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Artificial intelligence as a boundary-crossing object for employee engagement and performance

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ABSTRACT

The study proposes AI-powered tools and applications as boundary-crossing objects to examine how AI performance can affect employees' job engagement, service and job performance. Job security is modelled as a moderator in the boundary-crossing process. Several theories including boundary crossing, goal setting and self-regulation are drawn on to posit these relationships. The study was undertaken with Australia-based full-time employees who had experience with AI-powered tools at work. The results show that AI performance had a significant effect on job engagement, and employee service performance, which were significantly related to job performance appraisal. Job engagement and service performance exhibited significant mediation effects between AI and job performance. The moderation effect exerted by job security was significant in enhancing employees' job engagement and service performance. The study contributes to service research and human resource management literature. The findings have implications for service marketers and human resource practitioners.

1. Introduction

Advanced information and communication technologies (ICT), such as artificial intelligence (AI)- powered tools, have been extensively used in service organizations to facilitate service delivery (Belanche et al., 2020; Huang and Rust, 2018). A large body of the literature has reported that AI applications are related to customer satisfaction, customer experience, engagement, and loyalty (Li et al., 2021; Prentice et al., 2020). Others also approached from the perspective of technology acceptance to examine how adoption of AI technologies is related to consumer's emotions and expectations from retailers (e.g., Chuah and Yu, 2021; Tran et al., 2021; Yuan et al., 2022). Although AI has been claimed to assist employees in improving their job efficiency and performance (Huang and Rust, 2018; Hughes et al., 2019), most discussion of AI on employees in the literature is still conceptual. A limited number of studies provided empirical evidence of AI as a moderator of employees' job-related outcomes. For instance, researchers (Prentice et al., 2020; Wei and Prentice, 2022) modelled AI as a facilitator of emotional intelligence to explain employee performance. No study has attempted to investigate how AI is directly related to employee performance (see Fu et al., 2022).

Consequently, this study aims to examine how AI-powered tools may affect employee job behaviours and performance. This examination can be accounted for by the boundary-crossing theory. The theory (Suchman, 1993) indicates that a person can transit and interact across different sites or territories, facilitated by boundary objects. These objects refer to artifacts that conduct the crossing and bridge the boundaries (Star and Griesemer, 1989). Consistent with this theory, AI-powered tools can be viewed as the boundary object to fulfill the bridge function and transfer technological performance to human performance.

This research underpins a process in which AI applications render a key tool in aiding employees to carry their tasks (e.g., service performance) in the service encounter, leading to job engagement, and overall job performance. This proposed meditational logic stems from Locke and Latham's goal-setting theory (Latham and Locke, 2001). The theory indicates that an action plan is intentionally designed to motivate or guide an individual or a group toward a specific goal, and posits the importance of setting personal goals as a motivational driving force for a high level of job performance (Latham and Locke, 1991). Consistent with the theory, this research positions employee engagement and service quality facilitated or driven by AI-powered tools as the goal set by

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service employees to achieve better job performance.

On the other hand, AI technologies have been claimed to replace human staff and create threats to employee job security (Huang and Rust, 2018). Research (Li et al., 2019) shows that employees' AI awareness and the relevant advanced technologies affected employees' turnover intention. Therefore, the study further proposed a boundary condition – job security as a regulation condition for employee engagement and performance. This proposal is based on self-regulation theory, which refers to an individual's conscious management of the process of guiding his or her thoughts, behaviours and feelings to reach goals (Baumeister et al., 2007; Mithaug, 1993). This theory provides guiding lights to rationalise how employees' job security perceptions render an internal strength to regulate their service performance goal.

Consistent with the foregoing discussion, the study examines relationships between AI performance, job engagement, job security, service and job performance. Fig. 1 illustrates the proposed model. This investigation contributes to service research and organisational behaviour literature by identifying a new factor – AI to address service quality and employees' job behaviours. The findings of this research have implications for service marketers and human resource practitioners. The following section presents the relevant literature review and hypotheses. The methods for testing these hypotheses are outlined, followed by the results and discussion of the study. Implications of the study findings conclude the paper.

