


Artificial Intelligence Adoption and Psychological Factors Shaping Employee Mental Well-Being

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Abstract

Digital transformation through the adoption of artificial intelligence (AI) is increasingly changing the dynamics of modern work and creating new psychological risks for employees. This study aims to analyze the influence of AI Adoption on Depression, as well as to test the role of Psychological Safety as a mediator and Ethical Leadership as a moderator in this relationship. Using a quantitative approach with SEM-PLS, this study involved 195 employees from the financial sector, selected through purposive sampling with a minimum tenure of one year. The results show that AI adoption has a positive effect on depression and also has an impact on psychological safety. Furthermore, psychological safety has an insignificant effect on depression and mediates the relationship between AI adoption and depression. On the other hand, ethical leadership has a positive effect on psychological safety but does not moderate the of AI adoption on psychological safety. These findings indicate that psychological stress due to technology adoption is more influenced by AI-based work demands than leadership factors. Practically, this study emphasizes the importance of strengthening a psychologically safe work environment to minimize the negative impacts of digitalization and support employee mental well-being.

Keywords: AI Adoption, Psychological Safety, Ethical Leadership, Mental Well-Being

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INTRODUCTION

The development of artificial intelligence (AI) in the last decade has brought fundamental changes in the way organizations work, manage processes, and make strategic decisions (Bagis et al., 2024.; Sharma et al., 2025). AI integration provides huge opportunities through automation, efficiency, and data driven predictive analysis. (Chuang & Huang, 2025). However, recent research shows that AI adoption not only brings positive benefits but also poses psychological risks for employees. Several studies have found that adapting to intelligent technology can increase mental stress, anxiety, and even depression when the change is not accompanied by adequate organizational support. (Kim et al., 2025; Bagis et al., 2024).

This phenomenon is often referred to as the dark side of AI adoption, namely a condition where technology that should make work easier actually creates psychosocial burdens due to increased job demands, changing roles, and intensified digital surveillance

(B.-J. Kim et al., 2025) In a work environment undergoing massive digital transformation, IoT based systems, smart analytics, and big data are simultaneously increasing task complexity, time pressure, and uncertainty regarding job security (Almubarakah et al., 2024; Giuntella et al., 2025). Without adequate emotional and structural support, this condition can reduce employees' psychological well-being and increase the risk of chronic stress and depression (Bagis, Faridli, et al., 2025; B. J. Kim et al., 2025).

Accelerating digital transformation through the adoption of AI-based technology has also begun to be implemented in banking institutions and various microfinance institutions in Purwokerto and Purbalingga regions to improve operational efficiency and service quality. Various financial transactions for customers and prospective customers can be served effectively and efficiently. The banking sector in Indonesia can benefit from the rapid growth of AI technology in its operations (Sri Rahayu et al., 2023).

Although the adoption of artificial intelligence (AI) offers increased efficiency and automation, its implementation also changes the dynamics of employee work through increasing demands for technological adaptation, task intensification, and performance pressure based on digital systems that have the potential to increase work stress (Jin et al., 2024). These increasingly structured and algorithm based work patterns can impact employees' sense of psychological safety when it comes to communicating difficulties, seeking help, or expressing emotional distress. Research shows that AI adoption impacts not only technical aspects and performance but also psychological safety, which plays a key role in explaining the increased risk of employee depression (Bagis, Rabiatal Adawqiyah, et al., 2025)

On the theoretical side, the Job Demands–Resources (JD–R) Model framework explains that increased work demands due to technology can trigger stress when employees do not have sufficient psychological resources to cope. (Bagis, Adawiyah, et al., 2025; Chuang & Huang, 2025). One of these important resources is psychological safety, which is the belief that the work environment is safe for putting forward ideas, admitting mistakes, or expressing opinions without fear (Edmondson, 1999; Aboud et al., 2023). Recent research suggests that AI adoption has the potential to reduce psychological safety due to role uncertainty and increased automated evaluation. (Pereira et al., 2023). However, some studies have found the opposite result, namely that AI can actually increase feelings of psychological safety when perceived as a tool that supports efficiency and collaboration (Newman et al., 2020; Chen et al., 2023; Bankins et al., 2024). This inconsistency highlights a significant gap regarding how AI actually impacts psychological safety in the context of modern organizations..

