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The Reskilling Paradox in the Age of Artificial Intelligence: Examining the Effects of AI Skills Training on Employees' Job Security and Job Replacement Anxiety

ABSTRACT

This study aimed to investigate the effect of structured artificial intelligence skills training on employees' perceived job security and job replacement anxiety and to determine whether reskilling produces the paradoxical coexistence of greater occupational security and heightened awareness of AI-driven replacement risk. The study employed a quasi-experimental pretest–posttest design with an intervention group and a control group. The participants were 72 employees working in administrative, service, financial, and knowledge-based organizations in Tehran, Iran, who were assigned to an AI skills training group ($n = 36$) and a control group ($n = 36$). The intervention group participated in eight 90-minute AI skills training sessions over four weeks, whereas the control group continued routine occupational activities. Data were collected using the Job Insecurity Scale, the Artificial Intelligence Anxiety Scale with emphasis on the job replacement anxiety dimension, and an AI Skills and Training Competency Assessment. Data were analyzed using multivariate analysis of covariance and univariate analysis of covariance while controlling for baseline scores. The multivariate effect of group on the combined posttest outcomes was statistically significant, Pillai's Trace = .731, $F(3, 66) = 59.86$, $p < .001$, partial $\eta^2 = .731$. After controlling for pretest scores, AI skills training significantly increased perceived job security, $F(1, 69) = 49.72$, $p < .001$, partial $\eta^2 = .419$, and AI skills competency, $F(1, 69) = 224.54$, $p < .001$, partial $\eta^2 = .765$. Job replacement anxiety also increased significantly in the intervention group compared with the control group, $F(1, 69) = 11.53$, $p = .001$, partial $\eta^2 = .143$. AI reskilling appears to produce a dual psychological effect by strengthening employees' perceived occupational security and competence while simultaneously increasing awareness of AI-related replacement threats. These findings support the concept of a reskilling paradox and indicate that organizational AI training should combine technical skill development with transparent communication, career support, and strategies for managing replacement-related anxiety.

Keywords: Artificial intelligence, reskilling, job security, job replacement anxiety, AI skills training, employees, technological change

Introduction

Artificial intelligence (AI) has rapidly moved from being a specialized technological capability to becoming a central force shaping contemporary organizations, occupations, and labor markets. The expansion of generative AI, intelligent automation, machine learning, algorithmic decision support, and robotic process automation has altered how employees perform routine and nonroutine tasks, access information, make decisions, communicate, and create value. Organizations increasingly view AI not merely as a technological infrastructure but as a strategic resource capable of improving efficiency, accuracy, innovation, and responsiveness. At the same time, the growing integration of AI into workplaces has generated substantial uncertainty regarding the future role of human labor. Employees are increasingly confronted with a dual reality: AI may

enhance their productivity and augment their capabilities, yet it may also substitute for certain tasks, reduce demand for particular occupational roles, or change the skills required to remain employable. This tension has made the psychological and occupational consequences of AI adoption an increasingly important area of organizational research. Empirical work has shown that employees' perceptions of robotics, artificial intelligence, and automation are closely connected with job satisfaction, job security, and perceived employability, suggesting that technological transformation cannot be understood exclusively in terms of organizational performance or technical efficiency [1].

The employment implications of AI are particularly important because technological change affects employees not only through objective job redesign but also through subjective interpretations of threat and opportunity. When workers perceive AI as capable of replacing important elements of their roles, the technology may become a source of uncertainty, insecurity, and psychological strain. Job insecurity in this context refers to a perceived threat to the continuity, stability, or future availability of one's employment and may arise even before actual job displacement occurs. AI-induced job insecurity can therefore develop from employees' expectations about automation, managerial intentions, organizational restructuring, or the perceived substitutability of their own competencies. Research has increasingly emphasized that AI implementation may have unintended "dark side" consequences when employees interpret technological transformation as threatening their employment or diminishing the meaning of their work. For example, AI-induced job insecurity has been linked with changes in meaningfulness of work and broader employee behavioral outcomes, highlighting the importance of understanding the psychological mechanisms through which AI implementation affects workers [2]. Similarly, studies of AI identity threat indicate that employees may experience affective job insecurity when they perceive that AI challenges the uniqueness, value, or continued relevance of their professional identities [3].

These concerns are reinforced by the increasing visibility of AI systems in occupations that were once considered relatively protected from automation. AI applications now perform tasks involving language generation, information synthesis, data interpretation, customer interaction, administrative coordination, and decision support, thereby expanding the range of work activities potentially exposed to technological substitution. As AI capabilities become more sophisticated, employees may no longer interpret automation as a threat limited to repetitive manual tasks. Instead, the possibility of partial replacement increasingly extends to professional, analytical, and knowledge-intensive work. This shift has intensified concerns about technological displacement and has made job replacement anxiety an important construct in the study of contemporary employment relations. Reviews of AI implementation in organizational contexts suggest that employees may perceive AI as a direct threat to employment security when technological systems increasingly perform functions that overlap with human roles [4]. Such perceptions may influence not only emotional well-being but also organizational commitment, behavioral engagement, willingness to innovate, and intentions to remain with the organization.

Job replacement anxiety, however, should be distinguished conceptually from general job insecurity. Job insecurity reflects uncertainty regarding the continuation of employment, whereas job replacement anxiety specifically concerns fear or apprehension that AI or related technologies will substitute for human labor. Employees may therefore feel generally secure in their current employment while simultaneously worrying that future advances in AI could alter or eliminate important parts of their jobs. This distinction is particularly relevant because AI-related anxiety has emerged as a multidimensional psychological response to technological change. Evidence indicates that awareness of AI can generate work-related anxiety and influence employees' intentions to leave organizations, with self-efficacy playing an important role in how employees

interpret and respond to AI-related change [5]. Likewise, AI anxiety has been linked with employees' readiness to engage with AI-based systems in professional environments, indicating that emotional reactions to AI may influence whether technological transformation is experienced as an opportunity for development or as a threat to occupational continuity [6]. These findings suggest that organizational responses to AI should address not only employees' technical competencies but also their psychological interpretations of technological change.

One of the most prominent organizational responses to AI-driven transformation is reskilling. Reskilling refers to the deliberate development of new competencies that enable employees to perform emerging tasks, adapt to redesigned roles, or remain effective in technologically transformed workplaces. In the context of AI, reskilling often includes AI literacy, prompt formulation, critical evaluation of AI-generated outputs, data interpretation, responsible use of AI, human–AI collaboration, workflow redesign, and understanding the limitations of intelligent systems. From a human capital perspective, reskilling should strengthen employees' employability and reduce vulnerability to displacement because workers who can use AI effectively are more capable of complementing technological systems rather than competing directly with them. This logic implies that AI skills training can increase perceived job security by enhancing employees' capacity to remain relevant, productive, and adaptable. Research supports the view that positive interpretations of AI as an opportunity are associated with improved workplace well-being, particularly when employees engage in informal learning and perceive lower levels of job insecurity [7]. Accordingly, learning and skill development may serve as important resources that help employees translate technological change into occupational opportunity.

