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Revisiting the Job Demands-Resources Model: A Systematic and Critical Review of Innovative Job Performance in Digital-Intelligent Contexts

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Abstract

Purpose: This study critically examines how the Job Demands-Resources (JD-R) model explains innovative job performance (IJP) within the context of digital intelligent transformation. It aims to identify the generative mechanisms through which job demands and resources influence IJP and to clarify the mediating and moderating roles of job crafting and person-job fit (PJ fit). **Design/methodology/approach:** Drawing upon a systematic and critical review of 162 SSCI-indexed studies published between 2020 and 2025, this research synthesises findings using the dual-pathway logic of the JD-R model. Thematic coding and evaluative comparison were employed to ensure analytical coherence. **Findings:** (1) job demands exhibit a double-edged sword effect, constraining or stimulating innovation depending on employees' cognitive appraisals. (2) job resources, particularly digital literacy, digital leadership, and PJ fit, serve as primary drivers of IJP through motivational enhancement. (3) promotion and prevention-focused job crafting function as critical mediating pathways linking antecedents and outcomes. **Research limitations/implications:** The review is limited by language and time-frame constraints, suggesting future research employ meta-analytic and longitudinal methods to examine causal mechanisms across diverse contexts. **Practical implications:** The findings guide organisations in enhancing innovation by developing digital competencies, fostering empowering leadership, and optimising PJ fit. **Originality/value:** This study extends the JD-R model to innovation research, elucidating its dual-pathway mechanisms and boundary conditions within technology-intensive environments.

Keywords: Job Demands-Resources Model, Innovative Job Performance, Digital Literacy, Digital Leadership, Job Crafting, Person-Job Fit

Introduction

In an era marked by the accelerated convergence of digitalisation and intelligence, organisational innovative performance has become a pivotal determinant in sustaining firms' long-term competitive advantage and achieving high-quality development. As Industry 5.0 and the digital intelligent transformation continue to advance, Smart technology, artificial intelligence, robotics, and algorithms (STARA) are reshaping industrial structures, organisational processes, and work environments at an unprecedented pace (Bag et al., 2021; Huang & Rust, 2018). On the one hand, the integration of these technologies has significantly enhanced productivity, decision-making accuracy, and organisational agility, thereby injecting new momentum into corporate innovation. On the other hand, they have simultaneously introduced considerable challenges, including heightened task complexity, greater role ambiguity, and an increased risk of job displacement (Bankins & Formosa, 2023). This typical "double-edged sword" phenomenon has not only altered the fundamental logic of organisational operation and employment relations but has also compelled employees to re-evaluate their working methods, role identities, and patterns of innovative behaviour(Liang et al., 2022; Yin et al., 2024).

Against this backdrop, innovative job performance (IJP) has increasingly been recognised as a crucial indicator for assessing both the effectiveness of organisational transformation and the extent of employees' value creation within the digital era (Liu et al., 2024). Existing research has examined the antecedents of IJP across multiple levels, encompassing individual psychological traits (Mumtaz & Parahoo, 2020; Pai et al., 2022), organisational systems and cultures (FU et al., 2024; Luo & Zhang, 2021), as well as leadership behaviours and styles (Fatima & Masood, 2024; Li et al., 2025; Odugbesan et al., 2023). Nevertheless, most prior studies have primarily focused on relatively static organisational contexts, offering limited insight into the dynamic mechanisms through which employees generate innovative performance amidst intensified digital transformation and heightened environmental dynamism (Peng et al., 2021). This theoretical gap suggests that current understanding of how innovative performance emerges remains fragmented and incomplete, thereby underscoring the necessity for a more integrated and nuanced conceptual framework that captures the complex interplay between job demands and resources in contemporary work environments. To address these shortcomings, this study employs the Job Demands–Resources (JD-R) model as its theoretical foundation to systematically examine the generative mechanisms of IJP. Characterised by its dual-path logic, the health depletion pathway and the motivational enhancement pathway, which elucidates how job demands and resources respectively influence employee performance through energy depletion and motivational stimulation (Bakker & Demerouti, 2017). In recent years, the JD-R model has been extensively applied in research domains such as well-being (Kerse et al., 2022), work engagement, and turnover intentions(Crawford et al., 2010; Demerouti et al., 2001). However, its utilisation within IJP studies remains relatively limited. Particularly in the era of digitalisation and intelligence, systematic theoretical reviews and empirical analyses are lacking regarding how to integrate novel variables, such as STARA awareness, digital literacy, and digital leadership, into the model framework. This integration should be complemented by behavioural mechanisms like promotive and preventative job redesign.

