International Journal of Commerce and Management Research
www.managejournal.com
E-ISSN: 2455-1627
Received: 12-01-2026, Accepted: 11-02-2026, Published: 26-02-2026
Volume 12, Issue 1, 2026, Page No. 403-408

Remote work 3.0: Role of digital leadership and virtual team trust in employee engagement post-AI adoption

Dr. Sridevi Maganti
Assistant Professor (Adhoc), Department of Commerce and Management Studies, Adikavi Nannaya University MSN Campus, Kakinada, Andhra Pradesh, India
DOI: https://doi.org/10.66856/ijcmr.2026.12.1.12309

Abstract
The growing adoption of artificial intelligence (AI) is reshaping remote and hybrid work through automation, digital collaboration, and data-supported decision-making. However, the availability of advanced technology does not by itself ensure employee engagement. Digital leadership and virtual team trust may influence how employees experience technological change, collaborate with colleagues, and remain connected to organizational goals. This paper examines the conceptual relationships among AI adoption, digital leadership, virtual team trust, and employee engagement within the emerging framework of Remote Work 3.0. It adopts a conceptual approach based on a thematic synthesis of literature on remote work, digital leadership, organizational trust, AI-enabled work, and employee engagement. The analysis draws on the Job Demands–Resources model, Social Exchange Theory, and Social Cognitive Theory. It proposes that AI adoption may support employee engagement when tools are useful and responsibly implemented, employees receive appropriate training, and leaders communicate transparently. Virtual team trust is considered a potential mechanism through which digital leadership may contribute to engagement, while digital leadership may strengthen the relationship between AI adoption and engagement. The paper offers a conceptual framework and managerial recommendations relating to leadership development, trust-building, employee autonomy, privacy, and human oversight of AI. The proposed relationships require empirical validation across organizational and industry contexts.

Keywords: Remote work 3.0, artificial intelligence, digital leadership, virtual team trust, employee engagement, hybrid work, digital transformation

Introduction

Digital technologies have transformed organizational structures, employment relationships, communication practices, and human resource management. Remote and hybrid work arrangements are increasingly supported by cloud computing, video-conferencing platforms, collaborative applications, digital project-management systems, and artificial intelligence (AI). These technologies enable employees to coordinate activities and complete tasks across geographical boundaries, reducing the dependence on physical presence as the primary basis for work organization.

The expansion of remote work during the COVID-19 pandemic accelerated the use of digital collaboration tools. As organizations continue to refine remote and hybrid arrangements, AI has introduced additional possibilities for automating routine activities, assisting with information processing, generating content, supporting customer service, and improving decision-making. These applications may reduce repetitive workloads and allow employees to focus on complex, creative, and interpersonal tasks.

At the same time, AI-enabled remote work can create concerns about job security, privacy, algorithmic decision-making, workplace surveillance, and the need to acquire new skills. Remote employees may also experience social isolation, communication gaps, reduced informal interaction, and difficulties maintaining a sense of belonging. Thus, technological investment alone may not be sufficient to sustain engagement.

For this paper, Remote Work 3.0 is used as a proposed analytical concept rather than a universally standardized stage of remote-work development. It refers to an integrated model in which flexible work arrangements, AI-enabled processes, digital collaboration, trust-based leadership, and human-centred management practices are combined. Digital leadership can provide direction, feedback, learning opportunities, and support during technological change. Virtual team trust can help employees collaborate, exchange knowledge, and rely on colleagues despite limited face-to-face interaction.

This paper examines the relationships among AI adoption, digital leadership, virtual team trust, and employee engagement. Its central argument is that the outcomes of AI-enabled remote work depend not only on the capabilities of technology but also on how technology is implemented and on the quality of leadership and working relationships.

Need and Significance of the Study

The increasing use of AI in remote and hybrid workplaces creates a need to understand the organizational and behavioural conditions that enable employees to benefit from technological change. AI may improve efficiency and access to information, but it can also increase learning demands and concerns about monitoring or employment security. Understanding these competing possibilities is important for human resource management.