The potential protective role of AI competence is also supported by research emphasizing innovative behavior and proactive engagement with technological change. Employees who adopt innovative work practices may be better positioned to integrate AI into their existing roles, identify new applications, and demonstrate forms of value that are difficult to replicate through automation alone. Innovative behavior has been identified as an important mechanism through which AI adoption may contribute to greater job security and improved job performance, suggesting that technological competence becomes especially valuable when it is accompanied by active adaptation and experimentation [8]. In this sense, AI training may strengthen job security not simply because employees acquire technical knowledge, but because it enables them to reposition themselves within changing work systems. Reskilled employees may become more capable of using AI as an augmentative resource, redesigning workflows, taking responsibility for higher-order tasks, and developing occupational identities based on human–AI complementarity.

Nevertheless, the relationship between AI skills training and employee security may be more complicated than a simple protective effect. Training increases knowledge, and greater knowledge can simultaneously reduce uncertainty and increase awareness of threat. Before receiving structured AI training, employees may have only a general or abstract understanding of AI capabilities. Their perceptions of occupational risk may therefore be shaped by vague media narratives, incomplete information, or limited personal experience. During training, however, employees directly observe how rapidly AI systems can generate content, summarize information, automate administrative tasks, solve problems, analyze data, and perform activities that previously required human effort. Consequently, the same training that increases competence may also expose employees more clearly to the substitutive potential of AI. This possibility creates what may be described as a reskilling paradox: AI training may enhance employees' sense of job security by increasing their capacity to work with AI while simultaneously increasing job replacement anxiety by making the capabilities and disruptive potential of AI more salient.

This paradoxical possibility is theoretically important because it challenges the assumption that greater technological literacy necessarily produces lower anxiety. In many domains, competence is expected to reduce uncertainty and increase perceived control. Yet AI differs from conventional workplace technologies because it can function not only as a tool but also as a perceived competitor. The more employees learn about AI, the more they may recognize its capacity to perform activities associated with their own occupational expertise. Therefore, AI literacy may increase confidence in using the technology while also intensifying awareness of the speed and scope of technological substitution. Evidence from professional contexts supports the coexistence of literacy and anxiety as distinct mechanisms. For example, AI literacy and AI anxiety have both been shown to mediate employees' attitudes toward AI, indicating that greater understanding of the technology does not eliminate emotional concerns about its consequences [9]. This suggests that knowledge and anxiety should not necessarily be treated as opposite ends of a single continuum.

The possibility of simultaneous adaptation and anxiety is also consistent with research on career engagement and innovativeness. Employees who are more engaged in managing their careers may be more willing to learn, experiment, and develop new competencies, but this proactive orientation does not imply the absence of AI-related concern. Individual innovativeness has been shown to play an important mediating role in the relationship between career engagement and AI anxiety, demonstrating that employees' responses to AI are shaped by complex interactions among learning orientation, adaptability, and emotional reactions to technological change [10]. From this perspective, anxiety should not always be interpreted as a sign of technological resistance or low competence. In some cases, employees who understand AI more deeply may experience greater concern precisely because they possess a more realistic awareness of its capabilities and potential labor-market implications.

Self-efficacy may further help explain why AI training can produce seemingly contradictory outcomes. When employees acquire concrete skills and successfully complete AI-related tasks, their confidence in managing technologically transformed work is likely to increase. Higher self-efficacy can promote persistence, exploration, learning, and willingness to engage with AI. At the same time, self-efficacy does not necessarily eliminate perceptions of structural threat. Employees may feel confident that they can use AI effectively while remaining uncertain about whether organizations will reduce staffing, redesign roles, centralize functions, or replace specific activities with automated systems. Research on AI awareness has shown that work anxiety and self-efficacy operate as important mechanisms connecting awareness of AI with employee attrition-related outcomes [5]. Thus, employees' confidence in their personal adaptability and their concerns about the broader future of their jobs may develop in parallel rather than being mutually exclusive.

The organizational context is also critical in shaping how employees interpret AI training. If AI implementation is communicated primarily as a cost-reduction or labor-substitution strategy, employees may perceive reskilling initiatives as evidence that their existing competencies are becoming obsolete. In such circumstances, training may paradoxically reinforce fears that employees must continuously acquire new skills simply to avoid displacement. By contrast, when organizations frame AI adoption as a process of augmentation, internal mobility, and human–technology collaboration, training may be interpreted as an investment in employees' long-term value. The broader organizational environment therefore determines whether AI development initiatives are experienced as developmental resources or warning signals. Findings concerning corporate social responsibility and AI-induced job insecurity suggest that organizational practices can buffer the harmful consequences of technological insecurity, particularly by preserving meaningfulness and reinforcing employees' perceptions

that the organization remains committed to human-centered values [2]. This reinforces the argument that the effects of reskilling cannot be fully understood without considering the psychological meaning employees assign to AI implementation.

A further consideration is that employees may evaluate AI simultaneously at multiple levels. At the task level, they may recognize that AI improves efficiency and reduces burdensome work. At the occupational level, they may worry that cumulative automation will reduce the number of employees needed. At the personal level, they may believe that acquiring AI competencies increases their own employability. These different evaluations can coexist without contradiction. For example, an employee may believe that AI will eliminate some positions in the organization while also believing that his or her own newly acquired skills improve the likelihood of remaining employed. This layered interpretation provides a theoretical foundation for expecting job security and replacement anxiety to move in the same direction following training. Rather than treating these constructs as simple opposites, it may be more accurate to conceptualize job security as a judgment about one's adaptive capacity and employment continuity, and job replacement anxiety as an emotional response to the perceived structural threat posed by AI.

The need to distinguish these outcomes is particularly important because much of the existing literature has examined AI-related insecurity, anxiety, attitudes, or employability separately rather than experimentally assessing how structured AI skills development changes them simultaneously. Previous research has documented associations between AI implementation and job security [1], AI identity threat and affective job insecurity [3], AI adoption and innovative behavior [8], opportunity perceptions and workplace well-being [7], AI-induced job insecurity and employee outcomes [2], AI awareness and work anxiety [5], and AI anxiety and readiness for technological adoption [6]. However, these studies leave an important question unresolved: whether direct reskilling through structured AI training reduces employees' sense of occupational threat or, conversely, increases awareness of replacement risk even as it strengthens perceived employability and competence.

