



From Job Insecurity to Burnout in the Age of Artificial Intelligence: The Mediating Role of Work Engagement and the Moderating Role of Artificial Intelligence Self-Efficacy

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ABSTRACT

The study investigates the impact of job insecurity on employee burnout by emphasizing the mediating role of job involvement and the moderating role of self-efficacy in the use of artificial intelligence. Based on the Job Demand-Resource model and the Conservation of Resources theory, this study has explored how both psychological and technological resources shape employees' responses to the workplace. Through a structured survey, data were collected from 430 employees of Pakistan's software and IT firms and analyzed using structural equation modeling (SEM-PLS). Results indicated that job insecurity significantly increases burnout while simultaneously reducing job involvement. Moreover, job involvement has negatively influenced burnout, confirming its mediating role between insecurity and burnout. Besides, employees with higher AI self-efficacy reported stronger engagement, as self-efficacy was negatively associated with job insecurity and job involvement. These findings highlight the complex interplay among stressors, engagement, and technological confidence in shaping employee well-being. In addition, the current study contributes to theory by integrating AI-related self-efficacy into established stress-strain frameworks and by offering practical implications for organizations to minimize burnout by increasing employee involvement, reducing insecurity, and strengthening digital competencies.

Keywords: Job Insecurity, Employee Burnout, Work Engagement, Artificial Intelligence, Self-Efficacy, Job Demands–Resources Model

JEL Classifications: J28, J63, O33

1. INTRODUCTION

Employee well-being and performance have become central priorities for contemporary organizations operating in increasingly volatile and technology-driven environments (Hossain et al., 2026). Over the past decade, global economic uncertainty, organizational restructuring, and rapid digital transformation have significantly altered the nature of work (Zhang et al., 2025). These

changes have intensified employees' perceptions of job insecurity, which is widely recognized as one of the most critical psychosocial stressors in modern workplaces (Jiang and Probst, 2016). Job insecurity refers to the perceived threat of losing one's job or valuable job features and is associated with uncertainty regarding future employment stability (Qu et al., 2025). As organizations continue to adopt flexible employment practices, automation, and artificial intelligence, employees increasingly face concerns

about the sustainability of their careers and the future relevance of their skills (Tenakwah and Watson, 2025). A growing body of literature demonstrates that job insecurity is strongly associated with adverse psychological and behavioral outcomes (Zou et al., 2025; Zheng and Zhang, 2025). Employees experiencing job insecurity often report increased anxiety, emotional strain, and decreased motivation (Blom et al., 2015; Žutautienė et al., 2020). In particular, job insecurity has been identified as a major predictor of employee burnout, a psychological syndrome characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment (Alexaki et al., 2025). Burnout not only undermines individual well-being but also negatively affects organizational performance, productivity, and employee retention (Carod-Artal and Vázquez-Cabrera, 2012; Heaney et al., 1994). Employees who perceive their jobs as unstable are more likely to experience reduced job satisfaction and lower organizational commitment, which further intensifies the risk of burnout (Susilowati et al., 2024).

Although the positive relationship between job insecurity and burnout has been widely established, scholars increasingly argue that this relationship is complex and operates through underlying psychological mechanisms (Barnard, 2025; Perveen et al., 2025). One such mechanism is job involvement, which reflects the degree to which individuals psychologically identify with their work and consider it an essential part of their self-identity (Li et al., 2025). Job involvement plays a critical role in shaping employees' attitudes, motivation, and responses to workplace stressors (Alijanzadeh et al., 2026). Previous research suggests that job insecurity can reduce employees' commitment to their roles and weaken their psychological attachment to their work (Probst, 2000; Gallie et al., 2016). When employees feel uncertain about their future, they may disengage from their work as a coping strategy, which can subsequently increase the likelihood of burnout (Van Tuin et al., 2025). However, the role of job involvement in the job insecurity-burnout relationship remains debated. Some studies suggest that highly job-involved employees may experience stronger negative effects of job insecurity because they are more emotionally invested in their roles and therefore more vulnerable to perceived threats (Probst, 2000; Gallie et al., 2016). In contrast, other research indicates that job involvement can serve as a protective resource that buffers employees against stress and burnout (Lambert et al., 2017; Zhang et al., 2023). This contradictory evidence highlights the need to examine job involvement as a mediating mechanism that explains how job insecurity translates into burnout.

In addition to psychological resources, technological change has emerged as a defining feature of the modern workplace (de Sousa et al., 2025). The rapid adoption of artificial intelligence has transformed job roles, skill requirements, and organizational processes. While AI offers significant opportunities for efficiency and innovation, it has also intensified concerns regarding job displacement and skill obsolescence (Amankwah-Amoah and Appiah, 2025). Employees increasingly perceive AI as both a tool and a potential threat, making technological competence a critical factor in shaping workplace experiences (Burhan, 2025). Within this context, self-efficacy in using AI has gained growing attention

as an important personal resource. Self-efficacy refers to an individual's belief in their capability to perform tasks successfully and cope with challenges (Duong, 2025). Employees with higher AI self-efficacy are more likely to view technological change as an opportunity rather than a threat and are better equipped to adapt to evolving work demands (Han et al., 2025). Research suggests that employees can enhance their job involvement and manage workplace stress more effectively when they possess strong AI self-efficacy (Kim et al., 2024; Kim and Lee, 2024). Consequently, self-efficacy in using AI may serve as a moderating factor that weakens the negative impact of job insecurity on job involvement.

