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Artificial intelligence awareness, career resilience, job insecurity and behavioural outcomes

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ABSTRACT

Objective: As artificial intelligence has developed over the years, it has significantly influenced society as it has assisted people with their everyday lives. However, from the workplace perspective as artificial intelligence can help increase performance, it can also allow employees to perceive that their jobs can someday be replaced by it. Thus, the study explored the proximal and distal outcomes of artificial intelligence awareness on job insecurity, task performance and deviant behaviour as well as the moderating role of career resilience for the relationship between artificial intelligence awareness and job insecurity.

Method: Data were collected through a self-administered survey over three intervals. Participants were full-time office employees residing in South Korea.

Results: This study found that job insecurity mediated the relationships between artificial intelligence awareness and both task performance and deviant behaviour. Furthermore, career resilience moderated the relationship between artificial intelligence awareness and job insecurity.

Conclusions: Although technological advancements are intended to improve organisational outcomes, the study revealed that employees can develop negative perceptions of AI, leading to adverse workplace outcomes, such as increased job insecurity, deviant behaviour and decreased task performance. Furthermore, the study found career resilience to moderate the relationship between AI and job insecurity which then was found to mediate the model. These findings contribute to the existing literature and provide valuable insights for organisations aiming to mitigate the negative effects of AI.

KEY POINTS

What is already known about this topic:

(1) Despite the numerous benefits AI brings to business management, its adoption leads employees to worry that their jobs may someday be replaced by AI.
(2) Job insecurity results in numerous negative organisational outcomes such as reduced job satisfaction, organisational commitment, organisational citizenship behaviour and job performance.
(3) Career resilience has a positive impact on career outcomes, and individuals with higher career resilience perceive less risk in response to workplace changes.

What this topic adds:

(1) AI awareness increases job insecurity, which in turn mediates the relationship between AI awareness and task performance and deviant behaviour.
(2) Career resilience moderates the relationship between AI awareness and job insecurity, which then resulted in a mediated moderation relationship within the study model.
(3) This study expands the existing theoretical understanding by identifying the mechanism and boundary conditions underlying the negative organisational outcomes of AI awareness.

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Artificial intelligence awareness; career resilience; job insecurity; task performance; deviant behaviour

Introduction

Artificial intelligence (AI), defined as machines performing cognitive functions typically associated with human tasks (Berente et al., 2019), has exponentially developed over the past few years. In particular, AI technologies such as machine learning, chatbots and automation have been implemented in today's

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business environment (Holzinger et al., 2018). AI is implemented in various industries such as banking (e.g., fraud detection), retail (inventory management and customer personalization) and logistics (warehouse management and package delivery). Subsequently, AI is significantly restructuring the foundations of businesses and how employees work (Fountaine et al., 2019) as AI includes not only performing simple tasks but also processing and predicting data, content creation and decision-making.

With the rapid and ongoing advancement of technology, AI has become more affordable and as a result, it has become widely implemented at the workplace as it can significantly enhance work efficiency (Braganza et al., 2021; Mahroof, 2019). McKinsey and Company assessed that current technologies can approximately automate 45% of the work people perform and 60% of all occupations can see 30% or more of their constituent work to be automated (Chui et al., 2017). In addition, a recent study found that about 80% large organisations have already implemented some form of AI into their core business, which is an increase of 70% from 5 years ago (Ghosh et al., 2019). The rapid increase of AI implementation at the workplace is due to the benefits of improving economic growth by enhancing work efficiency and effectiveness (Davenport et al., 2020; Paschen et al., 2020). Therefore, studies have suggested that almost 50% of the jobs will be replaced by automation in the United States (e.g., Frey & Osborne, 2017), Europe (e.g., Bowles, 2014) and Asia (e.g., K. F. Lee, 2017) in the future.

Although new technologies such as AI can have numerous benefits, they can also have damaging repercussions on employees and their organisations. As AI is gradually replacing human jobs and is anticipated to further replace jobs in the future, AI can have significantly detrimental effects on employees because of the increased perceptions of unemployment and job loss (Smith & Anderson, 2014). Due to AI being implemented at work, employees will be more likely to perceive that their jobs are at risk (Nam, 2019) which then can result in employees negatively reacting towards their organisation. In this regard, studies on job insecurity have long argued that perceptions of job loss can negatively influence several workplace attitudes and behaviours such as job satisfaction, organisational commitment, organisational citizenship behaviour and performance (e.g., Reisel et al., 2010; Staufenbiel & König, 2010; Vander Elst et al., 2014).

Moreover, as the awareness of AI can cause feelings of job insecurity, individual differences have also been found to significantly affect job insecurity. Individual characteristics such as self-esteem, employability and marketability (e.g., De Cuyper et al., 2012; Peiró et al., 2012) have been found to negatively influence job insecurity. In this regard, career resilience may also mitigate the negative effects of AI awareness on job insecurity because when individuals worry, they are more likely to think more carefully about how they can overcome their difficulties, thereby influencing an individual's resilience perceptions (Wei & Taormina, 2014).