Furthermore, research indicates that person–job fit (PJ fit) plays a crucial moderating role in the operational mechanisms of job resources and demands (Kristof-Brown et al., 2005; Wang

et al., 2025). A higher level of PJ fit not only enhances the positive effects of resources and amplifies motivational pathways but also mitigates the negative impacts arising from high demands. This provides a fresh perspective for understanding how employees self-regulate and optimise their work approaches within complex and dynamic environments(Li et al., 2024; Wuryaningrat et al., 2024). However, the moderating role of PJ fit in IJP research remains at an exploratory theoretical stage, lacking systematic validation within digital contexts.

Based on this, the present study aims to explore the applicability and scope for extension of the JD-R model in explaining IJP through systematic review and critical analysis. Specifically, this research focuses on three core questions: (1) How do job demands and resources influence IJP through different pathways in the context of digital and intelligent transformation? (2) How do promotion-focused and prevention-focused job crafting serve as mediating mechanisms linking antecedents and outcomes? (3) What boundary-facilitating role does PJ fit play within the dual-pathway mechanism of JD-R?

Through the synthesis and evaluation of 162 SSCI indexed articles, this study not only validates the explanatory power of the JD-R model within the domain of IJP but also reveals its theoretical extensions and practical implications within digital-intelligent environments. This provides new theoretical underpinnings and managerial insights for further understanding the IJP of scientific and technological talents within complex settings.

Literature Review

This chapter will concentrate on systematically reviewing core theoretical and empirical literature within the domain of Innovative Job Performance. The primary objective is to acquire profound academic comprehension of key constructs, such as digital literacy and job crafting, in order to provide a robust and streamlined foundational basis for the current research investigation.

The Theoretical Foundations of the JD-R Model

Since its inception, the JD-R model has emerged as one of the most influential frameworks for explaining employee attitudes, behaviours, and performance (Bakker & Demerouti, 2017). This model emphasises that all job characteristics can be categorised into two broad types: job demands and job resources. Job demands refer to factors requiring sustained physical or mental exertion during task completion, such as time pressure, task complexity, and technical uncertainty. Job resources, conversely, denote elements that assist employees in achieving work objectives, alleviating demand pressures, or fostering growth and development, including social support, skill enhancement opportunities, and job autonomy (Bakker et al., 2023; Li et al., 2023).

The unique contribution of the JD-R model lies in its dual-path logic. On the one hand, high job demands deplete employees' energy reserves, leading to psychological strain and burnout, thereby reducing performance, which is the health depletion pathway (Bakker et al., 2023; Tims et al., 2013; Zhang & Parker, 2019). On the other hand, adequate job resources can stimulate motivation and engagement, enhancing individual creativity and work performance, which is the motivational pathway (Bakker & Demerouti, 2017; Li et al., 2023; Tims et al., 2013; Wrzesniewski & Dutton, 2001). In recent years, researchers have increasingly

recognised that this model not only explains traditional performance outcomes but also effectively reveals the generative mechanisms of IJP (Lesener et al., 2019).

Job Demands and IJP

Within the context of digital intelligent transformation, new forms of job demands continue to emerge, among which STARA threat awareness and environmental dynamism are particularly salient. STARA technologies are often perceived as potential sources of job substitution risk, when employees interpret them as threats, they are prone to experiencing heightened anxiety and a sense of insecurity, which in turn inhibit innovative engagement and risk-taking behaviours (Zhao et al., 2023). Simultaneously, environmental dynamism amplifies market and technological uncertainty, which has been shown to significantly undermine employees' logical reasoning and creative problem-solving capabilities (Zhou et al., 2023). However, some studies have indicated that when employees construe technological change and environmental volatility as challenges rather than threats, such appraisals can stimulate learning orientation and exploratory behaviour, thereby fostering innovation (Ding, 2021; Kang et al., 2023; Liang et al., 2022). Consequently, the influence of job demands on innovative performance manifests a distinct "double-edged sword" effect, reflecting both its potentially debilitating and facilitative impacts on employee innovation.

