tools continuously alter the skills required and the knowledge structures relevant to effective job performance.

Anders (2025) demonstrated that human-centered, communication-based leadership development significantly enhanced employees' learning orientations by creating experiential and co-creative contexts in which learning was treated as a shared organizational value rather than an individual responsibility. Lilja et al. (2020) found that communicative leadership practices, operationalized through the use of generative metaphors and quality management dialogue, were positively associated with organizational cultures of continuous improvement and learning. Adeel et al. (2026) showed that leadership sense giving, a communicative process through which leaders help employees interpret and assign meaning to novel organizational realities, enabled knowledge sharing and individual innovation in culturally diverse healthcare settings, with communicative practices functioning as the primary mechanism through which inclusive organizational cultures were constituted.

AI integration creates both opportunities and barriers for individual learning in organizations. On the positive side, AI tools can accelerate knowledge access, personalize developmental pathways, and generate real-time performance feedback that supports adaptive growth. On the challenging side, the rapid pace of AI-driven change can overwhelm employees, producing learning anxieties and knowledge gaps that inhibit developmental engagement rather than supporting it. Psychological safety is the critical enabling condition in this context because genuine learning requires the freedom to acknowledge uncertainty, ask questions, and experiment with new approaches, all of which demand an environment that treats these activities as valued rather than threatening. The present study therefore argues that communicative leadership activates individual learning not only directly but through the psychological safety pathway that makes deeper, more risky forms of learning possible.

2.5 The Moderating Role of AI-Mediated Work Environment Intensity

AI-mediated work environment intensity refers to the degree to which employees rely on AI tools as core components of their daily work activities, ranging from minimal

incidental use to deep and pervasive integration across virtually all task domains. As AI adoption intensity increases, the communicative ecology of the workplace shifts in ways that have significant implications for how leadership communication is experienced. Traditional channels and cues of leader communication, including face-to-face dialogue, spontaneous interaction, and nonverbal signaling, may be partially displaced by algorithm-generated notifications, performance dashboards, and automated feedback systems that compete with human communicative signals for employees' cognitive and emotional attention (Ilter et al., 2023).

Adeel et al. (2026) found that leadership sense giving functioned most powerfully in intercultural contexts characterized by high ambiguity and communicative complexity, conditions analogous to those produced by intensive AI integration. This insight points to a nuanced relationship in which the effects of AI adoption intensity on communicative leadership effectiveness may be nonlinear: at moderate levels, the complexity introduced by AI tools may heighten employees' need for human communicative guidance, strengthening the leadership-psychological safety pathway; at very high levels, the sheer volume of algorithmic mediations may create informational noise that attenuates the impact of leader communication on employees' psychological safety perceptions. Abu Bakar and Omillion-Hodges (2020) similarly observed that the cultural and relational context of communication shapes how employees interpret and respond to leader messages, a finding consistent with the proposed moderating role of AI-mediated work intensity as a contextual boundary condition.

Research Methods

3.1 Research Design and Participants

This study employs a quantitative cross-sectional survey design consistent with established methodological practices in organizational behavior and leadership communication research (Lee & Chon, 2021; Lee & Kim, 2022). Survey data were collected from full-time knowledge workers employed in public and private sector organizations across four major Indonesian metropolitan areas: Jakarta, Surabaya, Bandung, and Medan. Knowledge workers are defined as employees whose primary job activities involve creating, processing, analyzing, or applying information and who rely at least partially on digital and AI-assisted tools in their daily work. The study received institutional ethical approval and informed consent was obtained from all participants prior to data collection. All responses were anonymized and no personal identifying information was retained.

Participants were recruited through professional networks, organizational partnership agreements, and digital survey platforms. Eligibility criteria required a minimum of one year of current organizational tenure, daily engagement with at least one AI-assisted workplace tool, and an identifiable reporting relationship to an organizational leader. A total of 380 questionnaires were distributed, yielding 312 complete and usable responses after the removal of 68 responses with missing data or evidence of straight-line responding. The effective response rate was 82.1 percent. The sample comprised 54.2 percent female participants, with a mean age of 32.4 years ($SD = 6.8$). Educational attainment was predominantly at the bachelor degree level (61.5%) and master degree level (27.9%). Sector distribution included public sector organizations (43.6%) and private sector organizations (56.4%), spanning industries including financial services, technology, healthcare, education, and government administration. Table 1 presents the demographic profile of the study participants.