Subsequently, researchers have taken notice of the impact of AI on employee attitudes and behaviours in the workplace (Braganza et al., 2021; Brougham & Haar, 2018; Li et al., 2019). In addition, Sverke et al. (2019) suggested that the negative effects of job insecurity on behavioural outcomes have been understudied in comparison to work-related attitudes. However, prior studies have mainly explored the direct links between AI awareness and adverse work and well-being outcomes (Bakir et al., 2025), neglecting to identify underlying mechanisms and boundary conditions in this context.

Given that AI will inevitably replace human jobs in the future, it is crucial to understand its proximal and distal effects on individuals and organisations. To address this crucial need, Shoss' (2017) framework offers a comprehensive perspective for elucidating the proximal and distal effects of AI awareness. Shoss' (2017) job insecurity review suggested several antecedents to job insecurity such as technological change and numerous workplace behaviours such as task performance and organisational counterproductive work behaviours. Based on Shoss' (2017) framework, this study posits that job insecurity is construed to a proximal outcome of AI awareness, whereas task performance and deviant behaviours are seen as distal outcomes.

Accordingly, the study contributes to literature by investigating the proximal and distal outcomes of AI awareness as job insecurity is hypothesized to mediate the relationships between AI awareness and task performance and deviant behaviour. Moreover, as studies on boundary conditions are limited, the study contributes to literature as it examined the moderating effect of career resilience for the relationship between AI awareness and job insecurity.

AI awareness and job insecurity

Previous studies have argued that employees are very concerned about their job security due to the new technologies that are continuously implemented into their workplace (Nam, 2019). Job insecurity refers to the sense of powerlessness to maintain the continuity of one's threatened job situation (Greenhalgh & Rosenblatt, 1984). Job insecurity is based on an individual's perceptions and interpretations of the work environment (Greenhalgh & Rosenblatt, 1984; Hartley et al., 1990) and is perceived when an individual feels a potential threat to one's job continuity (Davy et al., 1997).

Studies have emphasized that AI-driven technological changes can have a negative impact on employees (Braganza et al., 2021; Mokyr et al., 2015) such as frustration and a loss of job autonomy (Barrett et al., 2012). For example, Koo et al. (2021) examined the impact of AI characterized as machine driven human-like intelligence that leverages algorithms and large datasets to enhance efficiency and deliver personalized customer experiences from the perspective of job insecurity. Employees are vastly concerned that their jobs can likely be replaced by AI (Nam, 2019). As a result of these concerns, growing AI awareness induces job insecurity, as such insecurity is often rooted in perceived environmental threats (Klandermans et al., 2010). This sense of job insecurity is not limited to a projection of job discontinuance in the near future, but also includes an expectation on job inexistence in the longer term.

From this perspective, Nam (2019) suggested that technology usage has a significant impact on job insecurity, thereby showing that AI awareness can trigger feelings of job instability. Job insecurity has been found to result in numerous negative organisational outcomes such as reduced job satisfaction, organisational commitment, organisational citizenship behaviour and job performance (e.g., Jiang & Lavaysse, 2018; Reisel et al., 2010).

Career resilience

Due to globalization and technological development, the business environment has become more volatile than ever. Organisations have continued to make changes to improve efficiency and effectiveness in various ways such as implementing new technology, restructuring, downsizing or moving the company overseas. Over the course of transition, individuals may lose their jobs, and they need to become more adaptive and resilient (Luthans et al., 2006), especially as lifelong jobs are no longer common in organisations (Ansell, 2016).

Resilience is "the process of adapting well" while experiencing negative circumstances, such as adversity, stress, trauma, health problems and work-related problems, and is related to an individual's ability to bounce back from difficulties (American Psychological Association, 2020). Resilience has received great attention especially in fields such as psychology and child development, while relatively little attention has been given in the field of career development and career management (Bimrose & Hearne, 2012; Han et al., 2021). Career resilience can be explained as an employee's ability to adapt to changes in the workplace and be composed of three dimensions: (1) belief in oneself, (2) need for achievement and (3) willingness to take risks (London & Noe, 1997, p. 62). Career resilience is involved with lifelong learning and the willingness to reshape to keep up with changes for an individual's career management (Waterman et al., 1994). Thus, research suggests that career resilience is a positive adaptation and developmental process over time rather than a one-time event (Mishra & McDonald, 2017).

Hypotheses development

The mediating effect of job insecurity

Shoss' (2017) integrated framework of job insecurity delineated how job insecurity associates the relationships between numerous types of antecedents (e.g., individual, organisational and macro-economic) and employee outcomes. This framework argued that macro situations such as technological change can influence perceptions of job insecurity. These perceptions, in turn, have been suggested to have a negative effect on the psychological states of employees and their organisational attitudes and behaviours. Accordingly, rapid changes in the organisation and labour market caused by the implementation of AI at

the workplace can increase feelings of job insecurity because AI can potentially signal that an employee's job is in jeopardy (Felten et al., 2019).

