



VIRTUAL MANAGEMENT OF FLUID WORKFORCE IN HYBRID WORK ENVIRONMENT: LEADERSHIP ROLE IN DIGITAL TRANSFORMATION

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Abstract

The pace of hybrid working has changed the way HR teams operate, impacting their people, processes, technology and performance. It is a conceptual study to explore how to virtual manage a fluid workforce in hybrid working and specifically how digital leadership can support the organizational transformation. The study builds on interdisciplinary literature from human resource management, leadership studies, information systems, digital transformation, and organizational behavior, to create a conceptual understanding of how leadership capabilities influence effectiveness of hybrid workforce. The study introduces a conceptual model that connects the dimensions and constructs of digital leadership competencies, digital transformation enablement, hybrid workforce management, and organizational outcomes (employee engagement, productivity, innovation, well-being, and organizational resilience). It also identifies sectoral differences between IT/software, healthcare, manufacturing, and education/EdTech, revealing how different the requirements for leadership are for each of these sectors based on the level of digital maturity, regulatory pressure, task structure, and the fluidity of the workforce. The study adds to the theory by combining e-leadership, transformational leadership and the socio-technical viewpoints in the hybrid working discourse. In practice, it provides management insights into building sustainable hybrid working systems by means of outcome-based performance management, inclusive digital cultures, continuous learning and context sensitive leadership. The study is based on the premise that the effectiveness of hybrid working is more about quality leadership in implementing hybrid technology in a human centric way than the technology itself.

Keywords: Hybrid Work, Fluid Workforce, Digital Transformation, Virtual Leadership

1. Introduction

The world of work is experiencing a fundamental change because of digitalization, globalization, demographic change and the long-term impact of the COVID-19 pandemic. The pandemic has seen lots of organizations forced to shift to remote working and digital collaboration tools at a pace never seen before. This emergency scenario evolved over time into a more sustainable alternative model of working, where the worker alternates between a physical workplace and a secondary place of work that is remote or digitally mediated. This transformation has caused not just a change in the location of employees, but a transformation in how organizations coordinate work, how they manage performance, how they develop a culture, and how they lead. Technology has been increasingly playing a key role in work design, communication, collaboration and organizational continuity in the rapidly changing and digital world (Kudyba, 2020; Lund et al., 2021).

The hybrid work model has become a crucial aspect of the new work environment as it provides flexibility, autonomy for employees, and a larger talent pool. But hybrid work is not a flexible work model. It is an intricate organizational structure that needs to be well managed and implemented when it comes to people, processes, technology, and leadership. Successful hybrid working requires a thoughtful design of the environment, timing, and ways in which staff work, and the way in which leaders ensure equitable, inclusive, and effective performance with dispersed workforces (Gratton, 2021). For remote and hybrid workers, clear communication and frequent check-ins, emotional support and adequate technology are all critical to engagement and productivity (Larson et al., 2020).

In the hybrid working world, the workforce has become more fluid. A fluid workforce is a group of workers moving across locations, roles, teams and digital platforms, including employees, contractors, specialists, and project-based workers. This mobility of the workforce enables companies to be more agile, scalable, and adaptable to evolving business requirements. It also helps companies to bring in special expertise that may not be available locally. But the fluidity it brings also poses some management problems like coordination problems, less team identity, role ambiguity, less monitoring of performance, digital fatigue, and lower organizational belonging. However, because of communication issues, social isolation, and lack of trust between team members, unintentional leadership behaviors can diminish the effectiveness of a virtual team (Gilson et al., 2021).

A key enabler of hybrid and flexible work models is digital transformation. Employees can work across time and space with digital platforms, cloud-based systems, collaboration options, analytics, artificial intelligence, and virtual communication options. However, digital transformation is not just a technical process, it's also a social, cultural and managerial process. The pandemic has brought the extent of transformation of everyday practices in work, education and information management by digital technologies to the fore (Iivari et al., 2020). For business organisations, digital transformation involves rethinking processes, enhancing staff capabilities, establishing a digital trust and finding the right balance between autonomy and accountability. Digital leadership is thus about empowerment and responsible control, especially in work environments in which staff are increasingly self-organized via digital systems (Gierlich-Joas et al., 2020).

