ISSN 2409-2665
Journal of Logistics, Informatics and Service Science
Vol. 11 (2024) No. 5, pp. 522-539
DOI:10.33168/JLISS.2024.0530

Engaging Hotel Employees in the Era of Artificial Intelligence: The Interplay of Artificial Intelligence Awareness, Job Insecurity, and Technical Self-Efficacy

Amany Hamid Ibrahim Hassan [1,2], Asier Baquero[3], Wagih M. E. Salama[1]*, Hazem Ahmed Khairy[4*]

[1]Department of Social Studies, College of Arts, King Faisal University, Saudi Arabia
[2]Department of Social Sciences, Faculty of Social Work, Fayoum University, Fayoum, Egypt.
[3]Faculty of Business and Communication, International University of La Rioja, 26006 Logrono, Spain
[4]Hotel Management Department, Faculty of Tourism and Hotels, University of Sadat City, Sadat City, Egypt

ahhasan@kfu.edu.sa, asier.baquero@unir.net, welsayed@kfu.edu.sa(Corresponding author), hazem.khaiery@fth.usc.edu.eg(Corresponding author)

Abstract. This study investigates the impact of artificial intelligence awareness (AIA) on employees' job engagement (EJE) in the hotel industry, focusing on the mediating role of job insecurity (JI) and the moderating role of technical self-efficacy (TSE). Drawing on the Expectancy theory and Affective Events theory, the study proposes a mediated moderation model and tests it using PLS-SEM on a sample of 390 full-time employees from five-star hotels in Egypt. The results confirm that AIA negatively influences EJE and positively influences JI, while JI negatively influences EJE and mediates the AIA→EJE relationship. Furthermore, TSE negatively moderates the AIA→JI relationship, mitigating the negative impact of AIA on JI. The findings highlight the importance of addressing employees' AI-related concerns and leveraging their technical self-efficacy to maintain job engagement and security in the face of technological disruptions. The study contributes to the literature by extending the application of the Expectancy theory and Affective Events theory to the context of AI adoption in the hotel industry and offers practical implications for hotel managers and HR professionals.

Keywords: Artificial Intelligence Awareness, Employees' Job Engagement, Job Insecurity, Technical Self-efficacy, Hotel Industry

1. Introduction

Artificial intelligence (AI) adoption is crucial in the digital age, offering opportunities and challenges to industries like hospitality. It's essential for transforming innovation into a global economy and improving living standards (Limna et al., 2021). The hospitality industry is facing a competitive landscape with new technologies, high customer expectations, innovation, and rising costs (Al-Romeedy & Khairy, 2024; Velwin et al., 2024). The hospitality and tourism industry is leveraging advanced technologies like artificial intelligence and robotics to improve customer service and experience, ensuring the survival of businesses in the changing environment (Al-Romeedy, 2024; Gaafar & Al-Romeedy, 2024).

The hospitality and tourism industry is rapidly adopting AI, with 20% of transportation firms adopting AI technologies in 2016, and 12% of other businesses (e.g. hospitality and entertainment) at a 6.5% annual growth rate (McKinsey Global Institute, 2017). This service-oriented sector uses marketing, service delivery, and communication to empower intelligent decision-making and ensure seamless interoperability for stakeholders (Buhalis, 2019). Smart technology in hospitality enhances consumer experience, improves operations, and enhances productivity (Buhalis and Sinarta, 2019). Service automation impacts consumer choices and actions, while smartness builds strong networks and interconnects all members (Jabeen et al., 2022).

However, the hospitality industry faces challenges in balancing digital and human interactions despite the widespread adoption of technology (Limna, 2023). Some traditional jobs may be lost due to AI integration (Presbitero and Teng-Calleja, 2023). McKinsey Global Institute predicts that 800 million jobs could be restructured and lost by 2030 (Presbitero and Teng-Calleja, 2023). The increasing number of robots in the workforce is causing a decrease in employment to population ratio and wages, necessitating the emergence of new jobs requiring new competencies for effective adaptation (Acemoglou and Restepo, 2020). Moreover, AI can outperform humans in complex jobs through deep learning (Christou et al., 2020). AI can perform many jobs, and AI may replace positions in the hospitality industry (Kong et al., 2021). Smart hotels, such as Henn-na Hotel in Japan and Alibaba Future Hotel in China, have already been established (Northfield, 2015). Furthermore, AI is revolutionizing hotel operations and introducing reforms (McCartney and McCartney, 2020). However, experts predict AI will displace jobs by 2025, potentially leading to unemployment and social order disruptions (Anderson and Smith, 2014). The integration of robots may alter job boundaries, occupations, and organizations, potentially affecting employee career patterns (Acemoglu and Restrepo, 2020). Additionally, AI may disrupt person-organizational fit (Xu et al., 2020), leading to employee disengagement.

On the other hand, individual characteristics, such as technical self-efficacy, play a crucial role in influencing attitudes and behaviors toward work events and new technologies (Chang et al., 2024). Technical self-efficacy is a crucial individual trait that indicates a person's confidence and ability to perform specific technical tasks (Compeau & Higgins, 1995). This self-efficacy significantly influences the acceptance of new technologies, with limited research on AI technology contexts (Cao et al., 2022). It may indirectly affect AI adoption intention through emotional experiences (Chang et al., 2024).

Despite the significant role of AI and robotics in the hospitality sector, there is a lack of research on their use (Khaliq et al., 2022). Researchers asserted the importance of addressing concerns about employee behavior toward smart technology introduction (Gonzalez et al., 2020; Ali et al., 2019). In addition, previous studies show inconsistencies in technostress's effects on employees, with some suggesting positive outcomes like increased productivity and innovation, while others suggest negative emotions may reduce technology adoption intention or resistance (Saleem et al., 2021; Salanova et al., 2023; Feng et al., 2019). Furthermore, research indicates that individuals' responses to technology vary significantly (Yu et al., 2023), influenced by positive and negative emotions, making understanding emotional responses to technology crucial (Agogo & Hess, 2018).

Therefore, the study utilizes Expectancy and Affective Events theories to analyze AI adoption and job engagement, highlighting their importance in comprehending employees' cognitive and emotional responses to technological disruptions. Specifically, the current study investigates the impact of AI awareness on hotel employees' job engagement, focusing on job insecurity as a mediator in the AIA→EJE relationship and the moderating role of technical self-efficacy in the AIA→EJE relationship. The study offers valuable insights into the human side of AI adoption in the hotel industry and paves the way for further research on the strategies and interventions that can help employees and organizations thrive in the era of technological transformation. By addressing employees' concerns, leveraging their strengths, and creating a culture of learning and innovation, hotels can harness the benefits of AI while maintaining a motivated and engaged workforce.