2. Literature review and hypothesis development

2.1. AI, job engagement, service and job performance

The goal-setting theory indicates that setting goals is a highly effective and motivational technique for employees to perform in the organizational setting (Latham and Locke, 2001). The theory acknowledges that goals should be challenging and yet reachable. Goals are meant to motivate people to attain specific benefits and desirable outcomes. To reach a challenging goal (e.g., service excellence), organizations are aware that employees must garner the right calibre and ability (Locke and Latham, 2006). Formal education and on-the-job training are certainly vital conduits that could ameliorate employee knowledge and capability (Lan et al., 2021). Nevertheless, these formal intervention programs could be time consuming and expensive. Other means to assisting employees in reaching a challenging goal such as delivering superior service quality or engaging with a challenging job (i.e., job engagement) include deploying information and communication technology such as artificial intelligence (AI) (Li et al., 2021; Zaczkiewicz, 2018). Performance of AI services could facilitate employees' job engagement and ability in serving customers with accuracy, reliability, promptness, and even empathy (Fu et al., 2022; Huang and Rust, 2018; Kirkpatrick, 2017).

Goal-setting studies in the organisation stream commonly acknowledge that attaining personal goals could benefit firms by improving employee engagement (Medlin and Green, 2009; Shoaib and Kohli, 2017) and job performance (Kim, 1984; Pulakos et al., 2019). Accordingly, we model these two measures as outcomes for personal goals. Although goals are highly dependent on individual attributes (e.g., ability and commitment) (Latham and Locke, 2001), rather than spending resources service training, savvy organizations are leveraging ICTs (e.g., AI services) to boost employees' ability to service customers. Hence, we argue that high performance of AI service for employees could enhance their job engagement and success in goal attainment with a higher level of service performance. Hence, the following hypotheses are offered.

H1. AI performance is positively related to job engagement.

H2. AI performance is positively related to employee service performance

Job engagement is the second and positive psychological process and is described as a positive and fulfilling affective-motivational state of mind (Schaufeli and Bakker, 2004). Engaging employees are able to handle job demands under any circumstances (Costa et al., 2014). In the service encounter context, employees play a pivotal role in customers' attitudes and behaviours (Prentice, 2016, 2019). Any personal encounter may have emotional elements, mostly originated from customers (Prentice, 2019). To ensure a successful service transaction, employees must be actively engaged with the required emotional work that is manifested in acting strategies (Prentice et al., 2013). These acting behaviours are directly related to the labourer's service performance (Goodwin et al., 2011; Prentice et al., 2013), which affects job performance appraisal (Prentice and King, 2013). Job engagement has long been discussed as an antecedent of employee performance. Consistent with this discussion, the following hypotheses are offered:

H3. Job engagement is positively related to employee service performance

H4. Job engagement is positively related to employee job performance

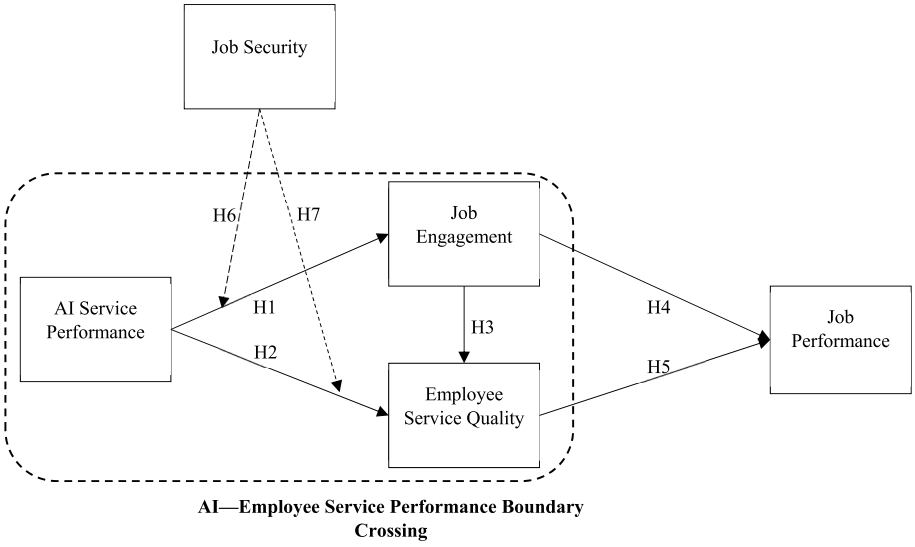

Fig. 1. Proposed research model.