Meanwhile, there are new risks in the hybrid and digital workplace. The digital workplace can be more flexible and connected, but also cause technostress, surveillance issues, privacy concerns, burnout and lack of boundaries between work and personal life. These challenges can be termed as the dark side of the digital workplace (Marsh et al., 2022). Trust and data protection skills of employees additionally suffer from remote work, and that necessitates ethical leadership and transparent digital governance in hybrid organisations (Kähkönen, 2023).

Effective hybrid work and virtual workforce management requires leadership, therefore. In hybrid settings, leaders need to motivate, guide, influence and support their employees using digital communication and technology-based collaboration. This is particularly important since leaders need to be able to engage with their teams without being physically present. Studies conducted in recent years have indicated that e-leadership can enhance the effectiveness of virtual teams when it is complemented with the proper leadership behaviors, digital technologies, and organizational factors (He et al., 2025). Furthermore, hybrid work should take the needs of diversity, equity and inclusion into account, as poorly designed hybrid work can lead to unequal visibility and career opportunities for remote workers (Dowling et al., 2022).

In this context, the current paper looks at the virtual management of a fluid workforce in hybrid working, focusing on the leadership role in digital transformation. It seeks to increase the conceptual understanding of

how digital leadership competencies can support organizations in enhancing the engagement, productivity, innovation and resilience of employees in the future of work.

2. Review of Literature

2.1 Hybrid Work and the Fluid Workforce

The hybrid working models are a mix of flexibility and structure between working remotely and at the office. Empirical research indicates that hybrid working has the potential to increase job satisfaction, decrease turnover intentions, and boost work–life balance. But other studies also show threats of diminished informal learning, lessened social connections, and difficulties with sustaining organizational identity (Hess et al., 2016).

This idea of 'fluid workforce' takes hybrid work a step further with a focus on workforce mobility, interfunctional working, and digital dependency. Proponents of the fluid approach to work say that organizations must move from control to trust-based and outcome-driven management. Digital transformation is the process of getting digital technologies adopted into the organizational processes, structure and culture. Digital transformation allows virtual collaboration, knowledge sharing, performance monitoring and employee engagement in hybrid environments. Research highlights that digital transformation is not simply a technological effort, but a socio-technical management process that needs leadership vision, employees' ability to acquire, and cultural alignment (Westerman et al., 2014).

In today's context, digital transformation (DT) has become a main strategic priority for organizations adapting to the current pace of technological evolution, evolving work patterns and a more competitive international landscape. DT is not just about digital technologies but also about changing the way organizations are structured, processes are executed, and culture is shaped and values are created. Digital transformation is more than just a technological challenge, it's a human and leadership challenge as well (Kane et al., 2019).

Even with significant resources dedicated towards digital efforts, many organizations struggle to achieve expected results because of a lack of leadership alignment, employee buy-in, and lack of strong change management skills. The growing research into successful digital transformation and sustainable outcomes of digital transformation in organisations has led to increased focus on leadership as a key enabler of successful digital transformation (Bartsch et al., 2021).

In the digital age, leadership skills need to be redefined. Leadership models are becoming less effective in a context of volatility, uncertainty, complexity and ambiguity (VUCA). Modern writing outlines a list of eight areas of digital leadership skills that are crucial to successful transformation. Digital literacy means the understanding of digital technologies, data analytics, artificial intelligence and platform business models among digital leaders. Digital leaders are more likely to be able to connect investments in technology with strategic goals and to support thoughtful decision making (Kane et al., 2019). Empirical research suggests that a digitally literate leader has a positive impact on the readiness of organizations for change and technology acceptance by employees.

In digital settings, strategic agility is considered to be an important leadership skill, defined as the capacity to perceive changes and quickly reconfiguring resources in the environment (Doz & Kosonen, 2010). Leaders who communicate a clear digital vision and put it into practice, can help to minimise uncertainty and improve the coherence of the organisation in a digital transformation.