The relationship between psychological safety and depression also shows inconsistent findings. Several studies have shown that high levels of psychological safety can reduce the risk of depression by providing a safe space to talk, ask for help, and express work stress openly (Bagis et al., 2025; Aboud et al., 2023; B. J. Kim et al., 2025). However, other studies emphasize that depression in the workplace is sometimes more influenced by structural conditions, physical demands, or biological factors than interpersonal factors such as psychological safety (Bankins et al., 2024; van Kessel et al., 2022). These differences in results indicate that the mechanisms by which psychological safety reduces depression, particularly in the context of AI based technological change, are not yet comprehensively understood.

Furthermore, the role of ethical leadership is a crucial factor that has the potential to strengthen employees' psychological resources. Ethical leaders are considered capable of creating a climate of trust, transparency, and moral protection that can maintain psychological safety amidst change (Brown & Treviño, 2006). However, previous research actually shows that technological pressures such as AI are more influenced by digital competence and structural demands than by leader support, so the moderating role of ethical leadership in this context is not yet consistent. (B. J. Kim et al., 2025). This shows

that the moderating relationship of ethical leadership in mitigating the impact of AI on psychological safety has not been fully tested and requires further exploration.

Furthermore, very few studies have simultaneously examined the relationships between AI adoption, psychological safety, depression, and the moderating role of ethical leadership within a single, integrated model. However, a comprehensive understanding of these mechanisms is crucial, especially for the financial sector, which is experiencing accelerated digitalization and high reliance on automated systems. The limited empirical evidence on how psychological safety acts as a mediator, and how ethical leadership can strengthen or weaken the impact of AI, highlights the urgent need to further examine this model.

Practically, this research is urgent given the increasing use of intelligent technology in financial organizations, which has the potential to increase employee psychological stress. If not managed properly, this condition can reduce productivity, increase turnover, disrupt service quality, and impact long-term mental health. Therefore, this research is important to conduct to thoroughly understand how AI adoption affects psychological safety and depression, as well as how the role of ethical leadership can help organizations in creating a psychologically safe work environment in the digital era.

LITERATURE REVIEW

Theory Job Demands–Resources (JD-R) dan Conservation of Resources (COR).

The JD-R theory explains how job characteristics affect employee health and performance (Chuang & Huang, 2025). In this theory, job demands such as heavy workloads, complex decision-making, and role changes due to technology can cause physical and mental stress. Conversely, job resources, such as autonomy, collegial support, and skill development opportunities, can help employees cope with these demands and support well-being and professional growth. COR theory emphasizes that people are driven to maintain and develop resources they consider valuable, such as skills, autonomy, and job security (Chowdhury et al., 2023a). Ancaman terhadap sumber daya ini menimbulkan stres dan risiko negatif, termasuk depresi. Dalam konteks adopsi AI, karyawan dapat merasa sumber daya mereka terancam akibat otomatisasi, berkurangnya otonomi, atau perubahan kompetensi profesional (Bankins et al., 2024; Chowdhury et al., 2023).

From JD–R perspective, AI adoption increases job demands through task complexity, demands for technological adaptation, and accelerated work rhythms that have the potential to cause psychological stress when not balanced by adequate resources (Chuang & Huang, 2025). In line with COR Theory, AI adoption can also be perceived as a threat to employees' important resources, such as professional competence, job control, and job security, thereby triggering stress and increasing the risk of depression (Bagis, Wiwik, et al., 2025; Kim et al., 2025).

Psychological safety is positioned as the primary psychological resource that explains the mechanism of this relationship. In JD–R Theory, psychological safety functions as a job resource that enables employees to cope adaptively with work demands, while in COR Theory, psychological safety acts as an interpersonal resource that protects individuals from resource loss due to uncertainty and technological stress (Edmondson, 1999; Hasanah & Bagis, 2024). When the work environment is psychologically safe, employees are better able to express concerns, seek help, and manage emotional distress, thus minimizing the negative impact of AI adoption on depression. Thus, psychological safety acts as a mediator linking AI adoption and employee depression, as emphasized in the conceptual model (B.-J. Kim et al., 2025).