H5. Employee service performance is positively related to job performance

2.2. The moderation of job security

Job security refers to employees' perception of their position with the organisation in the future (Kuhnert and Palmer, 1991). This perception is instilled by having organizational endeavours in offering a stable employment for their staff (Herzberg, 1968). Job security often renders as a psychological contract in which employees perceive that their efforts and job devotions would be recognised by the organisation in return for continued employment (Rodwell et al., 2015; Wong et al., 2019). Accordingly, job security often results in improved organizational commitment and employee performance as they are more engaged in the workplace (Altinay et al., 2019; Kraimer et al., 2005).

Job security is especially important on the rise of AI, which has been witnessed to replace some human jobs (Bhargava et al., 2021) and posed threats to workforce. When this observation and phenomenon lead to a sense of job insecurity, usage of AI service could backfire (Huang and Rust, 2018); creating technology misuse, tension, and even counterproductive behaviours that not only could lower job engagement and the quality of service delivered to customers (Abedin, 2022; Fu et al., 2022), but also jeopardise organisational performance and reputations (Crolic et al., 2022).

Goal setting theory notions the importance of self-regulation as a means to monitor one's progress in attaining a goal (Mithaug, 1993). Baumeister and colleagues' (2007) seminal work on self-regulation articulates four ingredients (e.g., motivation, standards, monitoring, and willpower) that could aid the attainment of goals since the goal-pursuit process necessitates ego depletion by consuming physical and mental resources. Job security renders a willpower or internal strength of regulation that uplifts employees' job engagement and performance with extra energy to carry their service obligations (Baumeister et al., 2018; Kraimer et al., 2005; Wong et al., 2019). On the other hand, job security could enhance the effect of AI service on their quality of service by instilling their confidence that technology is to complement rather than replacing their jobs (Bhargava et al., 2021; Fu et al., 2022). This discussion leads to the following hypothesis:

H6. The relationship between AI performance and job engagement is moderated by job security in that the relationship is stronger or weaker when employees have a high or low level of job security.

To understand the moderation of job security on the relationship between AI and employee service performance, self-regulation theory (Mithaug, 1993) is drawn to highlight a boundary condition. In particular, the theory posits that pursuing a goal (e.g., delivering superior service quality) necessitates individuals to sustain a high level of willpower or internal strength to replenish deleted resources in the process (Baumeister and Vohs, 2007). A secured job should provide employees means to sustain energy, "which consists of resources that are consumed in effortful activity," to strive for their service goals (Baumeister et al., 2018, p. 142). A high level of AI service could facilitate employees to better serve customers (Fu et al., 2022; Huang and Rust, 2018; Kirkpatrick, 2017). This is especially true for those who feel their employment is safe because a safe job position can give employees an extra level of energy to better utilize the right apparatus in the service encounter (Mukaihata, 2018), resulting in a superior level of service quality.

Goal-related theories have consistently acknowledged the role of self-regulation in the progression of specific goals (Bargh et al., 2010; Latham and Locke, 1991). Self-regulation theory, in particular, puts special emphasis on individuals' goal regulation process as they are eager to evaluate how well their performance can meet their internal standards by assessing their actions and behaviours (Kuhl et al., 2006). As Wood and Bandura (1989, p. 366) asserted that "discrepancies between behaviour and personal standards generate self-reactive influence, which serve as motivators and guides for action designed to achieve desired results." Baumeister and colleagues (Baumeister et al., 2007) refer this process as monitoring to notion their performance with reference to the standard. Such a standard in the organizational setting is by and large superimposed by managers and institutional benchmarks that are used to motivate employees to increase their job performance in order to meet organizational strategic objectives. Accordingly, organizations that excel in performance would set high standards and embark on endeavours to encourage employees to meet their performance indicators. The Marriott and its flagship luxury brand – Ritz Carlton – is a perfect case in point with golden standards that differentiate the brand from other competitors (Michelli, 2008).