The relationships among job insecurity, job involvement, and burnout are therefore multifaceted and influenced by both mediating and moderating mechanisms. Despite increasing research on workplace stress and technological change, limited studies have integrated these variables into a single framework. This gap is particularly evident in developing economies, where rapid digital transformation coexists with high employment uncertainty. Therefore, the present study aims to examine the impact of job insecurity on employee burnout by exploring the mediating role of job involvement and the moderating role of self-efficacy in using artificial intelligence. By integrating psychological and technological perspectives, this research contributes to a deeper understanding of how employees cope with uncertainty in the era of digital transformation and provides insights for organizations seeking to enhance employee well-being and sustainable performance.

2. LITERATURE REVIEW

2.1. Job Insecurity and Employee Burnout

Job insecurity is associated with employee burnout and has effects on employee well-being. Several studies have shown that job insecurity is a significant factor contributing towards employee burnout, as it refers to emotional exhaustion, depersonalization, and reduced personal accomplishment, exacerbating the feelings of job insecurity (Ntouka et al., 2026; Kokkonen et al., 2026). This relationship is particularly noticeable where employees feel their job stability is threatened, leading to increased stress and emotional fatigue. Studies have further shown that job insecurity is linked to increased burnout, psychological distress, and decreased job satisfaction (Sarfoo Kasmaei et al., 2025; Blom et al., 2015; Jiang and Probst, 2016). Burnout among professionals varies, ranging from 35.1% to 46.7% for different dimensions of burnout (Žutautienė et al., 2020). Another study confirmed that job insecurity has a positive and significant effect on burnout and further emphasized the link between these factors (Shary and Alamsyah, 2023). The relationship between job insecurity and burnout is not straightforward. While job insecurity generally leads towards negative outcomes, some studies have found that personality traits and work conditions can moderate this relationship (Blom et al., 2015). The role of self-efficacy was also examined, and it was found that higher self-efficacy can mitigate burnout. However, job insecurity still exerts a significant positive influence on burnout levels (Kang and Li, 2025). Additionally, factors such as job control, social support, and job demands can influence the likelihood of experiencing burnout (Žutautienė et al.,

2020). Keeping in view, job insecurity is a significant predictor of burnout and other negative job-related outcomes. However, the impact of job insecurity can be mitigated by factors such as trust in management (Jiang and Probst, 2016) and optimizing job demands (Žutautienė et al., 2020). Organizations may prioritize addressing job insecurity and implementing preventive measures to reduce occupational burnout, as it affects both individual well-being and organizational performance (Ahmad et al., 2025; Carod-Artal and Vázquez-Cabrera, 2012; Heaney et al., 1994).

According to Self-Determination Theory (Deci and Ryan, 2012), job insecurity frustrates employees' psychological needs for autonomy, belongingness, and competence, which in turn leads to emotional exhaustion and reduced core components of burnout (Vander Elst et al., 2012). This frustration of job involvement mediates the relationship between job insecurity and work-related well-being outcomes, including burnout. Traditional stress theories also describe the relationship between job insecurity and burnout (Tilakdharee et al., 2010; Popov and Popov, 2013). Job insecurity is considered a significant workplace stressor that leads to increased burnout and psychological distress (Jiang and Probst, 2016). Furthermore, the relationship between job insecurity and burnout has been found to be mediated by work-family conflict, suggesting a complex interplay of factors (De Angelis et al., 2021). Most studies confirmed a positive relationship between job insecurity and burnout (Chan et al., 2022; Chong et al., 2024). Some research has found contradictory results, such as Parent-Lamarche and Marchand (2018) reported that job insecurity was negatively associated with cortisol levels, which are typically linked to stress and burnout. This suggests that individual differences may influence the relationship between job insecurity and burnout. Based on the cited literature, the first hypothesis of the study is as follows:

H₁: Job Insecurity has a significantly positive impact on Employee Burnout.

2.2. Job Insecurity and Job Involvement

Job insecurity is linked to lower job involvement as employees may feel less committed to their roles when they perceive their job as unstable (Hngoi et al., 2024). Past studies found that job involvement positively influences organizational commitment, suggesting that higher job involvement can mitigate the negative effects of job insecurity (Khan et al., 2025; Zuhuf and Andriani, 2023). Job insecurity can reduce work engagement, with one study indicating a 56% impact on work engagement among honorary educational staff (Ramadhanty and Rozana, 2023). Research indicated that job insecurity generally has negatively affected employee attitudes and behaviors, but the impact can be varied depending on individual factors, i.e., job involvement and financial dependence (Probst, 2000; Richter et al., 2013). Highly job-involved employees may be more adversely affected by job insecurity (Yi and Kumar, 2025). A study found that employees with high job involvement reported more negative job attitudes, health problems, and psychological distress when they perceived job threats compared to less involved employees (Probst, 2000). This contradicts the assumption that job involvement might be buffered against the negative effects of insecurity (Pires, 2025). Job insecurity can manifest in different forms, including anxiety

about changes to job status insecurity and also fear about job loss (Gallie et al., 2016). Job insecurity generally reduces job satisfaction (Sharif et al., 2025; Sora et al., 2010) as job insecurity often leads to decreased job involvement, which in turn affects organizational commitment and overall employee performance (Gallie et al., 2016).