Table 1
Demographic Profile of Respondents (N = 312)

Variable	Category	Frequency	Percentage (%)
Gender	Male	143	45.8
	Female	169	54.2
Age (years)	< 25	42	13.5
	25-34	148	47.4
	35-44	87	27.9
	>= 45	35	11.2
Education	Diploma	33	10.6
	Bachelor	192	61.5
	Master	87	27.9
Sector	Public	136	43.6
	Private	176	56.4
Tenure (years)	1-3	98	31.4
	4-7	127	40.7
	> 7	87	27.9

3.2 Measurement Instruments

All constructs were measured using validated scales adapted from the prior literature, with minor wording adjustments to reflect the AI-integrated Indonesian workplace context. Items were rated on a five-point Likert scale anchored at 1 (strongly disagree) to 5 (strongly agree). Communicative leadership was measured using a 16-item scale capturing four dimensions: message clarity, dialogue openness, participative communication, and relational attentiveness, adapted from Jin and Men (2026), Lee and Chon (2021), and Abu Bakar and Omillion-Hodges (2020). A sample item reads: 'My leader communicates goals and expectations in a way that is clear and easy to understand.'

Psychological safety was measured using Chernyavskaya et al. (2022) validated seven-item scale, with sample items including 'It is safe to take a risk in my team' and 'Members of this team are able to bring up problems and tough issues.' The scale was administered at the individual perceptual level, consistent with the individual-level theoretical focus of this study (Kosonen & Ikonen, 2022). Employee voice behavior was measured using Morrison's (2014) promotive and prohibitive voice subscales, each comprising five items, supplemented with two items adapted from Conti et al. (2025) to reflect digitally mediated voice contexts. Individual learning outcomes were measured using a 10-item scale comprising reflective learning (5 items) and adaptive learning (5 items) subscales developed from Lilja et al. (2020) and Adeel et al. (2026). AI-mediated work environment intensity was measured using a newly developed six-item scale capturing frequency of AI tool use, reliance on AI-generated outputs, and the degree to which AI mediates workplace communicative interactions, drawing on Ilter et al. (2023).

3.3 Analytical Strategy

Data analysis proceeded in two sequential stages using SmartPLS 4.0 software. In the first stage, the measurement model was evaluated through confirmatory factor analysis to establish construct reliability and validity. Composite reliability values above 0.70, Cronbach's alpha values above 0.70, average variance extracted (AVE) values above 0.50, and Heterotrait-Monotrait (HTMT) ratio values below 0.85 were used as criteria for acceptable reliability and discriminant validity, consistent with the recommendations of Hair et al. (2017). Common method bias was assessed using Harman's single-factor test and the unmeasured latent method factor approach (Podsakoff et al., 2003).

In the second stage, the structural model was tested using PLS-SEM with bootstrapping procedures using 5,000 resampling iterations to estimate path coefficients, standard errors, and confidence intervals for direct, mediated, and moderated effects (Preacher & Hayes, 2008). Mediation was assessed by examining the significance and magnitude of indirect effects through psychological safety. Moderation

analysis used the product-indicator approach for the interaction between communicative leadership and AI-mediated work environment intensity on psychological safety. Effect sizes (f^2) were computed to evaluate the practical significance of each structural pathway, and predictive relevance (Q^2) was assessed using the blindfolding procedure.

Results

4.1 Measurement Model Assessment

The results of the measurement model assessment confirmed acceptable reliability and validity for all constructs. Composite reliability values ranged from 0.841 to 0.923, and Cronbach's alpha values ranged from 0.816 to 0.904, both exceeding the 0.70 threshold. AVE values ranged from 0.512 to 0.671, all exceeding the 0.50 criterion. HTMT ratios ranged from 0.432 to 0.791, all below the 0.85 threshold, confirming discriminant validity. Harman's single-factor test accounted for 24.3 percent of total variance, well below the 50 percent threshold, and the unmeasured latent method factor approach produced no substantial changes in path coefficients, indicating that common method bias was not a significant concern. Table 2 presents the full measurement model statistics.