2. Literature Review and Hypotheses Development

2.1. Artificial Intelligence Awareness and Employees' Job Engagement

The Fourth Industrial Revolution has introduced advanced technologies like artificial intelligence (AI), which automate production processes and reduce costs (Hofmann and Rüsch, 2017; Brougham and Haar, 2018; Bowen and Morosan, 2018). AI is revolutionizing various business sectors, including the hospitality industry (Almada-Lobo, 2015). The information and communication technology revolution has revolutionized the hospitality and tourism industry, introducing smart technologies like AI (Dorcic et al., 2019).

Job engagement is defined as "a positive, fulfilling, work-related state of mind, and it could be characterized by vigor, dedication, and absorption" (Schaufeli et al., 2002, p.72). Employee engagement in work is influenced by self-reliance and trust in management (Engelbrecht et al., 2017; Khairy et al., 2023a, 2023b, 2023c). Artificial intelligence (AI) presents new challenges that require effective identification and management to maximize its benefits and minimize its drawbacks (Abedin, 2022). Lacity and Willcocks (2018) highlight that AI, including robotics and cognitive automation; can be perceived negatively in organizations when employees lack knowledge about its impact on their jobs and careers. Organizations should prioritize employee job engagement to mitigate stress caused by excessive work demands, such as AI adoption, and ensure that technology is used effectively to improve organizational outcomes (Saxena and Mishra, 2023). Therefore, the following hypothesis is formulated:

H1: Artificial Intelligence Awareness negatively influences employees' job engagement.

2.2. Artificial Intelligence Awareness and Job Insecurity

Job insecurity is the perception of a future threat to an employee's position within an organization (Kuhnert and Palmer, 1991). Perceived job security refers to an employee's expectation of employment stability and continuity within an organization, with low levels being a major stressor in contemporary work life (Altinay et al., 2019). Job security is a psychological contract where employees feel recognized for their efforts and dedication (Wong et al., 2019). Organizations strive to provide stable employment, but job insecurity can lead to decreased commitment and decreased employee performance as they are more disengaged in the workplace (Altinay et al., 2019). Job security is crucial in the era of AI, as it can replace some human jobs and pose threats to the workforce (Bhargava et al., 2021; Prentice et al., 2023). Employees worldwide are concerned about job security due to the implementation of technologies, leading to job insecurity (Nam, 2019; Bhargava et al., 2021). The introduction of AI is viewed negatively, as leaders fear job loss, while job elimination is a major consequence (Ivanov, 2017; Davenport and Ronanki 2018). The increasing significance of robotics is predicted to lead to the replacement of 25% of the hospitality workforce by 2030 (Khaliq et al., 2022). This fear stems from perceived threats to job continuity (Frank et al., 2017). AI misuse can lead to technology misuse, tension, and counterproductive behaviors, affecting job

engagement and organizational performance (Abedin, 2022; Fu et al., 2022). Therefore, the following hypothesis is formulated:

H2: Artificial intelligence awareness increases job insecurity.

2.3. Job insecurity as a mediator

Job insecurity can lead to individuals questioning their competence and capabilities, leading them to seek other career opportunities in secure, competent workplaces (Van den Broeck et al., 2014) as a result of lower levels of engagement at work. Job insecurity also impacts career exploration behavior, leading to employee turnover, lower organizational commitment, and higher intention to leave (Lee and Jeong, 2017). This research suggests that job insecurity mediates the relationship between the perception of AI taking over jobs and employee job engagement. In addition, personal experiences, such as uncertainty and job insecurity, can significantly impact an employee's career choices and job engagement, particularly in the face of workplace threats like AI integration (Presbitero and Teng-Calleja, 2023).

The expectancy theory is a motivational theory that suggests individuals choose specific behaviors based on their expectations of the expected results (Vroom, 1964). Motivation is a product of an individual's expectancy that their effort will lead to the desired performance, the instrumentality of this performance to achieve a certain result, and the desirability of this result (Hung et al., 2015). According to the Expectancy theory concept, hotel employees should not feel valued or secure when AI adoption results in multiple roles not assigned to them. Hotel employees perceive increased responsibilities as highly valued by the company, leading to better job performance and recognition (Swailes and Blackburn, 2016). The company's downsizing plans due to AI adoption may lead to job insecurity among employees, reducing their engagement. Job insecurity may mediate the relationship between employees' perceived threat of AI taking their jobs and their lower job engagement levels. Therefore, the following hypotheses are formulated:

H3: Job Insecurity negatively influences Employees' Job Engagement.

H4: Job Insecurity mediates the relationship between artificial intelligence awareness and employees' job engagement.

2.4. Employees' technical self-efficacy as a moderator

Technical self-efficacy, an individual's judgment of their technology skills, significantly influences their emotional responses to AI-related stressors, according to the AET (Compeau & Higgins, 1995).”Affect is a crucial mechanism that links events to attitudes and behaviors (Li et al., 2020). This study employs Affective Events Theory (AET) to delve into the intricate interplay between emotions, attitudes, and behaviors in work situations. Individual characteristics, as per the AET, significantly influence the connection between work events and emotional responses, thus influencing attitudes and behaviors (Lazarus, 1991). The study highlights the importance of technical self-efficacy, a crucial individual trait that signifies a person's confidence and ability to perform specific technical tasks. Higher technical self-efficacy employees can adapt to new AI technological changes, leading to more positive emotional experiences (Chang et al., 2024). Individuals with increased confidence in learning new technologies and completing work tasks can transform challenges into opportunities for personal growth and personal value (Kim Y Lee, 2021). Employees with poor technical self-efficacy, on the other hand, feel less capable and require more confidence when faced with challenges (Compeau & Higgins, 1995). Stressors related to technology are seen as challenges that can be overcome by people with higher technical self-efficacy, which lessens negative emotions like AI anxiety (Wang & Wang, 2022). In contrast, personnel with weaker technical self-efficacy perceive barrier technology stresses as beyond their control, leading to negative emotions (Lazarus, 1991; Chang et al., 2024). Therefore, the following hypothesis is formulated:

H5: Employees' technical self-efficacy moderates the relationship between artificial intelligence

awareness and job insecurity.

The conceptual framework and hypotheses are presented in Figure (1) below.

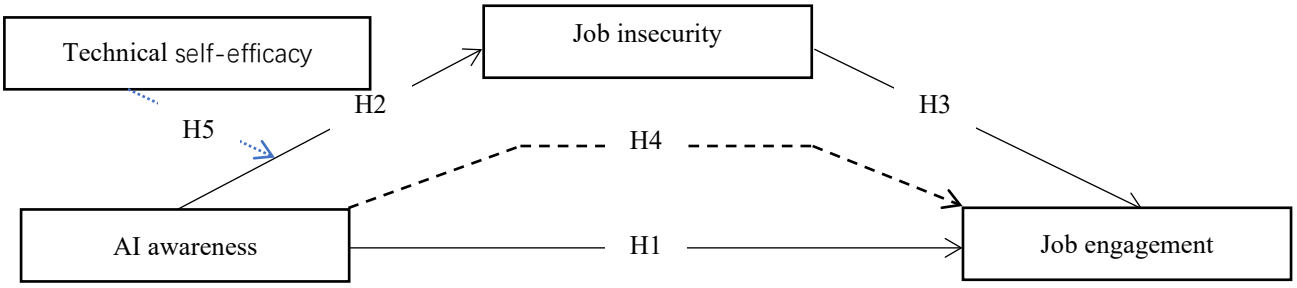

Fig. 1: Conceptual framework of the study.