Shoss' (2017) framework aligns with the stressor – strain perspective. According to this view, a stressor may be only one component within a broader cluster of stressors, and initial stressors give rise to additional secondary stressors, as stressors tend to beget further stressors (Pearlin et al., 2005). Strain refers to an individual's adverse responses to environmental demands or stressors and represents the consequences of such stressors (Beehr et al., 2003). Prior research has demonstrated that different stressors have unique effects on employees; they consistently lead to strain that undermines performance (LePine et al., 2005). In the workplace, the integration of AI into the organisation and job insecurity can serve as a significant source of stress for employees. Accordingly, AI awareness (Bakir et al., 2025) and job insecurity (Sverke et al., 2002) have been recognised as stressors associated with performance outcomes. From the stressor-strain perspective, AI awareness can increase employee demands, exceed resources and trigger job insecurity. These stress reactions, in turn, will be likely to reduce job performance.

In a similar vein, the career planning model explains that career plans or goals serve to trigger a series of career behaviours and attitudes (Aryee & Debrah, 1993). According to the model, successful career planning leads to a strategy being formed to meet one's goals, which in turn affects career outcomes. In this notion, AI can threaten an individual's career development and make it more challenging for them to satisfy their needs (Braganza et al., 2021; Brougham & Haar, 2018; Li et al., 2019). Employees working in an environment where their jobs are being replaced by AI will feel undervalued and not highly regarded by the organisation. Subsequently, this will negatively impact employee engagement (Braganza et al., 2021) while increasing levels of stress and nervousness (Brougham & Haar, 2018), which then can negatively affect performance while increasing the likelihood of deviant workplace behaviours.

AI can affect numerous organisational outcomes. For instance, AI can have adverse effects on organisational outcomes such as employee engagement, organisational commitment and job satisfaction (Bakir et al., 2025). Recent research on the impact of AI awareness on job outcomes adopts a cognitive perspective (He et al., 2024). From this viewpoint, the negative relationship between AI awareness and task performance can be explained through cognitive load theory, which posits that task performance tends to decline under conditions of excessive cognitive demand (Sweller, 1988). As employees become more aware of AI in the workplace, their self-monitoring and perceived uncertainty are likely to increase, which elevates cognitive load. This may impair working memory capacity for processing task-related information and thereby reduce task performance.

Job insecurity can further reduce job performance because when individuals are concerned about losing their jobs, they will be more likely to have work withdrawal intentions and be less engaged with their work (Chirumbolo & Hellgren, 2003). Moreover, when there is an undesirable or excessive workload that hinders an individual's work achievement (Cavanaugh et al., 2000), performance will be negatively impacted. Therefore, studies have found job insecurity to be negatively related to performance (e.g., Gilboa et al., 2008; Vander Elst et al., 2014).

In addition, job insecurity can trigger unfavourable work behaviours such as deviant behaviour. Job insecurity has been argued to be an antecedent of deviant behaviour (Lawrence & Robinson, 2007). Job insecurity can result in deviant behaviour because of the stress employees perceive from the organisation. Due to the stress from the organisation, employees will be more likely to blame the organisation for their insecure job perceptions, thereby increasing their tendency to retaliate towards the organisation such as engaging in deviant behaviour (Mitchell & Ambrose, 2007; Tian et al., 2014). Hence, studies have found job insecurity to be significantly associated with deviant behaviour (e.g., Chirumbolo, 2015; Huang et al., 2017), thereby we propose the following:

Hypothesis 1: Job insecurity will mediate the relationships between AI awareness and task performance and deviant behaviour.

The moderating role of career resilience

Conservation of resources (COR) theory proposed by Hobfoll (1998) provides a framework for the role of career resilience. According to COR theory, stress occurs as a response to situations that may lead to the depletion or threat of resources. Researchers have stressed that resource loss has a greater impact than

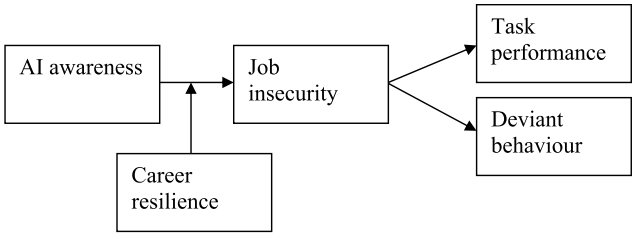

Figure 1. Hypothesized model.

resource gain (Hobfoll & Lilly, 1993), and thus people can be highly distressed by job loss but gaining a new job may not have a significant effect. Also, COR theory postulates that environments with a significant lack of resources are linked to a lower level of resilience.