The concept of "Transformational Leadership" offers solid ground to understand the effectiveness of leadership in the context of digital transformation. Transformational leaders inspire, intellectually stimulate and empower employees, promoting openness to innovation and experimentation (Avolio & Bass, 2004). Research has consistently found that transformational leadership is related to increased employee engagement, innovation and commitment to change (Jung et al., 2003).

Staff members may feel threatened and resistant to digital transformation because of job insecurity and a lack of skills. Strong EI leaders are more likely to be able to handle employee emotions, foster trust and establish psychological safety, which are key factors for engagement in times of transformation (Goleman, 1998).

2.2 Leadership Theories in Hybrid Contexts

The E-leadership is the collection of skills that allow an individual to lead, influence and motivate a team through the intelligent utilization of digital tools. E-leadership is an ability to effectively use the emerging

technologies within a firm or organization, or to implement digital solutions into the industry one works in. E-leadership skills involve a blend of the old-fashioned leadership skills, and the digital environment-specific skills. So, tradition and digitalization become one (AlNuaimi et al., 2022).

E-leadership theory is a theory which explains how information and communication technologies mediate leadership processes. Transformational leadership theory emphasizes vision and inspiration, individual consideration and intellectual stimulation during change. The situational leadership theory focuses on flexibility of leadership styles that depend on the complexity of tasks and the willingness of employees. Collectively, these theories have a strong reasoning basis when it comes to comprehending the effectiveness of leadership in hybrid workplaces (Ardito et al., 2021).

Digital transformation is a step-by-step process that consists of the development of a digital strategy, digitization of operations, cultural change, and lifelong learning. These processes are affected by leadership competencies in a number of ways (Akhtar et al., 2018).

Leaders are key in the articulation and communication of the vision, to ensure that digital initiatives are aligned with organizational objectives (Schein, 2010). Moreover, leadership practices also encourage empowerment, decentralization, and cross-functional teamwork enable agile implementation and innovation (O'Reilly & Tushman, 2013). The model shown in Figure 1 demonstrates the 5E model of digital leadership, revealing the most critical leadership functions that are necessary to manage hybrid and fluid workforces.

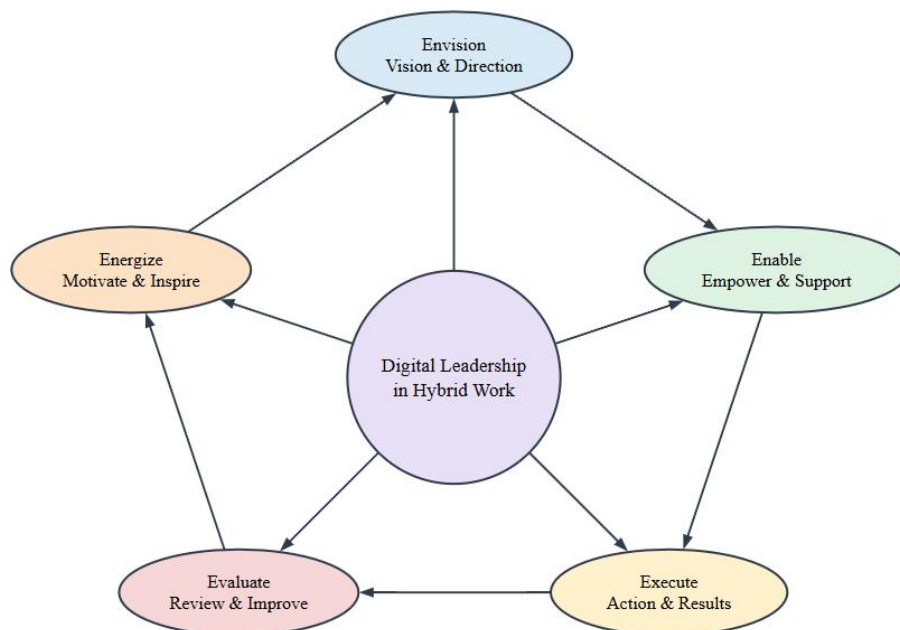


Figure 1. The 5E Model of Digital Leadership in Hybrid Work Environments

2.3 Organizational Outcomes of Leadership-Driven Digital Transformation

Employee Engagement: One of the most important results of the digital transformation enabled by leadership is employee engagement. Inspired employees exhibit increased discretionary effort, flexibility, and commitment to change in an organization. According to the literature, the participation, transparency, and supportive communication as leadership styles have a positive impact on engagement in digital initiatives (Bakker & Albrecht, 2018). Engaged employees will accept digital tools more, and will help make transformation a success.