The Job Adaptation Theory (Cornelius, 1987) describes that employees who are highly involved in their jobs are adversely affected by job insecurity as compared to those employees having low job involvement. Highly involved employees reported that negative job attitudes, health problems, and psychological distress when they perceived their jobs (Probst, 2000). The preservation motivation model presented a contrasting perspective that suggested job insecurity can lead to an increase in employees' performance when they feel their positions are secure (Fischmann et al., 2018). This creates a potential self-correcting mechanism that could subsequently decrease job insecurity. However, this effect may vary based on employees' professional level, with higher-level professionals experiencing a negative relationship between job insecurity and performance. At the same time, low-level employees might be shown a small positive relationship (Nikolova et al., 2022). Job adaptation theory suggests that high job involvement exacerbates the negative effects of job insecurity (Darvishmotevali, 2025), and the job preservation motivation model proposes that job insecurity can potentially lead to improved performance in certain contexts (Probst et al., 2025). These contrasting perspectives highlighted the need for further research to fully understand the dynamics between job insecurity, job involvement, and employee outcomes. Thus, the second hypothesis of the study is as follows: H₂: Job Insecurity has a significantly negative impact on Job Involvement.

2.3. Job Involvement and Employee Burnout

Across different occupational contexts, job involvement has been found to have complex relationships with burnout (Alshammari et al., 2025). For instance, in the study of Indian police officers, job involvement was associated with lower levels of all three dimensions of burnout, emotional exhaustion, depersonalization, and reduced sense of accomplishment (Lambert et al., 2017). This suggested that higher job involvement may protect against burnout for police officers. However, among disciplinary staff, job involvement had a positive association with emotional exhaustion, indicating it may contribute to this aspect of burnout (Lei and Kuok, 2025; Griffin et al., 2009). For teachers, professional identity, which relates to job involvement, was found to affect job burnout negatively, with work engagement and psychological capital mediating this relationship (Zhang et al., 2023). In healthcare settings, perceived high-involvement work practices were negatively related to job demands and burnout among hospital employees (Kilroy et al., 2016). For emergency department staff, social support and feedback were significant in reducing burnout risk (Moscu et al., 2023). Overall, job involvement protects against burnout. Its effects may vary by occupation and interact with other job factors. The contradictory findings highlight the need to consider job involvement's impact on burnout within specific work contexts rather than generalizing it across all professions.

The Job Demands-Resources (JD-R) Theory (Bakker and Demerouti, 2007) posited that high job involvement may be either buffered or exacerbated burnout depending on the balance between demands and resources (Bakker et al., 2022). Employees with high involvement but inadequate resources are more likely to experience emotional exhaustion. While sufficient resources, such as social support, can reduce the risk of burnout (Demerouti et al., 2001; Bakker and Demerouti, 2007). Conservation of resources (COR) Theory explains that employees strive to acquire and protect valuable resources such as energy, time and psychological capital. High job involvement can be beneficial when it provides intrinsic rewards. However, when job demands exceed available resources, employees face resource depletion, leading to higher levels of burnout (Hobfoll, 1989; Halbesleben et al., 2014). Role identity (RIT) Theory suggests that strong job involvement ties an individual's identity closely to his/her work role. While this can enhance motivation and satisfaction, over-identification may increase vulnerability to burnout when job stressors or role conflicts arise (Thoits, 1991). Finally, social exchange theory (SET) emphasized that employees who are highly involved in their jobs expect reciprocal support from their organizations. When this support is lacking, feelings of imbalance and violation of expectations can result in stress and eventually burnout (Cropanzano and Mitchell, 2005). These theoretical perspectives collectively demonstrated that job involvement played a complex role in influencing burnout, acting as a protective factor that depends on contextual and individual circumstances. Thus, the third hypothesis of the study is as follows: H₃: Job involvement has a significantly negative effect on employee burnout.

2.4. Job Involvement as a Mediating Variable

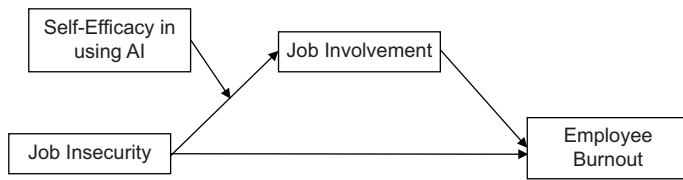
Job involvement reflected the degree to which individuals psychologically identify with their work, which can either channel stress into positive engagement or exacerbate strain when resources are insufficient, as per the Job Demands-Resources model (Bakker and Demerouti, 2007). Empirical evidence suggested that job involvement mediates between job insecurity and burnout (Zhu and Yang, 2025). When employees perceive job insecurity, their commitment to their work role decreases, which subsequently increases emotional exhaustion and burnout levels (Kim et al., 2026; Sora et al., 2010; Richter et al., 2013). Higher job involvement has been found to mitigate the negative psychological outcomes of insecurity by maintaining motivation (Lambert et al., 2017; Zhang et al., 2023). Research on organizational behavior highlighted that job involvement serves as a psychological mechanism that translates external pressures into internalized strain (Sackey et al., 2026). For example, employees experiencing job insecurity often reduce their involvement as a coping mechanism, which in turn contributes to negative work outcomes such as decreased well-being and performance (Wadhwa et al., 2025; Probst, 2000; Gallie et al., 2016). Studies across various sectors have shown that job involvement not only mediates between job insecurity and burnout but also between stressors, job satisfaction, turnover intention, and organizational commitment, which describes its importance in the stress-strain relationship (Ye et al., 2026; Griffin et al., 2009; Kilroy et al., 2016). The fourth hypothesis of the study is as follows: H₄: Job Involvement mediates the relationship between Job Insecurity and Employee Burnout.