The study is significant because it considers technology, leadership, trust, and engagement within one conceptual framework. It can inform organizational policies for AI implementation, digital leadership development, virtual collaboration, employee learning, and well-being. The framework may also help researchers identify variables and relationships for future empirical testing.

Statement of the Problem

Organizations are investing in AI-enabled systems and digital collaboration technologies to improve remote and hybrid work. However, the adoption of technology does not necessarily result in stronger employee engagement. Employees may experience uncertainty, inadequate training, excessive monitoring, or reduced interpersonal connection. These concerns raise questions about the role of digital leadership and virtual team trust in shaping employee experiences.

The central problem addressed in this paper is: How can organizations combine AI adoption, effective digital leadership, and virtual team trust to support employee engagement in Remote Work 3.0 environments?

Objectives of the Study

1. To understand the concept of Remote Work 3.0 in the post-AI workplace.
2. To examine the role of digital leadership in enhancing employee engagement.
3. To analyze the importance of virtual team trust in AI-enabled remote workplaces.
4. To explore the relationship among AI adoption, digital leadership, virtual trust, and employee engagement.
5. To suggest strategies for organizations to improve employee engagement in virtual work environments.

Research Questions

6. What are the major characteristics of Remote Work 3.0 in the post-AI workplace?
7. How can digital leadership contribute to employee engagement in remote and hybrid work environments?
8. Why is virtual team trust important for collaboration in AI-enabled workplaces?
9. How might AI adoption, digital leadership, and virtual team trust jointly relate to employee engagement?
10. What organizational strategies can strengthen employee engagement in technology-enabled virtual work environments?

Review of Literature

Remote Work and Organizational Outcomes

Remote work has developed from an alternative employment arrangement into an important feature of contemporary work design. Digital platforms allow employees to coordinate tasks without continuous physical interaction. Nevertheless, the outcomes of remote work depend on job characteristics, organizational policies, employee preferences, managerial support, and access to suitable technology. Choudhury, Foroughi, and Larson (2021) [6] examine work-from-anywhere arrangements and geographic flexibility, providing a basis for considering how work location can be separated from some traditional workplace constraints. Such flexibility does not eliminate the need for effective coordination, trust, and performance management.

Artificial Intelligence and Employee Experience

AI can assist with routine tasks, information processing, content development, customer interactions, and decision support. These applications may improve access to work resources and free time for more complex responsibilities. However, AI adoption may also raise concerns about job displacement, privacy, transparency, and the fairness of automated decisions. Dwivedi *et al.* (2021) [9] discuss the multidisciplinary opportunities and challenges associated with AI, underscoring the importance of responsible implementation. In remote workplaces, the employee experience is therefore likely to depend on how AI is introduced, explained, and governed.

Digital Leadership

Digital leadership extends leadership practices into technology-mediated environments. It involves using digital tools to communicate direction, coordinate work, support innovation, and manage change. Contreras, Baykal, and Abid (2020) [7] discuss e-leadership and teleworking, while Avolio, Kahai, and Dodge's work on e-leadership provides an important foundation for understanding leadership through advanced information technologies. In remote settings, effective leadership requires more than technical knowledge: it also requires empathy, clarity, responsiveness, feedback, and the ability to support employees through uncertainty.

Virtual Team Trust

Virtual team trust concerns employees' confidence in the competence, reliability, integrity, and intentions of colleagues and leaders who collaborate through digital channels. Gilson *et al.* (2015) [11] review major themes in virtual-team research, including communication, leadership, and collaboration. Purvanova and Bono (2009) [12] examine transformational leadership in face-to-face and virtual teams. Together, this body of work supports examining leadership behaviours and relationship quality as important contextual factors in virtual collaboration. Trust may be especially relevant where employees have fewer opportunities for informal, face-to-face interaction.