This unresolved issue is particularly relevant in organizational environments undergoing rapid digital transformation, where employees are increasingly expected to learn AI tools while simultaneously confronting uncertainty about how those tools will reshape future staffing and role structures. Organizations often assume that offering AI training will automatically reduce resistance and insecurity because training enhances familiarity and competence. Yet if training also reveals the extent to which AI can automate sophisticated tasks, the psychological effects may be more complex. Evidence that AI can simultaneously influence perceived job security, employability, anxiety, innovative behavior, and well-being underscores the need for research designs capable of capturing both beneficial and adverse effects of reskilling [1, 4, 10]. A quasi-experimental approach is especially useful because it allows changes in psychological outcomes to be examined before and after a structured intervention rather than relying exclusively on cross-sectional perceptions.

Theoretical attention to this reskilling paradox also has practical implications for human resource management. If AI training increases competence and job security but simultaneously heightens replacement anxiety, organizations should not treat technical education as sufficient preparation for technological change. Reskilling programs may need to be accompanied by transparent communication about job redesign, internal mobility, career pathways, and the intended role of human judgment in AI-enabled workplaces. Employees may benefit from knowing not only how to use AI but also how their organization plans to integrate human expertise with automated systems. Likewise, training should emphasize task complementarity, critical oversight, interpersonal competencies, ethical judgment, and context-sensitive decision-making

rather than presenting AI merely as a productivity-enhancing technology. Such an approach may help organizations capitalize on the benefits of AI literacy while reducing avoidable psychological insecurity.

The present study therefore addresses an important gap at the intersection of AI adoption, employee reskilling, job security, and technological anxiety. By examining employees before and after participation in a structured AI skills training program, the study treats competence development as an organizational intervention rather than merely an individual characteristic. It also separates perceived job security from job replacement anxiety, allowing both adaptive and threat-related responses to be evaluated concurrently. This distinction is consistent with emerging evidence showing that AI literacy, anxiety, self-efficacy, innovation, and job insecurity can operate simultaneously in shaping employee responses to intelligent technologies [5, 9, 10]. Understanding these concurrent effects is essential for developing a more realistic account of employee adaptation in the age of AI and for designing reskilling strategies that support both occupational capability and psychological sustainability.

Accordingly, the aim of the present study was to investigate the effect of structured AI skills training on employees' perceived job security and job replacement anxiety and to determine whether reskilling in the age of artificial intelligence produces the paradoxical coexistence of greater occupational security and heightened awareness of replacement risk.

Methodology

This study employed a quasi-experimental pretest–posttest design with an intervention group and a control group to examine the effects of artificial intelligence (AI) skills training on employees' perceived job security and job replacement anxiety. The statistical population consisted of employees working in administrative, service, financial, and knowledge-based organizations in Tehran, Iran, during 2026. Participants were recruited through convenience sampling from organizations in which employees were increasingly exposed to digitalization, automation, and the use of AI-based technologies in routine occupational activities. Following an initial screening and assessment of eligibility criteria, 72 employees were enrolled in the study and assigned to an intervention group receiving AI skills training ($n = 36$) and a control group ($n = 36$). Because the study was quasi-experimental, allocation was performed with consideration of participants' organizational accessibility and availability while attempting to maintain comparability between the two groups in terms of age, gender, educational attainment, occupational experience, and general level of exposure to digital technologies. The inclusion criteria were being employed on a full-time or part-time basis in an organization located in Tehran, having at least one year of occupational experience, being between 22 and 55 years of age, having basic computer and Internet literacy, reporting regular exposure to digital technologies in the workplace, and providing informed consent to participate in the study. Employees who had previously completed comprehensive professional AI training, were directly employed as AI specialists or machine-learning developers, were absent from more than two intervention sessions, or failed to complete either the pretest or posttest assessment were excluded. Before the intervention, participants in both groups completed the study questionnaires as the pretest. The intervention group subsequently participated in the structured AI skills training program, whereas the control group received no specific AI-related training during the study period and continued their routine occupational activities. Immediately after completion of the intervention, both groups completed the questionnaires again as the posttest. Participants were informed about the objectives and procedures of the study, voluntary participation, confidentiality of

personal information, and their right to withdraw from the research at any stage without occupational or organizational consequences. All data were analyzed anonymously and were used exclusively for research purposes.

Demographic and Occupational Information Form. A researcher-developed demographic and occupational information form was used to collect background information about the participants. The form included age, gender, educational level, marital status, years of occupational experience, type of employment, organizational position, occupational field, average daily use of digital technologies, previous experience with generative AI tools, frequency of AI use in occupational activities, and previous participation in AI- or technology-related training programs. These variables were collected to describe the sample and assess the comparability of the intervention and control groups at baseline. Information regarding employees' previous exposure to AI technologies was particularly important because differences in familiarity with AI could potentially influence perceived occupational threat, confidence in using emerging technologies, and responses to the training intervention.

Job Insecurity Scale. Employees' perceptions of job insecurity were assessed using the Job Insecurity Scale developed by De Witte. The instrument was developed to measure employees' subjective perceptions and concerns regarding the continuity and stability of their employment. The commonly used short version consists of four items assessing cognitive and affective perceptions of possible job loss and uncertainty about continued employment. Items are rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher total scores indicate greater perceived job insecurity, whereas lower scores reflect a stronger perception of employment stability and security. For interpretive consistency with the conceptual framework of the present study, the scores were reverse-coded when job security was reported as an outcome variable, so that higher transformed scores represented greater perceived job security. The scale has been widely used in occupational and organizational research and has demonstrated satisfactory construct validity, internal consistency, and criterion-related validity across different occupational groups and cultural contexts. Previous investigations have generally reported acceptable to high Cronbach's alpha coefficients for the instrument. In the present study, internal consistency was evaluated separately at the pretest and posttest stages before conducting inferential analyses.

Artificial Intelligence Anxiety Scale. Employees' anxiety concerning the occupational consequences of AI was measured using the Artificial Intelligence Anxiety Scale developed by Wang and Wang in 2019. The scale was specifically designed to assess individuals' anxiety regarding the development, implementation, and increasing use of artificial intelligence and consists of 21 items encompassing four dimensions: learning anxiety, job replacement anxiety, sociotechnical blindness, and AI configuration anxiety. Items are scored on a five-point Likert scale, with responses ranging from low to high agreement with anxiety-related statements. The present study primarily used the job replacement anxiety dimension because it directly reflects employees' concerns that AI systems, intelligent automation, or AI-enabled technologies may replace their current occupational roles, reduce the need for human labor, or negatively affect their future employment opportunities. Higher scores on this dimension indicate greater anxiety about being replaced by AI technologies. The total AI anxiety score was additionally calculated as a secondary descriptive indicator to provide a broader assessment of participants' psychological responses to AI. The Artificial Intelligence Anxiety Scale has demonstrated satisfactory factorial validity and internal consistency in previous studies, and its multidimensional structure allows differentiation between anxiety related to learning AI and anxiety arising specifically from perceived threats to employment. Internal consistency coefficients were calculated for the relevant dimensions in the present sample before hypothesis testing.