2.5. The Moderating Role of Self-Efficacy in Using AI

Research indicated that employees with higher self-efficacy in AI learning are better equipped to handle job insecurity and job involvement. Studies have shown that job insecurity negatively impacts employee well-being and job attitudes (Schreurs et al., 2010; Sora et al., 2018; Yin et al., 2025). However, self-efficacy in AI learning can mitigate these negative effects. Research demonstrates that AI learning self-efficacy weakens the positive link between organizationally prescribed perfectionism and job insecurity (Liu and Ye, 2025). Similarly, self-efficacy in AI learning moderates the relationship between AI adoption and job stress, with higher self-efficacy weakening the positive relationship (Di Stefano et al., 2025). The impact of job insecurity can vary depending on its conceptualization. Subjective job insecurity (personal perception) has been found to have a stronger negative relationship with affective well-being compared to objective-based job insecurity (temporary employment) (Sora et al., 2018). Moreover, both self-efficacy and collective efficacy moderate the relationship between subjective job insecurity and employee outcomes, improving well-being levels when job insecurity is perceived (Shin et al., 2026; Wang et al., 2018). While job insecurity generally hurts employee outcomes, including job involvement, self-efficacy in AI use can serve as a protective factor. Organizations should focus on fostering AI learning self-efficacy among employees to help them better cope with job insecurity and maintain higher levels of job involvement according to technological advancements (He et al., 2023; Presbitero & Teng-Calleja, 2023; Wang et al., 2022). The final hypothesis of the study is as follows: H₅: Self-efficacy in using AI significantly moderates the relationship between Job insecurity and Job involvement.

Cognitive Theory (CT) (Cugley and Savage, 1984) and conservation of resources theory (COR) (Ng et al., 2025) support the moderating role of self-efficacy in AI use. According to these theories, individuals with higher self-efficacy in AI learning are better equipped to cope with job insecurity and maintain job involvement (Kim et al., 2024). Kim and Lee (2024) found that self-efficacy in AI learning moderates the relationship between AI adoption and job stress, with higher self-efficacy weakening the positive relationship (Kim and Lee, 2024). This suggests that employees who feel confident in their ability to learn and use AI are less likely to experience stress from job insecurity related to AI adoption. Job Demands-Resources Theory also provides insight into this relationship. Darvishmotevali et al. (2017) applied this theory to explain how psychological advantages, including intrinsic motivation, which is closely related to self-efficacy, can act as a deterrent against the negative effect of job insecurity on job performance (Darvishmotevali et al., 2017). This implies that self-efficacy in AI use could serve as a personal resource that helps employees maintain their job involvement despite feelings of job insecurity. The relationship between job insecurity and job involvement is not always straightforward. Probst (2000) found that employees who were highly invested in their jobs were most adversely affected by job insecurity. This suggests that high job involvement exacerbates the negative effects of job insecurity. However, self-efficacy in AI use could mitigate this effect by providing employees with confidence in their ability to adapt to technological changes. Figure 1 shows the research framework of the study.

Figure 1: Research framework



3. METHODOLOGY

3.1. Sample and Procedure

The study employed a three-wave time-lagged survey design to minimize common method bias and strengthen causal inference among the study variables. Collecting predictor, mediator, moderator, and outcome variables at different time points helps reduce consistency bias, social desirability bias, and common method variance (Podsakoff et al., 2003). Time-lagged designs are particularly recommended when examining psychological and behavioral relationships in organizational settings because they separate measurement contexts and improve internal validity. Guided by the Job Demands-Resources (JD-R) theory (Bakker and Demerouti, 2007) and the Conservation of Resources (COR) theory (Hobfoll, 1989), this study examines how job insecurity influences employee burnout through job involvement and how AI self-efficacy buffers this relationship. The target population comprised employees working in Pakistani private sector organizations undergoing rapid digital transformation and AI adoption. Based on the nature of the research, data were collected from the software and IT firms. These firms were selected because employees in these firms are highly exposed to automation, artificial intelligence, and technological change, making them more likely to experience perceived job insecurity.

Due to the limited availability of comprehensive employee sampling frames in organizational research, a convenience sampling technique was used (Etikan et al., 2016). Data were collected in two waves during 2025, with a 1-month interval between each wave to ensure temporal separation of constructs and reduce common method bias (Podsakoff et al., 2003). Specifically, Time 1 data were collected from 1 to 31 January 2025, measuring job insecurity, job involvement and demographic variables. Time 2 data were collected from 1 to 28 February 2025, measuring employee burnout and AI self-efficacy. A total of 500 questionnaires were distributed through a combination of online and paper-based surveys. Out of these, 447 responses were returned. After removing incomplete responses containing more than 10% missing values, 430 usable questionnaires remained for final analysis. This sample size is considered adequate for PLS-SEM, which is suitable for complex predictive models and moderate sample sizes (Hair et al., 2017).