Job Resources and IJP

In contrast to the depleting nature of job demands, job resources exert a positive and motivational influence on IJP. Foremost among these is digital literacy, an emerging and critical personal resource that determines an employee's ability to proficiently utilise digital intelligent tools for knowledge integration and problem-solving. Empirical research has demonstrated that digital literacy not only enhances innovative behaviour directly but also indirectly promotes innovation outcomes by cultivating positive attitudes and a greater willingness to embrace new technologies (Huu, 2023; Nikou et al., 2022). Furthermore, digital leadership, as a pivotal organisational level resource, plays a vital role in creating an environment conducive to knowledge sharing and technological support, thereby stimulating employees' creativity and IJP (Fatima & Masood, 2024; Gao & Gao, 2024). In addition, PJ fit serves as a structural resource that strengthens employees' adaptability and confidence when facing complex or demanding work conditions. Its positive influence on innovation-related outcomes has been consistently validated across various organisational contexts (Wang et al., 2025).

The Mediating Role of Job Crafting

Job crafting refers to employees' proactive and self-initiated behaviours through which they deliberately reshape the task, relational, and cognitive boundaries of their work (Tims et al., 2012). Within the JD–R framework, job crafting has been widely recognised as a crucial mediating mechanism that links job demands and resources to performance outcomes. In recent years, scholars have further differentiated between promotion-focused job crafting and prevention-focused job crafting (Bindl et al., 2019). The former involves employees actively seeking additional resources and challenging tasks, thereby reinforcing the positive influence of job resources on innovative performance. In contrast, the latter entails the avoidance of hindering demands, transmitting the negative effects of excessive job requirements. Empirical evidence supports that this dual-dimensional perspective provides a

more nuanced understanding of how innovative behaviours are generated and sustained within organisational contexts (He et al., 2023; Zhu et al., 2022).

The Moderating Role of PJ Fit

As a critical boundary condition, PJ fit holds significant theoretical and practical value within the JD–R model. A high degree of PJ fit not only enhances employees' task confidence and adaptability to job requirements but also amplifies the positive effects of promotion-focused job crafting while mitigating the adverse influence of prevention-focused crafting (Guo & Hou, 2022; Wang et al., 2025). This suggests that PJ fit functions both as a complementary resource and as an essential moderating factor that shapes the differentiated outcomes of innovative performance within the dual-pathway mechanism of the JD–R framework. Nevertheless, empirical investigations into the moderating effects of PJ fit across diverse cultural and industrial settings remain limited. Further research is therefore warranted to explore its cross-contextual generalisability and boundary conditions in greater depth.

In summary, the extant literature demonstrates that the JD–R model provides a highly applicable theoretical framework for explaining innovative performance. Nevertheless, several research limitations remain evident. Firstly, insufficient attention has been devoted to the cognitive reappraisal mechanisms through which employees interpret and respond to job demands. Secondly, the transformation processes by which job resources are converted into innovation outcomes have yet to be thoroughly explored. Thirdly, empirical research examining the moderating role of PJ fit across different organisational and cultural contexts remains scarce. Accordingly, this study seeks to address these gaps through a systematic and critical review, thereby contributing to the refinement of theoretical understanding and offering valuable directions for future research.

Methods

The process of literature identification and screening in this study strictly adheres to the core tenets of systematic literature review methodology, so as to ensure the maximum transparency and high replicability of the research process (Cumming et al., 2023). In particular, multi-dimensional rigorous verification has been conducted regarding the comprehensive coverage, thematic relevance, and academic rigor of the literature. Meanwhile, against the backdrop of the digital transformation wave driven by the Industry 5.0 paradigm, the time frame for literature retrieval is restricted to January 2020 to September 2025. This initiative aims to accurately capture the latest theoretical advancements and practical insights fostered by the systematic implementation of digital intelligent technologies within organizations, encompassing core dimensions such as human resource capability building, employee proactive behavior development, and innovative work performance enhancement. The specific implementation steps are as follows:

Firstly, as a qualitative exploratory study, this study clearly defines the inclusion and exclusion criteria for literature, with specific details presented in Table 1.