Self-regulation theory would predict that a low sense of job security could translate into a debased level of willpower with a lack of internal strength to regulate individuals to strive for their goals (Baumeister and Vohs, 2007). When AI service could assist employees in enhancing their service performance (Belanche et al., 2020; Huang and Rust, 2018), the sense of job insecurity could lead to a lack of energy to carry out their tasks promptly and empathically, resulting in a deteriorated level of service performance. Accordingly, the following hypothesis is proposed.

Hypothesis 7. The relationship between AI performance and employee service performance is moderated by job security in that the relationship is stronger or weaker when employees have a high or low level of job security.

3. Methods

3.1. Sample and data collection

The data was collected from employees working in Australia-based service firms. The target respondents were full-time employees at the time of data collection in 2021 and had been working at the same company for more than 1 year to have their annual performance appraisal. The survey was conducted online using Qualtrics. Although prospective respondents were randomly selected, screen questions were developed to ensure the eligibility of the respondents, as well as to help them understand the purpose of this research. These questions include whether the prospective respondents understood AI and the tools being used to assist their job tasks at work. Only those who indicated having such knowledge were allowed to proceed with the survey.

A pilot test was conducted to ensure clarity of the questionnaire items and the reasonable length of the survey. Minor changes were made on the basis of suggestions from the participants. Anonymous and voluntary participation in the survey was ensured. After 2 weeks of the survey, 219 eligible responses were generated. Of the total respondents, 47.5% were female participants; 42.5% had a bachelor's degree; 32% had joined their working organizations for 3–5 years; the majority were frontline employees (58.4%). Additionally, more than half of the participants had annual income exceeding 80,000 AUD; 60.7% were married; 55.7% were Caucasians (see Table 1 for the summary of sample characteristics).

3.2. Measures

AI performance was assessed using a 14-item measure from Prentice and Nguyen (2020). The *job engagement* scale was adapted from Rich et al. (2010), including "I view my job as being meaningful." The *employee service performance* scale was adapted from the original SERVQUAL measure (Parasuraman et al., 1991; Prentice and Nguyen, 2020). The adapted scale has four dimensions, including employee reliability, employee empathy, employee responsiveness, and employee assurance. *Job security* scale was adapted from Probst (2003) with a focus on employees' sense of job security resulting from the adoption of AI technologies at work.

Job performance was evaluated using both self and supervisor ratings from the respondents' work. The respondents were required to set

Table 1
Characteristics of respondents.

Variable	Percentage	Variable	Percentage
Gender		*Annual income (AUD)*	
Male	52.5	Less than 19,999	5.9
Female	47.5	20,000–39,999	7.8
Highest education qualifications		40,000–59,999	10.5
High school	9.1	60,000–79,999	21.5
Some college	11.0	80,000–99,999	20.5
Bachelor's degree	42.5	100,000 and above	33.8
Postgraduate degree	37.4	*Marital status*	
Work experience in the organization		Single	25.6
Less than 1 year	7.8	Married	60.7
1–3 years	12.8	Divorced	5.9
3–5 years	32.0	De facto relationship	7.8
Above 5 years	47.4	*Races*	
Employee types		Caucasian	55.7
Frontline employees	58.4	Asian	32.0
Backstage employees	33.3	Aboriginal Australian	6.8
Remote employees	8.3	Others	5.5

performance goals on various criteria at the beginning of each year, which must be consulted with and approved by their supervisors. At the end of each year, employees conduct self-rating based on a five-point scale, namely "unsatisfactory," "requiring attention," "satisfactory," "above satisfactory," and "excellence. The self-rating must be endorsed by their respective supervisors. The endorsed performance rating was used to measure employee job performance in this study by the respondents uploading a screenshot of the endorsement.