3. Research Methodology

3.1. Measures and Instrument Development

The study will use a quantitative research design to explore the interconnectedness between artificial intelligence awareness, job insecurity, and employee engagement in the hotel sector. Quantitative research uses numerical data to explain phenomena, analyzing it using mathematical methods like statistics. It deals with numbers, logic, and an objective stance, focusing on specific, narrow questions and collecting data from participants (Creswell & Creswell, 2017). This research method is positivistic, objective, scientific, and experimental, and used for highly structured research designs. It requires an objective researcher who is not influenced by their observations or biases and can break down complex phenomena into numerical values (Mohajan, 2020). The study utilized a survey methodology, divided into two sections, one focusing on latent variables and the other on the research sample's characteristics.

The study utilized a validated questionnaire and literature-based constructs to ensure the instrument's quality validity and reliability. The study utilized four items from a scale developed by Brougham and Haar (2018) to measure AI awareness. For example, “I am personally worried about my future in my organization due to AI replacing employees” and “I am personally worried that what I do now in my job will be able to be replaced by AI”. In addition, the study employed five items from Jung et al. (2021) to measure job engagement. For instance, “I am enthusiastic about my job” and “At my work, I feel bursting with energy”. Moreover, the study utilized an 8-item scale adapted from Karatepe (2022) to assess job insecurity. For example, “I fear that I might lose my job” and “I feel uncertain about the future of my job”. Furthermore, the study utilized a 3-item scale adapted from Turja (2019) to assess employees’ technical self-efficacy. Sample items include: “I’m confident in my ability to learn how to use AI technique if they were to become part of my work” and “I’m confident in my ability to learn how to use AI technique if I were provided the necessary training”. The entire scale items were included in Appendix A.

A panel of experts in the same field revised the survey, confirming the validity of all scales used in the study. Then, the survey was piloted to 30 hotel employees to assess its content and ensure its readability. The questionnaire was initially created in English, and then translated into Arabic by a bilingual expert, and then back into English by another bilingual expert. The English translations of previous and later versions were thoroughly reviewed to ensure consistency in their content. There was a match between the two versions. The questionnaire was distributed in Arabic to ensure accurate phrase interpretation and maximize responses.

3.2. Sample and data collection

This study surveyed full-time employees at five-star hotels in Egypt's Greater Cairo region. These businesses, a dominant player in Egypt's hospitality industry (Alshehri et al., 2024; Al-Romeedy & Khairy, 2024; Khairy et al., 2024), are leveraging AI technologies to enhance operations and gain a competitive edge. In addition, AI adoption in these enterprises is a significant concern due to their high investment and employment levels. The Egyptian Ministry of Tourism and Antiquities reported in 2022 that there are 30 five-star hotels in the Greater Cairo area. The survey was distributed after obtaining permission from the HR managers of investigated enterprises; data was collected in January and March 2024 from employees voluntarily, with self-report convenience sampling used. The study utilized the convenience sample approach due to its practicality in dealing with a large population and limited resources. The self-report methodology offers valuable insights into people's feelings and perceptions of their jobs. It is a simple first step in studying various aspects of organizational behavior, such as job engagement, job insecurity, and organizational practices "i.e.g. AI adoption". While not considered inferior, self-report studies have provided valuable data on many organizational behavior questions (Spector, 1994). Following Donaldson et al. (2002) advice, participants were asked at the survey's end if they were concerned about their responses potentially jeopardizing their employment and could be excluded later. Out of 600 questionnaires distributed to 25 enterprises, 390 were collected, representing a 65% effective response rate, for analysis. The study's final analysis requires a minimum sample size of 170 respondents, as per Hair et al. (2010) guidelines, due to the 17 items to be considered.

3.3. Data Analysis

PLS is a method utilized when theory is insufficiently supported and the researcher primarily predicts the dependent variable. Therefore, the study utilized PLS-SEM, a widely used analytical technique in tourism research (El-Sherbeeny et al., 2023; Alshehri et al., 2024; Alghamdi et al., 2024; Khairy & Elzek, 2024), to evaluate the research hypotheses using WarpPLS 7.0 statistical software.

4. Results

4.1. Sample characteristics

Out of 390 employees involved in the study, 240 (61.5%) were male, and 150 (38.5%) females. The study involved 117 (30%) employees aged 18-45, 175 (44.9%) aged 30-45, and 98 (25.1%) over 45, with 288 (73.8%) having a bachelor's degree. Participants were required to have at least two years of work experience.

4.2. Measurement model assessment

The confirmatory factor analysis tested a four-factor model of AI awareness (AIA), employee job engagement (EJE), job insecurity (JI), and Technical self-efficacy (TSE) meeting all criteria suggested by Kock (2021) as presented in Table (1) below.

Table 1. Quality and model fit indices

Results	Criteria
APC =0.232, P<0.001	P<0.05
ARS =0.171, P<0.001	P<0.05
AARS = 0.166, P<0.001	P<0.05
AVIF =1.316	≤ 5 is fine, but ≤ 3.3 is better
AFVIF =1.408	≤ 5 is fine, but ≤ 3.3 is better
GoF =0.352	Small ≥ 0.1, medium ≥ 0.25, large ≥ 0.36
SPR =1.000	≥ 0.75 is fine, but = 1 is better
RSCR =1.000	≥ 0.9 is fine, but = 1 is better
SSR =1.000	≥ 0.7 is fine
NLBCDR =0.750	≥ 0.7 is fine

"APC: Average path coefficient; ARS: Average R-squared; AARS: Average adjusted R-squared; AVIF: Average block VIF; AFVIF: Average full collinearity VIF; GoF: Tenenhaus GoF ; SPR: Sympson's paradox ratio; RSCR: R-squared contribution ratio; SSR: Statistical suppression ratio; NLBCDR Nonlinear bivariate causality direction ratio".

According to Table (1), the model's fit was analyzed using the ten fit indices suggested by Kock (2021): APC "P<0.05", ARS "P<0.05", AARS "P<0.05", AVIF "acceptable if ≤5, ideally ≤3.3", AFVIF "acceptable if ≤5, ideally ≤3.3", GoF "small ≥0.1, medium ≥0.25, large ≥ 0.36", SPR "acceptable if ≥ 0.7, ideally =1", RSCR "acceptable if ≥ 0.9, ideally = 1", SSR "acceptable if ≥0.7", and NLBCDR "acceptable if ≥0.7". The proposed four-factor model provided well-fitted data "APC=0.232, P<0.001; ARS=0.171, P<0.001; AARS=0.166, P<0.001; AVIF=1.316; AFVIF=1.408; GoF=0.352; SPR=1.000; RSCR=1.000; SSR=1.000; and NLBCDR=0.750".