This study argues for the critical role of career resilience in the era of digital transformation based on COR theory. Currently, AI is gaining a lot of attention in academia and organisations, and job insecurity has been raised as one of the dire concerns stemming from the rapid advances in AI and automation technology (Brynjolfsson & McAfee, 2014). In addition, since AI implementation at work has become more affordable, it is highly likely that AI will be continuously adopted by many sectors (Frenette & Morissette, 2021). As a consequence, a substantial number of human jobs will be replaced by AI and job opportunities will eventually decline over time (Ascott, 2021), thereby increasing feelings of job insecurity (Wirtz et al., 2018). In this notion, contextual factors such as AI awareness may affect career perceptions and job insecurity, while individual perceptions such as career resilience may have a buffering effect.

Resilience is known to help cope with anxiety, and it can further help improve performance (Lyu et al., 2022). Previous research has stressed that workplace changes are in general negatively perceived as stressful, and individuals with higher career resilience perceive risks to be less harmful (Gowan et al., 2000) and to lessen the negative perceptions of changes and risks at the workplace (Kodama, 2021). In this notion, career resilience may buffer the effect of AI awareness on the perceived level of job insecurity of employees.

Regarding the relationship between career resilience and positive workplace outcomes, prior research has reported that individuals who were more persistent and capable of adapting to the changing environment showed fewer intentions to change their careers (Carless & Bernath, 2007; Kidd & Green, 2006), which may also indicate that they are less insecure about their jobs. Other studies have shown that career resilience is positively related to career outcomes (Ahmad et al., 2019; Chiaburu et al., 2006; Hadsell, 2010; Wei & Taormina, 2014). Therefore, we hypothesize that career resilience will moderate the relationship between AI awareness and job insecurity as career resilience can reduce the effects of AI awareness on job insecurity.

Hypothesis 2: Career resilience will moderate the relationship between AI awareness and job insecurity as career resilience will weaken the relationship.

Figure 1 presents the hypothesized model of the study.

Method

Procedures and participants

Data were collected through a self-administered questionnaire over three interval points starting in the last week of July 2024 and ending mid-October (a 5-week interval between each survey) in order to avoid common method variance (Podsakoff et al., 2003). A convenience sampling method was used to recruit participants. Participants were full-time office employees residing in South Korea. They were invited to voluntarily participate in the survey, and the questionnaire was delivered only to those who gave consent. The participants were given coffee coupons after completing the third questionnaire. To ensure anonymity, each questionnaire was given in person in an enclosed envelope and later were returned to the researchers through the contact point of the organisation. This study obtained ethical approval from the first author's institution (The University of Suwon Institutional Review Board Approval No. 2407–045–04). There was a

point of contact when distributing the questionnaires, and the point of contact managed a list to identify each participant with each survey number.

In the first interval questionnaires, AI awareness and career resilience were measured and were distributed to 300 individuals. Out of the 257 questionnaires that were returned (86% response rate), 6 were not usable due to missing values. For the second interval questionnaires, items measured job insecurity. Out of the 251 questionnaires distributed, 240 were received (96% response rate), and 1 case was excluded from the analysis due to incomplete data. In the final questionnaire, items measured task performance and deviant behaviour and were given to 239 respondents. Two hundred and thirty-two questionnaires were returned (97% response rate) and 209 cases were used in the final analysis because of missing values. Given the sample size, we thought that listwise deletion was appropriate as it can consistently estimate standard errors and does not introduce too much bias (Allison, 2009). The mean age of the respondents was 37.6 years old ($SD = 8.9$), average tenure was 11 years ($SD = 8.8$), and the average for team tenure was 2.3 years ($SD = 3.1$).

Measures

The study was conducted in South Korea and the measures were translated into Korean. Following Brislin's (1970) suggestion, the questionnaire items were translated back into English to ensure the quality of the translation. A 7-point Likert scale was used for all measures with a response ranging from 1 indicating "strongly disagree" to 7 indicating "strongly agree'.

AI awareness

The scale for AI awareness was from Li et al. (2019) 4-item scale. Sample items were "I think my job has a high risk of bowing to automation and will be replaced by machines with AI" and "I am quite pessimistic about my future due to the possibility that employees could be replaced with an artificial intelligence system". The internal reliability of the scale was .90.

Career resilience

Career resilience was measured with Day and Allen's (2004) 7-item scale. Items such as "I am able to adapt to changing circumstances" and "I can adequately handle work problems that come my way" were included. The internal reliability of the scale was .88.

Job insecurity

The scale for job insecurity consisted of five items (Mauno et al., 2001). Sample items were "I am worried about the possibility of being fired" and "My job is insecure". The internal reliability was .89.

Task performance

This study used Van Dyne and LePine's (1998) scale to measure task performance. The scale has four items and the sample items were "I fulfill the responsibilities specified in my job description" and "I perform the tasks that are expected as part of the job". The internal reliability was .94.