In addition, ethical leadership is seen as a contextual resource that has the potential to strengthen psychological safety. Based on JD–R Theory, fair, transparent, and morally oriented leadership behavior is a social job resource that supports employees'

sense of security in the face of organizational change (Budhwar et al., 2022). However, in line with COR Theory and the findings (B.-J. Kim et al., 2025), The pressures arising from AI adoption tend to be structural and technology centric, so ethical leadership is not always able to significantly moderate the impact of AI on psychological safety. This confirms that the psychological dynamics resulting from AI adoption are more determined by the characteristics of technological demands than by leadership factors.

AI Adoption and Employee Depression

The adoption of AI in organizations introduces significant new job demands, including the need to learn technology, adapt work processes, and cope with increased task complexity. According to JD-R theory, when these job demands exceed an employee's available resources, the risk of stress and burnout increases, which can trigger symptoms of depression (Braganza et al., 2021). In addition, COR theory emphasizes that threats to important resources, such as professional competence and job stability, can cause significant psychological distress (Y. T. Chuang et al., 2025). When employees feel their resources are threatened by automation or role changes, they are more susceptible to stress and emotional exhaustion. Empirical studies show that rapid technological change increases the risk of depression among workers (Giuntella et al., 2025; Chowdhury et al., 2023). Thus, the adoption of AI may increase the likelihood of employee depression.

H1: AI adoption has a positive effect on improving employee depression.

AI Adoption and Psychological Safety

AI adoption often creates uncertainty in the workplace due to changes in roles, processes, and organizational structures. According to COR theory, threats to important resources, including feelings of security and control over work, can reduce psychological well being (Guo et al., 2026). This unsupportive environment can significantly reduce employees' perceptions of psychological safety. Previous research has shown that AI integration without adequate support reduces employees' sense of psychological safety (Pereira et al., 2023). Therefore, AI adoption tends to lower the level of psychological safety.

H2: AI adoption negatively impacts employee psychological safety.

Psychological Safety and Employee Depression

Psychological safety is considered an important resource that allows employees to take interpersonal risks and express themselves without fear of negative consequences (A. Edmondson, 1999). According to COR theory, employees who have access to important resources such as psychological safety can protect themselves from stress and depression (Inoue et al., 2025). The JD-R theory emphasizes that these job resources help employees cope with job demands effectively, thereby reducing the likelihood of burnout and depression (Chuang & Huang, 2025). A supportive and psychologically safe work environment allows employees to obtain social support, manage stress, and maintain emotional and cognitive energy. Empirical studies have shown that psychological safety plays a role in reducing symptoms of depression in the workplace (Xu et al., 2023). Thus, increasing psychological safety can reduce employee depression.

H3: Psychological safety has a positive impact on employee depression.

The Mediation of Psychological Safety on AI Adoption and Depression

Psychological safety can act as a mediator between AI adoption and employee depression. COR theory states that psychological safety is a resource that enables employees to cope with the threats and uncertainties that arise from technological change (Valtonen et al., 2025). According to JD-R theory, job resources such as psychological safety can mitigate the negative impacts of high job demands arising from AI adoption (Valtonen et al., 2025). When organizations provide a safe environment, employees are better able to manage the demands of adapting to AI, reduce stress, and maintain mental health. Conversely, if psychological safety is low, exposure to the stress and uncertainty of AI can increase the risk of depression. Research shows that

interventions that increase psychological safety are effective in mitigating the negative effects of technological change on employee well being(Dheer et al., 2026). Thus, psychological safety may mediate the relationship between AI adoption and employee depression.

H4: Psychological safety mediates the effect of AI adoption on employee depression.

Ethical Leadership Moderation on AI Adoption and Psychological Safety

Ethical leadership can moderate the relationship between AI adoption and employee psychological safety by providing fair support, guidance, and evaluation during technology transitions(Budhwar et al., 2022). According to JD-R theory, leadership support can be considered a job resource that reduces the burden of AI demands, thereby maintaining employee psychological safety(Schwepker & Dimitriou, 2021). COR theory emphasizes that ethical leaders help employees protect their important resources, reducing the risk of stress and psychological uncertainty (Ibrahim et al., 2025) In the context of AI, high ethical leadership guides technology adoption through transparency, training, and clear communication, thus weakening the negative effects of AI on psychological safety. Conversely, low ethical leadership amplifies the negative impacts of AI due to minimal support. Research shows the positive moderation of ethical leadership in mitigating the impact of technological stressors on employee well-being (Budhwar et al., 2022).