AI Skills and Training Competency Assessment. To evaluate whether the intervention effectively improved participants' practical knowledge and competence in using artificial intelligence, an AI skills assessment was administered as a manipulation check before and after the intervention. The assessment covered fundamental AI concepts, appropriate selection and use of generative AI applications, prompt formulation, evaluation of AI-generated information, application of AI to routine workplace problems, recognition of algorithmic limitations and errors, data confidentiality, responsible use of AI, and human–AI task complementarity. The assessment included scenario-based and practical items designed to evaluate participants' ability to identify appropriate uses of AI rather than merely their theoretical familiarity with the technology. Higher scores indicated greater AI-related occupational competence. The assessment was reviewed by specialists in human resource management, organizational behavior, educational technology, and artificial intelligence to establish content relevance and comprehensibility. Its inclusion allowed the researchers to distinguish the psychological effects of actual skill acquisition from changes that might have occurred simply as a result of participation in a training program.

The intervention consisted of a structured AI skills training program delivered to the intervention group in eight 90-minute sessions over four consecutive weeks, with two sessions conducted each week. The training program was designed according to a reskilling perspective in which AI was presented not only as an automation technology but also as a complementary occupational tool that can augment human capabilities when employees possess the necessary knowledge and skills to use it effectively. The first session introduced fundamental concepts of artificial intelligence, machine learning, generative AI, automation, and the changing nature of work, while differentiating between task automation and complete occupational replacement. The second session focused on identifying AI-supported and human-centered components of participants' existing jobs and analyzing which occupational tasks could be automated, augmented, or redesigned. The third session provided practical instruction in the use of generative AI systems for searching, summarizing, drafting, brainstorming, organizing information, and supporting routine administrative and professional activities. The fourth session focused on prompt engineering and taught participants how to formulate clear instructions, provide relevant context, define constraints, refine outputs iteratively, and critically evaluate generated responses. The fifth session addressed workplace applications of AI, including data interpretation, report preparation, decision support, communication, productivity enhancement, and workflow optimization, using occupational scenarios relevant to the participants. The sixth session emphasized critical AI literacy, including hallucinations, algorithmic bias, data limitations, reliability assessment, information verification, privacy, confidentiality, and ethical use of AI-generated content. The seventh session concentrated specifically on human–AI collaboration and reskilling strategies and encouraged participants to identify uniquely human capabilities, such as contextual judgment, interpersonal communication, creativity, ethical reasoning, negotiation, and complex decision-making, that could be integrated with AI-supported work processes. The final session consisted of applied exercises in which participants redesigned selected components of their current occupational tasks using AI tools and developed individualized plans for continued AI skill development. Each session combined brief theoretical instruction, demonstrations, guided practice, occupational scenarios, individual exercises, and group discussion. Particular emphasis was placed on active hands-on practice so that employees experienced AI as an occupational resource rather than receiving only conceptual information about technological change. Participants were also given short practice assignments between sessions. The control group received no AI skills training during the research period and continued its normal occupational activities. To reduce

contamination between the two conditions, participants were requested not to distribute the instructional materials to colleagues in the other group until completion of the posttest assessment.

Data were analyzed using IBM SPSS Statistics version 29. Descriptive statistics, including mean, standard deviation, frequency, and percentage, were initially calculated to summarize participants' demographic and occupational characteristics and the distributions of the primary study variables. Internal consistency of the measurement instruments was assessed using Cronbach's alpha coefficients. Baseline comparability of the intervention and control groups was examined using independent-samples *t* tests for continuous variables and chi-square tests for categorical variables. Prior to inferential analysis, the statistical assumptions required for parametric testing were evaluated. The normality of the dependent variables was examined using the Shapiro–Wilk test in conjunction with skewness and kurtosis indices and inspection of the distributions. Homogeneity of variances was examined using Levene's test, while homogeneity of regression slopes was assessed by testing the interaction between the pretest scores and group membership. Because the study involved pretest and posttest measurements and the primary objective was to determine whether AI skills training produced changes in job security and job replacement anxiety after controlling for baseline differences, analysis of covariance (ANCOVA) was conducted separately for each principal outcome, with the posttest score entered as the dependent variable, study group as the fixed factor, and the corresponding pretest score as the covariate. A multivariate analysis of covariance was additionally performed when the outcomes were examined simultaneously to account for their conceptual and statistical interrelationships. The effectiveness of the intervention in increasing AI-related competence was evaluated by comparing posttest AI skills scores between the two groups while controlling for baseline scores. Adjusted means were reported to represent between-group differences after controlling for pretest values. Effect sizes were estimated using partial eta squared (η^2p), allowing the magnitude of the intervention effects to be interpreted in addition to statistical significance. All statistical tests were two-tailed, and the level of statistical significance was set at $p < .05$ with a 95% confidence level.

Findings and Results

A total of 72 employees completed all stages of the study and were included in the final statistical analysis, comprising 36 participants in the AI skills training group and 36 participants in the control group. No participant who entered the final intervention phase was excluded because of incomplete posttest data or excessive absence. The mean age of the participants was 36.74 years ($SD = 7.18$), with an age range of 24 to 53 years. The mean age was 36.42 years ($SD = 7.31$) in the intervention group and 37.06 years ($SD = 7.13$) in the control group. Of the total participants, 39 (54.2%) were male and 33 (45.8%) were female. In the intervention group, 20 participants (55.6%) were male and 16 (44.4%) were female, whereas the control group consisted of 19 men (52.8%) and 17 women (47.2%). Regarding educational attainment, 13 participants (18.1%) held an associate degree or diploma, 34 (47.2%) held a bachelor's degree, and 25 (34.7%) held a master's degree or higher. The participants had an average occupational experience of 10.83 years ($SD = 6.07$), with mean values of 10.56 years ($SD = 5.91$) in the intervention group and 11.11 years ($SD = 6.29$) in the control group. With respect to previous exposure to artificial intelligence applications, 19 participants (26.4%) reported rarely or never using generative AI tools for work purposes, 35 (48.6%) reported occasional use, and 18 (25.0%) reported regular occupational use. Preliminary comparisons showed no statistically significant differences between the intervention and control groups in age, gender distribution, educational attainment, occupational experience, employment status, or baseline frequency of AI use ($p > .05$ for all comparisons),

indicating that the two groups were sufficiently comparable with respect to the major demographic and occupational characteristics before implementation of the intervention.