Deviant behaviour

The scale to measure deviant behaviour was based on Bennett and Robinson's (2000) scale. The scale included 19 items (e.g., "I take an additional or a longer break than is acceptable at my workplace" and "I work on a personal matter instead of work for my employer".). The internal reliability was .95.

Results

Hypotheses testing

Table 1 shows results of descriptive statistics and correlation analysis. The descriptive statistics indicated the mean value of AI awareness to be relatively low, while the standard deviation was high ($M = 2.01$, $SD = 1.01$). This variation may be attributed to the differences in organisational communication about AI adoption, the extent of AI implementation across workplaces or individual-level factors such as job role, technological

Table 1. Descriptive statistics and correlations.

	M	*SD*	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender	.14	.35	1											
2. Age	37.55	8.93	−.09	1										
3. Education	2.48	.97	.19**	.08	1									
4. Position	2.77	1.28	−.04	.78**	.11	1								
5. Tenure	11.00	8.77	−.04	.93**	.00	.83**	1							
6. Team tenure	2.34	3.08	.01	.34**	.07	.30**	.31**	1						
7. No. of team members	7.33	7.16	−.01	.10	.07	.23**	.11	.24**	1					
8. AI awareness	2.01	1.01	−.05	.06	−.08	.12	.07	.01	−.02	1				
9. Career resilience	4.92	.86	−.08	.05	.08	.07	.08	.03	.05	−.13	1			
10. Job insecurity	2.00	.99	−.08	−.01	−.07	.08	.02	−.03	.06	.40**	−.29**	1		
11. Task performance	5.22	1.01	−.10	.10	.12	.09	.10	.13	.06	−.31**	.60**	−.38**	1	
12. Deviant behaviour	2.08	.96	−.04	.15*	−.01	.25**	.22**	.10	−.02	.35**	−.25**	.53**	−.29**	1

N = 209. *$p < .05$; **$p < .01$. Education: 1. High school graduate; 2. Vocational school graduate; 3. University graduate; 4. Graduate school graduate. Position: 1. Entry-level; 2. Section leader; 3. Section head; 4. Deputy department head; 5. Department head; 6. Director.

Table 2. Confirmatory factor analysis.

	χ^2	df	IFI	TLI	CFI	RMSEA
5-factor model	1,144.74	631	.93	.92	.93	.06
4-factor model	1,590.51	635	.87	.86	.87	.08
3-factor model	2,464.69	638	.75	.72	.75	.11
2-factor model	2,715.81	640	.71	.68	.71	.12
1-factor model	3,298.67	641	.63	.59	.63	.14

familiarity or interest in AI. In contrast, variables such as career resilience ($M = 4.92$, $SD = 0.86$) and task performance ($M = 5.22$, $SD = 1.01$) showed higher mean values, while job insecurity ($M = 2.00$, $SD = 0.99$) and deviant behaviour ($M = 2.08$, $SD = 0.96$) had low mean values.

A confirmatory factor analysis was conducted to assess the distinctiveness among the variables. The results of the confirmatory factor analysis are presented in Table 2. The incremental index fit (IFI, Bollen, 1989), comparative fit index (CFI, Bentler, 1990) and the root mean square error of approximation (RMSEA, Brown et al., 1993) were assessed to estimate the fit of the models. As shown in Table 2, the five-factor model appeared to be a better fit (χ^2 (631) = 1,144.74, IFI = .93, CFI = .93, RMSEA = .06) in comparison to the other models, thereby suggesting the research variables to be distinct. In addition, Harman's single-factor test was conducted and the results indicated that the amount of explained variance was 37.15%; thereby revealing that common method variance was not an issue.

Regression analyses were performed using SPSS 25 and gender, age, education, position, tenure, team tenure, and the number of team members were all controlled for the regression analyses. The PROCESS macro (Model 4) was used to test Hypothesis 1. Job insecurity was hypothesized to mediate the relationships between AI awareness and task performance and deviant behaviour.

Tables 3 and 4 show the results from the mediation analysis. AI awareness was found to be significantly related to job insecurity ($\beta = .38$, $p < .001$), task performance ($\beta = -.20$, $p < .01$) and deviant behaviour ($\beta = .14$, $p < .05$), while job insecurity was significantly related to task performance ($\beta = -.32$, $p < .001$) and deviant

Table 3. Mediation regression analysis.

	Job insecurity			Task performance			Deviant behaviour		
	β	SE	*p*	β	SE	*p*	β	SE	*p*
Gender	−.19	.19	.329	−.45	.19	.018	−.06	.16	.721
Age	−.02	.02	.263	−.02	.02	.369	−.04	.02	.025
Education	−.03	.07	.712	.11	.07	.125	.06	.06	.320
Position	.11	.09	.243	.06	.09	.495	.0	.08	.243
Tenure	.01	.02	.747	.02	.02	.395	.04	.02	.021
Team tenure	−.01	.00	.621	.03	.02	.218	.03	.02	.115
No. of team members	.01	.01	.431	.00	.01	.709	−.02	.01	.062
AI awareness	.38	.06	.000	−.20	.07	.005	.14	.06	.020
Job insecurity				−.32	.07	.000	.45	.06	.000
	$R^2 = .18$, $F = 5.54$***			$R^2 = .22$, $F = 6.40$***			$R^2 = .37$, $F = 13.21$***		

***$p < .001$.

Table 4. Bootstrapped indirect effects.