Psychological Safety and Employee Engagement

Psychological safety concerns whether people feel able to ask questions, raise concerns, and acknowledge mistakes without undue fear of negative interpersonal consequences. Edmondson (2019) [10] discusses its importance for learning and innovation. Employee engagement is commonly conceptualized through vigour, dedication, and absorption (Schaufeli *et al.*, 2002) [13]. Remote work may support engagement through flexibility and autonomy, but it can also contribute to isolation, blurred work-life boundaries, and digital fatigue. Engagement should therefore be assessed through employees' work-related experience rather than online presence alone.

Research Gap

The literature provides relevant perspectives on remote work, AI, digital leadership, trust, and employee engagement. These topics, however, are often studied through distinct theoretical and empirical approaches. An integrated framework that considers AI adoption alongside leadership practices and virtual team trust can help clarify the conditions under which AI-enabled remote work may be associated with employee engagement. This paper addresses that conceptual need by proposing relationships among the four principal constructs. The proposed relationships are not presented as empirically established causal effects.

Conceptual Analysis

Conceptualizing Remote Work 3.0

Remote Work 3.0 is conceptualized here as a digitally integrated and human-centred approach to remote and

hybrid work. It combines flexible work design, AI-assisted task performance, digital collaboration, trust-based leadership, and outcome-oriented performance management. Its distinguishing dimensions include AI-enabled productivity, flexible work arrangements, digital leadership, trust-based collaboration, outcome-focused evaluation, human–AI collaboration, and employee well-being.

This concept emphasizes that the quality of remote work depends on how technology is integrated with employee capabilities and relationships. AI can support speed and information processing, while human judgment, empathy, creativity, and accountability remain essential to effective work.

AI Adoption and Employee Engagement

AI adoption refers to the introduction and use of AI-enabled systems in work activities. Such systems may support scheduling, analysis, document preparation, customer service, and workflow coordination. When tools are useful and well integrated, they may reduce repetitive work and help employees focus on meaningful tasks. Conversely, poor implementation, inadequate training, perceived surveillance, or fears about job security may increase uncertainty and technostress. The relationship between AI adoption and engagement should therefore be considered conditional rather than automatically positive.

Organizations can improve the likelihood of beneficial outcomes by explaining the purpose and limitations of AI tools, offering role-relevant training, consulting employees during implementation, and establishing human review of consequential AI-supported decisions.

Digital Leadership and Employee Engagement

Digital leadership refers to the ability to guide employees, coordinate work, support innovation, and manage change through digital technologies and human-centred practices. In remote environments, leaders must communicate clear expectations, provide timely feedback, recognize contributions, and create opportunities for professional development. Supportive leadership may help employees feel valued and connected to organizational objectives.

By contrast, unclear responsibilities, excessive meetings, delayed feedback, and intrusive monitoring may undermine autonomy and confidence. Digital leadership is therefore considered a potential direct contributor to employee engagement and an enabling condition for effective AI adoption and trust-building.

Virtual Team Trust and Employee Engagement

Virtual team trust refers to confidence in colleagues' and leaders' competence, reliability, integrity, and intentions. Trust can support cooperation, knowledge sharing, constructive feedback, and willingness to seek assistance. In AI-enabled settings, trust also relates to confidence in organizational processes, data protection, and the fairness of technology-supported decisions.

Trust may be strengthened through consistent behaviour, clear responsibilities, transparent communication, fair workload distribution, respectful conflict resolution, and clear procedures for reviewing AI-generated outputs. Trust is treated in this paper as a potential contributor to employee engagement and as a possible mechanism through which leadership affects engagement.

Relationship Between Digital Leadership and Virtual Team Trust

Leadership behaviour helps establish the conditions in which trust develops among geographically dispersed employees. Transparent communication, consistent decisions, appropriate delegation, and fair treatment can strengthen confidence in leaders and colleagues. Digital leaders can also build trust by responding to concerns, encouraging open discussion, recognizing contributions, and explaining how AI systems are used.