Table 1

Descriptive Statistics for Job Security, Job Replacement Anxiety, and AI Skills Competency at Pretest and Posttest

Variable	Group	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD	Mean Change
Job security	AI training	11.94	2.48	15.81	2.37	+3.87
Job security	Control	12.17	2.56	12.39	2.51	+0.22
Job replacement anxiety	AI training	13.83	3.06	16.19	3.17	+2.36
Job replacement anxiety	Control	14.06	3.14	14.22	3.09	+0.16
AI skills competency	AI training	22.31	4.62	37.58	4.81	+15.27
AI skills competency	Control	22.75	4.74	23.42	4.65	+0.67

As shown in Table 1, the pretest mean scores of the intervention and control groups were relatively similar across all three study variables, whereas clear differences emerged at posttest. The mean job security score in the AI training group increased from 11.94 (SD = 2.48) before the intervention to 15.81 (SD = 2.37) after the intervention, representing a mean increase of 3.87 points. By comparison, the control group showed only a marginal increase from 12.17 (SD = 2.56) to 12.39 (SD = 2.51), corresponding to a change of 0.22 points. These descriptive results therefore suggested that employees who participated in AI skills training developed a stronger perception of their ability to maintain occupational relevance and employment continuity. At the same time, job replacement anxiety also increased among participants receiving AI training. The intervention group's mean job replacement anxiety score increased from 13.83 (SD = 3.06) at pretest to 16.19 (SD = 3.17) at posttest, whereas the control group demonstrated only a negligible increase from 14.06 (SD = 3.14) to 14.22 (SD = 3.09). Thus, although employees reported greater perceived job security following reskilling, they simultaneously reported greater concern about the possibility that AI might replace particular human tasks or occupational roles. The largest descriptive change was observed in AI skills competency. The intervention group improved from a pretest mean of 22.31 (SD = 4.62) to a posttest mean of 37.58 (SD = 4.81), producing a mean gain of 15.27 points, whereas the control group changed only slightly from 22.75 (SD = 4.74) to 23.42 (SD = 4.65). This pattern confirmed that the training program produced a substantial improvement in participants' practical AI-related competence and provided preliminary descriptive support for the effectiveness of the intervention.

Before conducting the main inferential analyses, the assumptions underlying covariance analysis were examined. Shapiro–Wilk tests indicated no statistically significant deviations from normality for the pretest or posttest distributions of job security, job replacement anxiety, or AI skills competency in either study group ($p > .05$). The absolute values of skewness and kurtosis were also within acceptable ranges. Levene's tests were nonsignificant for all three posttest dependent variables, supporting the assumption of homogeneity of error variances. In addition, the interactions between group membership and the corresponding pretest covariates were nonsignificant for job security, job replacement anxiety, and AI skills competency, indicating that the assumption of homogeneity of regression slopes was satisfied. Examination of residual plots did not reveal substantial heteroscedasticity or influential outliers. Correlations among the dependent variables were moderate and did not indicate problematic multicollinearity. Therefore, the data were considered appropriate for multivariate and univariate covariance analyses.

Table 2*Multivariate Analysis of Covariance for the Combined Posttest Outcomes*

Effect	Multivariate Test	Value	F	Hypothesis df	Error df	p	Partial η^2
Group	Pillai's Trace	.731	59.86	3	66	<.001	.731
Group	Wilks' Lambda	.269	59.86	3	66	<.001	.731
Group	Hotelling's Trace	2.721	59.86	3	66	<.001	.731
Group	Roy's Largest Root	2.721	59.86	3	66	<.001	.731

The multivariate analysis presented in Table 2 demonstrated a statistically significant overall effect of AI skills training on the combined set of posttest outcome variables after controlling for participants' corresponding baseline scores. Using Pillai's Trace, which is relatively robust to minor departures from multivariate assumptions, the multivariate effect of group was statistically significant, Pillai's Trace = .731, $F(3, 66) = 59.86$, $p < .001$, partial $\eta^2 = .731$. Wilks' Lambda yielded an identical substantive conclusion, $\Lambda = .269$, $F(3, 66) = 59.86$, $p < .001$. The partial eta squared value of .731 indicated that approximately 73.1% of the multivariate variance in the combined posttest scores was associated with group membership after accounting for pretest differences. This represented a large multivariate effect and showed that participation in the AI skills training program was associated with a substantial overall change across the three study outcomes. Because the omnibus multivariate test was statistically significant, follow-up univariate analyses of covariance were performed to identify the specific contribution of the intervention to posttest job security, job replacement anxiety, and AI skills competency.

Table 3*Analysis of Covariance for Posttest Job Security, Job Replacement Anxiety, and AI Skills Competency*

Outcome Variable	Source	SS	df	MS	F	p	Partial η^2	Adjusted Mean: AI Training	Adjusted Mean: Control
Job security	Pretest score	118.46	1	118.46	28.91	<.001	.295	—	—
Job security	Group	203.72	1	203.72	49.72	<.001	.419	15.86	12.34
Job replacement anxiety	Pretest score	245.31	1	245.31	41.68	<.001	.376	—	—
Job replacement anxiety	Group	67.89	1	67.89	11.53	.001	.143	16.24	14.17
AI skills competency	Pretest score	312.64	1	312.64	19.84	<.001	.223	—	—
AI skills competency	Group	3538.27	1	3538.27	224.54	<.001	.765	37.72	23.28

The univariate ANCOVA results presented in Table 3 showed that the intervention exerted statistically significant effects on all three outcome variables after controlling for their respective pretest scores. For perceived job security, the baseline score was a significant covariate, $F(1, 69) = 28.91$, $p < .001$, partial $\eta^2 = .295$, indicating that pre-intervention differences accounted for a meaningful proportion of posttest variability. More importantly, after adjustment for baseline job security, the effect of study group remained statistically significant, $F(1, 69) = 49.72$, $p < .001$, partial $\eta^2 = .419$. The adjusted posttest mean was 15.86 for the AI training group compared with 12.34 for the control group. The effect size indicated that approximately 41.9% of the adjusted variance in posttest job security was attributable to the intervention, representing a large effect. Therefore, participation in AI skills training was associated with a substantial increase in employees' perceptions of occupational security and their confidence in remaining relevant and employable in an increasingly AI-intensive work environment.

For job replacement anxiety, the corresponding pretest score also had a statistically significant relationship with the posttest outcome, $F(1, 69) = 41.68$, $p < .001$, partial $\eta^2 = .376$. After controlling for baseline anxiety, a statistically significant group effect was observed, $F(1, 69) = 11.53$, $p = .001$, partial $\eta^2 = .143$. The adjusted posttest mean for job replacement anxiety was 16.24 in the intervention group and 14.17 in the control group. The partial eta squared value of .143 indicated a

moderate-to-large intervention effect. Contrary to the assumption that reskilling would necessarily reduce employees' concerns about technological substitution, participants who received systematic AI training reported significantly higher awareness and anxiety regarding the possibility of job or task replacement by AI. The coexistence of increased job security and increased replacement anxiety constitutes the central empirical manifestation of the reskilling paradox examined in the present study. The results suggest that acquiring AI-related competencies may strengthen employees' perceived capacity to adapt to technological change while simultaneously making the disruptive potential of AI more salient and concrete.