Table 2 demonstrates that all constructs have composite reliability ratings >0.70, validity confirmed by significant loadings >0.50 with p<0.05, and are free of common method bias (VIF of ≤3.3).

Table 2. Item loadings, Cronbach alpha, CR, AVE, and VIFs

Construct	Indicators	Loading	CR	CA	AVE	VIF
AI awareness (AIA)	AIA.1	0.637	0.866	0.792	0.621	1.894
	AIA.2	0.817				
	AIA.3	0.833				
	AIA.4	0.848				
Employee job engagement (EJE)	EJE.1	0.758	0.893	0.848	0.626	1.080
	EJE.2	0.663				
	EJE.3	0.838				
	EJE.4	0.835				
	EJE.5	0.848				
Job insecurity (JI)	JI.1	0.838	0.938	0.924	0.655	1.191
	JI.2	0.818				
	JI.3	0.829				
	JI.4	0.826				
	JI.5	0.816				
	JI.6	0.808				
	JI.7	0.761				
	JI.8	0.774				
Technical self-efficacy (TSE)	TSE.1	0.632	0.887	0.801	0.730	1.806
	TSE.2	0.953				
	TSE.3	0.940				

The research model's discriminant validity is confirmed by the AVE value exceeding the maximum common value and a significant correlation across latent variables (see Table 3). The validity of the constructs was also confirmed by calculating the HTMT, as illustrated in Table 4.

Table 3. Discriminant validity results

	EJE	AIA	TSE	JI
Employee job engagement (EJE)	**0.791**	-0.268	-0.143	-0.110
AI awareness (AIA)	-0.268	**0.788**	0.632	0.340
Technical self-efficacy (TSE)	-0.143	0.632	**0.854**	0.364
Job insecurity (JI)	-0.110	0.340	0.364	**0.809**

Table 4. HTMT for validity

HTMT ratios	**AIA**	**EJE**	**JI**
Employee job engagement (EJE)			
AI awareness (AIA)	0.323		
Technical self-efficacy (TSE)	0.216	0.851	
Job insecurity (JI)	0.125	0.397	0.424
One-tailed P values	**AIA**	**EJE**	**JI**
Employee job engagement (EJE)			
AI awareness (AIA)	<0.001		
Technical self-efficacy (TSE)	<0.001	0.001	
Job insecurity (JI)	<0.001	<0.001	<0.001
"HTMT ratios (good if < 0.90, best if < 0.85), P values (one-tailed) for HTMT ratios (good if < 0.05)"			

4.3. Structural model testing and hypothesis testing

The data presented in Figure (2) and Table (4) indicates that AI awareness (AIA) has a negative weak impact on employee job engagement (EJE) (β=-0.28, P<0.01), with increased AIA value resulting in decreased EJE, confirming H1. In addition, AI awareness (AIA) has a positive medium impact on job insecurity (JI) (β=0.40, P<0.01), suggesting that high AIA levels lead to higher JI, confirming H2. Furthermore, JI has a negative weak impact on EJE (β=-0.21, P=0.01), suggesting that high JI levels lead to lower EJE, confirming H3. Moreover, technical self-efficacy (TSE) negatively moderates the AIA→EJE relationship (β=-0.31, P<0.01), it mitigates the negative relationship between AIA and JI, supporting H5. Figure (2) also shows that AIA significantly interpreted 16% of the variance in JI (R2=0.16). Also, AIA and JI significantly interpreted 22% of the variance in EJE (R2=0.22).

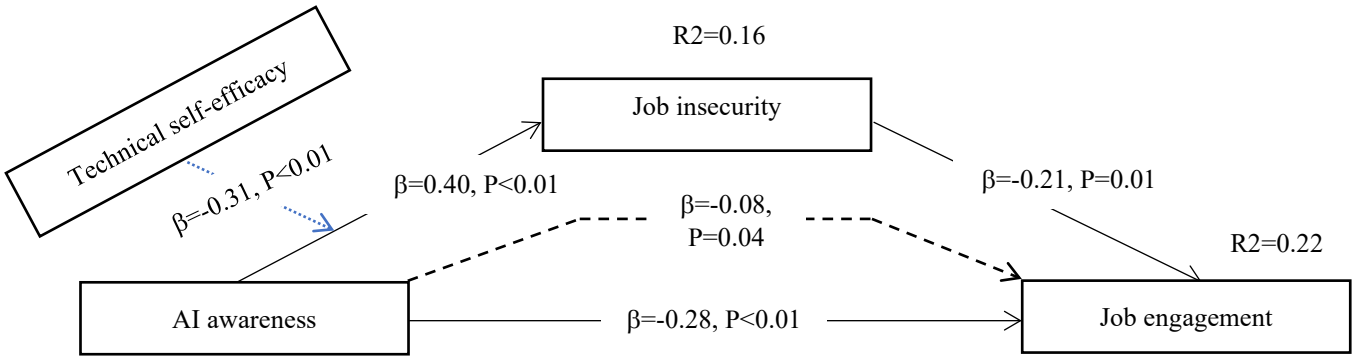

Fig. 2: the final model of the study.

Table 5. Effect size and confidence intervals

Hs	Relationship	Direct effect (β)	Sig.	*t-value*	Confidence intervals	Decision
H1	*AIA→EJE.*	-0.28	P<0.01	-5.839	-0.380, -0.189	Supported
H2	*AIA→JI*	0.40	P<0.01	4.577	0.129, 0.321	Supported
H3	*JI→ EJE*	-0.21	P<0.01	-2.222	-0.209, -0.013	Supported
H5	TSE*AIA →*JI*	-0.31	P<0.01	-6.366	-0.405, -0.214	Supported

Finally, the study confirms that job insecurity significantly mediates the relationship between AI awareness and employee job engagement, with a "95%bootstrapped confidence interval". The study utilizes the mediation analysis method developed by Preacher and Hayes (2008). The bootstrapping analysis indicates that the indirect effect β=-0.084 (0.400×-0.210) was significant (P=0.04) with a t-value of -2.710 (see Table 6). The indirect effect of -0.084, "95% bootstrapped confidence interval" (LL=-0.145, UL=-0.023), the values do not intersect at a zero, confirming mediation (H4 is therefore supported).

