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# Assimilating talent-centric approaches to digital workplace engagement behaviours



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**Orientation:** Effectively managing talent is imperative for transforming traditional work engagement models. Successfully implementing these evolving models requires a timely and comprehensive approach to talent management practices (TMP).

**Research purpose:** This study uncovers how TMP such as knowledge sharing (KS), employee mobility (EM) and training and development (TD) impact employee engagement (EE) within the digital workplace. It further examines the mediating roles of psychological empowerment (PE) and job satisfaction (JS), with trust (TR) considered a moderating factor within the tenets of Social Exchange Theory.

**Motivation for the study:** While TMP's importance in enhancing EE is well-recognised, its role in sustaining EE, particularly in the digital workplace, has received limited attention in human resource management literature.

**Research approach/design and method:** The study used a self-administered questionnaire with quota sampling, and data analysis was conducted using the PLS-SEM technique to assess measurement and structural models.

**Main findings:** Results showed that KS and TD impacted EE indirectly via PE, while EM had both direct and indirect effects. Job satisfaction partially mediated the link between PE and EE, but TR did not positively moderate the JS–EE relationship.

**Practical/managerial implications:** This study takes a broader approach by exploring direct and indirect effects of TMP on EE and highlighting TR as a moderator, providing fresh insights for academics and human resource (HR) practitioners in digital workplace engagement strategies.

**Contribution/value-add:** This study links TMP with PE, JS and TR to examine their combined effects on EE, offering a novel contribution to management literature.

**Keywords:** talent management practices; psychological empowerment; job satisfaction; employee engagement; Social Exchange Theory; digital workplace; PLS-SEM.

## Introduction

The rapid pace of digital transformation has greatly altered traditional work environments, evolving from isolated, static models to integrated, collaborative digital ecosystems. These shifts are reshaping organisational operations, creating interconnected systems where people, information and technology converge seamlessly (Attaran et al., 2020). This digital integration offers substantial benefits to both organisations and employees. It enhances collaboration, communication and workload management for employees. At the same time, it helps organisations cultivate a more engaged and productive workforce (Attaran et al., 2020; Hizam et al., 2023; Naqshbandi et al., 2024).

The digital workplace sounds impressive, which brings an advanced environment of cloud-based tools, communication platforms and AI-driven workflows. However, stripping away the buzzwords reveals something simpler: a workplace built on technology, driven by employees who bring that tech to life (Guerra et al., 2023; Lakshmi et al., 2024). In a truly digital workplace, the engaged workforce plays an important role. Their creativity drives innovation, utilising digital tools to solve problems and adapt swiftly to changing needs. Collaboration flourishes as employees leverage digital platforms to share insights and build collective knowledge, enhancing productivity (Meher et al., 2024). By embracing new processes, the right talent builds a resilient culture, ready to tackle disruptions head-on. Ultimately, they maximise the return on digital investments, using tools effectively to streamline workflows and deliver value beyond what the technology could

achieve on its own. It is their passion, confidence and commitment that transform digital possibilities into tangible organisational success (Akter et al., 2022; Hizam et al., 2023; Naqshbandi et al., 2024).

Yet, despite these advancements, achieving high levels of employee engagement (EE) within the digital workplace is not an easy task. According to Naqshbandi et al. (2024), companies that neglect to prioritise their people and fail to actively involve them in their work roles are less likely to achieve long-term success and growth. Recent research highlights that many organisations struggle with low EE. Gallup (2022), for instance, reports that 60% of employees globally feel emotionally detached, with 19% actively disengaged, even in organisations undergoing digital transformation. These findings indicate a critical issue in digital work environments: while technology continues to advance, emotional connection often fails to keep pace. Solving this issue requires a comprehensive approach to talent management practices (TMP) that not only attracts top talent but also improves engagement and commitment (Attaran et al., 2020; Lakshmi et al., 2024; Newman, 2021).

The lack of effective talent management can lead to employee frustration and stress, particularly when employees are placed in roles misaligned with their skills and preferences. This mismatch often results in higher levels of disengagement, especially among top talent (Burnett & Lisk, 2021; Guerra et al., 2023; Wason, 2024). Talent management practice plays an important role in tackling such issues by ensuring that employees are positioned in roles that align with their abilities and expectations. When employees have opportunities to utilise their strengths, they are more likely to perform at a high level and feel valued for their contributions (Burnett & Lisk, 2021; Sypniewska et al., 2023). However, the extent of TMP has evolved significantly from its traditional focus. Historically, TMP emphasised rewards, career progression and performance evaluation (Akter et al., 2022; Tlaiss, 2021). In the current digital era, the focus has expanded to include skills development, collaborative teamwork, digital readiness and flexible work arrangements (Younas & Bari, 2020; Kaliannan et al., 2023; Nwankpa & Roumani, 2024). Several key factors, such as knowledge sharing (KS), employee mobility (EM), and training and development (TD), have become fundamental components of TMP and serve as essential pillars of these capabilities (Fait & Sakka, 2020; Hizam et al., 2023; Kaliannan et al., 2023).

While discussing TMP, KS emerges as a key aspect in the modern business world. Sharing skills is a process and when employees are provided with a KS platform, they become more willing to share their insights (Meher et al., 2024). Furthermore, KS among colleagues or teams builds mutual trust, which, in turn, strengthens teamwork (Ali et al., 2023; Fait & Sakka, 2020). According to Islam et al. (2024), organisations should incorporate KS practices into their business strategies, as this approach boosts employees' confidence in their abilities. Ultimately, this leads to a more engaged workforce.

Similarly, another important element of talent management is EM. The surge in digitalisation has strengthened this concept. As Naqshbandi et al. (2024) noted, modern tools and systems have made it easier for employees to work remotely. This practice of mobile work offers several benefits, such as flexible schedules, reduced commuting time and optimised productivity, all of which help sustain job engagement. A recent survey reveals that 87% of employees who worked remotely during the coronavirus disease 2019 (COVID-19) pandemic prefer not to return to full-time desk jobs (Newman, 2021). Hizam et al. (2023) argue that organisations should maintain EM thoughtfully to continue strengthening EE.

On the other hand, technology now permeates nearly every industry. Therefore, improving digital skills has become a top priority. The challenge now is to figure out how to enhance these skills. One of the most effective strategies to achieve this is through TD (Hickey & Correia, 2024). Traditionally, TD programmes were classroom-based, where trainees honed skills for repetitive tasks using standardised methods. However, with the increasing emphasis on digital competency, TD programmes have evolved to focus more on advancing these skills (Robinson & Smith-Jackson, 2023). Thus, neglecting TD strategies makes it impossible to truly captivate and engage the most skilled workers (Chohan & Hu, 2022; Hickey & Correia, 2024; Sandbakk et al., 2023).

Despite the recognised importance of TMP in driving better EE, its role as an inclusive approach for sustaining EE has received limited attention in human resource management literature, particularly within the context of the digital workplace. While previous studies have investigated specific elements of TMP, such as KS, EM and TD, these investigations have typically focused on various employee behavioural outcomes (Akter et al., 2022; Younas & Bari, 2020), but have lacked a comprehensive and integrative perspective. The existing literature fails to address the combined effects of these TMP components on EE; therefore, there is a need to examine how their combined implementation might lead to a more engaged workforce. To bridge this gap, this study investigates the interconnected influence of KS, EM and TD on EE, offering new insights into the integrated role of TMP in enhancing EE in digitally transformed organisational settings.