Productivity: Digital transformation increases productivity by automating it, making decisions grounded in data, and simplifying workflow. Nonetheless, increases in productivity depend on the effectiveness of leadership. The leaders that erase structural obstacles, promote skill growth, and foster constant enhancement allow the workers to utilize digital tools more efficiently (Hess et al., 2016).

Innovation: Digital transformation is a driver and an outcome of innovation. Innovation and performance are closely linked with leadership competencies that encourage creativity, experimentation, and sharing

knowledge. Empirical studies have empirically associated transformational and participative leadership styles with increased organizational innovation in digitally intensive environments (Jung et al., 2003). Organizational Resilience: The capacity to foresee, absorb and adjust to disruptions- the idea of organizational resilience has become a key factor in the environment of digital uncertainty. Strategic foresight, learning orientation, adaptability, and other leadership skills increase resilience because they help organizations to reorganize resources and maintain operations when faced with a crisis (Duchek, 2020). When informed by a strong leadership, digital capabilities enhance resilience. Table 1 provides an overview of major studies in various industries, where they are going and with what findings on the topic of hybrid work, e-leadership, digital transformation, and leadership-enabled organizational outcomes.

Table 1. Summary of Key Studies across Industries

| Author(s) | Industry | Focus Area | Key Findings |
|--------------------------|--------------------------|-----------------------------|---|
| (Bloom et al., 2015) | IT / Services | Hybrid work productivity | Hybrid work improves productivity when autonomy is high |
| (Avolio & Bass, 2004) | Multi-industry | E-leadership | Digital leadership mediates virtual team effectiveness |
| (Westerman et al., 2014) | Manufacturing / Services | Digital transformation | Leadership alignment drives digital success |
| (Efimov et al., 2020) | Healthcare | Hybrid administration | Leadership ensures compliance and employee well-being |
| (Iivari et al., 2020) | Education | Blended learning leadership | Digital readiness of leaders impacts outcomes |

2.4 Industry-Specific Literature

The hybrid work in the IT and knowledge services industry is linked to increased productivity and talent retention in case of digital maturity and enabling leadership (Akhtar et al., 2018). Administrative functions and telemedicine implemented by healthcare organizations are based on hybrid models, which demand leaders to find a balance between flexibility and compliance with regulations (Bartsch et al., 2021). Academic leadership is challenged by new requirements of educational institutions that implement blended learning models. The financial services and banking focus on cybersecurity, data privacy, and control as they grow wary of hybrid practices. The comparative analysis shows that leadership problems manage in fluid workforce in hybrid work environments differ greatly depending on the nature of work, the extent of fluidity of the workforce, and the intensity of regulation. IT, education, and consulting are all examples of knowledge-intensive industries that experience acute issues of trust-building, employee engagement, and cultural cohesion due to high mobility of workers and wide use of virtual teamwork (Ardito et al., 2021). On the other hand, healthcare and manufacturing leaders are facing the problem of hybrid coordination, in which crucial on-site processes have to be harmonized with remote administrative and planning processes.

In any industry, one of the leadership issues is the change to the traditional supervisory control to the outcome-based and trust-oriented leadership model (AlNuaimi et al., 2022). Nonetheless, the coping strategies attempted are not similar. IT and consulting sectors are more focused on empowerment, autonomy, and norms of digital collaboration, whereas healthcare and manufacturing are more likely to be dependent on structured protocols, compliance-oriented leadership, and situational authority (Bartsch et al., 2021). The areas of education and edtech show that facilitative leadership is increasingly in demand to maintain motivation and keep the quality of instruction on par in an online environment.

Overall, the analysis highlights that successful virtual leadership within the hybrid environment is not neutral industry. Digital leadership skills should be context-specific and allow leaders to combine transformational,

situational, and strategic leadership styles to handle the fluidity of the workforce to guarantee performance and organizational sustainability (Ardito et al., 2021).