The largest intervention effect was observed for AI skills competency. Pretest competency was significantly associated with posttest scores, $F(1, 69) = 19.84$, $p < .001$, partial $\eta^2 = .223$. After controlling for initial competence, the effect of group was highly significant, $F(1, 69) = 224.54$, $p < .001$, partial $\eta^2 = .765$. The adjusted posttest mean was 37.72 for the intervention group compared with 23.28 for the control group, indicating a substantial difference favoring employees who completed the structured AI training program. Approximately 76.5% of the adjusted variance in posttest AI competence was associated with group membership, representing a very large effect. This finding confirmed the effectiveness of the intervention as a reskilling program and demonstrated that the psychological changes in job security and replacement anxiety occurred alongside a demonstrable increase in participants' ability to understand, evaluate, and apply AI technologies in occupational contexts rather than merely reflecting exposure to general information about artificial intelligence.

Taken together, the findings demonstrated a differentiated psychological response to AI-related reskilling. The intervention substantially enhanced employees' practical AI competence and was associated with a marked improvement in perceived job security, indicating that employees who acquired greater technological capabilities felt better equipped to maintain their occupational value in an evolving labor market. However, the same employees simultaneously exhibited a significant increase in job replacement anxiety. This apparently contradictory pattern supports the proposed reskilling paradox: increased knowledge and competence may function as a source of occupational empowerment while also increasing employees' awareness of the scope, speed, and potential consequences of AI-driven automation. The magnitude of the intervention effect was strongest for AI skills competency, followed by job security and then job replacement anxiety. Accordingly, the results indicate that AI reskilling cannot be understood solely as a mechanism for reducing technological threat. Instead, it appears to produce both an adaptive dimension, reflected in increased competence and job security, and a threat-awareness dimension, reflected in heightened anxiety about possible replacement by AI.

Discussion and Conclusion

The present study examined the reskilling paradox in the age of artificial intelligence by investigating the effects of structured AI skills training on employees' perceived job security, job replacement anxiety, and AI skills competency. The findings revealed three principal results. First, employees who participated in the AI skills training program demonstrated a substantial increase in AI-related competency compared with the control group, indicating that the intervention effectively enhanced participants' practical knowledge and ability to use AI in occupational contexts. Second, after controlling for baseline scores, the intervention group reported significantly higher perceived job security than the control group. Third, and most importantly, job replacement anxiety also increased significantly among participants who received the training. Thus, the findings supported the central proposition of the study: reskilling may simultaneously strengthen employees' perceived capacity to remain occupationally relevant while increasing their awareness of the possibility that AI could automate or

replace important components of human work. The results therefore suggest that the psychological consequences of AI reskilling are not unidirectional. Rather, skill acquisition can generate both an adaptive response, reflected in greater perceived job security, and a threat-awareness response, reflected in heightened job replacement anxiety.

The significant increase in AI skills competency provides evidence that structured reskilling can meaningfully improve employees' ability to understand and apply AI technologies in the workplace. This finding is important because AI-related competence is increasingly becoming part of employees' broader adaptive capacity in digitally transforming organizations. The intervention emphasized practical use, prompt formulation, critical evaluation of AI-generated outputs, ethical and responsible application, human–AI collaboration, and task redesign. Accordingly, participants were not merely introduced to AI conceptually but were trained to use it as a functional occupational resource. This pattern is consistent with the broader literature indicating that employee adaptation to AI is strongly connected with learning, innovative behavior, technological literacy, and active engagement with new work practices. Ghorbanzadeh emphasized that innovative behavior may serve as an important mechanism linking AI adoption with improved job performance and enhanced perceptions of job security, suggesting that employees who actively engage with technological change may be better able to convert AI adoption into occupational advantage [8]. Similarly, Karimnzhad showed that perceiving AI as an opportunity may contribute to workplace well-being through learning-related processes and lower perceived job insecurity [7]. The present findings extend this line of research by showing that a structured training intervention can directly strengthen AI-related competence rather than simply relying on pre-existing employee attitudes or informal learning tendencies.

The significant increase in perceived job security among trained employees represents the first major psychological effect of the intervention. Participants who gained greater knowledge of AI and learned how to integrate it into their occupational activities appeared to perceive themselves as better prepared for a changing labor environment. This result can be interpreted through a human capital and employability perspective. Employees who acquire AI-related competencies may perceive that they possess greater adaptive value because they are able to work with emerging technologies rather than being rendered obsolete by them. In this sense, reskilling may strengthen perceived job security by increasing employees' confidence that they can remain relevant under conditions of technological transformation. This interpretation is consistent with Bhargava et al., who reported that employees' perceptions of robotics, artificial intelligence, and automation are closely related to perceptions of job security, employability, and job satisfaction [1]. Their findings support the idea that employees do not respond to automation solely on the basis of the objective characteristics of the technology; rather, they evaluate whether technological implementation increases or decreases their personal occupational value.

The increase in job security is also consistent with the argument that positive engagement with AI may transform technological change from a threat into a developmental opportunity. When employees acquire greater AI competence, they may become more capable of using AI to improve productivity, accelerate routine tasks, enhance information processing, and support decision-making. Such capabilities may lead employees to view themselves as complementary to AI rather than directly substitutable by it. Ghorbanzadeh's findings are particularly relevant in this regard because they highlight the role of innovative behavior in translating AI adoption into improved job-related outcomes [8]. Employees who can identify new applications of AI and redesign their workflows may experience stronger occupational confidence because their role shifts from performing tasks that AI can replicate toward coordinating, evaluating, and augmenting AI-supported work. The present

study suggests that formal training can facilitate this transition by giving employees the technical and cognitive resources necessary to engage with AI constructively.

The finding is also aligned with Karimnzhad's emphasis on opportunity perceptions and informal learning. Employees who perceive AI as an opportunity and actively learn how to use it may experience greater workplace well-being and lower perceived insecurity [7]. Although the present study employed a formal intervention rather than informal workplace learning, the underlying mechanism may be similar. Skill acquisition appears to increase employees' sense of agency in relation to technological change. Instead of experiencing AI as an uncontrollable external force, trained employees may perceive that they possess actionable strategies for adapting to it. This distinction between passive exposure and active competence is important. Employees who lack AI skills may view technological transformation as something imposed upon them, whereas reskilled employees may feel that they can participate in, influence, and benefit from the transformation.