Moreover, this study examines PE as a mediating factor between TMP components and EE. Literature suggests that PE plays a strong intervening role in the link between TMP and employee behavioural outcomes (Younas & Bari, 2020), which can lead to greater employee dedication, enthusiasm and willingness to take on their job roles. According to Akter et al. (2022), prior researchers have not paid enough attention to this role of PE, indicating a need for deeper analysis. The authors further encourage more extensive research on the mediating effects of PE in the relationship between TMP and EE; this study seeks to contribute to that effort. Additionally, while job satisfaction (JS) is essential for positive employee outcomes (Abubakar & Sanda,

2024; Ding & Wu, 2023), its role as a mediator between PE and EE within TMP is not yet well understood. Another aim of this study is to fill this gap by examining how JS connects PE and EE. Furthermore, trust (TR) operates as a foundational element within organisations. When employees trust their organisation, they are more likely to feel secure, valued and satisfied within their work environment, which makes them more likely to invest in their roles and go beyond their basic responsibilities. Alzyoud (2018) has shown that trust can act as a powerful moderating factor between JS and EE by influencing the strength and quality of this relationship. The author calls for further investigation into this relationship. This study, therefore, responds to this call by analysing TR as a moderator that could strengthen the JS–EE relationship within TMP frameworks. Therefore, keeping all above in a line, this research aims to acquire the following objectives:

- To examine the role of TMP, specifically KS, EM and TD, in enhancing EE within digitally transformed workplaces.
- To investigate the mediating effect of PE in the relationship between TMP components (KS, EM, TD) and EE.
- To explore the mediating role of JS in linking PE to EE.
- To analyse the moderating effect of TR on the relationship between JS and EE.

By addressing the existing research gaps, this study contributes to the literature on TMP, modern workplaces and EE, empirically validating a model linking TMP components to EE in digital contexts. Grounded in Social Exchange Theory (SET), this framework provides insights into how TMP promotes reciprocal relationships between employees and employers, positing that employees reciprocate organisational support with positive behaviours and engagement (Cropanzano et al., 2017; Meira & Hancer, 2021). This relationship, enhanced by PE, JS and TR, presents a compelling model for boosting engagement in digital workplace.

For policymakers and practitioners, findings from this study would provide actionable guidance in designing TMP strategies that align with the evolving needs of digitally engaged workforces. By highlighting KS, EM and TD as core elements of EE, this research underlines the strategic importance of TMP frameworks that resonate with today's workforce priorities. It advocates a focused emphasis on PE and JS, suggesting that fostering empowerment and work satisfaction can meaningfully improve EE outcomes. Additionally, the exploration of TR as a moderating factor would offer valuable insights for building trust-based relationships that sustain engagement amid rapid technological advancements.

# Theoretical foundation and research hypotheses

## Social exchange theory

This study applies Social Exchange Theory (SET), a leading conceptual paradigm with significant influence in explaining workplace behaviour, embraced by numerous scholars. Social Exchange Theory contends that employee engagement occurs when individuals feel connected to their job roles (Meira & Hancer, 2021), established through tangible benefits and genuine organisational care, increasing a strong attachment to job responsibilities (Akter et al., 2022). In this scenario, two parties participate in an exchange of rewards, improving a mutual relationship through ongoing interactions (Cropanzano et al., 2017). Organisations, by providing financial and socio-emotional resources to employees, elicit increased commitment and involvement, thus establishing a robust theoretical foundation for exploring employee engagement (Cropanzano et al., 2017). Research shows that creating a positive work environment with open communication, skill development opportunities and workplace flexibility enhances autonomy at work. Such autonomy, in turn, heightens career satisfaction and employee enthusiasm (Cropanzano et al., 2017; Aldabbas et al., 2020; Hizam et al., 2023). This study harmonises this reciprocal exchange with SET. Moreover, trust (TR), viewed as a fundamental element within SET, is built on mutual benefits (Alzyoud, 2018). Employees who embody trustworthiness, reliability and commitment are instrumental in strengthening enduring workplace bonds and cultivating reciprocal engagements within organisational settings (Alzyoud, 2018; Cropanzano et al., 2017).

## Talent management practices

Talent management practices encompass strategic initiatives aimed to attract, develop and retain skilled employees, acting as a valuable catalyst in optimising workforce capabilities (Jyoti & Rani, 2014). This involves aligning employee skills with organisational goals, leveraging technology and creating an environment conducive to innovation. Optimal TMP includes the implementation of strategies like workforce planning, diversity and inclusion and embracing a culture of continuous improvement. Scholars have emphasised several practices closely tied to effective talent management, including employees' skills-sharing (Younas & Bari, 2020), flexible work arrangements (Nwankpa & Roumani, 2024) and competency development (Akter et al., 2022). Accordingly, this study underlines three vital aspects of TMP, outlined in the following sections.

## Knowledge sharing

Knowledge sharing (KS) is a crucial process of organisational growth, involving the exchange of information and perspectives to disseminate knowledge across individuals and workplaces. Employees' skills and expertise play a vital role in this process. When employees are able to share their experiences with others, they connect with fellow individuals, building relationships of sharing, caring and learning (Meher et al., 2024). This exchange often takes place during in-person meetings or using virtual platforms, enabling effective idea sharing. Actively participating in these discussions not only cultivates new friendships but also expands professional networks (Fait & Sakka, 2020). Furthermore, as KS facilitates the development of new skills, the workforce finds more avenues for job attachment and career progression (Younas & Bari, 2020). By actively participating in the skill-sharing process, individuals enjoy engaging in friendly discussions, thereby enhancing their dedication to the job roles (Ali et al., 2023).

Aldabbas et al. (2020) have long emphasised the significance of KS in moulding cognitive behaviours. The authors elaborated that participating in information-sharing behaviours increases positive thinking and decreases the manifestation of negative behaviours. This, in turn, influences one's feelings, values and sense of self-control. The work of Islam et al. (2024) explained that when KS occurs within employees' conversations, it can trigger an individual's belief in their ability to perform job tasks effectively. Yasir et al. (2023) elaborated that employees with the freedom to share their opinions feel greater self-efficacy, experience enough job autonomy and contribute positively to organisations. From these observations, the following hypotheses are proposed:

**Hypothesis 1a (H1a):** Knowledge sharing (KS) has a positive impact on employee engagement.

**Hypothesis 1b (H1b):** Knowledge sharing (KS) positively affects psychological empowerment.

## Employee mobility

The shift from traditional office setups to digital workplaces has led to 'employee mobility (EM)', involving both physical and virtual movement. This shift, influenced by trends such as 'Bring Your Own Device (BYOD)' policies and remote work, is reshaping work dynamics (Attaran et al., 2020), signifying the relocation of skilled workforces (Makarius et al., 2024). This study defines EM as the ability of employees to work from any location using their own devices. In this context, terms such as telework and remote work can be considered forms of EM. Past researchers have confirmed a varied relationship between EM and employee outcomes. Empirical evidence suggests that remote work could have a negative impact on one's productivity at work because of the absence of social interactions, resulting in social isolation (Bareket-Bojmel et al., 2023). Conversely, many researchers have confirmed it is positively linked to an individual's enthusiasm and dedication to their job roles (Attaran et al., 2020; Nwankpa & Roumani, 2024). However, a recent study fails to prove that telework negatively impacts work engagement (Naqshbandi et al., 2024).