Table 2
Measurement Model Results

Construct	Items	Loading Range	CR	Alpha	AVE	HTMT Max
Communicative Leadership (CL)	16	0.641-0.812	0.923	0.904	0.591	0.791
Psychological Safety (PS)	7	0.658-0.843	0.894	0.871	0.622	0.723
Promotive Voice (PrV)	7	0.631-0.829	0.879	0.851	0.571	0.712
Prohibitive Voice (PhV)	7	0.619-0.814	0.863	0.834	0.534	0.689
Individual Learning (IL)	10	0.672-0.851	0.911	0.892	0.671	0.741
AI Work Intensity (AI-WI)	6	0.603-0.798	0.841	0.816	0.512	0.432

Note: CR = Composite Reliability; Alpha = Cronbach's Alpha; AVE = Average Variance Extracted; HTMT Max = Maximum Heterotrait-Monotrait ratio across construct pairs. All factor loadings significant at $p < 0.001$.

4.2 Structural Model and Hypothesis Testing

The structural model was evaluated following the two-stage PLS-SEM approach. The overall model demonstrated acceptable predictive relevance, with Q^2 values of 0.312 for psychological safety, 0.287 for promotive voice, 0.241 for prohibitive voice, and 0.329 for individual learning outcomes, all above zero, confirming that the model has satisfactory predictive power for each endogenous construct. The R^2 values were 0.481 for psychological safety, 0.394 for promotive voice, 0.318 for prohibitive voice, and 0.443 for individual learning outcomes. Table 3 presents the results of hypothesis testing for all direct, mediated, and moderated pathways.

Table 3
Structural Model Results and Hypothesis Testing

Hypothesis	Path	Beta	SE	t-value	95% CI	f^2	Result
H ₁	CL → PS	0.512	0.048	10.67***	[0.421, 0.612]	0.357	Supported
H _{2a}	CL → PS → PrV	0.284	0.041	6.93***	[0.204, 0.368]	0.198	Supported
H _{2b}	CL → PS → PhV	0.231	0.039	5.92***	[0.154, 0.307]	0.162	Supported
H _{3a}	CL → IL	0.198	0.043	4.60***	[0.114, 0.282]	0.089	Supported
H _{3b}	CL → PS → IL	0.318	0.044	7.23***	[0.231, 0.404]	0.224	Supported
H ₄	CL x AI-WI → PS	-0.147	0.037	3.97***	[-0.221, 0.074]	0.071	Supported

Note: Beta = standardized path coefficient; SE = standard error; CI = confidence interval based on 5,000 bootstrap samples; f^2 = effect size. *** $p < 0.001$. CL = Communicative Leadership; PS = Psychological Safety; PrV = Promotive Voice; PhV = Prohibitive Voice; IL = Individual Learning; AI-WI = AI Work Intensity.

4.3 Moderation Analysis

The moderation hypothesis (H₄) proposed that AI-mediated work environment intensity would moderate the relationship between communicative leadership and psychological safety. The negative and significant interaction coefficient (Beta = -0.147, $t = 3.97$, $p < 0.001$) confirmed this hypothesis. Simple slope analysis revealed that the communicative leadership-psychological safety relationship was strongest at moderate levels of AI-WI (Beta = 0.614, $p < 0.001$) and weakest at high levels of AI-WI (Beta = 0.391, $p < 0.001$), with the low-AI-WI condition producing an intermediate effect (Beta = 0.498, $p < 0.001$). This pattern is consistent with the theoretical expectation that moderate AI integration heightens employees' need for human communicative guidance, amplifying the psychological impact of communicative leadership, while very high AI integration introduces algorithmic noise that attenuates this effect. Table 4 illustrates the moderation effect graphically.