All items were assessed using a five-point Likert scale anchoring from 1 (strongly disagree) to 5 (strongly agree). Each scale had adequate reliability, as their Cronbach's alpha values surpassed 0.85 (see Table 2).

4. Analysis and results

4.1. Validity testing

Confirmatory factor analysis (CFA) was performed to test the reliabilities and validities of the study variables. Their measurement fits were satisfactory; each had a comparative fit index (CFI) and Tucker–Lewis index (TLI) over 0.92 while having standardised root mean square residual (SRMR) below 0.05. Results suggested that each item had factor loading exceeding 0.50, with the average variance extracted (AVE) value of each scale above 0.50, suggesting convergent validity. The square root value of AVEs presented in Table 2 also surpassed respective pair correlations, demonstrating discriminant validity. The correlational analysis shows that the relationships among the study constructs were significantly correlated with one another (see Table 2).

Multicollinearity was also assessed. The results indicate that all variance inflation factors were lower than 2.0. A few procedures, including Harman's single factor test, were performed to detect common method bias (CMB), revealing that the single factor explained less than 40% of the variance. Accordingly, collinearity and CMB issues were not an issue in this study.

4.2. Hypothesis testing

Hypothesis 1 suggests that AI service performance is positively related to job engagement. Results from Table 3 indicate a positive relationship between AI service performance and job engagement, with $\beta = 0.31$ ($p < 0.001$); hence, supporting this hypothesis. Hypothesis 2 posits a positive relationship between AI service performance and employee service quality. The hypothesis is warranted ($\beta = 0.25$, $p < 0.01$), suggesting that AI and employee service performance were positively related. Hypothesis 3 proposes that job engagement is positively associated with employee service performance. The relationship was supported as $\beta = 0.40$ ($p < 0.001$).

Hypothesis 4 postulates that job engagement is positively related to job performance. Results ($\beta = 0.27$, $p < 0.001$) support the positive relationship between job engagement and job performance. Hypothesis 5 suggests a positive relationship between employee service quality and job performance. Results confirmed this hypothesis with $\beta = 0.63$ ($p < 0.001$).

The hypotheses suggest a few mediation relationships. Consequently, we analysed the serial mediating effect of AI service performance on job performance using PROCESS macro. The analysis utilised 5000 bootstrap samples to derive 95% confidence intervals (CI). Results from Table 4 suggest a significant total indirect effect of AI service performance on job performance ($\beta = 0.38$, 95% CI = [0.23, 0.54]). Also, the path from AI service performance to job performance mediated by job engagement is found significant ($\beta = 0.10$, 95% CI = [0.02, 0.21]). Similarly, the indirect effect of AI service performance on job performance mediated by employee service performance is also warranted ($\beta = 0.22$, 95% CI = [0.09, 0.38]). However, the path mediated by job engagement and employee service performance is insignificant ($\beta = 0.06$, 95% CI = [−0.01, 0.12]), suggesting a full mediation.

Hypothesis 6 proposes that the relationship between AI service performance and job engagement is moderated by job security. The moderating effect is warranted, as $\beta = 0.10$ ($p < 0.10$). We then illustrated this effect using Aiken and West's (1991) simple slope method. It is revealed in Fig. 2, suggesting that AI service performance has a more

Table 3
Results of the hypothesis testing.

Hypotheses	Estimates	S.E.	Results
H1AI service performance → Job engagement	0.31***	0.07	Supported
H2AI service performance → Employee service performance	0.25**	0.07	Supported
H3Job engagement → Employee service performance	0.40***	0.06	Supported
H4Job engagement → Job performance	0.27***	0.05	Supported
H5Employee service performance → Job performance	0.63***	0.05	Supported
H6AI service performance × Job security → Job engagement	0.10†	0.05	Supported
H7AI service performance × Job security → Employee service performance	−0.12*·	0.05	Supported

Note: Estimates were standardized.
***p < 0.001, **p < 0.01, *p < 0.05, †p < 0,10.
S.E. = standard error.