	M	SE	LL 95% CI	UL 95% CI
Indirect effect through job insecurity (Task performance)	−.12	.04	−.20	−.06
Indirect effect through job insecurity (Deviant behaviour)	−.17	.05	.09	.27

Note: Bootstrap size = 5,000. CI = confidence interval; LL = lower limit; UL = upper limit.

behaviour ($\beta = .45$, $p < .001$). Results from the bootstrapping test showed that AI awareness had a significant indirect effect on task performance (−.12) as well as deviant behaviour (.17) as the bootstrapped 95% confidence interval around the indirect effect did not include zero for task performance (−.20, −.06) and deviant behaviour (.09, .27). Thus, Hypothesis 1 was supported.

Hypothesis 2 proposed the moderation effect of career resilience for the relationship between AI awareness and job insecurity. To test Hypothesis 2, the PROCESS macro (Model 1) was used. As seen in Table 5, the interaction term was significant ($\beta = -.17$, $p < .05$) and the moderating role of career resilience is illustrated in Figure 2 following Aiken's et al. (1991) recommendation. It clearly shows that the slopes for the

Table 5. Moderation regression analysis results.

	Job insecurity		
	β	SE	*p*
Gender	−.26	.18	.152
Age	−.03	.02	.075
Education	.00	.07	.098
Position	.13	.09	.148
Tenure	.02	.02	.413
Team tenure	−.01	.02	.711
Number of team members	.01	0	.381
AI awareness	.32	.06	.000
Career resilience	−.30	.07	.000
AI awareness x Career resilience	−.17	.07	.018
$R^2 = .27$, $F = 7.16$***			

***$p < .001$.

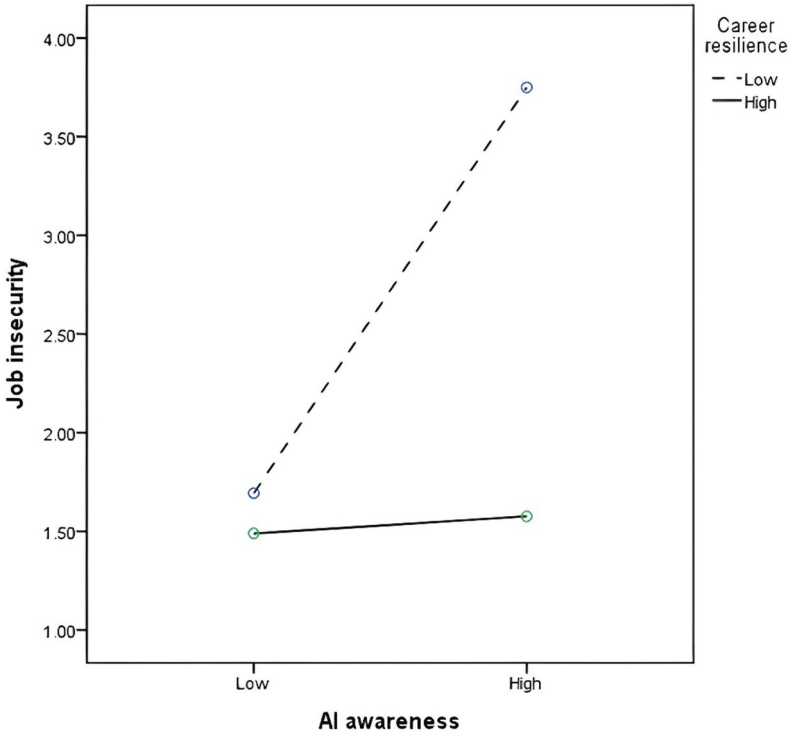

Figure 2. The moderating effect of career resilience.

Table 6. Mediated moderation results.

	M	SE	LL 95% CI	UL 95% CI
Career resilience (Task performance)	.05	.03	.01	.12
Career resilience (Deviant behaviour)	−.07	.03	−.15	−.01

Note: Bootstrap size = 5,000. CI = confidence interval; LL = lower limit; UL = upper limit.

high (*M* +1*SD*) group and low (*M* − 1*SD*) group of career resilience were different as the slope for the high group was saliently lower in comparison to the slope for the low group. Thus, Hypothesis 2 was supported.