Trust depends not only on communication frequency but also on consistency between words and actions, respect for autonomy, and the reliability of organizational procedures. The framework therefore proposes that digital leadership may be positively associated with virtual team trust, which may in turn be associated with employee engagement.

Interrelationship Among the Main Constructs

AI adoption provides technological resources for completing and coordinating work. Digital leadership shapes how these resources are introduced, explained, and supported. Virtual team trust influences employees' willingness to collaborate, exchange information, and depend on colleagues. Employee engagement represents a desired work-related outcome. These constructs should not be treated as independent organizational priorities.

For example, an AI-enabled project-management platform may improve coordination. If employees are inadequately trained or believe the platform is used primarily for surveillance, the expected benefits may not translate into engagement. If leaders explain the platform's purpose, establish fair usage policies, provide training, and invite feedback, employees may be more likely to experience it as supportive. This example illustrates a plausible mechanism for future testing rather than a demonstrated causal result.

Theoretical Framework

Job Demands–Resources Model

The Job Demands–Resources model explains how job demands and resources relate to well-being and engagement (Demerouti *et al.*, 2001; Bakker & Demerouti, 2007) [3, 8]. Resources such as autonomy, feedback, learning opportunities, and managerial support may facilitate engagement, whereas excessive demands may contribute to strain. AI may function as a resource when it simplifies tasks and improves access to information, but it may become a demand when it creates complexity, continuous availability, or intrusive monitoring.

Social Exchange Theory

Social Exchange Theory (Blau, 1964) [5] suggests that workplace relationships involve reciprocal exchanges. When employees perceive fair treatment, support, and respect from leaders and organizations, they may respond with greater involvement and constructive work behaviour. In virtual environments, transparent AI practices, training, recognition, and privacy safeguards may strengthen perceptions of organizational support.

Social Cognitive Theory

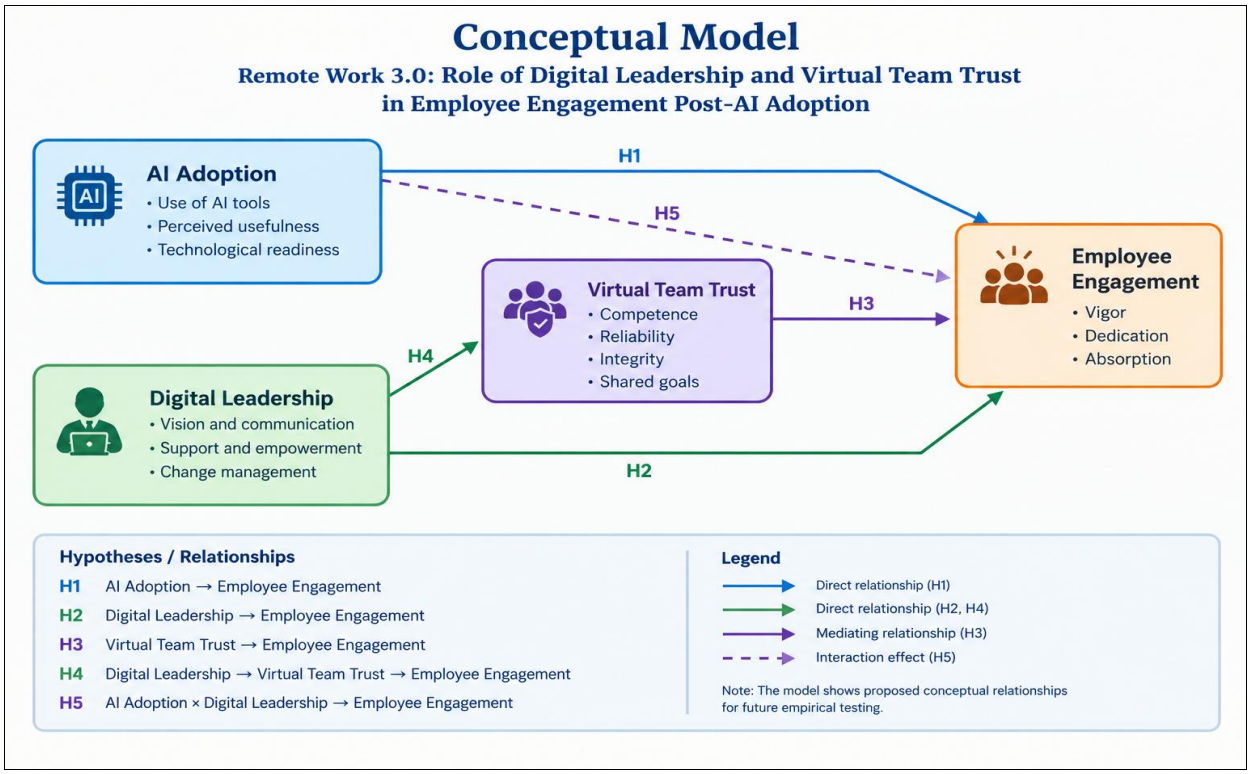
Social Cognitive Theory (Bandura, 1986) [4] emphasizes the interaction among personal factors, behaviour, and environmental conditions. Employees' digital self-efficacy may be influenced by training, feedback, and opportunities