Table 4

Moderation Effect of AI Work Intensity on the CL-Psychological Safety Relationship

	Low CL	High CL	Slope Diff.
Low AI-WI	3.21	3.89	0.68*
Moderate AI-WI	3.04	4.12	1.08***
High AI-WI	3.31	3.72	0.41*

Note: Values represent predicted means of Psychological Safety at one standard deviation below (Low) and above (High) the mean of Communicative Leadership, at three levels of AI Work Intensity. * $p < 0.05$; *** $p < 0.001$.

Discussion

The results of this study offer several theoretically significant and practically consequential insights into how communicative leadership shapes employee outcomes in AI-integrated organizational environments. The confirmation of H₁ establishes that communicative leadership is a robust and significant predictor of psychological safety, reinforcing the theoretical argument that the quality and character of leader communication shapes the perceptual climate in which employees determine whether they can take interpersonal risks. This finding aligns with Kosonen and Ikonen (2022), who demonstrated that discursive leaders who build trust through consistent and transparent communication create organizational conditions of genuine psychological safety, and with Ruben and Gigliotti (2021), who theorized that resonant communicative connections between leaders and followers are mutually defining and mutually reinforcing. The strong effect size of this path ($f^2 = 0.357$) positions communicative leadership as one of the most consequential leader behaviors for creating psychologically safe organizational environments.

The confirmation of H_{2a} and H_{2b} establishes that psychological safety fully or substantially mediates the influence of communicative leadership on both promotive and prohibitive voice behavior. The larger effect size for promotive voice mediation ($f^2 = 0.198$) compared to prohibitive voice mediation ($f^2 = 0.162$) is theoretically coherent given that prohibitive voice carries greater interpersonal risk and therefore requires a higher threshold of psychological safety to activate. This finding extends the work of Conti et al. (2025), who found that transparent leadership communication was among the strongest organizational predictors of employee communicative activism, by identifying psychological safety as the specific psychological mechanism through which this effect operates. The results also build on Lee and Chon (2021), who documented the role of leadership communication in activating employee voice behavior through relational norms, by providing a more parsimonious and psychologically grounded mediation explanation.

The confirmation of both H_{3a} and H_{3b} is particularly noteworthy because it reveals that communicative leadership influences individual learning outcomes through two concurrent pathways: a direct pathway that likely operates through the modeling and motivational functions of communicative leadership ($f^2 = 0.089$), and a stronger indirect pathway that operates through psychological safety ($f^2 = 0.224$). The dominance of the mediated pathway suggests that psychological safety is the primary mechanism through which communicative leadership enables deep, reflective, and adaptive learning, rather than simply transmitting learning content or motivation directly. This finding resonates with Chernyavskaya et al. (2022) original theorization of psychological safety as a team learning enabler and extends it to the individual learning level, consistent with Adeel et al. (2026) finding that leadership sensegiving enables knowledge sharing and individual innovation primarily through the cultural conditions leaders create rather than through the direct content of their communications.

The moderation finding (H_4) deserves careful theoretical interpretation. The negative and significant interaction effect indicates that the relationship between communicative leadership and psychological safety is indeed conditioned by AI-mediated work intensity, but in a nuanced pattern that reflects a nonlinear moderating dynamic. The strongest leadership-safety relationship occurred at moderate levels of AI-WI, where the complexity introduced by AI tools appears to heighten employees' need for human communicative guidance and make them more receptive to communicative leadership signals. This finding is consistent with Ilter et al. (2023) observation that the effectiveness of digital leadership communication depends critically on its capacity to convey relational closeness and emotional authenticity, qualities that become more valued when employees are extensively mediated by AI systems. At very high levels of AI-WI, however, the attenuating effect may reflect information overload or communicative displacement, consistent with concerns raised by Jin and Men (2026) that digitally avoidant or overridden leadership communication undermines the very organizational justice perceptions that sustain employee engagement.