Table 6. Mediation analysis' Bootstrapped Confidence Interval

	Path a AIA→JI	Path b JI→EJE	Indirect Effect	SE	*t-value*	Bootstrapped Confidence Interval		*Decision*
						95% LL	95% UL	
AIA→JI→EJE	0.400	-0.210	-0.084	0.031	-2.710	-0.145	-0.023	Mediation

5. Discussion

The study investigates the impact of artificial intelligence awareness on job engagement in hotel enterprises, focusing on the mediating role of job insecurity in the AIA→EJE relationship and the moderating role of technical self-efficacy in the AIA→EJE relationship. The study found that artificial intelligence awareness negatively influences employees' job engagement, aligning with previous research by Lacity and Willcocks (2018) and Saxena and Mishra (2023) who argued that AI can be perceived negatively in organizations, impacting jobs and careers. Li et al. (2019) argued that, for example, the introduction of AI lodging systems in the workplace may negatively impact employee relationships, productivity, and cost reduction, potentially leading to a negative perception of workplace belonging and dedication, potentially causing alternative career choices. In addition, tourism and hospitality businesses are concerned about the risks and security of AI and robotic systems due to their accessibility and consistency, as well as the potential for worker safety and mental health deterioration (Limna, 2023).

The study also indicates that artificial intelligence awareness increases job insecurity, aligning with previous research by Abedin (2022) and Fu et al. (2022) who argued that AI can cause tension and counterproductive behaviors, impacting job engagement and organizational performance. The perceived threat of AI taking over jobs can lead to low self-efficacy and job insecurity among employees. This insecurity is influenced by the perceived efficiency of AI in handling tasks, with higher perceived threats causing greater job insecurity (Presbitero and Teng-Calleja, 2023).

In addition, the study found that job insecurity negatively influences employees' job engagement and mediates the relationship between artificial intelligence awareness and employees' job engagement, aligning with previous research findings of Presbitero and Teng-Calleja (2023) who claimed that uncertainty and job insecurity can significantly influence an employee's career choices and engagement, especially in the face of workplace threats like AI integration. Hotel employees' awareness of AI and robotics significantly influences their turnover intention, particularly in lower-skilled positions, who are aware of the high risks of AI replacement (Li et al., 2019). Koo et al. (2021) added that AI's potential to mimic human thought processes could threaten human jobs in the hotel industry. Housekeeping and maintenance jobs are expected to be automated for operational efficiency, staffing costs, and customer experience improvement. Other roles like front desk and concierge may share tasks with AI."

Lastly, the study found that employees' technical self-efficacy moderates the relationship between artificial intelligence awareness and job insecurity, aligning with previous research findings of Chang et al. (2024) who claimed that Technical self-efficacy influences the impact of technology stressors on affective reactions and AI adoption through AI anxiety. General self-efficacy refers to individuals' belief in their ability to handle challenging situations (Bandura, 1986), while specific self-efficacy measures confidence in specific tasks or contexts. Technology-specific self-efficacy is correlated with interest in technology, suggesting that employees with self-efficacy are more likely to adopt new environments during organizational changes (Turja et al., 2019).

To sum up, the findings support the Expectancy and Affective Events theories employed to examine AI adoption and job engagement, emphasizing the significance of understanding employees' cognitive and emotional responses to technological disruptions. The study findings also emphasize the need for hotel managers and HR professionals to address employees' concerns about AI, job security, skill development, and a supportive organizational culture.

6. Conclusion and Implications

The study explores how artificial intelligence awareness influences employees' job engagement in hotel enterprises, focusing on job insecurity as a mediating impact and the moderating role of technical self-efficacy on the AIA→EJE relationship. This study demonstrates that artificial intelligence awareness stimulates the feeling of insecurity among hotel employees. The study is a pioneering exploration of this research model in an emerging economy, specifically Egypt. In addition, this study broadens the Expectancy theory that is used as a theoretical foundation of this study. The Expectancy theory was used to suggest that hotel employees should not feel valued or secure when AI adoption leads to multiple roles not being assigned to them. The study also expands the application of the Affective Events Theory to the study of AI technology adoption. In other words, it extends the application of the Expectancy theory and Affective Events theory to the study of AI adoption and job engagement, demonstrating the relevance of these frameworks for understanding employees' cognitive and affective responses to technological disruptions. The study explores how challenging technology stressors, including job insecurity, impact AI adoption and employee engagement through psychological mechanisms, providing valuable insights into existing literature. Moreover, this study highlights the significant impact of AI awareness on job insecurity and employee engagement, enhancing human resource management research by highlighting the technology's influence on the workplace environment.

The current study provides practical implications for hotel managers and HR professionals. It

suggests strategies to mitigate the negative impact of AI on job engagement and utilize technical self-efficacy for employee adaptation and performance. The study highlights the importance of considering AI awareness, job engagement, and job insecurity in hotel human resource practices to enhance employee performance. It also highlights the importance of investing in employee training and development to enhance their confidence and adaptability in the face of technological changes. Hotel management should balance AI investments with employee training to ensure security and trust, while also enhancing performance. In addition, job insecurity is a significant factor in the application of AI technologies in organizations. AI can only replace low-level human jobs, so hotel management should identify tasks that can be performed by AI or AI-powered bots. For jobs that can be replaced, hotel management should explore new opportunities, provide skill training, and invest in employee satisfaction, commitment, and engagement. This will help maximize efficiency and business profitability. Furthermore, hotel managers should encourage employees to collaborate with AI to enhance career outcomes by transitioning from routine tasks to subjective, emotional work, potentially enhancing adaptability and lifelong learning abilities. Furthermore, hotel organizations should tailor training programs to individual employees' skill levels, enhancing technical self-efficacy, AI awareness, job engagement, and technological transformation, ultimately boosting innovation. Lastly, the study underscores the need for hotel managers and HR professionals to proactively address employees' concerns about AI and job security, provide opportunities for skill development and career growth, and foster a supportive organizational culture that values employee well-being and engagement.

7. Limitations and Further Research

The study has some limitations that should be acknowledged and addressed in future research. The cross-sectional design and self-report data may not fully capture the dynamic and long-term effects of AI adoption on employee attitudes and behaviors. Future studies could employ longitudinal or experimental designs to establish causal relationships and control for potential biases. Additionally, the focus on five-star hotels in a single region may limit the generalizability of the findings to other hotel categories or cultural contexts. Comparative studies in different cultural and organizational contexts across different hotel types and countries could provide a more comprehensive understanding of the boundary conditions and variations in the relationships examined. Future research should also consider examining other mediators like job stress and trust in leadership, reducing social desirability bias, exploring additional career-related factors influenced by AI, and exploring other moderators such as trust in artificial intelligence and employee readiness for change.

Acknowledgment

This work was supported by the Deanship of Scientific Research, Vice Presidency for Graduate Studies and Scientific Research, King Faisal University, Saudi Arabia [GrantA127].

References

Abedin, B. (2022). Managing the tension between opposing effects of explainability of artificial intelligence: a contingency theory perspective. *Internet Research*, *32*(2), 425-453. https://doi.org/10.1108/INTR-05-2020-0300

Acemoglu, D., & Restrepo, P. (2020). Robots and jobs: Evidence from US labor markets. *Journal of political economy*, *128*(6), 2188-2244. https://doi.org/10.1086/705716

Agogo, D., & Hess, T. J. (2018). "How does tech make you feel?" a review and examination of negative affective responses to technology use. *European Journal of Information Systems*, *27*(5), 570-599.