to learn from colleagues. Greater confidence in using AI tools may support adaptation and participation in digitally enabled work.

Proposed Conceptual Framework

The proposed framework considers AI adoption, digital leadership, and virtual team trust as factors associated with employee engagement. It also proposes that virtual team trust may mediate the relationship between digital leadership and engagement, and that digital leadership may moderate the relationship between AI adoption and engagement.

- AI adoption → Employee engagement: effective and useful AI adoption may be positively associated with engagement.
- Digital leadership → Employee engagement: supportive digital leadership may be positively associated with engagement.
- Virtual team trust → Employee engagement: trust may support cooperation and psychological safety, contributing to engagement.
- Digital leadership → Virtual team trust → Employee engagement: trust is proposed as a potential mediator of the relationship between leadership and engagement.
- AI adoption × digital leadership → Employee engagement: digital leadership may strengthen the relationship between AI adoption and engagement.



Source: Author's own conceptual framework, developed based on the review of relevant literature.

These pathways are propositions for conceptual examination and future empirical testing. The mediation pathway would require an appropriate mediation analysis, while the interaction pathway would require a statistical interaction term.

Research Methodology

Research Design

This paper adopts a conceptual research design based on a narrative and thematic synthesis of literature relating to remote work, AI-enabled work, digital leadership, virtual team trust, and employee engagement. It does not report an original employee survey or statistical analysis.

Sources and Approach

The manuscript draws on academic articles, books, and selected organizational reports cited in the paper.

Method of Analysis

The literature is organized thematically around the paper's principal constructs. The analysis then uses the Job Demands–Resources model, Social Exchange Theory, and Social Cognitive Theory to interpret plausible relationships and developed a conceptual framework.

Scope and Limitations

The paper focuses on remote and hybrid work settings where employees use digital collaboration platforms or AI-enabled applications. The framework may be relevant to knowledge-intensive and service-oriented activities, but its applicability can vary by industry, occupation, organizational culture, and level of AI use. As a conceptual paper, it does not independently measure employee attitudes, test hypotheses, or establish causal effects. The proposed relationships require empirical validation.

Findings from the Conceptual Analysis

1. Remote Work 3.0 can be understood as an emerging work model integrating AI-enabled technologies, flexible work arrangements, digital leadership, and virtual collaboration.
2. AI adoption may support task efficiency and engagement when tools are useful, accessible, and appropriately integrated into work processes.