The work environment greatly influences employees' mindsets, determining whether they perceive it as comfortable or uncomfortable to work in. When contrasting working in an office with working on a virtual platform, there are clear differences in both the physical and psychosocial conditions (Petani & Mengis, 2023). As an illustration, the virtual work environment can influence how and to what extent these needs are met. This shift also affects individuals' emotions, which could positively impact their task performance. Another essential aspect is employees' sense of control in the workplace, a feeling that becomes stronger when they are engaged in virtual workspaces (Giacomelli et al., 2023). Results from a meta-analysis have exhibited that working remotely can change one's perceptions of their control over their tasks, decision-making and work methods (Gajendran et al., 2024). From this evidence, the next hypotheses are developed:

**Hypothesis 2a (H2a):** Employee mobility (EM) is positively related to employee engagement.

**Hypothesis 2b (H2b):** Employee mobility (EM) positively influences psychological empowerment.

## Training and development

Training is centred on job-specific skills, while development nurtures broader professional growth. Together, they encompass the acquisition and improvement of skills and knowledge, essential for individuals to excel in the constantly evolving digital landscape (Chohan & Hu, 2022). Recognising the significance of workforce performance, Luncheon (2024) underscores the key role of training and development (TD) at various stages to align employee skills with organisational goals. The positive link between TD and employee productivity is reinforced by Qawasmeh et al. (2024), highlighting the positive impact on organisational outcomes. Tlaiss (2021) argues that TD strategies elevate devotion levels among workforces, contributing to their engagement at work.

The learning programme in an organisation equips staff with knowledge and capabilities to proficiently complete tasks. The digitalisation imperative brings out the need for effective training programmes to develop employees' talents and capacities, ensuring their competence in current and future situations. Stimulating their competence through such strategies results in a sharp sense of empowerment within their job roles (Hickey & Correia, 2024). Studies, including the analysis by Arefin et al. (2019) on employee outcomes, affirmed the positive impact of TD on the exploration of psychological empowerment. According to Robinson and Smith-Jackson (2023), the development and learning chances significantly influence the cognitive abilities of employees, strengthening their emotional stability and self-efficacy. Hence, this study formulates the subsequent hypotheses:

**Hypothesis 3a (H3a):** There is a positive relationship existing between training and development (TD) and employee engagement.

**Hypothesis 3b (H3b):** Training and development (TD) has a positive influence on psychological empowerment.

## Mediating role of psychological empowerment

Psychological empowerment (PE) has received significant scholarly attention in the past few decades. It entails feeling confident in one's abilities to complete tasks, make decisions and contribute meaningfully to their work (Spreitzer, 1995). Many scholars have asserted a favourable link between PE and employee behaviour. A recent study claimed that PE could be a more effective avenue to achieve engaged employees. Further elucidating this point, the

study unveiled that in an organisation where a harmonious work environment is established with psychological circumstances, employees are more likely to engage in their work (Akter et al., 2022). Similarly, Aldabbas et al. (2020) confirmed that employees with PE tend to show more innovation, higher commitment and an ability for innovative behaviours at work.

This study argues how TMP foster PE to boost employee engagement. Knowledge sharing, identified as a potential aspect of TMP, has the ability to increase PE among employees, thereby improving their creative and proactive behaviour (Yasir et al., 2023). Several previous studies revealed that KS leads to the enhancement of employee behaviour in the existence of PE (Aldabbas et al., 2020; Islam et al., 2024). Another aspect of TMP in the HRM field that receives less attention is EM. It has the potential to enhance employees' competency in productivity and innovation (Nwankpa & Roumani, 2024), consequently increasing their belief in their abilities and ultimately strengthening their work engagement. A recent study emphasises the significant role of IT-enabled workspace in balancing autonomy and control within the workforce, contributing to the advancement of best work practices (Petani & Mengis, 2023). Another research clarified that an individual's control over tasks mediates the relationship between remote work and employee well-being (Giacomelli et al., 2023). Gajendran et al. (2024) observed that remote work influences perceived autonomy, leading to positive impacts on various crucial employee outcomes such as organisational commitment.

Furthermore, TD is invaluable for reshaping skills growth, regarded as an important element in talent management. Employees who participate in training are better equipped for their work roles, with the ability to refine their skills and pursue career advancement. These opportunities for learning and progress often empower employees, contributing to better job engagement (Robinson & Smith-Jackson, 2023). In Arefin et al.'s (2019) research, the emphasis was placed on the importance of prioritising employees' PE when a company aims to enhance work engagement through human resource initiatives like TD opportunities. This signals that the organisation values the contributions of its workforce and is also concerned about their well-being. As a result, we propose that:

**Hypothesis 4a (H4a):** Psychological empowerment (PE) is positively related to employee engagement.

**Hypothesis 4b (H4b):** Psychological empowerment (PE) mediates the relationship between knowledge sharing and employee engagement.

**Hypothesis 4c (H4c):** Psychological empowerment (PE) has a mediating role in building up a relationship between employee mobility (EM) and employee engagement.

**Hypothesis 4d (H4d):** Psychological empowerment (PE) mediates the connection between training and development (TD) and employee engagement.

## Mediating role of job satisfaction

Job satisfaction (JS) is a multifaceted concept that includes the contentment, fulfilment and positive emotional well-being that individuals experience from their work. It relates to the degree to which employees perceive that their job aligns with their expectations (Spector, 1985). Both academics and practitioners acknowledge that JS primarily arises from employees' positive feelings towards their job roles. Usually, individuals who are satisfied with their jobs can instigate positive changes within the organisation, driven by their sense of control over their work and surroundings (Ding & Wu, 2023). A meta-analytic review confirms a robust, positive and substantial connection between employees' PE and JS (Mathew & Nair, 2022). Abubakar and Sanda (2024) established that effective PE enables greater JS.

Employees with a higher degree of work satisfaction inherently possess a stronger sense of attachment to the organisation (Ding & Wu, 2023). An empirical study concluded that satisfaction at work is a strong predictor of organisational citizenship behaviour (Abubakar & Sanda, 2024). In Sypniewska et al.'s (2023) study, the significant and positive correlation between employee satisfaction and work engagement has been well established. Moreover, JS embodies individuals' proactive and involved stance towards their job duties. The satisfied workforce views their workplace as something they can shape through their actions, such as their sense of control, decision-making authority and understanding of the impact of their assigned work roles, thereby increasing their work engagement (Mathew & Nair, 2022). Abubakar and Sanda (2024) evidenced that effective PE leads to increased JS, resulting in stronger positive organisational citizenship behaviour. Ding and Wu (2023) elaborate on how positive employee experiences, such as psychological empowerment, are crucial in the workplace. These experiences greatly influence work attitudes, such as JS, which is key to maximising employee attachment to the organisation. Consequently, it is hypothesised that:

**Hypothesis 5a (H5a):** Psychological empowerment (PE) has a positive effect on job satisfaction.

**Hypothesis 5b (H5b):** There is a positive relationship between job satisfaction (JS) and employee engagement (EE).

**Hypothesis 5c (H5c):** Job satisfaction mediates the relationship between psychological empowerment (PE) and employee engagement (EE).