Alghamdi, A., Baquero, A., Khairy, H.A. & Salama, W.M.E. (2024). Social Loafing and Job Performance in Hotels: Does Transactional Leadership Matter? *African Journal of Hospitality, Tourism and Leisure*, 13(1):192-197. https://doi.org/10.46222/ajhtl.19770720.497

Ali, F., Park, E., Kwon, J., & Chae, B. (2019). 30 Years of contemporary hospitality management: uncovering the bibliometrics and topical trends. *International Journal of Contemporary Hospitality Management*, *31*(7), 2641-2665. https://doi.org/10.1108/IJCHM-10-2018-0832

Almada-Lobo, F. (2015). The Industry 4.0 revolution and the future of Manufacturing Execution Systems (MES). *Journal of innovation management*, *3*(4), 16-21. https://doi.org/10.24840/2183-0606

Al-Romeedy, B. S. (2024). Tomorrow's Travel Companion: The Role of Artificial Intelligence in Shaping the Future of Tourism. In *Marketing and Big Data Analytics in Tourism and Events* (pp. 162-182). IGI Global.

Al-Romeedy, B. S., & Khairy, H. A. (2024). Eco-Innovation and Hospitality and Tourism Business Resilience: The Mediating Role of Green Dynamic Capabilities. In *Shifts in Knowledge Sharing and Creativity for Business Tourism* (pp. 17-36). IGI Global.

Al-Romeedy, B. S., & Khairy, H. A. (2024). Organizational politics and employee job performance in the tourism and hospitality industry: workplace stress and counterproductive work behavior. *Tourism Review*. https://doi.org/10.1108/TR-06-2023-0428

Alshehri, N.Z., Baquero, A., Abd-Elhady, M.H., Salama, W.M.E., Khairy, H.A., & Abouelenien, R.E.I. (2024). GREEN HRM AND GREEN COMPETITIVE ADVANTAGE IN HOTEL AND TOURISM INDUSTRY: A MEDIATED MODERATION MODEL USING ECO-INNOVATION AND GREEN PSYCHOLOGICAL CLIMATE. *GeoJournal of Tourism and Geosites*, 52(1), 313–322. DOI: https://doi.org/10.30892/gtg.52130-1207

Altinay, L., Dai, Y. D., Chang, J., Lee, C. H., Zhuang, W. L., & Liu, Y. C. (2019). How to facilitate hotel employees' work engagement: The roles of leader-member exchange, role overload and job security. *International Journal of Contemporary Hospitality Management*, *31*(3), 1525-1542. https://doi.org/10.1108/IJCHM-10-2017-0613

Anderson, J. and Smith, A. (2014), AI, Robotics, and the Future of Jobs, Pew Research Center's Internet and American Life Project, available at: www.pewinternet.org/2014/08/06/future-of-jobs/

Bandura, A. (1986). Social foundations of thought and action. *Englewood Cliffs, NJ*, *1986*(23-28), 2.

Bhargava, A., Bester, M., & Bolton, L. (2021). Employees' perceptions of the implementation of robotics, artificial intelligence, and automation (RAIA) on job satisfaction, job security, and employability. *Journal of Technology in Behavioral Science*, *6*(1), 106-113. https://doi.org/10.1007/s41347-020-00153-8

Bowen, J., & Morosan, C. (2018). Beware hospitality industry: the robots are coming. *Worldwide Hospitality and Tourism Themes*, *10*(6), 726-733. https://doi.org/10.1108/WHATT-07-2018-0045

Brougham, D., & Haar, J. (2018). Smart technology, artificial intelligence, robotics, and algorithms (STARA): Employees' perceptions of our future workplace. Journal of Management & Organization, 24(2), 239-257. https://doi.org/10.1017/jmo.2016.55

Buhalis, D. (2019). Technology in tourism-from information communication technologies to eTourism and smart tourism towards ambient intelligence tourism: a perspective article. *Tourism Review*, *75*(1), 267-272. https://doi.org/10.1108/TR-06-2019-0258

Buhalis, D., & Sinarta, Y. (2019). Real-time co-creation and nowness service: lessons from tourism and hospitality. *Journal of Travel & Tourism Marketing*, *36*(5), 563-582. https://doi.org/10.1080/10548408.2019.1592059

Cao, D., Sun, Y., Goh, E., Wang, R., & Kuiavska, K. (2022). Adoption of smart voice assistants technology among Airbnb guests: a revised self-efficacy-based value adoption model (SVAM). *International Journal of Hospitality Management*, *101*, 103124.

Chang, P. C., Zhang, W., Cai, Q., & Guo, H. (2024). Does AI-Driven Technostress Promote or Hinder Employees' Artificial Intelligence Adoption Intention? A Moderated Mediation Model of Affective Reactions and Technical Self-Efficacy. *Psychology Research and Behavior Management*, 413-427.

Christou, P., Simillidou, A., & Stylianou, M. C. (2020). Tourists' perceptions regarding the use of anthropomorphic robots in tourism and hospitality. *International Journal of Contemporary Hospitality Management*, *32*(11), 3665-3683. https://doi.org/10.1108/IJCHM-05-2020-0423

Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS quarterly*, 189-211.

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

Davenport, T. H., & Ronanki, R. (2018). Artificial intelligence for the real world. *Harvard business review*, *96*(1), 108-116.

Dorcic, J., Komsic, J., & Markovic, S. (2019). Mobile technologies and applications towards smart tourism–state of the art. *Tourism Review*, *74*(1), 82-103. https://doi.org/10.1108/TR-07-2017-0121

El-Sherbeeny, A. M., Al-Romeedy, B. S., Abd elhady, M. H., Sheikhelsouk, S., Alsetoohy, O., Liu, S., & Khairy, H. A. (2023). How Is Job Performance Affected by Ergonomics in the Tourism and Hospitality Industry? Mediating Roles of Work Engagement and Talent Retention. *Sustainability*, *15*(20), 14947. **https://doi.org/10.3390/su152014947**

Engelbrecht, A. S., Heine, G., & Mahembe, B. (2017). Integrity, ethical leadership, trust and work engagement. *Leadership & Organization Development Journal*, *38*(3), 368-379. https://doi.org/10.1108/LODJ-11-2015-0237

Feng, W., Tu, R., Lu, T., & Zhou, Z. (2019). Understanding forced adoption of self-service technology: the impacts of users' psychological reactance. *Behaviour & Information Technology*, *38*(8), 820-832.

Frank, M., Roehrig, P., & Pring, B. (2017). *What to do when machines do everything: How to get ahead in a world of ai, algorithms, bots, and big data*. John Wiley & Sons.