3.2. Measures

All constructs were measured using validated scales (Table 1) from prior research to ensure reliability and validity. Job insecurity was measured using the scale developed by Kraimer et al. (2005), employee burnout was measured using the burnout scale developed by Pines et al. (2002), job involvement was measured using the scales developed by Kanungo (1982a and b) and Lawler and Hall

Table 1: Instruments

Variables	Items	Source
Job insecurity	6	Kraimer et al. (2005)
Employee burnout	5	Malach-Pines (2005)
Job involvement	3	Kanungo (1982a and b) and Lawler and Hall (1970)
Self-efficacy in using AI	3	Bandura (2006)

(1970), and AI self-efficacy was measured following the self-efficacy guidelines proposed by Bandura (2006). All items were assessed using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), a widely used measurement approach in behavioral research (Likert, 1932).

3.3. Data Analysis Strategy

The data were analyzed using SmartPLS to perform partial least squares structural equation modeling (PLS-SEM) following the two-step approach recommended by Anderson and Gerbing (1988). First, the measurement model was assessed by examining factor loadings, Cronbach’s alpha, composite reliability, and average variance extracted (AVE) to establish reliability and convergent validity. Discriminant validity was assessed using the Fornell-Larcker criterion (Fornell and Larcker, 1981) and the Heterotrait-Monotrait (HTMT) ratio (Henseler et al., 2015). Second, the structural model was evaluated by examining path coefficients, t-statistics, and P-values using the bootstrapping procedure recommended by Hair et al. (2017). Mediation and moderation analyses were conducted to test the proposed hypotheses and examine indirect and interaction effects.

3.4. Ethical Considerations

Ethical standards were strictly followed throughout the research process. Participation was voluntary, respondents were informed about the purpose of the study, and confidentiality and anonymity were ensured. Participants were also informed that the collected data would be used solely for academic purposes and that they could withdraw from the study at any time without any consequences.

3.5. Addressing Potential Bias

To minimize potential sources of bias, several procedural safeguards were implemented. Participants were assured throughout the data collection process that their responses would remain confidential and anonymous, encouraging honest and accurate answers. The survey was carefully designed to avoid leading questions and to ensure that response options were unambiguous. Respondents were also informed that there were no right or wrong answers and that their responses would have no impact on their job position or workplace relationships, helping to reduce social desirability bias.

3.6. Common Method Variance

Since the data were collected from a single source at multiple time points, common method variance (CMV) was assessed and addressed using multiple strategies. The survey used clear and concise language to reduce respondent confusion and bias. Additionally, Harman’s single-factor test was applied using both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), a widely recognized diagnostic method for detecting

CMV (Podsakoff et al., 2003). Results from EFA did not produce a dominant single factor, and CFA indicated poor fit for a one-factor model, suggesting that common method variance was not a significant concern in this study.

4. RESULTS

Table 2 presents the demographic information of the respondents, including gender, age group, education, and tenure. In terms of gender, 75% of respondents were male, and 25% were female. The majority of respondents belonged to the young age group of 31-35 years (33%), while a considerable portion were aged above 40 years (24%). Regarding education, respondents' qualifications ranged from Intermediate to Master's degrees, with the largest proportion holding a Graduate degree (38%). In terms of professional experience, 39% of respondents reported a tenure of 5-10 years. Only a small proportion (2%) had more than 26 years of service.

Table 2: Respondent's demographic survey

Factors	Frequency	Valid (%)
Gender		
Male	323	75
Female	107	25
Age group		
25-30	69	16
31-35	142	33
36-40	116	27
40 and above	103	24
Education		
Masters	120	28
Graduate	164	38
Intermediate	146	34
Tenure		
<5 years	133	31
5-10 years	168	39
11-15 years	77	18
16-20	26	6
21-25	16	4
26 and above	10	2

Table 3 presents the factor loadings and reliability indicators for Job Insecurity (JINS), Job Involvement (JINV), self-efficacy in using artificial intelligence (SE-AI), and Burnout (BO). For Job insecurity, the items exhibit outer loadings ranging from 0.646 to 0.874, with a Cronbach's alpha of 0.821 and an average variance extracted (AVE) of 0.532, indicating good internal consistency and acceptable convergent validity (Hair et al., 2019; Nunnally and Bernstein, 1994). Similarly, Job involvement has item loadings between 0.836 and 0.900, Cronbach's alpha of 0.807, and an AVE of 0.722, suggesting safe reliability and validity (Hair et al., 2019). However, Self-efficacy in using artificial intelligence (SE-AI) shows outer loadings from 0.504 to 0.840, a Cronbach's alpha of 0.529, and an AVE of 0.649, reflecting effective reliability and validity (Hair et al., 2012; Nunnally and Bernstein, 1994). The burnout construct exhibits loadings ranging from 0.570 to 0.907 with a high Cronbach's alpha of 0.892 and the AVE of 0.704, which demonstrates robustness (Hair et al., 2019). AVE values for all constructs exceeded the recommended threshold of 0.50, confirming that constructs explain a substantial portion of the variance in their observed indicators. These results validate both the measurement scales' reliability and convergent validity, providing a strong foundation for further analysis (Hair et al., 2012; Hair et al., 2019; Nunnally and Bernstein, 1994).