3. Digital leadership may support engagement through transparent communication, feedback, employee empowerment, and continuous learning.
4. Virtual team trust may facilitate cooperation, knowledge sharing, psychological safety, and collaboration among geographically dispersed employees.
5. Digital leadership may contribute to engagement directly and indirectly by helping build trust within virtual teams.
6. The relationship between AI adoption and engagement may depend on implementation quality, leadership support, employee perceptions, and training opportunities.
7. Excessive monitoring, unclear performance expectations, and privacy concerns may undermine employee confidence and the potential benefits of remote work.
8. Responsible AI practices, including transparency, data protection, human oversight, and fair decision-making, are important considerations for sustaining trust.
9. Employee engagement should be understood through vigour, dedication, and absorption rather than digital availability or activity alone.
10. A human-centred approach combining technological capability, digital leadership, and virtual team trust provides a promising basis for improving engagement in AI-enabled remote work.

These are conclusions from the conceptual analysis and literature synthesis. These are not resulting from a new employee survey or statistical testing.

Discussion

The proposed framework emphasizes that engagement in Remote Work 3.0 may be shaped by the interaction of technological resources and human relationships. AI can support information access and reduce repetitive tasks, but employees also need to understand how the technology relates to their responsibilities and receive adequate implementation support.

Digital leadership may help translate technology investments into positive work experiences by setting priorities, communicating expectations, encouraging learning, and supporting employee adaptation. Leadership that combines technological competence with empathy and fairness may help employees remain connected to organizational goals. However, these relationships should be treated as propositions until tested in an appropriate empirical setting.

Virtual team trust is also relevant because employees rely on digital communication and shared systems to coordinate work. Trust may encourage employees to share knowledge, ask for assistance, and participate in collective problem-solving. In AI-enabled environments, transparent procedures for data use and human review of consequential decisions may help reduce uncertainty.

The model also suggests that the way AI is implemented matters. A platform introduced without consultation or used for excessive monitoring may be experienced differently from a system introduced with training, clear purposes, and fair performance criteria. The broader implication is that technology and social context should be considered together when evaluating employee engagement.

Suggestions and Managerial Implications

1. Provide development programmes in digital communication, AI literacy, virtual team management, emotional intelligence, conflict resolution, and change management. Encourage leaders to manage through clear objectives, feedback, and support rather than relying exclusively on digital surveillance.
2. Promote transparent AI adoption- Explain the purpose, intended use, limitations, and oversight of AI tools. Consult employees where feasible before significant changes to work systems.
3. Use regular but purposeful team meetings, individual discussions, accessible communication channels, and timely responses. Avoid unnecessary meetings that contribute to digital fatigue.
4. Evaluate agreed objectives, work quality, collaboration, and meaningful results rather than online presence alone. Make evaluation criteria clear and provide opportunities to discuss assessments.
5. Encourage knowledge-sharing sessions, peer mentoring, collaborative problem-solving, and appropriate informal interaction. Clarify roles and shared goals.
6. Provide practical training in AI literacy, data privacy, evaluation of AI-generated outputs, and digital collaboration. Support continuous learning as tools and responsibilities change.
7. Establish transparent and proportionate rules for data collection and monitoring, consistent with applicable laws and policies. Respect reasonable boundaries around working hours and digital availability.
8. Give employees appropriate discretion over work methods and task organization while maintaining clear accountability.
9. Review AI-generated recommendations appropriately, especially for consequential employment decisions. Provide a clear way to raise concerns and request review.
10. Assess engagement, trust, communication quality, workload, AI readiness, and well-being periodically. Ensure remote employees have equitable access to information, training, mentoring, development, and recognition.
11. Use AI to complement human judgment, creativity, empathy, and accountability. Preserve opportunities for meaningful interaction and professional contribution.

Future Research Directions

Future studies could use survey data from employees in remote and hybrid roles to examine the relationships among AI adoption, digital leadership, virtual team trust, and engagement. Researchers could test whether virtual team trust mediates the relationship between digital leadership and engagement and whether digital leadership moderates the relationship between AI adoption and engagement.