3. Conceptual Framework Development

The conceptual model presented in this study suggests that leadership is the key driver of digital transformation and, therefore, an impactor of workforce and organizational outcomes in hybrid settings, based on the literature synthesis (Dowling et al., 2022). This framework would make the digital transformation a mediating process in which the leadership competencies can be converted to quantifiable organizational outcomes. The model has its contribution to the current body of literature because it incorporates the theory of leadership with digital transformation, and the perspective of organizational performance. The proposed conceptual framework, connecting digital leadership competencies, digital transformation enablement, hybrid workforce management, and organizational outcomes, is illustrated in Figure 2.

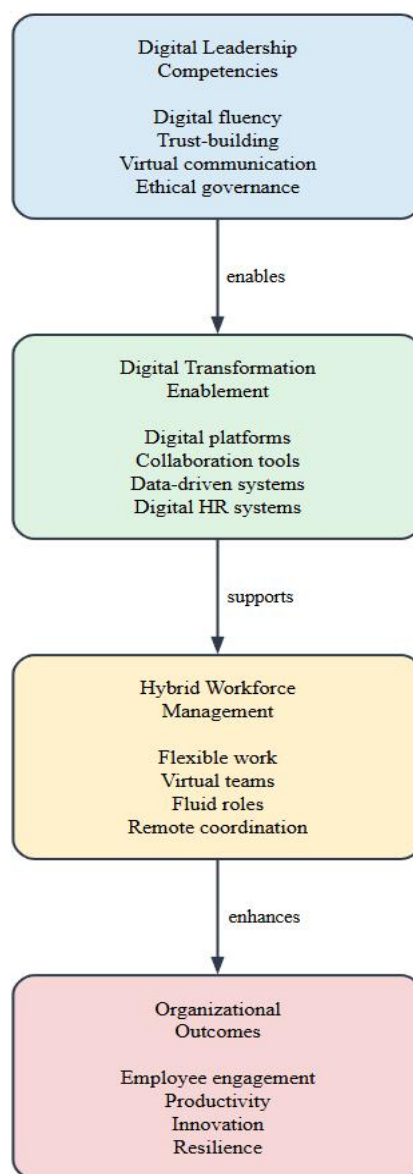


Figure 2. Conceptual Framework Linking Digital Leadership, Digital Transformation, and Organizational Outcomes

4. Digital Leadership and Organizational Outcomes in Hybrid Work Environments

4.1 Digital Leadership Capabilities in Hybrid Workforce Management

The theoretical synthesis shows that digital leadership is a main strength to handle fluid workforces within a hybrid work setting. In contrast to the conventional leadership, digital leadership demands the possibility to organize geographically scattered workers, promote collaboration under the influence of technologies, and sustain trust without physical supervision. Digital leadership is also a strategic recognition of the changing nature of organizational processes, value creation, and workforce relationships through digital innovation (Demirkan et al., 2016). Learning how to use technology and apply human-focused management practices is a necessity in hybrid contexts because the workforce agility relies on unceasing skills training and HRD-HRM integration (Harney & Gubbins, 2024). Additional literature on the topic of digital leadership proposes that the skills required of leaders to handle uncertainty and ensure organizational coherence include digital communication, adaptability, empowering employees, and readiness to change (Eberl & Drews, 2021). The key digital leadership dimensions, which promote successful hybrid workforce management and organizational performance, are summarized in Table 2.