At the same time, the finding that job replacement anxiety increased after AI training reveals the more complex side of reskilling. This result may initially appear contradictory because greater competence is often assumed to reduce anxiety. However, in the context of AI, increased knowledge may simultaneously increase awareness of technological risk. Employees who receive systematic training become more familiar with the speed, breadth, and sophistication of AI systems. During practical exercises, they directly observe how AI can generate text, summarize information, support analysis, automate communication, solve routine problems, and perform occupational tasks that previously required substantial human effort. Greater familiarity with these capabilities may therefore make the possibility of task substitution more concrete. In other words, training may reduce uncertainty about how AI works while increasing certainty that some components of human work are technologically replicable.

This interpretation is consistent with the growing literature on AI-related anxiety. Song et al. demonstrated that AI awareness can contribute to work anxiety and influence employee attrition-related outcomes, while self-efficacy also plays an important role in shaping employee responses to AI [5]. This finding is particularly relevant to the present study because it illustrates that awareness and confidence can coexist with anxiety. Employees may become more capable of using AI and simultaneously more aware of its implications for occupational substitution. The present findings therefore suggest that self-efficacy and threat perception should not be treated as mutually exclusive psychological states. An employee can believe, "I am more capable of working with AI," while also believing, "AI is more capable of replacing certain tasks than I previously realized." These two evaluations may emerge from the same learning experience.

The increase in job replacement anxiety is also consistent with research showing that AI implementation can produce job insecurity when employees interpret intelligent systems as threats to employment continuity. Kim and Lee emphasized the negative consequences of AI-induced job insecurity and showed that organizational conditions can shape how such insecurity affects employee outcomes [2]. Similarly, Eshiett and Eshiett described AI implementation as a potential job security threat when employees perceive that AI can replace or substantially reduce the need for human labor [4]. These studies support the interpretation that exposure to AI capabilities may intensify perceived replacement risk. The present study extends this literature by showing that such anxiety can arise even when training simultaneously enhances job security. Therefore, job security and replacement anxiety should not necessarily be conceptualized as opposite ends of a single continuum.

The distinction between these constructs is one of the most important implications of the study. Perceived job security appears to reflect employees' judgments about their own adaptability, employability, and capacity to remain occupationally

useful, whereas job replacement anxiety reflects concern about the broader substitutive capabilities of AI. An employee may therefore feel increasingly secure in his or her own ability to adapt while also becoming more concerned about the structural implications of AI for jobs in general or for particular tasks within the current role. This dual response is compatible with the notion of affective job insecurity described in research on AI identity threat. Gull et al. showed that AI-related identity threat can generate affective job insecurity and negatively influence employee well-being [3]. The present results suggest that training does not necessarily remove such threat awareness. Instead, it may alter its form. Employees may feel less personally helpless while simultaneously perceiving the technological threat more clearly.

The findings regarding AI anxiety in other professional settings provide further support for this interpretation. Özden and Duru found that AI anxiety plays a mediating role in professionals' readiness for medical AI, demonstrating that attitudes toward AI are shaped not only by technological acceptance but also by emotional responses to emerging systems [6]. Likewise, Xu et al. showed that AI literacy and AI anxiety can jointly influence attitudes toward AI in healthcare contexts [9]. These findings are especially important because they demonstrate that literacy and anxiety can coexist rather than operate as simple opposites. The present study provides quasi-experimental evidence consistent with this pattern. Employees who became more competent through training did not necessarily become less anxious; instead, competence increased alongside replacement-related concern. This suggests that AI literacy may refine rather than eliminate anxiety by replacing vague uncertainty with more specific awareness of which tasks and roles are technologically vulnerable.

The results concerning career engagement and innovativeness also help explain this dual pattern. Eren et al. reported that individual innovativeness mediates the relationship between career engagement and AI anxiety [10]. This suggests that employees who are actively engaged in their careers and open to innovation may still experience AI-related anxiety. Indeed, greater career engagement may increase sensitivity to technological developments precisely because highly engaged employees monitor changes that could affect future employability. From this perspective, increased replacement anxiety following training should not automatically be interpreted as a failure of the intervention. It may partly reflect more informed and realistic appraisal. The intervention appears to have increased both competence and awareness, producing a more complex psychological response than a simple reduction in fear.

The magnitude of the observed effects also deserves attention. The strongest effect occurred for AI skills competency, indicating that the intervention achieved its primary instructional objective. The effect on job security was also substantial, suggesting that training translated into a meaningful change in employees' occupational confidence. By comparison, the effect on job replacement anxiety was smaller, although still statistically significant and practically meaningful. This pattern suggests that the empowering effects of reskilling may be stronger than its anxiety-enhancing effects. Employees appear to have gained considerable confidence in their ability to function effectively in an AI-enabled workplace, even though they also became more aware of replacement risks. This balance is consistent with the reskilling paradox: the same intervention can enhance adaptive capacity and simultaneously intensify recognition of structural threat.

Another important interpretation concerns the role of uncertainty. Before the intervention, participants may have had relatively superficial or fragmented knowledge of AI. Limited knowledge can produce anxiety, but it can also prevent employees from accurately evaluating the technology's capabilities. Training reduces informational uncertainty by making AI more understandable. However, greater clarity may reveal that some tasks are genuinely automatable. Therefore, training may reduce uncertainty-based anxiety while increasing evidence-based replacement concern. The present study did not

separately measure these forms of anxiety, but the pattern of findings supports such a distinction. Employees' post-training anxiety may have become more specific, grounded, and task-oriented rather than merely reflecting generalized fear of unfamiliar technology.

The findings also underscore the importance of organizational framing. AI skills training may have different psychological consequences depending on whether employees interpret it as an investment in their development or as preparation for impending workforce reduction. Kim and Lee showed that organizationally relevant conditions such as corporate social responsibility can buffer the negative consequences associated with AI-induced job insecurity [2]. This suggests that training programs should not be implemented in isolation from broader organizational communication. When organizations provide skill development without clarifying the future role of employees, training may inadvertently signal that existing competencies are becoming obsolete. Conversely, when training is embedded in a clear human-centered strategy emphasizing augmentation, internal mobility, and long-term employability, employees may be more likely to interpret reskilling as evidence of organizational commitment.

Taken together, the findings support a more differentiated understanding of AI reskilling. The results do not indicate that training is either psychologically beneficial or harmful in a simple sense. Rather, the intervention appears to generate two simultaneous processes. The first is an empowerment process in which employees gain technical competence, self-efficacy, adaptability, and confidence in their occupational future. The second is an awareness process in which employees develop a more accurate understanding of AI's ability to automate tasks and potentially restructure employment. The coexistence of these processes explains why job security and replacement anxiety can rise simultaneously. This interpretation is consistent with research emphasizing the multidimensional nature of employee responses to AI, including job insecurity, well-being, innovativeness, anxiety, and self-efficacy [1, 3, 5, 10]. Accordingly, the present study contributes to the literature by demonstrating that reskilling should be evaluated not only in terms of competence acquisition but also in terms of the psychological meaning employees assign to the technological future of their work.