The Fornell-Larcker and HTMT criteria, as shown, confirm the discriminant validity of the constructs: Job insecurity (JIns), Job involvement (JInv), self-efficacy-artificial intelligence (SE-AI), and Burnout (BO). According to the Fornell-Larcker criterion (Table 4), the square root of the average variance extracted (AVE) for each construct (e.g., Job insecurity: 0.689, Job involvement: 0.702, and BO: 0.794) exceeds the inter-construct correlations, indicating that each construct shares more variance with its indicators than with other constructs.

Similarly, the HTMT values in Table 5, which measure the similarity between constructs, are all below the recommended threshold of 0.85, with the highest value being 0.888 (between JInv

Table 3: Factor loadings

Items	Job insecurity	Employee burnout	Job involvement	Self-efficacy in using AI	Cronbach alpha	AVE
Job insecurity					0.821	0.532
JIS-1	0.870					
JIS-2	0.574					
JIS-3	0.674					
JIS-4	0.546					
JIS-5	0.627					
JIS-6	0.707					
Employee burnout					0.892	0.704
BO-1		0.570				
BO-2		0.775				
BO-3		0.907				
BO-4		0.603				
BO-5		0.907				
Job involvement					0.807	0.722
JI-1			0.836			
JI-2			0.795			
JI-3			0.900			
Self-efficacy in using AI					0.529	0.649
SE-AI-1				0.840		
SE-AI-2				0.504		
SE-AI-3				0.558		

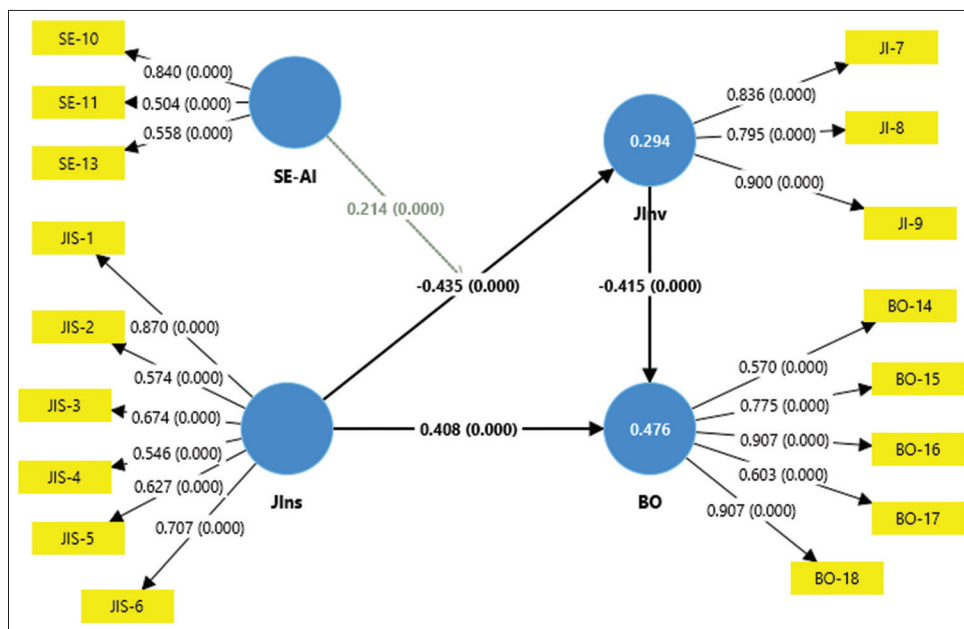
Table 4: Fornell-Larcker criterion

Variables	Employee burnout	Job insecurity	Job involvement	Self-efficacy in using AI
Employee burnout	0.794			
Job insecurity	0.689	0.699		
Job involvement	-0.702	-0.384	0.863	
Self-efficacy in using AI	-0.668	-0.499	0.804	0.819

Table 5: HTMT criterion

Variables	Employee burnout	Job insecurity	Job involvement	Self-efficacy in using AI	Self-efficacy in using AI×Job insecurity
Employee burnout	----				
Job insecurity	0.69	----			
Job involvement	0.7	0.37	----		
Self-efficacy in using AI	0.704	0.585	0.888	----	
Self-efficacy in using AI×Job insecurity	0.193	0.309	0.177	0.107	----

Figure 2: Structural model of the study



and SE-AI), confirming acceptable discriminant validity. These results validate that the constructs are distinct from one another and robust for further analysis (Hair et al., 2019; Henseler et al., 2015).

The Structural model presented in Figure 2 illustrates relationships between job insecurity, job involvement, employee burnout and self-efficacy in using AI. The results demonstrate a significant positive relationship between job insecurity and employee burnout ($\beta = 0.408, t = 5.305, P < 0.000$), which suggests that a high level of job insecurity increases employee burnout (Horpynich et al., 2025). Job insecurity negatively impacts job involvement ($\beta = -0.435, t = 6.591, P < 0.000$), indicating that employees experiencing insecurity in their roles are less committed to their work. Findings highlighted the detrimental effects of job insecurity on employee well-being and workplace engagement (Singh et al., 2025). Job involvement is negatively associated with employee burnout ($\beta = -0.415, t = 5.765, P < 0.000$), which emphasizes the protective role of job involvement in mitigating stress and exhaustion at work (Jayaraman et al., 2025).