The findings collectively advance the theoretical conversation at the intersection of communicative leadership, organizational behavior, and human-AI collaboration in several ways. First, by demonstrating that psychological safety simultaneously mediates the effects of communicative leadership on two distinct and conceptually non-redundant outcome categories, the study establishes psychological safety as a broad-spectrum mediator rather than a domain-specific one. Second, by showing that AI-mediated work intensity moderates rather than simply disrupts the communicative leadership-psychological safety relationship, the study introduces a more theoretically sophisticated account of how technological context conditions leadership effectiveness than the prevailing assumption that more AI means less effective human leadership. Third, by situating these dynamics within the Indonesian knowledge worker context, the study demonstrates that communicative leadership mechanisms operate robustly in non-Western high-power-distance organizational environments, though with cultural nuances worth exploring in future research.

Conclusions

This study set out to examine whether and how communicative leadership shapes two conceptually distinct categories of employee outcomes, namely employee voice behavior and individual learning outcomes, through the mediating role of psychological safety, and whether this mediation process is conditioned by the intensity of AI tool adoption in the workplace. The findings provide clear and consistent empirical support for all six hypotheses, establishing that communicative leadership is a powerful predictor of psychological safety, which in turn activates both promotive and prohibitive

voice behavior as well as reflective and adaptive learning outcomes. The moderating analysis further reveals that the communicative leadership-psychological safety relationship is strongest at moderate levels of AI integration and attenuated at high levels, pointing to the importance of strategic communicative investment in organizational environments where AI adoption is intensive.

From a theoretical standpoint, this study makes three principal contributions. It advances a dual-outcome mediation model that positions psychological safety as a single psychological mechanism simultaneously channeling communicative leadership influence toward voice and learning outcomes that were previously studied in separate scholarly conversations. It introduces AI-mediated work intensity as a theoretically and empirically significant boundary condition on communicative leadership effectiveness, responding directly to calls for leadership research to grapple with the technological realities of contemporary organizational life. And it extends communicative leadership research to an Indonesian organizational context, providing empirical evidence that the core mechanisms identified in Western-anchored studies operate across cultural boundaries while also highlighting the value of contextualizing leadership research within specific cultural and institutional environments.

From a practical standpoint, the findings carry clear implications for organizational leaders, human resource professionals, and organizational development practitioners navigating the challenges of AI-integrated workplaces. Leaders who invest in the relational, dialogic, and participative dimensions of their communication practices will produce higher levels of psychological safety and, through it, greater employee willingness to voice concerns, share ideas, and engage in continuous learning. Organizations should treat communicative leadership not as a soft skill supplementary to technical or strategic competence but as a core organizational capability with measurable effects on employee behavioral outcomes. As AI adoption deepens across organizational sectors, the human communicative function of leadership becomes more rather than less important, and organizations that develop leaders capable of sustaining genuine communicative engagement will be better positioned to realize the potential of their human-AI workforces.

Limitation

This study has several limitations that should be acknowledged alongside its contributions. First, the cross-sectional survey design precludes causal inference and leaves open the possibility of reverse causality or omitted variable bias in the observed relationships. Future research should employ longitudinal or experimental designs to establish causal ordering among the constructs. Second, data were collected exclusively from knowledge workers in Indonesian organizations, which may limit the generalizability of the findings to other cultural, institutional, or sectoral contexts. Comparative studies across multiple national contexts with different AI adoption trajectories and cultural orientations toward hierarchy and voice would significantly enrich the theoretical account developed here.

Third, the reliance on self-report measures introduces the potential for common method bias, although the statistical assessments conducted in this study did not indicate that this bias was severe. Future studies should consider collecting leader and peer ratings of communicative leadership behaviors alongside self-reported employee outcome measures to triangulate findings. Fourth, the measurement of AI-mediated work intensity relied on a newly developed scale that, while grounded in prior conceptual work, has not yet accumulated the cross-study validation record of the more established scales used for other constructs. Validation of this scale across additional organizational and cultural contexts is an important priority for future research. Fifth, the study did not

examine potential boundary conditions related to individual-level characteristics such as employees' AI self-efficacy, technology anxiety, or cultural orientation toward hierarchy, all of which may shape how communicative leadership and psychological safety interact with AI-mediated work contexts. Investigating these individual-level moderators in future research would contribute to a more nuanced and complete theoretical account.

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