Table1
Criteria for Literature Inclusion

Options	Rules
Inclusion Criteria	The publication period for papers is from January 2020 to September 2025.
	The research field is management.
	The type is an English academic paper.
Exclusion Criteria	Non-English paper.
	Non-academic paper.
	Papers outside the field of management.

Secondly, relying on top international academic databases such as Web of Science, Scopus, and Google Scholar, the study adopts a multi-dimensional keyword combination strategy encompassing terms like "JD-R Model", "innovative work performance", "digital literacy", "digital leadership", "job crafting", and "person-job fit" to conduct precise in the target databases. A total of 756 initial relevant papers were obtained, as illustrated in Figure 1.

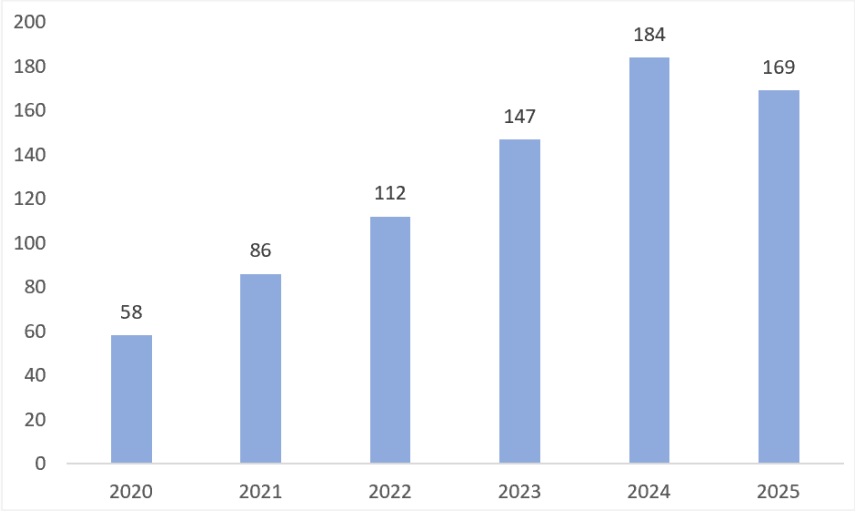

Figure 2 Articles published by year

Subsequently, the retrieved results underwent preliminary screening based on correlation analysis. This study excluded duplicate literature, as well as publications with low citation frequencies or those failing to meet inclusion criteria, ultimately retaining 68 high-impact core articles. By focusing on high-quality research samples, this approach effectively narrowed the scope of investigation, providing foundational support for ensuring literature quality.

Moreover, this study employed content analysis techniques to conduct an in-depth examination of the selected literature, systematically extracting the definitional connotations and research status of core constructs such as "innovative job performance", "digital literacy", "digital leadership", "job crafting", and "person-job fit". This process involved synthesising research perspectives from diverse scholars, comprehensively distilling the essential characteristics and attributes of relevant constructs regardless of consensus or divergence in their definitions. This enabled the formation of abstracted, universalised understandings of the phenomena under investigation.

Ultimately, the core objective of these stages lied in refining the phenomenological terminology of relevant constructs through textual segmentation, literature restructuring, and data extraction. This process categorised analogous phenomena into equivalent analytical dimensions, enabling higher-level abstraction in interpreting research phenomena. The extracted data provided foundational support for constructing novel research frameworks, thereby deepening understanding of the intrinsic mechanisms underpinning employee innovative job performance.

In summary, this study employed a systematic process of literature acquisition, analysis, and integration to precisely identify research consensus and points of contention regarding relevant constructs. This established a robust theoretical foundation for the research, thereby supporting a comprehensive exploration of core issues in employee innovation work performance. This methodology not only facilitated the construction of theoretical frameworks but also provided methodological guidance for empirical investigation and analysis, ensuring the research's relevance and scientific rigour.