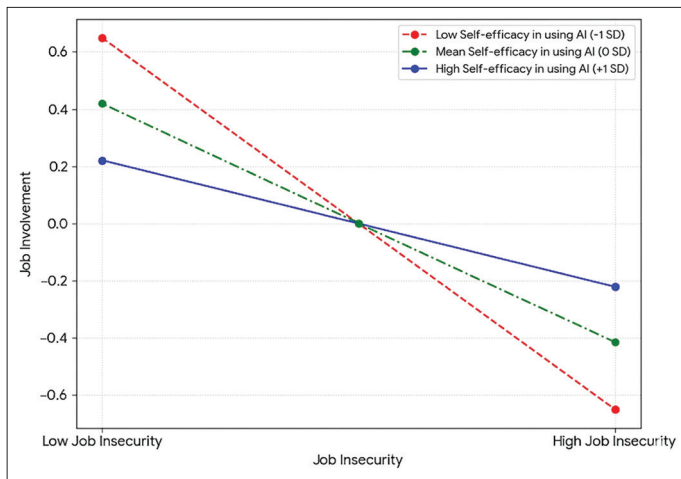
Analysis provides valuable insights into direct and moderating effects among these variables mentioned in Table 6. The indirect relationship between JINS and BO via JINV is partially significant ($\beta = 0.164, t\text{-value} = 5.009, P < 0.000$); thus, hypothesis 4 is accepted. The role of self-efficacy in using AI also emerged as significant in this study, as it positively influences the job involvement ($\beta = 0.352, t = 5.133, P < 0.000$), indicating that employees who are confident in their ability to use AI are more engaged in their work (Kong et al., 2025). Moreover, self-efficacy moderates job insecurity and job involvement ($\beta = 0.214, t = 4.753, P < 0.000$). These findings suggested that higher levels of self-efficacy in using AI can weaken the negative impact of job insecurity on job involvement, acting as a buffer against the adverse effects of insecurity (Wu et al., 2024). These findings also emphasized the importance of enhancing employees' self-efficacy in using AI, which mitigated the adverse impacts of job insecurity. Hypothesis H_5 is supported, demonstrating the moderating influence of self-efficacy in this context.

The interaction plot (Figure 3) demonstrates the moderating role of AI self-efficacy in the relationship between job insecurity and job

Table 6: Direct, indirect and moderating effects

Variables	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ((O/STDEV)	P-values	Hypothesis
Job insecurity ->Employee Burnout	0.408	0.418	0.080	5.305	0.000	H ₁
Job insecurity -> Job Involvement	-0.435	-0.414	0.063	6.591	0.000	H ₂
Job involvement ->employee burnout	-0.415	-0.394	0.069	5.765	0.000	H ₃
Indirect effect						
Job insecurity -> job involvement ->employee burnout	0.164	0.162	0.033	5.009	0.000	H ₄
Moderation analysis						
Self-efficacy in using AI×job insecurity -> job involvement	0.214	0.205	0.044	4.753	0.000	H ₅

Figure 3: Moderating effect of artificial intelligence self-efficacy on the relationship between job insecurity and job involvement



involvement. Job insecurity negatively predicts job involvement at all levels of AI self-efficacy; however, the strength of this negative relationship varies across levels of the moderator. Specifically, the relationship is strongest when AI self-efficacy is low and weakest when AI self-efficacy is high. This pattern indicates a buffering moderation effect, suggesting that employees with higher confidence in using AI technologies are less adversely affected by job insecurity in terms of their job involvement.

5. DISCUSSION

The findings of this study provide strong evidence that job insecurity is positively associated with employee burnout in the context of Pakistani private sector organizations undergoing technological transformation. Employees who perceive higher levels of job insecurity tend to experience increased emotional exhaustion and stress, confirming the stress-strain framework suggested by the Job Demands-Resources (JD-R) model (Bakker and Demerouti, 2007). This aligns with prior studies demonstrating that uncertainty regarding job continuity is a significant psychological stressor that negatively affects employee well-being and engagement (Blom et al., 2015; Jiang and Probst, 2016; Lochner et al., 2025). The results reinforce the understanding that employees under threat of job loss are more vulnerable to burnout, even when they maintain high levels of competence and work experience.

A notable contribution of this study is the confirmation of the mediating role of job involvement in the relationship between job

insecurity and burnout. Employees experiencing job insecurity often show reduced job involvement, indicating a decline in their psychological investment and attachment to their work roles (Wu et al., 2025). This finding is consistent with earlier research suggesting that job insecurity diminishes work engagement and organizational commitment (Gallie et al., 2016; Teng et al., 2025). The mediation effect illustrates that decreased involvement functions as a pathway through which job insecurity translates into burnout. In other words, job insecurity not only directly increases burnout but also indirectly affects burnout by reducing employees’ engagement and identification with their work. This highlights the critical role of job involvement as a mechanism linking workplace uncertainty to adverse psychological outcomes (Lambert et al., 2017; Zhang et al., 2023).

Another important finding is the moderating role of AI self-efficacy, which reflects employees’ confidence in their ability to utilize artificial intelligence technologies effectively. Employees with high AI self-efficacy are better able to maintain job involvement despite experiencing job insecurity, which supports the principles of conservation of resources (COR) theory (Hobfoll, 1989). Personal resources, such as technological competence and confidence in AI skills, appear to buffer the negative impact of perceived job insecurity, enabling employees to sustain engagement and resist the progression toward burnout (Sharma et al., 2025). This finding aligns with recent studies indicating that technological self-efficacy enhances adaptability and resilience in rapidly changing work environments (Low et al., 2025; Gößwein and Liebherr, 2025; Presbitero and Teng-Calleja, 2023).