Supplemental analysis

As mediation and moderation relationships were found to be significant, supplementary analyses were conducted to examine whether a significant mediated moderation effect exists. The PROCESS macro (Model 7) was used for the analysis and as presented in Table 6, the results showed mediated moderation for both task performance (.01, .12) and deviant behaviour (−.15, −.01) as the lower limit and upper limit of the confidence interval around the indirect effect did not include zero for each of the dependent variables.

Discussion

The study empirically investigated the mediating effects of job insecurity on the relationships between AI awareness and task performance and deviant behaviour and the moderating effects of career resilience on the relationship between AI awareness and job insecurity. The findings suggest that AI awareness can result in negative psychological and behavioural outcomes. When employees believe their jobs can be replaced by AI, they can feel more challenged when attempting to fulfil their needs (Brougham & Haar, 2018) and feel undervalued by their organisations (Braganza et al., 2021). Accordingly, these negative AI perceptions are likely to have a negative effect on an employee's psychological status and behaviour (Brougham & Haar, 2018). These findings can be explained through the lens of cognitive load theory (Sweller, 1988). When employees become aware of AI's potential impact on their performance, they may experience heightened cognitive loads due to increased self-monitoring and uncertainty. This additional mental burden can impair working memory and reduce individuals to focus on their tasks, thereby degrading performance.

As for the moderating role of career resilience, career resilience was found to weaken the effects of AI awareness on job insecurity. Individuals with stronger career resilience are more likely to feel they are able to adapt to workplace changes such as AI implementation and cope with the negative feelings that AI might replace their jobs. This result is in line with previous research that found resilience to moderate the relationships between job insecurity with exhaustion, cynicism, psychological contract breach and deviant behaviour (Shoss et al., 2018). Also, the study results are consistent with the argument that individuals with stronger career resilience perceived risks to be less harmful and not always to be negative in nature (Gowan et al., 2000; Kodama, 2021).

Job insecurity is a workplace strain that can be increased by AI awareness. It can be naturally argued that heightened levels of job insecurity will lead to negative workplace outcomes such as decreased task performance and increased deviant behaviour. Hence, the study found insecure job feelings to lower job performance while increasing the likelihood of deviant behaviour. The study findings are similar to previous studies that have found job insecurity to reduce task performance (e.g., Gilboa et al., 2008; Vander Elst et al., 2014) and enhance deviant behaviour (e.g., Chirumbolo, 2015; Reisel et al., 2010). In addition, the study found mediated moderation for the research model which suggests that individuals that perceived AI as a job threat and were more resilient with their career were less likely to feel insecure about their jobs which then resulted in more favourable work behaviours. These findings offer meaningful theoretical insight, indicating that employees with higher career resilience may be better equipped to buffer the negative effects of AI-related job insecurity.

Theoretical and practical implications

The study hypothesized that job insecurity serves as a proximal mechanism that can link the distal relationships between AI awareness and task performance and deviant behaviour and career resilience to moderate the relationship between AI awareness and job insecurity. As the hypotheses were supported, the study extends the literature as job insecurity was found to be an underlying mechanism for the relationship between AI awareness and behavioural outcomes and career resilience to buffer the relationship between AI awareness and job insecurity.

In addition, career resilience was found to weaken the effects of AI awareness on job insecurity and career resilience was found to be positively correlated to task performance and negatively correlated to deviant behaviour. Hence, not only is career resilience positively related to career outcomes, but it may also help individuals adapt to their environment and help them cope with the adversities and risks from work (Chiaburu et al., 2006; Hadsell, 2010; Sarwar et al., 2019). Therefore, the study findings support the conceptual frameworks of job insecurity (Shoss, 2017) and contribute to integrating AI awareness into job insecurity literature by conceptualizing AI awareness as an antecedent of job insecurity. This study extends existing theories of job insecurity by demonstrating how emerging technological changes drive perceptions of job threat. In addition, since the study found a significant mediated moderation relationship, the study results can further suggest that career resilience has significant indirect effects on the outcomes of AI awareness through job insecurity.

While extant literature has examined the impact of AI awareness, most studies have focused on its direct effect on job outcomes (Bakir et al., 2025). This narrow focus overlooks key mechanisms and interactions between constructs, resulting in an incomplete understanding of AI's influence in the workplace. Consequently, current literature presents a fragmented view that fails to reflect the full complexity of AI awareness and its implications for employees. To address this gap, this study offers a more comprehensive exploration of AI awareness by explaining why and under what conditions AI awareness and job insecurity are linked to task performance and deviant behaviour. This approach contributes to a deeper understanding of the complex dynamics of AI awareness in organisational settings.

Moreover, the study applies well-established multiple theoretical perspectives to explain the effects of AI on job security and behavioural outcomes. It advances academic discourse by integrating multiple theoretical frameworks such as Shoss' (2017) framework, the stressor-strain perspective, cognitive load theory and conservation of resources theory within the context of AI. This multi-theoretical approach provides a more comprehensive understanding of the psychological and behavioural impacts of AI perceptions at work.