H5: Ethical leadership moderates the impact of AI adoption on employee psychological safety, thereby weakening its negative effects.

METHOD

This study uses quantitative methodology and is a replication of previous research (B. J. Kim et al., 2025)This study analyzes AI adoption, psychological safety, ethical leadership, and depression. The population in this study comes from the financial sector of banking institutions and microfinance institutions in Purwokerto and Purbalingga, with a total of 242 employees, consisting of 96 banking institution employees and 146 microfinance institution employees. The sampling technique used is purposive sampling with the criterion sampling type, namely a sample selection method based on certain criteria that have been determined by the researcher in accordance with the research objectives. (Memon et al., 2025). The criteria used in this study were employees who had a minimum of one year of service. The research was conducted by (Bena et al., 2013) and (Caplin et al., 2022) shows that a minimum of one year of work experience allows respondents to have sufficient experience in the organization to provide relevant answers. The sample size was determined using the Slovin formula with an error rate of 5% (0.05). Based on the calculation results, a minimum sample size of 150 people was obtained. However, to increase the accuracy and reliability of the analysis results, the number of respondents used in this study was set at 195 people.

Data collection was conducted online using Google Forms, which facilitated the distribution of questionnaires to all respondents. Each question item was measured using a five-point Likert scale, namely: 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree). The data obtained were then analyzed using Structural Equation Modeling-Partial Least Squares (SEM-PLS) with the help of SmartPLS software. This method was chosen because it is capable of analyzing complex relationship models.

Each variable in this study was measured using indicators adapted from various previous research sources. Each variable in this study was measured using indicators adapted from various previous research sources. The AI adoption variable in organizations used five indicator items from the research developed(Chen et al., 2023) The ethical leadership variable is measured by five indicator items developed by (Brown & Treviño, 2006). Psychological security variables are measured by five indicators based on

(A. Edmondson, 1999) Meanwhile, the depression variable is measured using five indicators taken from (Andresen et al., 1994).