Findings

Drawing upon a systematic synthesis and critical evaluation of literature, this study identifies three principal mechanisms through which IJP is influenced grounded in the dual-pathway logic of the JD–R model: the job demands pathway, the job resources pathway, and the interactive mechanism linking the two.

Job Demands Pathway

Empirical evidence indicates that high levels of job demands tend to undermine innovative performance by depleting employees' energy and accumulating work-related strain. Within the context of digital–intelligent transformation, technostress, task complexity, and environmental dynamism have emerged as salient demand-related factors. Prior studies suggest that environmental dynamism can significantly weaken employees' ability to engage in logic-based innovative thinking, primarily because the unpredictability of market demands and technological changes heightens employees' sense of uncertainty (Zhou et al., 2023). At the same time, employees' threat perception of STARA technologies operates as a hindrance demand. When artificial intelligence, robotics, and algorithmic systems are perceived as potential substitutes for human labour, employees are more likely to adopt prevention-focused job crafting, avoiding challenging tasks and consequently constraining innovative behaviour (Demerouti et al., 2001; Li et al., 2023). These findings lend support to the health-impairment pathway proposed by the JD–R model.

Job Resources Pathway

In contrast, job resources exert a motivational and empowering influence that significantly enhances innovative performance. At the individual level, digital literacy serves as a critical personal resource that enables employees to use digital intelligent tools more effectively and, through promotion-focused job crafting, transform these capabilities into greater innovative output (Nikou et al., 2022). At the organisational level, digital leadership fosters a supportive climate and a culture of knowledge sharing, directly stimulating creativity while indirectly promoting IJP through resource-based empowerment (Fatima & Masood, 2024). Furthermore, structural resources, such as PJ fit, enhance employees' adaptability and confidence when facing complex or demanding tasks, encouraging them to reinterpret

challenges as opportunities for growth and thus further stimulating innovative behaviour (Wang et al., 2025).

The Interactive Mechanism

The analysis further highlights the central role of job crafting within the JD–R framework. Promotion-focused job crafting has been confirmed as a key mediating mechanism through which job resources foster IJP, whereas prevention-focused job crafting functions as a critical channel through which job demands suppress innovation (Bindl et al., 2019). Simultaneously, PJ fit operates as an important boundary condition within the dual-pathway mechanism. High levels of PJ fit amplify the positive influence of promotion-focused crafting while buffering the adverse effects of prevention-focused crafting, thereby validating the resource-buffering effect embedded in the JD–R model.

In summary, three principal conclusions can be drawn from this review: (1) The job demands pathway exhibits a double-edged sword effect, whereby threat perceptions and environmental dynamism may impede innovation, yet challenge appraisals can, under certain conditions, stimulate it. (2) The job resources pathway acts as the primary driver of IJP, with digital literacy, digital leadership, and PJ fit identified as key enabling factors. (3) The interactive mechanism is critical, job crafting functions as a central mediator, while PJ fit substantially shapes both the direction and magnitude of the dual-pathway effects.

Discussion and Conclusion

This study not only reaffirms the theoretical explanatory power of the JD-R model but also reveals its boundary conditions and directions for extension within technology-intensive organisational contexts. The following discussion will centre on the research findings, drawing comparisons with existing literature.

The Double-Edged Sword Effect of Job Demands

Findings indicate that high job demands may either inhibit innovation performance or, under specific conditions, exert a facilitating effect. Threat Awareness of STARA and Environmental Dynamism were confirmed as a typical 'inhibitory demand', primarily undermining employees' innovative engagement through prevention-focused crafting. This discovery aligns closely with the health impairment pathway proposed by the JD-R model (Bakker & Demerouti, 2017). However, some studies indicate that when job demands are reinterpreted as 'challenging demands', they may promote innovation by stimulating learning and adaptive behaviours (Kong et al., 2024; Liang et al., 2022). This suggests that employees' subjective cognitive evaluations play a crucial role in determining the direction of job demand effects, warranting future research into the demand reappraisal mechanism.