In the era of AI, automation and machine learning, employees are unfortunately dealing with greater feelings of job insecurity. While our findings indicate that AI awareness can negatively impact psychological and behavioural outcomes by increasing job insecurity, this effect is likely contingent on the context and the level of support provided to employees. Therefore, organisations and managers should take proactive steps to mitigate the negative consequences of technological changes within the organisation. To manage the impact of AI on organisational members, both employers and employees need to be flexible and open-minded towards AI integration at work. By doing so, employees may be able to reframe AI as a tool for collaboration rather than competition. For instance, surgical robots used by physicians often result in beneficial outcomes for both the patient and surgeon (Peters et al., 2018). In this case, the employee–AI relationship can be understood to be complementary, and that humans act as collaborators working together with AI to create better outcomes.

Additionally, organisations can alleviate concerns about technological transitions through effective communication strategies that explain the organisation's long-term vision such as how AI technologies will be implemented and how AI can impact employee jobs. Another approach in lessening the negative consequences of AI awareness is to manage employee programmes for developing career resilience and adaptability. In this era, organisations need to respond nimbly to the times and environmental changes and demands. Organisations and managers can provide training and education programmes that aim to foster career resilience to help employees adapt to technological changes as research has found training and education to bolster career resilience (e.g., Seibert et al., 2016) and strengthen their adaptability in volatile times which may then enhance feelings of job security (Brown, 1996). Further, resilient employees may proactively embrace the challenges of AI implementation and acquire up-to-date skills, which will lead to

innovation and transformation of the organisation. Therefore, education programmes for organisational leaders are necessary so that leaders can support and invest in employee career development and resilience.

Limitations and future research

A few limitations of the current study should be mentioned. First, common method bias may be of concern because data were collected from self-reported questionnaires. However, common method bias was not an issue as several procedural and statistical methods recommended by Podsakoff et al. (2003) were implemented for the study. Additionally, Harman's single factor test was conducted and the results indicated that common method variance was not a concern. In terms of the rate of attrition, less than 20% is generally considered acceptable and a retention rate higher than 70% is required (Amico, 2009). In this study, 257 respondents returned the questionnaire in the first wave, and 81.3% were used (209 out of 257) in the analysis. Thus, this study seems within a healthy range and future research should plan more thorough designs to minimize the possible concerns such as whether data are missing randomly or not.

Second, cultural characteristics cannot be disregarded as employment practices in South Korea are very distinct from Western societies. Although South Korea is a collectivistic society where individuals react more adversely to the threat of job loss compared to individuals from individualistic cultures (Probst & Lawler, 2006), employment law in Korea is very employee-centred (International Labour Organisation, 2018) and it is not uncommon that Koreans are less likely to worry about job insecurity which is consistent with the data as it found job insecurity to be on the lower end. Therefore, the study should be empirically tested in Western cultures as the study results may not be generalizable. In addition, how job insecurity was measured for the study may be a limitation as several studies have mentioned the need for measurement improvements and dimensional issues (e.g., C. Lee et al., 2018; Shoss, 2017). For instance, different dimensions of job insecurity (quantitative/qualitative and cognitive/affective) can have different effects on outcome variables (Shoss, 2017).

Last, the conceptual framework presented by Shoss (2017) includes organisational and individual characteristics as antecedents of job insecurity, while this study mainly focused on individual characteristics. Multilevel modelling including factors related to organisational characteristics can help further expand our understanding of job insecurity and behavioural outcomes. Future studies should investigate whether AI perceptions can result in positive outcomes such as improved efficiency and performance. In addition, employee perceptions of AI may differ by industry. For example, employees in research and development may feel less threatened by AI because they may feel that AI is not capable of executing creative tasks (Bhargava et al., 2021), while employees in the hospitality industry such as hotels and retail fear the loss of their jobs with the implementation of AI at their workplace (Koo et al., 2021). Thus, future studies should also explore how the impact of AI implementation at work would differ across industries.

Future research may need to further explore the association of socio-economic variables with AI awareness, career resilience and job insecurity. For example, age is known to be related to career resilience. While studies have shown mixed results; some reported older workers were less able to adapt to changes in the workplace (Nissen et al., 2010) while others showed that older people were more resilient (Scheibe et al., 2022). Furthermore, predictors of career resilience have yet to be comprehensively researched as studies are limited (Lyons et al., 2015). For better understanding of the antecedents of career resilience, future studies need to investigate individual and organisational factors from a broader perspective.

Conclusion

Organisations and employees will continue to face challenges when implementing and adapting to new technologies. Although technological changes are intended to improve organisational outcomes, they can come at a cost as this study found employees to have negative perceptions about AI, which in turn can lead to detrimental workplace outcomes such as increased job insecurity and deviant behaviour and reduced task performance. Moreover, this study found career resilience to moderate the relationship between AI and job insecurity which then was found to mediate the moderated study model, hence contributing to the extant literature.

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Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy/ethical considerations.

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