Table 2
The mean, standard deviation, and correlations for the study variables.

	Mean	S.D.	α	1	2	3	4	5
1. AI service performance	3.72	.76	.96	*.80*				
2. Job engagement	3.56	.79	.91	.55**	*.73*			
3. Employee service quality	3.83	.75	.97	.50**	.40**	*.80*		
4. Job security	3.61	.84	.93	.64**	.59**	.52**	*.78*	
5. Job performance	3.76	.77	.87	.58**	.52**	.74**	.68**	*.76*

Notes: **p < 0.01.
S.D. = standard deviation; α = Cronbach's alpha.The square root of AVEs were presented on the diagonals.

Table 4
Results of the serial mediating effect test.

Serial mediation paths	Standardized Estimates	95% Lower CI	95% Upper CI
Total indirect effects of AI service performance on Job performance	0.38	0.23	0.54
AI service performance → Job engagement → Job performance	0.10	0.02	0.21
AI service performance → Employee service quality → Job performance	0.22	0.09	0.38
AI service performance → Job engagement → Employee service quality → Job performance	$0.06^{n.s.}$	−0.01	0.12

Note: *n.s.* denotes not significant.

profound effect on job engagement, especially when employees perceive high job security. Similarly, Hypothesis 7 proposes that job security moderates the relationship between AI service performance and employee service performance. Results ($\beta = -0.12$, $p < 0.05$) confirmed the moderating effect, showing that employees who rate high in AI service performance and job security tend to perform better (see Fig. 3).

5. Discussion and implications

The study draws on the boundary-crossing and goal-setting theories to propose AI-powered tools as boundary-crossing objects to examine how the performance of these tools affect employees' job engagement, service and job performance. Job security is modelled as a moderator in the boundary-crossing process. The study was undertaken in Australia with full-time employees who had experience with AI-powered tools at work. The results show that AI performance had a significant effect on

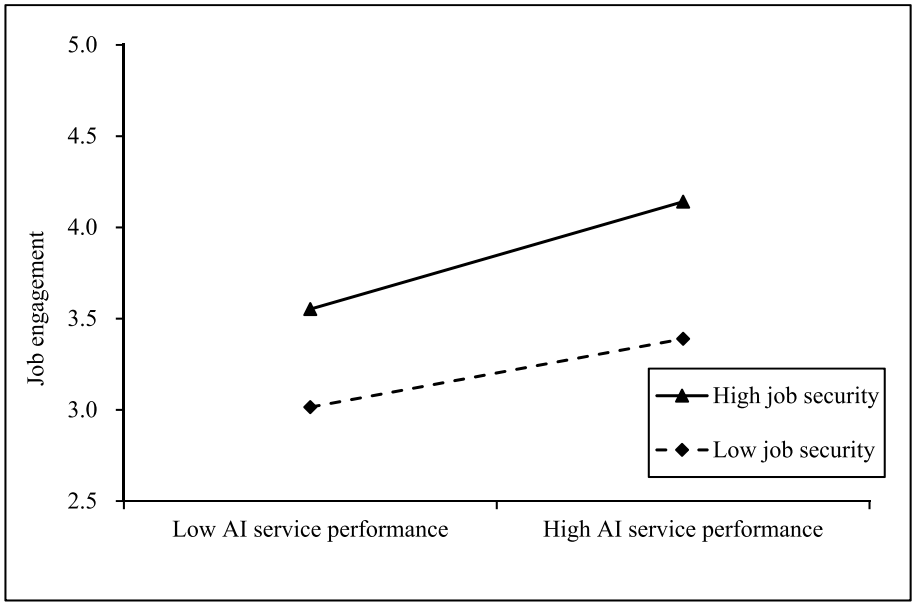

Fig. 2. AI service performance by job security on job engagement.