## Moderating role of trust

Trust, a personal trait entailing reliance on or faith in someone or something, is crucial for effective personal and professional interactions (Alzyoud, 2018). This is agreed by Shah et al. (2019), indicating that employees' TR strengthens JS, resulting in greater commitment and engagement in their work. With a dataset of 476 valid responses, Hamakhan (2020) established that TR moderates the relationship between individual

factors and behavioural outcomes. Nurhayati et al. (2020) showed that the interaction between JS and employee TR, acts as a moderator and influences employee outcomes. Thus, another hypothesis is postulated:

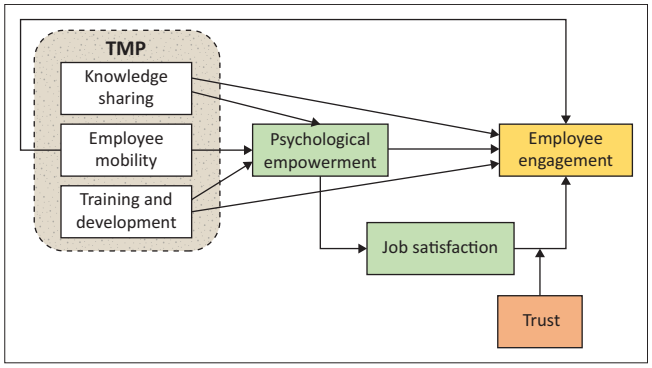
> **Hypothesis 6 (H6):** Trust moderates the connection between job satisfaction (JS) and employee engagement (EE).

# Research design

The proposed research framework (Figure 1) depicts the relationships among TMP, PE and EE. Moreover, it presents the mediating role of JS in the connection between PE and EE, while also accounting for the moderating effect of TR in the association between JS and EE.

## Methodology

The methodology of this research is structured upon the Research Onion Model. The research framework explored the causal relationships between variables within a positivist paradigm. The study utilised established theory to develop the research framework, aligning with the deductive approach. A one-time, quantitative survey was conducted, employing quota sampling for its effectiveness in assembling targeted data while minimising response bias. The study analysed the collected data using Partial Least Squares Structural Equation Modelling (PLS-SEM), with a sample size of over 300 considered sufficient to ensure robust results with this analysis technique (Hair et al., 2021). The target population for this study consists of employees working in the Malaysian telecommunications sector. This study focuses on the telecommunications industry because of its primary contribution towards digital transformation, development of knowledge-intensive work cultures and opting for talent management approaches to maintain a high level of employee engagement during the fast-paced changing of technology. Respondents were chosen from four leading telecom companies in Malaysia. Specifically, 400 questionnaires were evenly distributed among these companies in person, with 100 employees randomly selected from each. Out of the 400 questionnaires distributed, 337 were completed by employees, resulting in an adequate response rate of 84.25%. Data collection was conducted over a 3-month period, during which the researcher personally visited the headquarters of the selected telecom companies. Key contacts within each company facilitated access to employees, ensuring smooth distribution and completion of the surveys. Respondents were assured of confidentiality and anonymity, reinforcing the credibility of the collected data. The questionnaire, written in English, was administered using a quota sampling strategy, ensuring balanced representation from all four companies.




TMP, talent management practices.

**FIGURE 1:** Research framework.

For the collection of data from telecom professionals, the questionnaire was divided into two sections: Section A assessed demographic particulars and Section B included the questionnaire items for study variables, comprising a total of 48 items. Response options were captured using a 5-point Likert scale ranging from 'strongly disagree' to 'strongly agree'. All the questionnaire items used in this survey were previously validated and accordingly adopted. The six items for assessing KS were adapted from Lee et al. (2016) and another six items to measure EM, were sourced from i4cp (2015). Training and development was evaluated using four items adapted from Lawler et al. (1992). Psychological empowerment was gauged through 12 items based on Spreitzer (1995), while JS and TR were measured using seven items from Spector (1985) and four items from Tyler (2003), respectively. Additionally, nine items developed by Schaufeli et al. (2006) were used to assess employee engagement.

The data analysis was performed using the PLS-SEM. This method was selected because of the study's emphasis on hypothesis testing rather than theory development, aiming to clarify the relationships among variables through predictive modelling (Hair et al., 2021; Sarstedt et al., 2021). This study also extended the PLS-SEM results by adding importance-performance map analysis (IPMA). In the IPMA approach, constructs' effects represent their importance, while their average scores indicate their performance. By combining IPMA results with PLS-SEM, this study assessed predictor variables' importance and performance, providing a valuable basis for managerial actions (García-Fernández et al., 2020).

## Ethical considerations

Ethical clearance to conduct this study was obtained from the University of Kuala Lumpur Research Ethics Committee (No. UniKL REC/2025/CA01).

# Results

## Demographic results

Based on the 337 datasets, the demographic analysis was assessed using SPSS v26. The overview of the demographic profile of each respondent is listed in Table 1.

## Measurement model

### Indicators' reliability

This research calculated outer loadings to check indicator reliability. An outer loading value >0.70 indicates adequate reliability (Sarstedt et al., 2021), while >0.50 signifies acceptable reliability (Akter et al., 2022). The results of this study met these criteria. Table 2 shows the entire outer loadings of all indicators.

**TABLE 1:** Demographic results.

| Respondent traits | Category | Frequency | % |
|---|---|---|---|
| Gender | Male | 210 | 62.3 |
| | Female | 127 | 37.7 |
| Age (years) | ≤ 25 | 52 | 15.4 |
| | 26–30 | 85 | 25.2 |
| | 31–35 | 75 | 22.3 |
| | 36–40 | 87 | 25.8 |
| | > 40 | 38 | 11.3 |
| Race | Chinese | 127 | 37.7 |
| | Malay | 94 | 27.9 |
| | Indian | 65 | 19.3 |
| | Others | 51 | 15.1 |
| Educational qualification | Diploma | 81 | 24.0 |
| | Bachelor | 172 | 51.0 |
| | Masters | 49 | 14.5 |
| | Others | 35 | 10.4 |
| Job duration (years) | < 1 | 52 | 15.4 |
| | 1–5 | 134 | 39.8 |
| | 6–10 | 110 | 32.6 |
| | > 10 | 41 | 12.2 |
| Income level (MYR) | < 3000 | 69 | 20.5 |
| | 3001–6000 | 127 | 37.7 |
| | 6001–9000 | 93 | 27.6 |
| | > 9000 | 48 | 14.2 |
| Department | Administrative or Customer care | 76 | 22.6 |
| | Finance and Accounting | 78 | 23.1 |
| | Technical | 132 | 39.2 |
| | Others | 51 | 15.1 |

MYR, Malaysian Ringgit.

### Construct reliability and validity

This study evaluated construct reliability using Cronbach's alpha ($\alpha$) and composite reliability (CR), with $\alpha$ values > 0.70 indicating high internal consistency (Sarstedt et al., 2021). Composite reliability, a similar measure, has thresholds higher than $\alpha$ (Hair et al., 2021). The study found good reliability levels for all constructs, as detailed in Table 3.

Convergent validity was assessed using the average variance extracted criterion, with values > 0.50 indicating strong validity (Sarstedt et al., 2021). All constructs, except employee engagement, exceeded this threshold. Despite an AVE of 0.48 for employee engagement, acceptable outer loadings and CR confirmed its validity, as shown in Table 3 (Hair et al., 2021; Su & Cheng, 2019).

Moreover, discriminant validity was tested using the heterotrait-monotrait ratio, which evaluates the distinctiveness of factors (Hair et al., 2021). Following Henseler et al. (2015), HTMT values ≤0.85 confirm validity. In this study, HTMT analysis verified discriminant validity between reflective constructs, with results presented in Table 3.