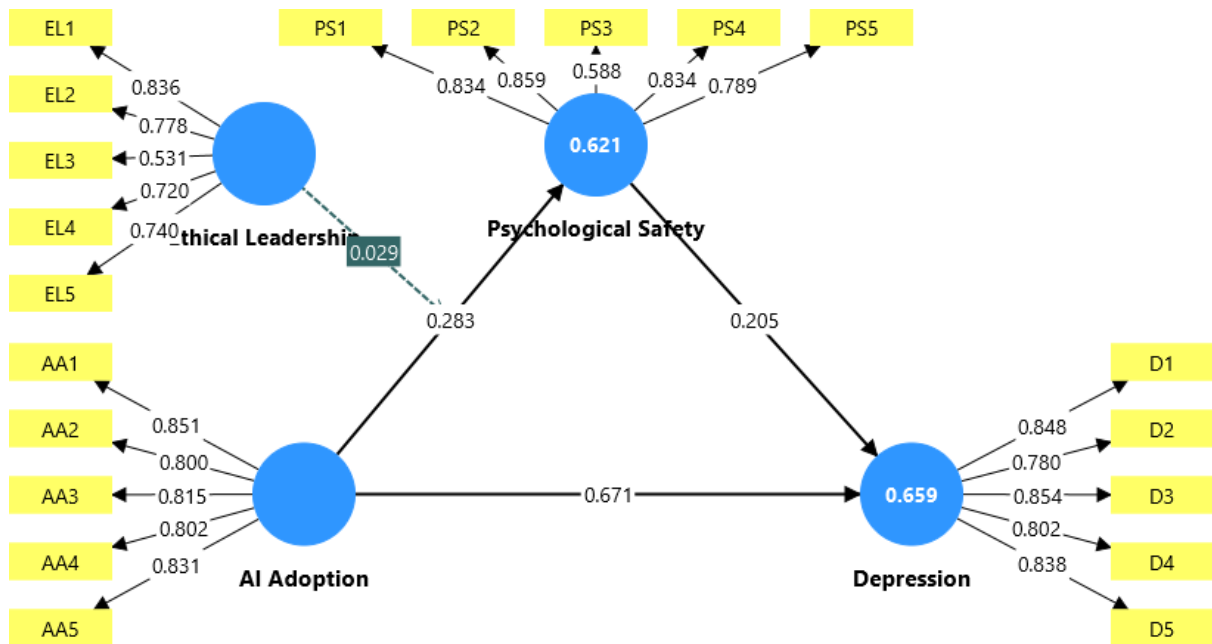
Table. 1 Respondent Demographics

Identity	Information	Frequency	Percentage
Company Origin	Banking institutions	96	49.2
	Microfinance institutions 1	10	5.1
	Microfinance institutions 2	11	5.6
	Microfinance institutions 3	36	18.5
	Microfinance institutions 4	13	6.7
	Microfinance institutions 5	29	14.9
Gender	Male	118	60.5
	Female	77	39.5
Age	18- 25 Years	22	11.3
	26 - 30 Years	48	24.6
	31 - 35 Years	42	21.5
	36 - 40 Years	37	19.0
	41 - 50 Years	33	16.9
	> 50 Years	13	6.7
Length of work	1 - 3 Years	45	23.1
	4 - 6 Years	56	28.7
	7 - 9 Years	32	16.4
	> 10 Years	62	31.8

Table 1. Shows the demographic results of respondents who participated in this study, including institutional origin, gender, age range, and length of service. In the category of institutional origin, the majority of respondents came from banking institutions with a proportion (49.2%), followed by microfinance institutions 3 (18.5%) and microfinance institutions 5 (14.9%). This distribution indicates a relatively large involvement of certain financial institutions compared to others. In terms of gender, respondents were dominated by men at 60.5%, while women numbered 39.5%, reflecting a fairly balanced gender composition in the population studied.

In the age variable, the majority of respondents are in the productive age group, the 26–30 years range with a percentage of (24.6%) and the 31–35 years range with a percentage of (21.5%). Other age groups such as 36–40 years (19%) and 41–50 years (16.9%) also show significant contributions, indicating that most respondents are in an active career phase. Furthermore, the distribution of length of service shows fairly even variations, with the highest proportion being more than 10 years (31.8%) and 4–6 years of service (28.7%). This finding indicates that respondents have diverse work experience, ranging from new employees to those with long service periods.

RESULT AND DISCUSSION



Results of SEM-PLS model analysis

Indicates an outer loading value greater than 0.70. This means that each statement item with a value above 0.70 is considered valid. Indicators with an outer loading value above 0.50 are retained because they are deemed to meet the eligibility criteria. (Hair et al., 2021).

Table 2. Outer loading

	Statement Items	Outer Loading
AA1	our company uses ai in human resource management system	0,851
AA2	Our company uses AI technology in production and operation systems	0,800
AA3	Our company uses AI technology in marketing and customer management systems	0,815
AA4	Our company uses AI technology in planning and strategy systems	0,802
AA5	Our company uses AI technology in financial and accounting systems	0,831
D1	I feel depressed	0,848
D2	I find everything difficult to do	0,780
D3	I slept restlessly	0,854
D4	I feel lonely	0,802
D5	I feel hopeful about the future	0,838
EL1	My leader disciplines employees who violate ethical standards	0,836
EL2	My leader applies ethics and values when interacting with employees	0,778
EL3	My leader sets an example of ethical behavior	0,531
EL4	My leader considers moral aspects in decision making	0,720
EL5	My leader cares about the welfare of his subordinates	0,740

	Statement Items	Outer Loading
PS1	I feel safe to take risks in this organization	0,834
PS2	I feel comfortable bringing up difficult problems or issues to colleagues or superiors in this organization	0,859
PS3	I easily ask other members of this organization for help when I need it	0,588
PS4	No member of this organization has intentionally undermined or hindered my efforts	0,834
PS5	I feel that my opinions and ideas are valued by other members of this organization	0,789

Table. 2 Displaying the outer loading results in the analysis, which shows that there are several indicators with values below 0.07. However, because the analysis was conducted in one round, these indicators were not removed, which is in line with the research (Hair et al., 2021) Indicators with outer loading values between 0.05 and 0.70 can still be retained if their deletion does not provide a significant improvement in model quality.