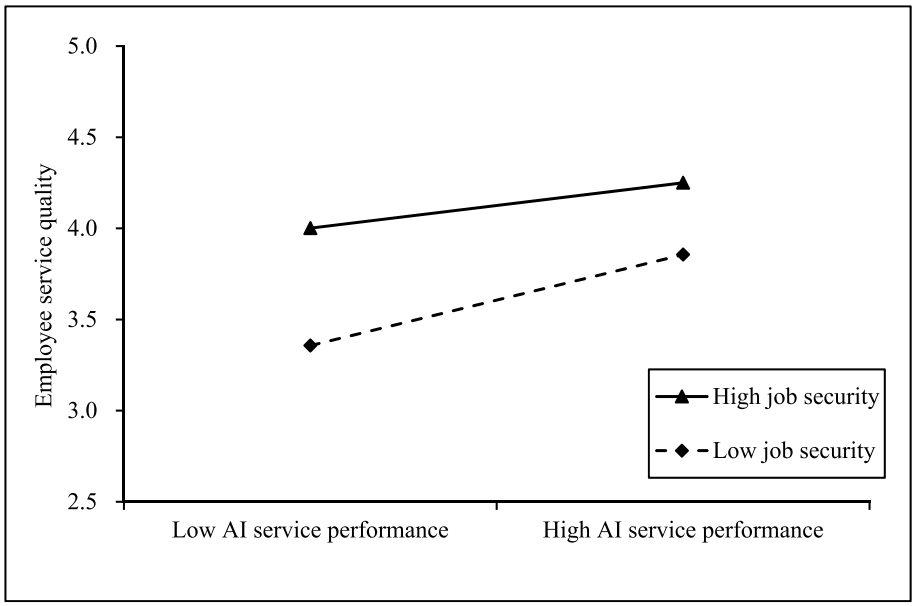

Fig. 3. AI service performance by job security on employee service quality.

job engagement, and employee service performance, which were significantly related to employee job performance appraisal. Job engagement and service performance exhibited significant mediation effects between AI and job performance. The moderation effect exerted by job security was significant in enhancing employees' job engagement and service performance. The study has a range of implications for the relevant literature and practitioners.

6. Theoretical implications

The significant relationship between AI and employee service performance confirmed the boundary cross effect and showcases a new means to address employees' service encounter behaviours and performance. Prior research has primarily approached from personal traits such as personality (Liao and Chuang, 2004; Pidd, 2005) and emotional intelligence (Prentice and King, 2011) and organisational factors (Abou-Moghli, 2015; Astuty and Udin, 2020). This study undertakes a novel approach to revealing a cost-effect means by showing that AI-powered tools and applications can be utilised to improve employee service and job performance. The finding is consistent with that in Tong et al. (2021) who reported that AI data analytics may increase feedback quality and subsequently employee productivity. Similarly, the finding in this study concurs with the results in Wijayati et al.' (2022) study. The authors reported a significant effect exerted by AI on employee performance and engagement.

Service performance in the current study indicates employees' service encounter behaviours which may affect customers' perception of the firm's service quality. Whilst employees' personality traits can influence their behaviours and performance as shown in previous studies, the study shows that modern technological performance can be used to assist employees in delivering services. For example, AI-powered chatbots have been widely used in firms for initial contact between customers and the firm. The requests from customers are then analysed by AI to inform subsequent response –transferring to the relevant employees for further actions. In the case of sales forecasting, AI analytics can be used to predict demand and determine pricing for sales team and marketers. The level of AI performance influences employees' decisions and, ultimately, performance. This finding extends service quality research by embracing the technological component into the service quality management.

The significant relationship between AI performance, job engagement and performance in this study enriches human resource management research by showcasing how technology can be used to improve employee engagement and performance. Job engagement has been a key factor of organisational performance as it is related to employees' work behaviours and productivity. Providing adequate organizational support and appropriate leadership have been the key strategies to improve employees' job engagement. These strategies entail excessive organisational resources. The study shows that investing in AI technology can effectively address employee engagement and performance. These findings are consistent with those in Hughes et al. (2019), Malik et al. (2022), Rao et al. (2020) and Wang et al. (2021). These researchers have undertaken studies to address the connection between AI and employee engagement or performance.