## Structural model

### Evaluation of the collinearity

To assess the structural model, we first calculate the collinearity problem by determining the predictor constructs' variance inflation factor (VIF). Variance inflation factor values below 3 indicate no collinearity issues (Hair et al., 2021). Table 4a shows that all VIF values are below 3, confirming no collinearity problems in the model.

**TABLE 2:** Outer loadings.

| Constructs | Items | Outer loadings |
|---|---|---|
| KS | KS-1 | 0.81 |
| | KS-2 | 0.80 |
| | KS-3 | 0.76 |
| | KS-4 | 0.79 |
| | KS-5 | 0.75 |
| | KS-6 | 0.75 |
| EM | EM-1 | 0.71 |
| | EM-2 | 0.75 |
| | EM-3 | 0.74 |
| | EM-4 | 0.70 |
| | EM-5 | 0.68 |
| | EM-6 | 0.70 |
| TD | TD-1 | 0.75 |
| | TD-2 | 0.84 |
| | TD-3 | 0.78 |
| | TD-4 | 0.81 |
| JS | JS-1 | 0.63 |
| | JS-2 | 0.74 |
| | JS-3 | 0.77 |
| | JS-4 | 0.77 |
| | JS-5 | 0.76 |
| | JS-6 | 0.74 |
| | JS-7 | 0.72 |
| PE | PE-1 | 0.66 |
| | PE-2 | 0.63 |
| | PE-3 | 0.73 |
| | PE-4 | 0.70 |
| | PE-5 | 0.61 |
| | PE-6 | 0.64 |
| | PE-7 | 0.65 |
| | PE-8 | 0.61 |
| | PE-9 | 0.61 |
| | PE-10 | 0.60 |
| | PE-11 | 0.67 |
| | PE-12 | 0.69 |
| TR | TR-1 | 0.77 |
| | TR-2 | 0.82 |
| | TR-3 | 0.82 |
| | TR-4 | 0.83 |
| EE | EE-1 | 0.70 |
| | EE-2 | 0.69 |
| | EE-3 | 0.71 |
| | EE-4 | 0.71 |
| | EE-5 | 0.73 |
| | EE-6 | 0.71 |
| | EE-7 | 0.65 |
| | EE-8 | 0.69 |
| | EE-9 | 0.65 |

KS, knowledge sharing; EM, employee mobility; TD, training and development; JS, job satisfaction; PE, psychological empowerment.

### Path coefficient of the structural model

Partial Least Squares Structural Equation Modelling (PLS-SEM) was performed using SmartPLS 3.0 to assess the study's hypotheses (Table 4a and Table 4b). The analysis revealed that KS ($\beta$ = 0.042) and TD ($\beta$ = 0.009) did not significantly impact EE, leading to the rejection of H1a (KS → EE) and

**TABLE 3:** Construct reliability and validity.

| Construct | $\alpha$ | CR | AVE | HTMT ratio | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | EE | EM | JS | KS | PE | TD | TR |
| EE | 0.87 | 0.89 | 0.48 | - | - | - | - | - | - | - |
| EM | 0.801 | 0.86 | 0.51 | 0.74 | - | - | - | - | - | - |
| JS | 0.86 | 0.89 | 0.54 | 0.77 | 0.69 | - | - | - | - | - |
| KS | 0.87 | 0.90 | 0.60 | 0.70 | 0.82 | 0.65 | - | - | - | - |
| PE | 0.88 | 0.90 | 0.52 | 0.82 | 0.71 | 0.69 | 0.74 | - | - | - |
| TD | 0.81 | 0.87 | 0.63 | 0.71 | 0.85 | 0.66 | 0.74 | 0.74 | - | - |
| TR | 0.83 | 0.89 | 0.66 | 0.65 | 0.67 | 0.57 | 0.61 | 0.66 | 0.67 | - |

KS, knowledge sharing; EM, employee mobility; TD, training and development; JS, job satisfaction; PE, psychological empowerment; CR, composite reliability; AVE, average variance extracted; HTMT, heterotrait-monotrait; EE, employee engagement; TR, trust.

**TABLE 4a:** Hypotheses testing, variance inflation factor, *f*-square and *R*-square.

| Hypotheses | Path | $\beta$ | *T*-Statistics | *p* | Findings | $f^2$ | VIF |
|---|---|---|---|---|---|---|---|
| H1a | KS→EE | 0.04 | 0.77 | 0.442 | Rejected | 0.00 | 2.37 |
| H1b | KS→PE | 0.35 | 6.35 | 0.000 | Accepted | 0.12 | 2.07 |
| H2a | EM→EE | 0.12 | 2.02 | 0.043 | Accepted | 0.02 | 2.59 |
| H2b | EM→PE | 0.15 | 2.44 | 0.015 | Accepted | 0.02 | 2.41 |
| H3a | TD→EE | 0.01 | 0.16 | 0.875 | Rejected | 0.00 | 2.40 |
| H3b | TD→PE | 0.31 | 5.76 | 0.000 | Accepted | 0.09 | 2.06 |
| H4a | PE→EE | 0.43 | 7.31 | 0.000 | Accepted | 0.24 | 2.37 |
| H4b | KS→PE→EE | 0.20 | 4.71 | 0.000 | Accepted | - | - |
| H4c | EM→PE→EE | 0.09 | 2.36 | 0.019 | Accepted | - | - |
| H4d | TD→PE→EE | 0.18 | 4.33 | 0.000 | Accepted | - | - |
| H5a | PE→JS | 0.61 | 12.88 | 0.000 | Accepted | 0.58 | 1.00 |
| H5b | JS→EE | 0.23 | 4.97 | 0.000 | Accepted | 0.09 | 1.90 |
| H5c | PE→JS→EE | 0.14 | 4.54 | 0.000 | Accepted | - | - |
| H6 | Moderating effect (TR) | -0.06 | 2.96 | 0.003 | Accepted | 0.02 | 1.73 |

KS, knowledge sharing; EM, employee mobility; TD, training and development; JS, job satisfaction; PE, psychological empowerment; EE, employee engagement; VIF, variance inflation factor.

**TABLE 4b:** *R*-square results for endogenous variables.

| Endogenous variables | $R^2$ | $R^2$ Adjusted |
|---|---|---|
| EE | 0.67 | 0.67 |
| PE | 0.51 | 0.51 |
| JS | 0.37 | 0.37 |

EE, employee engagement; PE, psychological empowerment; JS, job satisfaction.

H3a (TD → EE). In contrast, EM had a significant positive effect on EE ($\beta = 0.125$), supporting H2a (EM → EE). Similarly, the findings confirmed H1b (KS → PE), H2b (EM → PE) and H3b (TD → PE), showing significant impacts of KS ($\beta = 0.346$), EM ($\beta = 0.153$) and TD ($\beta = 0.310$) on PE. Together, these factors account for a total change of 51.1% in PE.