5.2 Incentive Mechanisms and Transformation Processes of Job Resources

Along the resource pathway, research indicates that digital literacy, digital leadership, and PJ fit are pivotal factors driving IJP. This finding aligns with empirical studies by Nikou et al. (2022) and Fatima and Masood (2024), which demonstrate that resources can significantly enhance innovative behaviour through motivation and empowerment. However, this study further reveals that the impact of resources is not directly manifested but requires transformation through facilitative job redesign. While employees gain access to technology, leadership support, and role fit, they are more likely to convert these advantages into innovation

outcomes only when they proactively adjust task boundaries and seek resources. This finding extends the motivational pathway of the JD-R model, indicating that the value of resources depends on the individual's proactive engagement.

Mediating Role and Pathway Differences in Job Crafting

Research indicates that job reshaping serves as a crucial mediating mechanism linking job demands/resources to innovation performance. Promotive job redesign significantly amplifies the positive effect of resources on innovation performance, whereas preventive job redesign transmits the negative impact of job demands. This conclusion aligns with Bindl et al. (2019) research on dual-dimensional job redesign and further demonstrates that the JD-R model explains innovative behaviour not through a single pathway, but by differentiating positive or negative outcomes via distinct forms of redesign behaviour. Notably, job redesign reflects not only employees' responses to resources and demands but also their reconfiguration of work meaning. This suggests future research could explore this mechanism more deeply by integrating meaning-making theory.

Moderating Effects and Boundary Conditions of PJ Fit

Regarding moderation mechanisms, PJ fit was confirmed as a significant boundary condition. In high-fit contexts, employees were more likely to translate promotive job redesign into innovative performance and could buffer the negative effects of preventative redesign. This finding not only corroborates the "resource buffering effect" hypothesis within the JD-R model (Bakker et al., 2023), but also further embeds PJ Fit research within the field of IJP. Echoing the work of Huang et al. (2019) and Wang et al. (2025), this study highlights the moderating role of PJ fit in shaping employees' cognitive and behavioural pathways within complex dynamic environments. It suggests that future research should delve deeper into the interactive logic between fit and the JD-R model.

Consistency and Differences with Existing Research

Overall, the findings align with mainstream perspectives in the JD-R literature, validating its explanatory power in innovation performance research. However, three distinctions emerge: (1) Regarding job demands, this study highlights the negative effects of perceived threat, whereas some research emphasises the positive role of challenging stress, indicating cognitive reappraisal as a key moderator. (2) Regarding job resources, this study highlights the resource transformation mechanism, where resources must be reshaped through facilitative work to exert their effects, whereas traditional research predominantly emphasises direct resource effects. (3) Concerning boundary conditions, this study uncovers the dual role of PJ Fit, which can both amplify positive pathways and attenuate negative pathways, offering significant implications for expanding the applicability of the JD-R model.

Adaptability of the JD-R Model in Digital Intelligent Contexts

It is worth emphasising that this study focuses on technology-intensive organisations undergoing digital intelligent transformation. Within this context, employees face both potent threats from technological displacement and environmental dynamism, alongside robust resources in the form of digital tools and managerial support. Consequently, the dual-path logic of the JD-R model is fully validated here. Compared to traditional manufacturing or service sector research, this study reveals more complex cognitive processes and boundary conditions within the digital-intelligent context, demonstrating the model's strong

adaptability. However, it necessitates contextual expansion by incorporating novel variables such as STARA awareness, digital literacy, and digital leadership.

In summary, this study elucidates the mechanism through which job demands and resources influence innovation performance via distinct forms of job redesign within the JD-R framework. It further identifies PJ fit as a critical moderator across both pathways. This not only enhances the explanatory power of the JD-R model in innovation research but also provides novel theoretical perspectives and empirical foundations for understanding employee innovation behaviour in the digital intelligent context.

Theoretical Implications

This study systematically reviews and critically evaluates research findings on employee innovation performance within the context of digital transformation, grounded in the JD-R model. Findings indicate that variables including STARA awareness, digital literacy, digital leadership, job crafting, and PJ fit influence IJP through the dual-path logic of the JD-R model to varying degrees.