Longitudinal studies could assess how engagement changes before and after AI implementation. Comparative research across industries, organizational sizes, and cultural settings could identify contextual differences. Additional variables such as psychological safety, digital self-efficacy, perceived organizational support, technostress, and perceived job insecurity may also help explain employee responses to AI-enabled work.

Conclusion

Remote Work 3.0 is conceptualized in this paper as an integrated approach to work that combines AI-enabled technologies, flexible arrangements, digital leadership, and virtual collaboration. Its effectiveness depends not only on the availability of advanced tools but also on how employees experience technological change and how organizations support relationships within dispersed teams.

The conceptual analysis highlights digital leadership and virtual team trust as potentially important factors associated with employee engagement. Leaders can provide direction, feedback, learning opportunities, and responsible technology practices, while trust can support collaboration, knowledge sharing, and psychological safety. AI adoption may create opportunities for productivity, but concerns about privacy, job security, monitoring, and technostress need to be addressed.

The study proposes an integrated conceptual framework that explains the relationships among AI adoption, digital leadership, virtual team trust, and employee engagement in the context of Remote Work 3.0. It proposes that technology should be implemented alongside transparent communication, training, employee autonomy, privacy safeguards, and human oversight. Because the framework has not been empirically tested in this paper, future survey-based, longitudinal, and comparative research is required to validate the proposed relationships.

References

1. Avolio BJ, Kahai S, Dodge GE. E-leadership, implications for theory, research, and practice. The Leadership Quarterly,2001:11(4):615–668.
2. Alkhayyal S, Bajaba S. Countering technostress in virtual work environments, the role of work-based learning and digital leadership in enhancing employee well-being. Acta Psychologica,2024:248: Article 104377. https://doi.org/10.1016/j.actpsy.2024.104377
3. Bakker AB, Demerouti E. The Job Demands–Resources model, state of the art. Journal of Managerial Psychology,2007:22(3):309–328. https://doi.org/10.1108/02683940710733115
4. Bandura A. Social foundations of thought and action, a social cognitive theory. Prentice-Hall,1986.
5. Blau PM. Exchange and power in social life. John Wiley & Sons,1964.
6. Choudhury P, Foroughi C, Larson B. Work-from-anywhere, the productivity effects of geographic flexibility. Strategic Management Journal,2021:42(4):655–683.
7. Contreras F, Baykal E, Abid G. E-leadership and teleworking in times of COVID-19 and beyond, what we know and where do we go. Frontiers in Psychology,2020:11: Article 590271. https://doi.org/10.3389/fpsyg.2020.590271
8. Demerouti E, Bakker AB, Nachreiner F, Schaufeli WB. The Job Demands–Resources model of burnout. Journal of Applied Psychology,2001:86(3):499–512. https://doi.org/10.1037/0021-9010.86.3.499
9. Dwivedi YK, Hughes L, Ismagilova E, *et al*. Artificial Intelligence (AI), multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. International Journal of Information Management,2021:57: Article 101994. https://doi.org/10.1016/j.ijinfomgt.2019.08.002
10. Edmondson AC. The fearless organization, creating psychological safety in the workplace for learning, innovation, and growth. John Wiley & Sons,2019.
11. Gilson LL, Maynard MT, Young NCJ, Vartiainen M, Hakonen M. Virtual teams research, 10 years, 10 themes, and 10 opportunities. Journal of Management,2015:41(5):1313–1337.
12. Purvanova RK, Bono JE. Transformational leadership in context, face-to-face and virtual teams. The Leadership Quarterly,2009:20(3):343–357.
13. Schaufeli WB, Salanova M, González-Romá V, Bakker AB. The measurement of engagement and burnout, a two-sample confirmatory factor analytic approach. Journal of Happiness Studies,2002:3:71–92. https://doi.org/10.1023/A:1015630930326
14. Westerman G, Bonnet D, McAfee A. Leading digital, turning technology into business transformation. Harvard Business Review Press,2014.