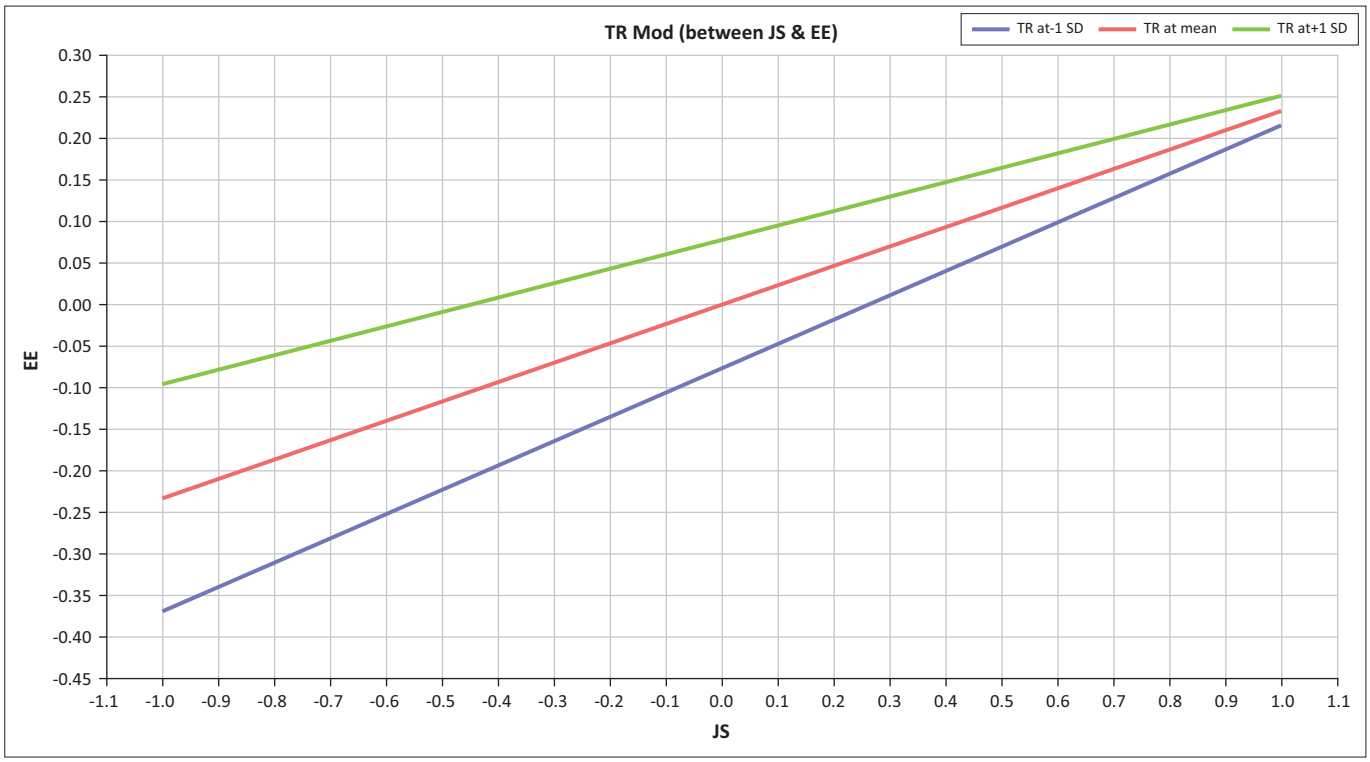
In addition, PE had a direct impact of 43% on EE, confirming H4a (PE → EE). Furthermore, PE fully mediated the relationships between KS and EE ($p < 0.001$) and between TD and EE. It partially mediated the relationship between EM and EE ($p < 0.05$). These results fully confirm H4b (KS → PE → EE), H4c (EM → PE → EE) and H4d (TD → PE → EE). The findings also entirely support H5a (JS → PE) and H5b (JS → EE). Both the relationship between PE and JS ($\beta = 0.607$, $p < 0.001$) and between JS and EE ($\beta = 0.233$, $p < 0.001$) are positive and statistically significant. Moreover, JS partially mediates the relationship between PE and EE, confirming H5c (PE → JS → EE). Additionally, TR slightly moderated the relationship between JS and EE ($\beta = -0.060$), supporting H6. Lastly, the $R^2$ value of JS was found to be 36.9%, while all talent management components – KS, EM and TD – along with PE, JS and TR bring a variation of 67.3% ($R^2$) for EE. Table 4a and Table 4b summarises the results of the hypothesised relationships and their significance levels.

### $f^2$ effect size

The $f^2$ effect size measures how well exogenous variables explain endogenous constructs in the structural model. $f^2$ thresholds are 0.02 (small effect), 0.15 (medium effect) and 0.35 (large effect), with values below 0.02 considered negligible (Sarstedt et al., 2021). This study found most exogenous variables significantly explain their response variables, except for KS and TD on EE, as shown in Table 4a and Table 4b.

### Moderating effect via interaction terms

This study applied a two-stage approach using SmartPLS v3 for the analysis of moderating effects through interaction terms (Ramaya et al., 2018). In Figure 2, a simple slope analysis envisages the two-way interaction effect. The three lines displayed in the simple slope analysis signify the connection between JS (*x*-axis) and EE (*y*-axis). The middle line indicates the relationship for an average level of the moderator variable 'TR'. The other two lines stipulate the relationship between JS and EE for higher (i.e., mean value of 'TR' plus one standard deviation unit) and lower (i.e., mean value of 'TR' minus one standard deviation unit) levels of the moderator variable 'TR'. The slope analysis is supported by the negative but significant interaction effect. It means when the negative influence of TR upsurges, the positive impact of JS on EE diminishes.




JS, job satisfaction; EE, employee engagement; TR, trust; SD, standard deviation.

**FIGURE 2:** Simple slope analysis.

### Importance–Performance matrix analysis

The importance-performance map analysis graphically is signified through four-quadrants: Q1 (high-performance and high importance), Q2 (high importance and needs focus), Q3 (low importance, but high-performance) and Q4 (low importance and low performance) (García-Fernández et al., 2020). This study labels these quadrants based on the average importance and performance of predictor variables (Figure 3). Importance-performance map analysis results show that PE has the highest importance score (0.571), but the lowest performance score (71.376), positioning it in Q2. This implies a need for managerial actions to improve its performance. Moreover, KS, EM and TD have importance scores of 0.240, 0.212 and 0.186 and performance scores of 72.567, 73.022 and 74.852, respectively. These constructs, along with JS, exhibit high performance, but low importance, placing them in Q3. Therefore, managers should better understand their importance. Additionally, TR is positioned in Q4 of the importance-performance map, indicating it requires no action for improvement.