The study also reinforces the importance of examining complex interrelationships between psychological and technological resources. While job involvement has traditionally been recognized as a protective factor against stress, the moderating effect of AI self-efficacy demonstrates that employees’ technological confidence enhances this protective effect. Employees who are competent in AI applications can continue to engage fully in their work despite environmental uncertainties, highlighting the interaction between human and digital resources in influencing employee well-being (Arboh et al., 2025). This emphasizes the need to view engagement and personal resources as multidimensional, encompassing both psychological and technological competencies.

In addition, the results offer empirical support for the JD-R framework in contemporary workplace settings, particularly in digitalized organizations. Job insecurity represents a significant

demand that can deplete employees' psychological resources, leading to burnout (Zhu and Wang, 2025). Job involvement acts as a personal resource that mitigates these effects, while AI self-efficacy functions as an additional resource, enhancing employees' capacity to maintain involvement under stress (Aljuaid, 2025). The findings suggest that understanding employee outcomes in technologically advanced organizations requires integrating both traditional psychological constructs and modern digital competencies.

Furthermore, the study extends the literature on burnout in AI-driven environments, highlighting that technological competence is not merely a performance-related skill but also a psychological resource that influences engagement and stress outcomes (Aljuaid, 2025). Employees who perceive themselves as capable of navigating AI tools demonstrate higher resilience against the adverse effects of job insecurity (Chung et al., 2025). This suggests that in addition to conventional job-related resources, organizations should recognize and support technological self-efficacy as a factor that shapes employee well-being.

Hence, the study demonstrates that job insecurity increases burnout directly and indirectly through reduced job involvement, and that AI self-efficacy serves as a key moderating factor that allows employees to sustain involvement despite uncertainty. The results underscore the intricate interplay between perceived job threats, engagement, and personal resources, illustrating how psychological and technological factors jointly influence employee outcomes. By focusing on these relationships, the study advances understanding of the mechanisms underlying burnout in contemporary, AI-driven organizational contexts.

6. CONCLUSION

This study aimed to examine how job insecurity contributes to employee burnout by exploring the mediating role of job involvement and the moderating role of self-efficacy in using artificial intelligence. The findings provide strong empirical evidence that job insecurity is a significant workplace stressor that increases burnout while simultaneously reducing employees' psychological involvement in their work roles. The results confirmed that job involvement plays a crucial mediating role in translating job insecurity into burnout. Employees who perceive their jobs as unstable tend to psychologically disengage from their work, which subsequently leads to higher emotional exhaustion and burnout. This finding highlights the importance of maintaining employee engagement as a key mechanism for safeguarding well-being. A major contribution of this study is the identification of AI self-efficacy as a protective personal resource. Employees with higher confidence in their ability to use AI technologies were better able to maintain job involvement despite feelings of insecurity. This demonstrates that technological self-efficacy can buffer the negative effects of workplace uncertainty and help employees adapt to digital transformation.

6.1. Research Implications

This study contributes to existing literature by integrating job insecurity, job involvement, burnout, and AI-related self-efficacy

into a single framework. It strengthens theoretical understanding of the stress-strain relationship by highlighting job involvement as a mediating factor that is consistent with the Job Demands-Resources (JD-R) model (Bakker and Demerouti, 2007). Moreover, identification of AI self-efficacy as a moderator that extends existing research by demonstrating how technological confidence can mitigate insecurity and negative consequences. Present research also addresses gaps in emerging economies, such as Pakistan, where AI integration is accelerating, and job insecurity remains high. By positioning the study in a developing context, it provides cross-cultural evidence as well as enhances the generalizability of prior findings (Susilowati et al., 2024).

6.2. Practical Implications

The findings underscore the importance of reducing perceptions of job insecurity that prevent burnout and disengagement in organizations. Managers should focus on transparent communication, trust-building, and job redesign to enhance employees' sense of stability (Jiang and Probst, 2016). Organizations should encourage job involvement by providing opportunities for meaningful work, autonomy, and recognition that can strengthen employee engagement and reduce stress (Kilroy et al., 2016). Training programs that enhance AI self-efficacy are also essential as they can empower employees to adapt to technological changes and sustain performance under uncertain conditions (Kim et al., 2024; He et al., 2023).

6.3. Limitations and Future Research Directions

This study contains several limitations. The cross-sectional design restricts the ability to infer causal relationships between job insecurity, involvement, and burnout. Future studies should employ longitudinal methods to establish temporal causality (Halbesleben et al., 2014). The study sample was limited to private sector employees in Pakistan, which may have restricted the generalizability of findings. Comparative studies across industries and cultures are needed to increase external validity (Žutautienė et al., 2020). The present study focused on AI self-efficacy as a moderator. Future research may explore other personal resources, such as resilience, psychological capital, or collective efficacy, to better understand protective factors against burnout (Wang et al., 2018; Zhang et al., 2023). Finally, integrating qualitative approaches such as interviews can provide deeper insights into how employees interpret job insecurity and manage technological change.

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