Several limitations should be considered when interpreting the findings. First, the study was conducted with 72 employees working in organizations located in Tehran, and the relatively modest sample size limits the extent to which the findings can be generalized to employees in other regions, industries, occupational categories, or national contexts. Second, the quasi-experimental design did not involve fully randomized allocation, and although the intervention and control groups were comparable on major baseline characteristics, unmeasured differences between the groups may have influenced the results. Third, the posttest was conducted immediately after completion of the intervention, meaning that the study cannot determine whether improvements in AI competency and perceived job security or the increase in replacement anxiety persisted over time. Fourth, the main psychological outcomes were measured using self-report instruments and may therefore have been influenced by common method variance, social desirability, response tendencies, or temporary emotional states. Fifth, the intervention combined several training components, including AI literacy, practical application, prompt engineering, ethical use, critical evaluation, and human-AI collaboration; consequently, the study cannot identify which specific component was most responsible for the observed changes. Finally, participants came from multiple occupational domains, and differences in the actual degree of exposure to automation or objective replacement risk across occupations were not modeled separately.

Future studies should replicate the present research using larger and more diverse samples drawn from different industries, occupational groups, cities, and countries in order to evaluate the generalizability of the reskilling paradox. Fully randomized controlled trials would provide stronger causal evidence and help minimize potential selection effects associated with quasi-experimental allocation. Longitudinal designs with multiple follow-up assessments are also recommended to determine whether increased job security and replacement anxiety persist, diminish, or change as employees gain more workplace experience with AI after training. Future research should distinguish between different dimensions of AI anxiety, including learning anxiety, replacement anxiety, performance anxiety, ethical concerns, and uncertainty regarding career development. It would also be valuable to examine potential mediators and moderators such as AI self-efficacy, perceived employability, career adaptability, innovative behavior, organizational trust, perceived organizational support, age, occupational complexity, actual automation exposure, and previous AI experience. Experimental comparison of different training formats could further determine whether technical training alone produces different psychological effects from programs that combine technical instruction with career planning, job redesign, communication about workforce strategy, and psychological support. Future studies may also incorporate objective indicators of performance, productivity, AI usage behavior, and job redesign alongside self-report measures.

Organizations implementing AI-based transformation should treat reskilling as both a technical and psychological process. AI training should provide employees with practical competencies that increase their ability to use intelligent systems effectively, but it should also explicitly address concerns regarding job redesign, automation, and future employability. Training programs should clarify the distinction between task automation and complete job replacement and should help employees identify which aspects of their work can be augmented by AI and which depend on uniquely human capabilities such as contextual judgment, interpersonal communication, ethical reasoning, creativity, negotiation, and responsibility. Human resource departments should accompany AI training with transparent communication about organizational workforce plans, internal mobility opportunities, emerging roles, and pathways for continued skill development. Managers should avoid presenting reskilling as a one-time response to technological disruption and instead establish continuous learning systems that enable employees to update their competencies as AI capabilities evolve. Organizations should also monitor employees' psychological responses to AI adoption and provide opportunities for discussion, career counseling, and participatory job redesign. By integrating technical skill development with clear organizational communication and career support, employers may strengthen the beneficial effects of reskilling on job security while limiting unnecessary or unmanaged anxiety about technological replacement.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Written consent was obtained from all participants in the study.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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References

- [1] A. Bhargava, M. Bester, and L. Bolton, "Employees' Perceptions of the Implementation of Robotics, Artificial Intelligence, and Automation (RAIA) on Job Satisfaction, Job Security, and Employability," *Journal of Technology in Behavioral Science*, vol. 6, no. 1, pp. 106-113, 2021, doi: 10.1007/s41347-020-00153-8.
- [2] B. J. Kim and J. Lee, "The Dark Sides of Artificial Intelligence Implementation: Examining How Corporate Social Responsibility Buffers the Impact of Artificial Intelligence-Induced Job Insecurity on Pro-Environmental Behavior through Meaningfulness of Work," *Sustainable Development*, vol. 33, pp. 4732-4756, 2025, doi: 10.1002/sd.3376.
- [3] A. Gull, S. Dilawar, and F. Sher, "Data-Driven Artificial Intelligence at the Crossroads: Investigating the Role of Affective Job Insecurity in the Relationship Between Artificial Intelligence Identity Threat and Employee Well-Being," *Abbdm*, vol. 3, no. 1, pp. 18-34, 2023, doi: 10.62019/abbdm.v3i1.35.
- [4] I. O. Eshiett and O. E. Eshiett, "Artificial Intelligence Marketing and Customer Satisfaction: An Employee Job Security Threat Review," *World Journal of Advanced Research and Reviews*, vol. 21, no. 1, pp. 446-456, 2024, doi: 10.30574/wjarr.2024.21.1.2655.
- [5] J. Song, Y. Shan, W. Cai, and C. He, "How Does Artificial Intelligence Awareness Impact Employee Attrition: The Roles of Work Anxiety and Self-Efficacy," *Canadian Journal of Administrative Sciences / Revue Canadienne Des Sciences De L Administration*, vol. 42, no. 4, pp. 576-590, 2025, doi: 10.1002/cjas.70012.
- [6] B. A. Özden and P. Duru, "The Mediating Role of Artificial Intelligence Anxiety in the Effect of Nurses' Attitudes Toward Health Technologies on Their Readiness for Medical Artificial Intelligence," *Journal of Evaluation in Clinical Practice*, vol. 32, no. 3, 2026, doi: 10.1111/jep.70421.
- [7] M. H. Karimnzhad, "Examining the impact of perceiving artificial intelligence as an opportunity on employees' workplace well-being: The role of informal learning and perceived job insecurity," Payame Noor University, Master's thesis in Business Administration (Technology Orientation), 2025.
- [8] D. Ghorbanzadeh, "Role of Innovative Behaviour as a Missing Linchpin in Artificial Intelligence Adoption to Enhancing Job Security and Job Performance," *Systems Research and Behavioral Science*, 2024, doi: 10.1002/sres.3076.
- [9] D. Xu *et al.*, "Impact of Hospital Hierarchy on Nurses' Attitudes Toward Artificial Intelligence: Mediating Roles of Artificial Intelligence Literacy and Anxiety," *Journal of Nursing Management*, vol. 2026, no. 1, p. 5593996, 2026, doi: 10.1155/jonm/5593996.
- [10] E. Eren, F. Ergulec, and A. Kara, "The Mediating Role of Individual Innovativeness in the Relationship between Career Engagement and Artificial Intelligence Anxiety," *Education and Information Technologies*, vol. 30, no. 18, pp. 26301-26328, 2025, doi: 10.1007/s10639-025-13723-1.