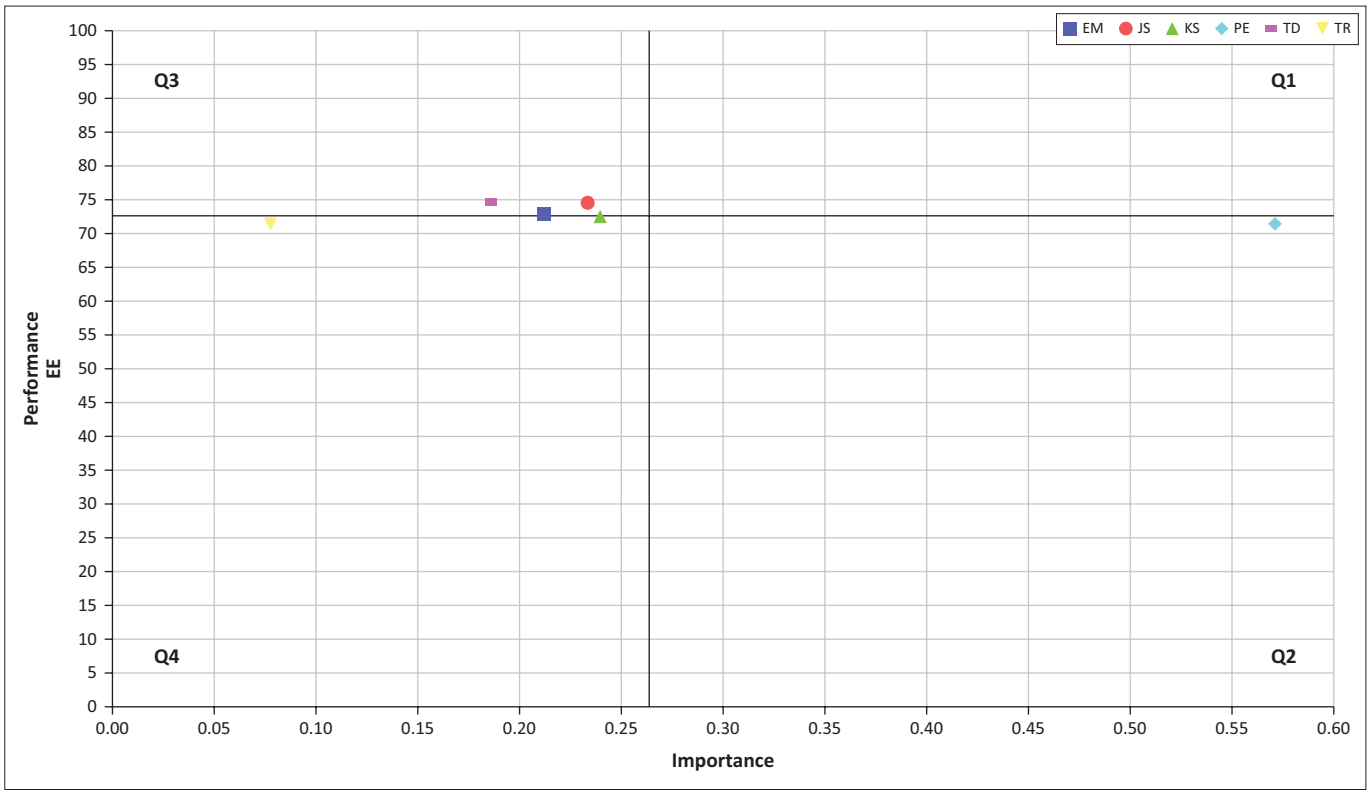
## Discussion

This study investigates how TMP, such as KS, EM and TD impact EE, with a focus on the mediating role of PE in this relationship. It also explores JS as a mediator between PE and EE, while assessing TR as a moderator in the connection between JS and EE. Overall, this study mainly focuses on these relationships to understand the importance of EE in adapting to the digital shift within organisations.

### Hypothesis results

The PLS-SEM analysis indicates that neither KS nor TD significantly impact EE. This unexpected finding contrasts with the majority of EE research (Tlaiss, 2021; Younas & Bari, 2020). It suggests that access to flexible KS opportunities does not automatically enhance engagement in work roles (Ali et al., 2023). Similarly, if TD programmes fail to correspond with an employee's confidence in skill improvement, it will not have a discernible effect on their engagement levels (Akter et al., 2022). Conversely, this study proved a positive and significant change in EE resulting from EM. This positive relationship between EM and employee outcomes is well-supported by previous research (Hizam et al., 2023). Therefore, improving EE in the digital age necessitates a strategic re-evaluation and adaptation of EM policies, making this an essential priority (Gajendran et al., 2024).

Furthermore, this research confirmed that KS, EM and TD reached significant positive levels of impact on PE, aligning with previous research (Arefin et al., 2019; Gajendran et al., 2024; Yasir et al., 2023). It validates that enhanced employees' mental resilience because of open skills exchange, upsurges their confidence levels, which in turn improves their PE (Islam et al., 2024). In a similar vein, recent studies define EM as a factor that improves employees' sense of empowerment and mental strength through remote productivity (Giacomelli et al., 2023). Additionally, scholars emphasise the importance of TD programmes for skill development and proficiency. Engaging in these programmes augments employees' confidence in their task performance abilities, thereby instilling a sense of PE (Robinson & Smith-Jackson, 2023).




EE, employee engagement; EM, employee mobility; JS, job satisfaction; KS, knowledge sharing; PE, psychological empowerment; TD, training and development; TR, trust.

**FIGURE 3:** Importance-performance matrix analysis.

Our path analysis further revealed a substantial strengthening in EE resulting from PE. Literature supports this connection as well (Akter et al., 2022; Hizam et al., 2023). Additionally, the findings supported the mediating role of PE between TMP (KS, EM and TD) and EE. Past research validates this link, that is, PE's role in linking TMP with positive employee behaviours (Akter et al., 2022; Aldabbas et al., 2020). Another exploration of this study found robust changes in JS due to PE. Furthermore, the study evidenced a significant positive shift in EE driven by JS. Notably, the results confirmed that JS partially mediated the relationship between PE and EE. These findings align with prior research (Ding & Wu, 2023; Mathew & Nair, 2022). According to Abubakar and Sanda (2024), the more psychologically empowered employees are, the greater their work satisfaction. Similarly, highly satisfied employees tend to exhibit higher levels of engagement in their work roles (Sypniewska et al., 2023).

Lastly, the study identified the moderating role of TR in the relationship between JS and EE. This result contrasts with prior studies, showing that the negative interaction effect of TR reduces the positive impact of JS on EE (Alzyoud, 2018; Nurhayati et al., 2020). According to Ramaya et al. (2018), the influence of moderating variables can vary based on respondents' opinions, expectations, cultural norms and values. This insight clarifies the complexity of trust as a moderating factor in the association between JS and EE.

## Theoretical implications

This research contributes to recognising the impact of TMP on EE, either directly or indirectly. While previous research has explored the relationship between various components of talent management and employee outcomes (Akter et al. 2022; Younas & Bari, 2020), this study uniquely aligns KS, EM and TD with TMP impacting EE. Unlike earlier studies that primarily focused on traditional workplace contexts, this research examines this relationship within the digital workplace context. This approach addresses a gap in the literature highlighted by Akter et al. (2022) and Hizam et al. (2023), who called for a deeper exploration of such relationships concerning digital workplace mechanisms. Thus, this study responds to this call. Our analysis shows the specific role of PE as a mediator in this connection. The results reveal that KS and TD have no significant direct impact on EE, with only EM having a direct effect on changes in EE, while PE robustly strengthens these connections. Our analysis also identifies that PE is an indispensable factor for EE, showing strong direct, indirect and mediating effects to enhance EE. This multifaceted role of PE has not been observed in previous research (Akter et al., 2022; Aldabbas et al., 2020), and this study adds to that understanding by introducing new insights.

Additionally, this research extends the study model to explore the potential mediating role of JS in the link between PE and EE and the moderating role of TR in the connection between JS and EE. These mediating and moderating effects have been slightly observed in past research (Alzyoud, 2018; Ding & Wu, 2023). To the best of our knowledge, no previous

research has investigated the effect of PE on EE through JS, which this study validates. Furthermore, it was unclear whether TR could act as a moderator in the JS–EE relationship. This study addresses this question, initially raised by Alzyoud (2018), who suggested further exploration of this link. Our findings prove that while TR does not have a strong moderating impact, it does have a minor but significant negative effect on the JS–EE relationship. This finding brings a new contribution compared to the past literature.

Finally, this study's framework is developed based on the concept of SET, validating its continued relevance. Consistent with Cropanzano et al. (2017), we affirm that SET effectively explains reciprocal relationships within employee–organisation interactions. For example, when employees receive tangible workplace benefits – such as open skill-sharing platforms, flexible work environments and skills development opportunities – it enhances their cognitive abilities and job satisfaction. This, in turn, fosters greater commitment and engagement, ultimately leading to a more dedicated workforce. Thus, SET provides a strong theoretical foundation for the study's conclusions, reinforcing the idea that mutual exchanges between employees and organisations drive sustained engagement and productivity.