The significant moderation effect of job security confirmed the claims that AI advancement creates job insecurity despite its positive influence on employees. The finding of this study is consistent with that in Brougham and Haar (2020) who reported that an employee's perceived threat of technological disruption had a significant effect on job insecurity and turnover intentions; in Koo et al. (2021) who found that employee's perception of job insecurity by AI had a significant impact on job engagement and turnover intention; and in Li et al.'s (2019) study indicating that employees' awareness of AI and robotics significantly affected their turnover intentions, which implies their sense of job insecurity. The study provides a new venue for organisational behaviour researchers to address job security and performance.

7. Practical implications

The findings of this study have implications for service marketers and human resource practitioners. The significant relationships between AI, job engagement, employee service performance and job performance indicate that service marketers and human resource practitioners should look beyond personality traits and organisational resources to address service quality and employee performance. Although personal factors such as personality and emotional intelligence have been extensively discussed as significant and valid antecedents of job behaviours and performance, when employees are lack of the right personal competence for service performance, the management could invest in AI technologies to enhance employee performance. Recruiting the right talents with the right competencies is key to organisational success. However, personality cannot be modified or trained; other personal competence such as emotional intelligence can be trained but the improvement is time-consuming and expensive.

Nevertheless, AI technologies are easily modified, programmed and reprogrammed, and adapted to cater for the appropriate demands. These technologies have long-lasting effects and extensive usage. Adopting them not only improves employee performance and engagement, but also affects customer attitudes and behaviours. These claims are supported by recent studies that showcase how AI can be used to improve customer engagement and loyalty (see Prentice and Nguyen, 2020; Prentice et al., 2020). Customers' responses may be directly related to AI applications or through their influence on employees. For instance, research (Jiang et al., 2022; Prentice et al., 2020) shows that AI-associated applications have a positive effect on consumer satisfaction, engagement and purchase intentions. The management should seek balance in investing the resources to improve AI or training employees.

The significant moderation effect exerted by job security indicates that the management should apply AI technologies appropriately. Seeking employees' input may be conducive to understanding how AI can improve their performance but not pose a threat to their jobs. Although AI has been claimed to supersede humans and replace some human tasks at organisational contexts, researchers (Wirtz et al., 2018) indicate that AI can only replace only low-level of human jobs or tasks. The management must identify the tasks, for instance, auto messaging, sales forecasting, hotel concierge or butlers service, that can be performed by AI or AI-powered bots or robots, the jobs that must be performed by employees to maximise efficiency and business profitability. For jobs that can be replaced by AI, the management should explore new opportunities to increase employment for those employees, provide skill training for new jobs. For example, the employees who used to answer phone calls at the backstage but were replaced by chatbots can be brought to the front stage to serve customers. Interpersonal communication and empathy skills embedded in personal emotional intelligence can be trained to improve the service encounter with customers. Retrenchment and voluntary redundancy programs can be disheartening and create a high sense of job insecurity to employees. Investing in skill training would increase employee satisfaction and commitment.

8. Limitation and future research

A few limitations must be acknowledged for this research. First, the data relating to independent and dependent variables were collected at the same time. This practice affects the actual predictability. We addressed this issue by using the average performance ratings for the respondents from previous years. Nonetheless, future research should endeavour to conduct a longitudinal study to remedy the limitation. Second, the study was only conducted in Australia. The findings may be limited to the population with similar demographic and geographic backgrounds to the respondents. Undertaking research in other locations and regions can validate the findings. The sampling strategy may affect the generalisability of the findings to the broader population of

employees working in Australia-based service firms. Adopt a probability-based sampling method in future research may address this issue. Third, the sample size is rather small. A larger sample can render better statistical analysis. Grouping the sample into different categories, for instance, job positions, or behavioural characteristics such as more vs. less interactions with AI can provide more insights into the proposed relationships. Fourth, AI-powered tools used in the organisational context are rather broad and diverse. Classifying these tools and their performance could enrich the research findings. Future research should investigate these limitations for improved validity and generalisation.

Declaration of competing interest

The authors declare no conflict of interest throughout this research.

Data availability

Data will be made available on request.

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