The next step was to evaluate discriminant validity by examining the cross-loading values. Based on these results, it was found that the EL5 indicator had a higher correlation with other constructs than with its original construct. This condition has the potential to interfere with discriminant validity because it indicates ambiguity in the construct's representation. As recommended (Hair et al., 2021), Indicators showing high cross-loadings on other constructs should be considered for removal to improve clarity of boundaries between constructs. Therefore, indicator EL5 was eliminated, and the model was then recalculated to obtain a more valid and reliable measurement model structure.

Table 3. Construct Reliability dan Validity

	Cronbach's alpha	Rho_A	Composite reliability	Average variance extracted (AVE)
Ai Adoption	0,878	0,879	0,911	0,673
Depression	0,882	0,884	0,914	0,680
Ethical Leadership	0,773	0,794	0,847	0,530
Psychological safety	0,843	0,865	0,889	0,619

Referring to Table 3. From the description above, it is known that the variables ai adoption, depression, ethical leadership, psychological safety are more than 0.5. The Average Variance Extracted (AVE) value shows that the overall construct value is more than 0.5, thus indicating that all variables in this study are stated to be reliable.

Table 4. Model Fit

	Saturated model	Estimated model
SRMR	0,066	0,066
d_ULS	0,913	0,914
d_G	0,409	0,409
Chi-square	435,362	434,395
NFI	0,816	0,817

Based on Table 4, the results of the mode suitability test show an SRMR value of 0.066. This result is lower than the threshold of 0.08 recommended by (Hair et al., 2021). Thus, it can be concluded that this research model generally has a good level of model suitability and is suitable for use in future analyses.

The adjusted R-square value for the Depression variable is 0.659, meaning that 65.9% of the variation in employee depression can be explained by AI Adoption and Psychological Safety. This value falls into the moderate to strong category. (Hair et al., 2021), Therefore, it can be concluded that the model has good explanatory power regarding employee depression levels. Furthermore, the R-square value for the Psychological Safety variable, which is 0.527, indicates that AI Adoption and Ethical Leadership can explain 52.7% of the variation in psychological safety. This value is in the moderate category, meaning that both variables make a substantial contribution to predicting levels of psychological safety in the workplace.

Table 5. Discriminant Validity

	Ai Adoption	Depression	Ethical Leadership	Psychological safety
Ai Adoption	0,820			
Depression	0,795	0,825		
Ethical Leadership	0,503	0,509	0,762	
Psychological safety	0,603	0,610	0,653	0,787

Discriminant validity testing in this study was carried out using the Fornell-Larcker criteria to ensure that each construct used in the model has clear conceptual boundaries and does not overlap (Hair et al., 2021). A construct is said to fulfill discriminant validity if the square root value of the AVE of the construct is higher than its correlation with other constructs.

Based on the evaluation results in the table, all constructs in the study, including AI Adoption, Depression, Ethical Leadership, and Psychological Safety, show that the square root of the AVE value is higher than its correlation with the other constructs. This indicates that each variable in the model has unique conceptual characteristics and can stand alone without any overlapping measurements between variables.

Thus, it can be concluded that all constructs have met the discriminant validity criteria according to the Fornell Larcker approach, so they are suitable for use in further analysis.

Table 6. Path Coefficients

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Hasil
AiAdoption-> Depression	0,671	0,672	0,070	9,638	0,000	Accepted
AiAdoption-> Psychological safety	0,369	0,371	0,070	5,282	0,000	Accepted
Psychological safety->Depression	0,076	0,077	0,032	2,352	0,000	Accepted
Ethical Leadership x AiAdoption-> Psychological safety	0,008	0,027	0,056	0,150	0,881	Rejected
Psychological safety -> Depression	0,205	0,205	0,072	2,838	0,005	Accepted

Based on Table 6 of the Path Coefficients presented in the document, the process of testing the acceptance and rejection of the hypothesis is carried out by referring to the P-value, where a P-value <0.05 indicates that a relationship is statistically significant. The

results of the analysis show that the first hypothesis, namely the effect of AI Adoption on Depression, is proven significant with a P-value of 0.000, so the hypothesis is declared accepted. Furthermore, the second hypothesis that tests the relationship between AI Adoption and Psychological Safety also shows significant results with a P-value of 0.000, so this hypothesis is also accepted.