## Practical implications

This research emphasises the need to better understand EE strategies in the digital work environment, with TMP being a convincing approach. Not long ago, employees' basic needs (i.e., rewards, recognition, career progression) were under the umbrella of TMP (Akter et al., 2022; Tlaiss, 2021). In this tech-prevailing era, TMPs extend to broader areas of employees' skills and capabilities, such as collaboration, digital competency and the ability to work from any place (Attaran et al., 2020). Knowledge sharing, EM and TD emerge as vital pillars of these abilities (Hizam et al., 2023; Kaliannan et al., 2023). An essential insight from this study is how these effective TMPs drive the achievement of long-term organisational goals, such as an engaged workforce. However, KS, EM and TD are not direct influencers of EE; instead, PE plays a main role in this relationship.

To improve EE amid the emerging tech transformation, HR practitioners must align TMP with their current organisational strategies. For example, digitalisation allows workers to communicate across different shifts and locations. This is how KS jobs are created (Attaran et al., 2020; Meher et al., 2024). While employees may be hesitant to share skills and talk to each other, an open skills-sharing platform would empower them in their capacities and ultimately boost task dedication. Moreover, technology enables the workforce to access everything they need with just a tap on their devices and stay connected from anywhere. These mobility prospects enable them to work from home, while travelling or even in a local café, thus providing a balance between professional and personal life (Hizam et al., 2023; Naqshbandi et al., 2024). When organisations offer such flexible work opportunities, employees gain a greater sense of control over their job roles. These employees are likely to be more enthusiastic about their work.

Similarly, organisations must adjust training programmes to meet employees' needs and bridge the skills gap caused by a lack of digital competencies (Chohan & Hu, 2022; Kaliannan et al., 2023). Developing these competencies involves ensuring the safe, responsible and effective use of technologies, which can be achieved only when appropriate training is provided. Trainees should be inspired to involve in self-reflection regarding their skillsets and to refine their existing capabilities. Such reflective practices enhance cognitive abilities (being psychologically empowered), thus enhancing passion for and attachment to their job responsibilities.

This study also conveys an important message to business practitioners that PE ignites a powerful boost in EE. Psychological empowerment encourages employees to develop a sense of independence, take ownership of their tasks and feel pride in achieving their goals (Akter et al., 2022; Hizam et al., 2023). This leads to satisfaction at work, which, in turn, results in the increase of EE. Therefore, organisational policymakers should focus more on empowering organisational staff in such a way that offers them the flexibility to manage their own schedules and feel confident enough to work independently. This empowerment-based approach will result in more engaged and motivated workforce.

Moreover, dissatisfied employees require constant micromanagement (Abubakar & Sanda, 2024). Organisations, hence, can stimulate empowerment among staff by valuing their opinions and entrusting them with decision-making power. In this situation, when employees feel their opinions are respected and they are trusted to make decisions, they experience happiness, comfort and satisfaction in task completion. When they feel happy and fulfilled in their roles, it fuels their dedication and productivity. Additionally, our findings can support academics and practitioners in recognising contextual variations when examining the combined effects of TR and JS on EE. We demonstrated that employees with high satisfaction inherently trust their organisation. However, highly trustworthy employees might not always be satisfied. Thus, TR and JS each have a robust individual impact on EE, but their combined effect is not strong enough.

From a practical perspective, examining global case studies assists in understanding how TMP is being effectively implemented in the telecommunications industry. An example is the overall digital transformation strategy of Vodafone, whereby employee engagement and operational efficiency are improved through the adoption of cloud-based HR systems. To standardise many of the HR functions for nearly 100 000 employees across 24 markets, the company implemented SAP SuccessFactors solutions. This initiative is in support of a high-performance learning culture, while simultaneously remaining focused on upskilling and reskilling existing employees (Prause, 2023). Similarly, Verizon (2022) has also put into practice complex strategies of recruiting and engaging talent by integrating internal

upskilling with strategic external recruitment companies. To recruit new employees, the company spends money on adjacent partnerships because they can provide relevant external information which is needed to understand the customer. As a result, the right talent will be ready to cope with rapidly changing market needs and the corporation's goals for career growth (Verizon, 2022). These examples are a reflection of how leading telecommunications companies have a well-defined TMP framework that helps them to perform their digital transformation strategies successfully, increasing employee engagement and overall organisational productivity.

# Conclusion

The pace of digitalisation has accelerated significantly, and policies have become technology-centric in the workplace. Organisations now increasingly recognise that employees constitute a necessary component of their long-term assets. Consequently, leading organisations are placing greater emphasis on EE, achievable through TMP and employee well-being. In this scenario, this study examined three crucial TMP elements: KS, EM and TD that exert an influence on EE. Psychological empowerment emerged as a leading mediator that fortifies this relationship. Moreover, this study illuminated the role of JS as a potential mediator between PE and EE, with the results providing support for this relationship. Additionally, our exploration of TR as a moderator in the relationship between JS and EE uncovered a minor yet meaningful negative moderating effect. These findings reveal that, although digitalisation is accelerating because of the rapid technological revolution, organisations cannot neglect their employees to keep up with this pace. Hence, the role of TMP, employees' cognitive abilities and satisfaction at work in growing their engagement behaviour towards job roles should not be ignored and requires more attention. On the other hand, this study develops the research framework that encompasses the concepts of SET, firmly confirming this theory's relevance in understanding modern workplace relationships. The overall outcomes of this study emphasise the TMP's significance in shaping EE in the digital workplace, ultimately contributing to organisational achievement. These findings enrich management literature by highlighting that workforce's potential goes beyond their work roles. Prioritising EE through nurturing and supporting enables the organisations to tap into this potential, thereby bringing about a better-engaged workforce.

## Limitations and future research

Despite its contributions, this study presents limitations that would warrant attention in future research. For instance, it utilised a quantitative research approach, whereas employing a quali-quantitative research technique could provide a deeper understanding of the variations in results between this study and the mixed method approaches. Additionally, as the survey data were collected at a single point in time, a longitudinal study could be a more robust approach to tracking the same subjects over multiple time points. Moreover, this study validates that TR negatively moderates the relationship between JS and EE, suggesting a need for further investigations into their interplay. Finally, the research model was validated using responses from telecom employees in Malaysia. This opens avenues for future research to conduct comparative studies by replicating this study in different sectors or nation's contexts.

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## Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

## Authors' contributions

S.M.H. contributed to the manuscript's review and editing, provided supervision, managed project administration and secured funding for the research.

H.A. was involved in conceptualising and developing the study's idea, writing the original draft, working on methodology, conducting formal analysis and investigations, collecting data and managing project administration.

W.A. worked on the formal analysis and investigation of the study, managed the visualisation and validation processes, curated the data, directed the technical aspects of the paper and contributed to proofreading and editing.

I.S. contributed to finalising the methodology, provided supervision, validated findings, curated data and provided resources.

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## Data availability

The data that support the findings of this study are available from the corresponding author, H.A. upon reasonable request.

## Disclaimer

The views and opinions expressed in this article are those of the authors and are the product of professional research. It does not necessarily reflect the official policy or position of any affiliated institution, funder, agency or that of the publisher. The authors are responsible for this article's results, findings and content.

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