Table 2. Key Digital Leadership Dimensions for Hybrid Workforce Management

| Leadership Dimension | Main Role in Hybrid Work | Expected Outcome | Reference |
|--|--|---|-------------------------|
| Digital fluency | Enables leaders to use digital platforms, analytics, and collaboration systems effectively | Better digital adoption and coordination | (Demirkan et al., 2016) |
| Trust-based leadership | Reduces dependence on physical supervision and supports employee autonomy | Higher engagement and accountability | (Gratton, 2021) |
| Virtual communication | Maintains clarity, connection, and team alignment across dispersed work settings | Improved collaboration and team cohesion | (Larson et al., 2020) |
| Agile decision-making | Supports quick response to changing work demands and digital transformation needs | Greater adaptability and resilience | (Akhtar et al., 2018) |
| Ethical digital governance | Addresses privacy, surveillance, inclusion, and responsible technology use | Fair and sustainable hybrid work culture | (Dowling et al., 2022) |
| Employee well-being orientation | Helps manage digital fatigue, stress, and work-life boundary issues | Sustainable productivity and employee retention | (Efimov et al., 2020) |

4.2 Impact of Digital Leadership on Employee Engagement, Productivity, and Innovation

Digital leadership has a profound effect on organizational outputs, as it directs the experience of hybrid work by employees. Leaders who are clear, autocratic, and have feedback, and offer emotional support are more prone to enhance the engagement of the employees and work effectiveness in virtual places. The importance of health-oriented leadership is especially significant since hybrid and remote employment can make people more isolated, stressed, and face increased boundary-management issues (Efimov et al., 2020). The experience of remote and homeworking suggests that flexible working can facilitate productivity, which depends on proper managerial support, work design, and employee competency (Felstead & Reuschke, 2023). In the same way, the adoption of remote work depends on various decision-making issues, such as the level of technological preparedness, organizational culture, communication, and perceived benefits and drawbacks (Ferreira et al., 2021). Thus, it is not the technology that can guarantee the improvement of performance; the kind of leadership behavior can make the digital systems increase engagement, productivity, and innovation. Agile leadership practices additionally reinforce this bond by promoting experimentation, quicker decision-making, collaboration, and constant enhancement (Denning, 2022).

4.3 Sectoral Variations in Hybrid Work Effectiveness and Organizational Resilience

There are sector differences in the efficiency of hybrid working due to different levels of digitalization, regulation, task structuring, and flexibility within each industry. Knowledge-intensive sectors may find it easier to embrace the hybrid approach as work processes are digitally transferrable compared to sectors that

require employees' physical presence. The shift towards remote working caused by the pandemic brought some benefits like flexibility, autonomy, and broader access to talent pool, as well as some difficulties linked to workload, communication, health, and organizational culture issues (Franken et al., 2021). Therefore, these examples show that digital leadership should take into consideration the specific context. Digital leaders in highly digitalized sectors may concentrate on innovation, autonomy, and collaboration, while those working in regulated or operationally intensive sectors should focus on compliance, continuity, data protection, and employee care (Vakola, 2014). In other words, hybrid working is efficient when digital leadership brings together technology, people, structures, and organizational requirements of the sector. The comparison of hybrid work in IT/software, healthcare, manufacturing, and education/EdTech sectors is presented in Table 3.

Table 3. Comparative Analysis of Hybrid Work Practices and Digital Leadership Requirements across Industries

| Dimension | IT / Software | Healthcare | Manufacturing | Education / EdTech | Reference |
|----------------------------------|---|---|---|--|----------------------------|
| Nature of Work | Knowledge-intensive, project-based | Patient-centric with some administrative remote tasks | Production & operations with fixed-site requirements | Teaching, content creation, and admin | (Choudhury et al., 2021) |
| Hybrid Mix | High remote flexibility | Limited remote work for clinical roles; admin remote | Majority on-site with remote planning | Mostly remote teaching and content; limited lab-based work | (Ferreira et al., 2021) |
| Workforce Fluidity | High contractors, global teams, agile squads | Moderate rotating schedules, telehealth staff | Low to moderate rigid shifts for on-site staff, planners remote | High adjuncts, part-time, digital staff | (Caligiuri et al., 2022) |
| Primary Virtual Tools | Slack, Teams, Jira, GitHub, Zoom | Telehealth platforms, EHR systems with remote access | Remote monitoring dashboards, ERP, Teams | LMS such as Moodle/Canvas, Zoom/WebEx | (Kudyba, 2020) |
| Key Challenges | Over-communication, burnout, time zone overlaps | Maintaining clinical quality, data privacy | Coordination between remote planning and shopfloor | Student engagement, digital fatigue | (Marsh et al., 2022) |
| Team Cohesion Practices | Virtual standups, virtual social events | Huddles, telehealth team check-ins | Supervisor rounds, digital dashboards | Online communities, peer mentoring | (Larson et al., 2020) |
| Leadership Focus | Empower autonomy; trust outcomes | Balance clinical care and remote admin support | Ensure safety and operational continuity | Facilitate digital pedagogy | (Bartsch et al., 2021) |
| Leadership Style Required | Transformational, empowering | Situational, ethical, clinical | Directive with participative planning | Facilitative, coaching-oriented | (Cortellazzo et al., 2019) |