The third hypothesis, which states that psychological safety has a mediating effect on AI adoption and depression, shows a P-value of 0.080, indicating a significant relationship and supporting the acceptance of the hypothesis. However, the fourth hypothesis, which tests the interaction effect (moderation effect) between Ethical Leadership × AI Adoption on Psychological Safety, shows a P-value of 0.881, which is above the significance limit of 0.05. Thus, this hypothesis is rejected because there is insufficient evidence that the interaction has a significant influence.

The fifth hypothesis, which assesses the effect of Psychological Safety on Depression, showed a P-value of 0.005, thus being declared significant and the hypothesis accepted. Overall, the results of the study indicate that most hypotheses have empirical support, except for the moderating effect of Ethical Leadership × AI Adoption, which was not proven significant in improving Psychological Safety.

DISCUSSION

The Impact of AI Adoption on Depression

AI adoption has a positive effect on increasing depression. This finding indicates that the increased use of AI in the workplace can increase employee psychological distress. From the perspective of Job Demands–Resources (JD-R) Theory, new technologies such as AI can create additional job demands in the form of cognitive demands, the need for rapid adaptation, and uncertainty regarding changing work roles. When these demands are not balanced with adequate work resources, individuals will be more susceptible to strain, ranging from stress to depressive symptoms (Chuang & Huang, 2025). This is also evident in banking and microfinance institutions, where the implementation of digital systems and AI in banking and microfinance operations requires employees to adapt quickly to new procedures, system-based targets, and digital performance monitoring, which has the potential to increase psychological stress and vulnerability to depression if not balanced with adequate organizational support. This finding is in line with empirical studies showing that rapid technological change increases the risk of depression among workers (Giuntella et al., 2025); Chowdhury et al., 2023).

The Impact of AI Adoption on Psychological Safety

AI adoption has a positive impact on psychological safety. These findings suggest that when technology is perceived as a supportive resource, its presence can actually strengthen employees' sense of security at work. Within the JD-R framework, AI that reduces manual workloads, minimizes potential errors, and increases efficiency serves as a job resource that expands employees' capacity to meet work demands, thus fostering self-confidence, role clarity, and psychological well-being (Chuang & Huang, 2025). This is also evident in banking and microfinance institutions. AI adoption focused on improving service accuracy, process transparency, and administrative ease can create a more structured work environment, helping employees feel more secure, confident, and comfortable in carrying out their daily tasks.

In line with that, (Newman et al., 2020; Raisch, 2021) emphasizes that technology that provides easy access to information, clearer work structures, and more organized communication flows can strengthen positive psychological experiences because employees feel more directed and supported in carrying out their tasks. Therefore, AI can enhance psychological safety when positioned as a collaborative tool that helps employees perform their jobs more effectively, rather than as a threat that reduces control or disrupts role stability.

The Influence of Psychological Safety on Depression

Psychological safety is correlated with a person's level of depression. This aligns with the COR theory. Employees who feel safe to report problems, ask for help, or express emotional distress indicate positive psychological safety, which leads to lower levels of depression.(B.-J. Kim et al., 2025). This condition is also seen in banking institutions and microfinance institutions that employees who feel psychologically safe, especially in conveying work difficulties and emotional stress, tend to have better mental resilience, so that the risk of depression due to work demands and technology adoption can be minimized. This research (van Kessel et al., 2022; Raisch & Krakowski, 2021) also emphasized that psychological safety can reduce the risk of burnout and depressive symptoms by increasing interpersonal comfort and a sense of support from the work environment. Thus, psychological safety acts as a psychological barrier that protects individuals from the stressors of technology adoption and other job demands.