Fu, S., Zheng, X., & Wong, I. A. (2022). The perils of hotel technology: The robot usage resistance model. *International Journal of Hospitality Management*, *102*, 103174. https://doi.org/10.1016/j.ijhm.2022.103174

Gaafar, H. A. A., & Al-Romeedy, B. S. (2024). Bridging the Digital Divide: Unleashing the Power of Big Data Analytics for Touristic Destination Promotion. In *Marketing and Big Data Analytics in Tourism and Events* (pp. 17-37). IGI Global.

Gonzalez, R., Gasco, J., & Llopis, J. (2020). Information and communication technologies and human resources in hospitality and tourism. *International Journal of Contemporary Hospitality Management*, *32*(11), 3545-3579. https://doi.org/10.1108/IJCHM-04-2020-0272

Hair, J. F., Black, W. C., Balin, B. j., & Anderson, R. E. (2010). Multivariate data analysis: Maxwell Macmillan International Editions.

Hofmann, E., & Rüsch, M. (2017). Industry 4.0 and the current status as well as future prospects on logistics. *Computers in industry*, *89*, 23-34. https://doi.org/10.1016/j.compind.2017.04.002

Hung, C. C., & Lin, C. H. (2015). The Relationships among Buyersâ€™ Perceived Risk, Exhibitorsâ€™ Brand Equity, Purchase Postponement and Switching Intention-From the Perspectives of Perceived Risk Theory and Expectancy Theory. *Information Management and Business Review*, *7*(4), 74-89. https://doi.org/10.22610/imbr.v7i4.1165

Ivanov, S. H. (2017). Robonomics-principles, benefits, challenges, solutions.

Jabeen, F., Al Zaidi, S., & Al Dhaheri, M. H. (2022). Automation and artificial intelligence in hospitality and tourism. *Tourism Review*, *77*(4), 1043-1061. https://doi.org/10.1108/TR-09-2019-0360

Jung, H. S., Jung, Y. S., & Yoon, H. H. (2021). COVID-19: The effects of job insecurity on the job engagement and turnover intent of deluxe hotel employees and the moderating role of generational characteristics. International journal of hospitality management, 92, 102703. https://doi.org/10.1016/j.ijhm.2020.102703

Karatepe, T. (2022). Do Qualitative and Quantitative Job Insecurity Influence Hotel Employees' Green Work Outcomes?. Sustainability, 14(12), 7235. https://doi.org/10.3390/su14127235

Khairy, H. A., & Elzek, Y. (2024). The impact of nepotism and workplace gossip on job performance in travel agencies and hotels in Egypt: the moderating role of organizational justice. *Journal of Human Resources in Hospitality & Tourism*, *23*(1), 52-75. https://doi.org/10.1080/15332845.2023.2253673

Khairy, H. A., Baquero, A., & Al-Romeedy, B. S. (2023c). The effect of transactional leadership on organizational agility in tourism and hospitality businesses: The mediating roles of Organizational Trust and Ambidexterity. *Sustainability*, *15*(19), 14337. https://doi.org/10.3390/su151914337

Khairy, H. A., Fahmy, N. S., Awad, A. H. I., & Ashour, E. Z. (2024). Green Work Engagement and Green Competitive Advantage in Five-Star Hotels and Travel Agencies: The Role of Green Creativity. *Journal of the Faculty of Tourism and Hotels-University of Sadat City*, *8*(1/1). https://doi.org/10.21608/MFTH.2024.342738

Khairy, H. A., Liu, S., Sheikhelsouk, S., EI-Sherbeeny, A. M., Alsetoohy, O., & Al-Romeedy, B. S. (2023b). The Effect of benevolent leadership on job engagement through psychological safety and workplace friendship prevalence in the tourism and hospitality industry. *Sustainability*, *15*(17), 13245. https://doi.org/10.3390/su151713245

Khairy, H.A., Baquero, A., Al-Abyadh, M.H. & Alsetoohy, O. (2023a). How is Work Disengagement Affected by Workplace Bullying in the Hotel Industry? The Role of Authentic Leadership. *African Journal of Hospitality, Tourism and Leisure*, 12(4):1437-1452. https://doi.org/10.46222/ajhtl.19770720.441

Khaliq, A., Waqas, A., Nisar, Q. A., Haider, S., & Asghar, Z. (2022). Application of AI and robotics in hospitality sector: A resource gain and resource loss perspective. *Technology in Society*, *68*, 101807. https://doi.org/10.1016/j.techsoc.2021.101807

Kim, D. G., & Lee, C. W. (2021). Exploring the roles of self-efficacy and technical support in the relationship between techno-stress and counter-productivity. *Sustainability*, *13*(8), 4349.

Kock, N. (2021). WarpPLS User Manual: Version 7.0. Laredo, TX: ScriptWarp Systems.

Kong, H., Yuan, Y., Baruch, Y., Bu, N., Jiang, X., & Wang, K. (2021). Influences of artificial intelligence (AI) awareness on career competency and job burnout. *International Journal of Contemporary Hospitality Management*, *33*(2), 717-734. https://doi.org/10.1108/IJCHM-07-2020-0789

Koo, B., Curtis, C., & Ryan, B. (2021). Examining the impact of artificial intelligence on hotel employees through job insecurity perspectives. *International Journal of Hospitality Management*, *95*, 102763. https://doi.org/10.1016/j.ijhm.2020.102763

Kuhnert, K. W., & Palmer, D. R. (1991). Job security, health, and the intrinsic and extrinsic characteristics of work. *Group & organization studies*, *16*(2), 178-192. https://doi.org/10.1177/105960119101600205

Lacity, M. and Willcocks, L.P. (2018). *Robotic Processes and Cognitive Automation: The Next Phase*, SB Publishing, Ashford.

Lazarus, R. S. (1991). Progress on a cognitive-motivational-relational theory of emotion. *American psychologist*, *46*(8), 819.

Lee, S. H., & Jeong, D. Y. (2017). Job insecurity and turnover intention: Organizational commitment as mediator. *Social Behavior and Personality: an international journal*, *45*(4), 529-536. https://doi.org/10.2224/sbp.5865

Li, J. J., Bonn, M. A., & Ye, B. H. (2019). Hotel employee's artificial intelligence and robotics awareness and its impact on turnover intention: The moderating roles of perceived organizational support and competitive psychological climate. *Tourism Management*, *73*, 172-181. https://doi.org/10.1016/j.tourman.2019.02.006

Li, Z., He, B., & Sun, X. (2020). Does work stressors lead to abusive supervision? A study of differentiated effects of challenge and hindrance stressors. *Psychology Research and Behavior Management*, 573-588.

Limna, P. (2023). Artificial Intelligence (AI) in the hospitality industry: A review article. *International Journal of Computing Sciences Research*, *7*, 1306-1317. https://doi.org/10.25147/ijcsr.2017.001.1.103

Limna, P., Siripipatthanakul, S., & Phayaphrom, B. (2021). The role of big data analytics in influencing artificial intelligence (AI) adoption for coffee shops in Krabi, Thailand. *International Journal of Behavioral Analytics*, *1*(2), 1-17.