Expanding the JD-R Model's Applicability to IJP

Traditional JD-R research predominantly focuses on outcome variables such as employee well-being, work burnout, and turnover intentions (Crawford et al., 2010; Demerouti et al., 2001; Kerse et al., 2022). However, this systematic review reveals the model's equal efficacy in explaining the formation mechanisms of IJP. Specifically, job demands not only diminish IJP via the energy depletion pathway but may also stimulate innovation motivation under challenging evaluation conditions. Conversely, job resources do not merely directly drive innovation, they require facilitative job redesign to translate into tangible outcomes. Thus, the dual-pathway logic of the JD-R model receives fresh validation and extension within innovation research. This finding enriches theoretical explanations of IJP while providing academia with a more universally applicable research framework.

Revealing the Core Role of Dual-Dimensional Job Crafting in the JD-R Model

This study further elevates the theoretical standing of job crafting within the JD-R framework. Unlike prior research treating job crafting as a singular mediator, it emphasises the differentiated pathways of promotion versus prevention-focused job crafting. Promotion-focused job crafting amplifies the positive impact of resources on innovation, whereas prevention-focused job crafting channels the negative effects of job demands. This finding not only refines the mediating mechanisms within the JD-R model but also offers new perspectives on understanding employee behavioural responses under varying cognitive and resource conditions. In other words, job crafting is no longer a unidimensional mediation black box but operates through dual-dimensional pathways to influence IJP. This conclusion enhances the explanatory power of the JD-R model and facilitates deeper dialogue with research in positive organisational behaviour and meaning-making theory.

Reinforcing the Role of Boundary Conditions in the PJ Fit within the JD-R Model

As a moderating variable, PJ fit is validated in this study as a crucial boundary condition influencing the strength of the dual-path effects within the JD-R model. High levels of PJ fit not only enhance employees' commitment to and innovation conversion effects from promotion-focused job crafting, but also buffer the innovation inhibition effects arising from

prevention-focused job crafting. This finding adds an individual-context interaction dimension to the JD-R model, indicating its effects are not universally stable but significantly moderated by fit factors. Theoretically, this deepens boundary condition research within JD-R, suggesting future studies should focus more on the operational mechanisms of fit variables across diverse contexts.

Advancing the Contextual Application of the JD-R Model

Existing JD-R research predominantly draws upon Western contexts and traditional industries. The literature synthesised in this study, however, underscores the model's applicability within digital intelligent transformation and emerging economies. The introduction of emerging variables such as STARA awareness, digital literacy, and digital leadership not only expands the scope of the JD-R model but also enhances its capacity to explain employee innovation behaviour amidst rapid technological iteration and highly dynamic environments. Consequently, this study provides new contextual evidence for the JD-R model, advancing its theoretical evolution within the globalised and digital-intelligent landscape.

Practical and Social Implications

Against the backdrop of digital-intelligent transformation and industrial upgrading, understanding the mechanisms underlying employees' innovative work performance carries not only theoretical significance but also critical practical implications for enterprise management and social development.

Implications for Enterprise Management

Firstly, the findings suggest that digital literacy is a fundamental personal resource that drives innovation. Enterprises should implement systematic training and learning programmes to help employees master tools such as big data, artificial intelligence and cloud computing. This approach can enhance employees' ability to handle complex tasks, improve work efficiency and stimulate creative thinking. It can also encourage employees to engage more proactively in job crafting for promotion.

Secondly, digital leadership is pivotal in enhancing IJP. Managers should lead by example by adopting digital, intelligent tools and fostering a culture of knowledge sharing and cross-departmental collaboration. By adopting empowering, coaching and inclusive leadership styles, leaders can effectively stimulate their employees' innovative motivation and encourage them to transform stress into challenging goals. In the context of Specialized Refinement Differential Innovation (SRDI) enterprises in particular, digital leaders function as both resource providers and architects of an innovative climate.

Thirdly, the importance of managing PJ fit should not be overlooked. During recruitment and job crafting, enterprises should ensure that employees' abilities and interests align with job requirements. A high level of PJ fit increases employee engagement, amplifies the positive effects of promotion-focused job crafting and mitigates the negative effects of prevention-focused job crafting. Therefore, human resource practices should incorporate fit assessment at every stage of the talent management process, from recruitment and selection to performance evaluation and career development, to create a comprehensive management strategy.