The influence of Psychological Safety mediation on AI Adoption on Depression

Psychological Safety has a mediating effect on the relationship between AI Adoption and Depression. This shows that in line with the Conservation of Resources (COR) theory, psychological safety is an interpersonal resource that helps individuals face threats and uncertainties that arise due to the adoption of technology (Bankins et al., 2024). When employees feel safe to raise challenges, ask for help, or express emotional distress, the negative effects of technological demands can be minimized. This is also evident in banking and microfinance institutions, where psychological safety is a crucial factor in helping employees navigate technological change, particularly when they feel they have a space to discuss challenges, address technical challenges, and receive social support amidst their organization's digital transformation.

Study from (Chowdhury et al., 2023;Brady et al., 2020) also supports that increasing psychological support can reduce the negative impact of technology on mental well being.

The moderating effect of Ethical Leadership on AI Adoption towards Psychological Safety

Ethical leadership on the relationship between AI adoption and psychological safety showed no moderating effect. This suggests that while ethical leadership and AI adoption each have significant effects, they do not reinforce each other simultaneously. In the context of JD-R, interpersonal work resources (such as leader behavior) and technological resources (such as AI) can operate independently. According to a study from (Haznil Zainal et al., 2023;Liu et al., 2023), which states that not all work resources are synergistically related, especially when employee perceptions of technology are highly dependent on personal factors such as digital competence and work experience. This is also seen in the practices of banking institutions and microfinance institutions, these findings indicate that although ethical leadership has been implemented in organizational values, employee perceptions of psychological safety in the use of AI are more influenced by individual readiness, digital competence, and their direct experience in interacting with the technological systems used. This finding is inconsistent with JD-R theory. According to JD-R theory, leadership support can be considered as a job resource that reduces the burden of AI demands, thereby maintaining employee psychological safety (Chuang & Huang, 2025). COR theory emphasizes that ethical leaders help employees protect their important resources, reducing the risk of stress and psychological uncertainty (Chowdhury et al., 2023)

The results of this study indicate that the use of artificial intelligence (AI) technology in the workplace does not always have a positive impact on employees. While AI can help improve work efficiency and accuracy, its implementation can also cause psychological stress, leading to an increased risk of depression, especially when

employees feel burdened by the demands of adapting to technology and changing work practices. However, this study also found that a sense of psychological safety in the workplace can help mitigate these negative impacts. When employees feel safe to raise difficulties, ask for help, and express emotional distress without fear of blame, their mental well-being tends to be more stable.

For organizations, particularly in the banking and microfinance sectors, these findings illustrate that the success of AI implementation is determined not only by the sophistication of the system, but also by how the organization treats its employees. An open, supportive, and trusting work environment is key to enabling employees to adapt to new technologies without experiencing undue stress. In other words, attention to employee mental health must go hand in hand with the digital transformation process to optimally benefit from AI.

This study certainly has limitations. First, it was conducted at a single point in time, so it cannot describe long-term changes in employee psychological well-being following the use of AI. Second, the study was limited to a few financial institutions in a specific region, so the results may not necessarily reflect conditions in other sectors or regions. Third, the data used were derived from employee responses via questionnaires, thus relying heavily on respondents' perceptions and honesty. Furthermore, this study did not include other factors that may also influence employee mental health, such as digital skills, job security, or overall organizational support.

Based on these limitations, further research is recommended to be conducted over a longer period of time to observe changes in employee psychological well-being as they adapt to AI technology. Future research could also include other sectors, such as insurance, fintech, or digital-based industries, to achieve broader and more diverse results. Furthermore, future researchers could include other factors related to individual readiness and organizational support, such as technology proficiency, job loss concerns, or the level of support from superiors and coworkers. Thus, future research is expected to provide a more comprehensive picture of how AI technology impacts employee mental health and how organizations can better manage it.

CONCLUSION

The results of the study indicate that AI adoption has an influence on depression. On the other hand, AI adoption also has a positive impact on psychological safety because it is perceived as a work resource that supports effectiveness and role clarity. Psychological safety has been shown to reduce depression and mediate the relationship between AI adoption and depression, so that a psychologically safe work environment can reduce the negative impact of technology on employee mental health. However, ethical leadership does not moderate the relationship between AI adoption and psychological safety, indicating that psychological safety is more influenced by employee perceptions of technological demands than by the ethical behavior of leaders. Overall, the findings confirm that AI adoption carries complex implications, increasing the risk of depression but can be managed by strengthening psychological safety in the workplace.

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