Maier, C., Laumer, S., Tarafdar, M., Mattke, J., Reis, L., & Weitzel, T. (2021). Challenge and hindrance IS use stressors and appraisals: Explaining contrarian associations in post-acceptance IS use behavior. *Journal of the Association for Information Systems*, *22*(6), 1590-1624.

McCartney, G., & McCartney, A. (2020). Rise of the machines: towards a conceptual service-robot research framework for the hospitality and tourism industry. *International Journal of Contemporary Hospitality Management*, *32*(12), 3835-3851. https://doi.org/10.1108/IJCHM-05-2020-0450

McKinsey Global Institute (2017), "Artificial intelligence: the next digital frontier?", available at: https://www.mckinsey.com/~/media/McKinsey/Industries/Advanced%20Electronics/Our%20Insights/How%20artificial%20intelligence%20can%20deliver%20real%20value%20to%20companies/MGI-Artificial-Intelligence-Discussion-paper.ashx.

Mohajan, H. K. (2020). Quantitative research: A successful investigation in natural and social sciences. *Journal of Economic Development, Environment and People*, *9*(4), 50-79.

Nam, T. (2019). Technology usage, expected job sustainability, and perceived job insecurity. *Technological Forecasting and Social Change*, *138*, 155-165. https://doi.org/10.1016/j.techfore.2018.08.017

Northfield, R. (2015). Robot hotel. *Engineering & Technology*, *10*(6), 50-51. https://doi.org/10.1049/et.2015.0620

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior research methods*, *40*(3), 879-891. https://doi.org/10.3758/BRM.40.3.879

Prentice, C., Wong, I. A., & Lin, Z. C. (2023). Artificial intelligence as a boundary-crossing object for employee engagement and performance. *Journal of Retailing and Consumer Services*, *73*, 103376. https://doi.org/10.1016/j.jretconser.2023.103376

Presbitero, A., & Teng-Calleja, M. (2023). Job attitudes and career behaviors relating to employees' perceived incorporation of artificial intelligence in the workplace: a career self-management perspective. *Personnel Review*, *52*(4), 1169-1187. https://doi.org/10.1108/PR-02-2021-0103

Salanova, M., Llorens, S., & Cifre, E. (2013). The dark side of technologies: Technostress among users of information and communication technologies. *International journal of psychology*, *48*(3), 422-436.

Saleem, F., Malik, M. I., Qureshi, S. S., Farid, M. F., & Qamar, S. (2021). Technostress and employee performance nexus during COVID-19: training and creative self-efficacy as moderators. *Frontiers in Psychology*, *12*, 595119.

Saxena, M., & Mishra, D. K. (2023). Artificial intelligence: the way ahead for employee engagement in corporate India. *Global Knowledge, Memory and Communication*. https://doi.org/10.1108/GKMC-09-2022-0215

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness studies*, *3*, 71-92. https://doi.org/10.1023/A:1015630930326

Spector, P. E. (1994). Using self-report questionnaires in OB research: A comment on the use of a controversial method. *Journal of organizational behavior*, 385-392.

Swailes, S., & Blackburn, M. (2016). Employee reactions to talent pool membership. *Employee relations*, *38*(1), 112-128. https://doi.org/10.1108/ER-02-2015-0030

The Egyptian Ministry of Tourism and Antiquities. (2022). Hotel and tourism companies and establishments: Directory of hotel establishments and tourism companies, the Ministry of Tourism: Egypt. Retrieved from: https://mota.gov.eg/ar/

Turja, T., Rantanen, T., & Oksanen, A. (2019). Robot use self-efficacy in healthcare work (RUSH): development and validation of a new measure. *AI & SOCIETY*, *34*(1), 137-143.

Van den Broeck, A., Sulea, C., Vander Elst, T., Fischmann, G., Iliescu, D., & De Witte, H. (2014). The mediating role of psychological needs in the relation between qualitative job insecurity and counterproductive work behavior. *Career Development International*, *19*(5), 526-547. https://doi.org/10.1108/CDI-05-2013-0063

Velwin, W., Idris, G., Engkos, A., & Agustinus, B. (2024). Improving Sustainability in the Small-Medium Culinary Industry: Analyzing the Role of Open Innovation and Competitive Advantage. *Journal of System and Management Sciences*. 14(2), 172-187. https://doi.org/10.33168/JSMS.2024.0211

Vroom, V.C. (1964). *Work and Motivation*. JohnWiley & Sons, New York, NY.

Wang, Y. Y., & Wang, Y. S. (2022). Development and validation of an artificial intelligence anxiety scale: An initial application in predicting motivated learning behavior. *Interactive Learning Environments*, *30*(4), 619-634.

Wong, I. A., Ma, E., Chan, S. H. G., Huang, G. I., & Zhao, T. (2019). When do satisfied employees become more committed? A multilevel investigation of the role of internal service climate. *International Journal of Hospitality Management*, *82*, 125-135. https://doi.org/10.1016/j.ijhm.2019.03.014

Xu, S., Stienmetz, J., & Ashton, M. (2020). How will service robots redefine leadership in hotel management? A Delphi approach. *International Journal of Contemporary Hospitality Management*, *32*(6), 2217-2237. https://doi.org/10.1108/IJCHM-05-2019-0505

Yu, X., Xu, S., & Ashton, M. (2023). Antecedents and outcomes of artificial intelligence adoption and application in the workplace: the socio-technical system theory perspective. *Information Technology & People*, *36*(1), 454-474.

Appendix (A): Scale Items
AI awareness AIA.1. I am personally worried about my future in my industry due to AI replacing employees. AIA.2. I am personally worried about my future in my organization due to AI replacing employees. AIA.3. I am personally worried that what I do now in my job will be able to be replaced by AI. AIA.4. I think AI could replace my job.
Employee Job engagement EJE.1. I find the work that I do full of meaning and purpose EJE.2. I am enthusiastic about my job EJE.3. My job inspires me EJE.4. At my work, I feel bursting with energy EJE.5. I get carried away when I am working.
Job insecurity (JI) JI .1. My concern is the rise in my salary. JI.2. I worry that I may soon be required to work in a different location or department. JI.3. My workload is probably going to get heavier in the future. JI.4. I do not feel secure about the potential scope of my job JI.5. I believe the future will see a decline in the interest of my work. JI.6. I'm concerned that I could have a different boss in the future. JI.7. I'm not certain who coworkers I'll be working within the near future. JI.8. I do not feel secure about my prospects for advancement in my job.
Technical Self-Efficacy TSE.1. I'm confident in my ability to learn how to use care AI techniques if they were to become part of my unit. TSE.2. I believe that it would be easy for me to learn how to use the AI technique that may be used in home care in the future. TSE.3. I'm confident in my ability to learn simple programming of AI techniques if I were provided the necessary training.