Implications for Employee Development

From an individual perspective, the results suggest that employees should actively engage in promotion-focused job crafting. This involves seeking resources, embracing challenging tasks and expanding cognitive boundaries in order to transform organisational resources into personal growth and innovative outcomes. However, they should also be aware of the potential risks of prevention-focused job crafting, as avoiding hindering demands altogether could stifle innovation. In the new era, the ability to self-regulate and acquire resources has become a core competency for technological talent.

Furthermore, employees should cultivate cognitive reappraisal skills in relation to STARA. When employees can reinterpret technological substitution risks as opportunities for self-development and innovation, the pressure arising from digitalisation can become a driving force for creativity. This transformation requires openness, a learning orientation and psychological resilience in order to foster a positive response to challenges.

Implications for Industry and Societal Development

At an industrial level, the findings offer valuable insights into the development of SRDI enterprises. As core drivers of technological innovation, these enterprises should promote digital and intelligent transformation, establishing comprehensive talent support systems in the process. By providing employees with resources, designing jobs effectively and fostering an organisational culture that encourages innovation, they can enhance the performance of technological talent. In regions such as China's Yangtze River Delta, these enterprises play a critical role in the national innovation-driven strategy, so enhancing employees' innovation potential is essential for both corporate survival and the high-quality development of regional economies.

At a societal level, the study emphasises the strategic importance of digital transformation of human capital. With the accelerated development of artificial intelligence and automation, society must establish a forward-looking digital literacy education system, from basic education to vocational training, to ensure the workforce can adapt to the intelligent era. Furthermore, policymakers should promote cross-industry talent mobility and retraining mechanisms to alleviate employment insecurity caused by technological substitution, thereby fostering social equity and sustainable development.

Limitations and Suggestions for Future Research

Although this study provides new theoretical and practical insights into how the JD-R model can be used to understand IJP, it has several limitations that should be acknowledged. These limitations also provide valuable guidance for future research.

Limitations in Literature Sampling and Research Methods

Firstly, the literature sample primarily comprises SSCI-indexed studies published between 2020 and 2025. While this guarantees the timeliness and academic rigour of the review, it could mean that relevant research published in non-English journals or practice-oriented outlets is overlooked. Consequently, the conclusions may be somewhat constrained by the scope of the sample. Future studies could expand the corpus by incorporating cross-language and interdisciplinary research to construct a more comprehensive and diverse knowledge base.

Secondly, this study employs a combined systematic and critical review approach, which is well suited to tracing theoretical development and identifying research gaps. However, the absence of quantitative synthesis techniques, such as meta-analysis, limits the ability to statistically estimate effect sizes and the strength of relationships between variables. Therefore, future research could employ meta-analytic or multi-level structural equation modelling approaches to provide a more precise, evidence-based assessment of the JD-R model's explanatory power in the context of innovation performance.

Limitations in Contextual Generalizability

This research focuses on technological professionals in the context of digital and intelligent transformation, and SRDI enterprises. While this focus provides valuable insights into emerging organisational settings, the generalisability of the findings remains limited. Job demands, resources and PJ fit may differ across countries, industries and cultural environments. For example, employees in Western contexts tend to prioritise autonomy and personal development, whereas those in Eastern contexts may value collective support and relational resources. Future studies could use cross-cultural and cross-industry comparative designs to investigate how the JD-R model functions in different contexts, thus strengthening its external validity and theoretical universality.

Limitations in Longitudinal and Dynamic Perspectives

Most existing studies, including this one, use cross-sectional research designs. This restricts their ability to capture the dynamic, temporal processes through which job demands and resources affect innovative performance. However, innovation is an inherently cumulative and time-dependent process. Furthermore, employees' perceptions of stress, resources and motivation may fluctuate across different developmental stages. Therefore, future research should adopt longitudinal or experimental designs to examine causal relationships and trace the temporal evolution of IJP. Additionally, integrating big data analytics and artificial intelligence based behavioural tracking could deepen our understanding of the dynamic mechanisms underlying innovation in digitalised workplaces.

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