5. Managerial Implications for Sustainable Hybrid Workforce Management

5.1 Developing Digital and Agile Leadership Capabilities

To manage sustainably hybrid workforce, organizations need to invest in creating digital and agile leadership skills. The conventional command and control strategies are not applicable to handling the hybrid work environment due to the scattered locations, online environments, and the various flexible work arrangements of employees. Therefore, leaders need to learn how to communicate virtually, build trust, empower employees and lead teams in times of uncertainty. Digital leadership comes into play especially in the transformation caused by crisis since leaders can impact the way employees embrace the change, utilize digital tools, and stay motivated in the midst of the disruption (Bartsch et al., 2021). Likewise, e-leadership

has become a necessity in the management of teleworking employees since the impact of leadership is becoming more technological, mediated by communication than control (Contreras et al., 2020). Managers are then supposed to be taught on digital communication, virtual motivation, online working, emotional support, and ethical utilization of the digital systems.

5.2 Aligning Digital Transformation with Innovation and Performance

The hybrid work practices should be aligned with the overall digital transformation and innovation strategies in organizations. Digital transformation has the potential to facilitate product, process, and business model innovation by establishing a culture of experimentation, learning, and technological openness by the leaders (Bresciani et al., 2021). Digital orientation also has a positive impact on innovation performance in small and medium enterprises where it is balanced to environmental and strategic priorities (Ardito et al., 2021). Managers are not supposed to regard hybrid work as a policy of workplace flexibility and innovations, but rather a policy that should be related to operational efficiency, customer responsiveness, and organizational competitiveness. The significance of strategic planning is also explained by the fact that the digital transformation and entrepreneurship processes are reinforced when companies implement technologies like AI-based customer relationship management systems and align them with the business objectives (Chatterjee et al., 2022). Thus, the leaders must make sure that the digital platforms, performance systems, and workforce capabilities are in line with quantifiable organizational results.

5.3 Building Resilient, Inclusive, and Flexible Work Systems

Inclusive and robust work systems are also needed in hybrid workforce management. The COVID-19 pandemic has shown that change in the workplace is not a temporal phenomenon but a component of a larger change in the way organizations organise work, how people are managed, and continuity is maintained (Ancillo et al., 2021). The productivity may be enhanced with the help of work-from-anywhere arrangements that provide geographic flexibility but need to be well coordinated, managed on a basis of trust and having clear performance expectations (Choudhury et al., 2021). An international HRM outlook will also require companies to be aware that flexibility of the workforce, well-being of employees, and international coordination are the core of the post-pandemic management practice (Caligiuri et al., 2022). The leadership of a digitalized world thus has to combine technological skills with human management, flexibility and vision (Cortellazzo et al., 2019). Especially in a volatile and unstable environment, skills-based HRD-HRM agenda plays a crucial role, as lifelong capability building helps to be resilient, employable, and organizationally sustainable (Harney & Gubbins, 2024).

6. Managerial Implications

This study offers several managerial implications. Organizations need to invest in building digital leadership skills, instead of solely concentrating on acquiring the technology. The digital fluency, virtual communication, trust-building, employee empowerment, and change management should be prioritized in leadership development programmes (Yaseen, 2025). These are the competencies that are necessary in the management of fluid and hybrid workforces where workers work within digital platforms, flexible jobs and work environments that are scattered. Managers also ought to embrace performance management systems that are performance based and which are appropriately suited to a hybrid and fluid arrangement of work. Organizations need to consider employees by assessing them based on specific goals, quality of work, teamwork, innovativeness, responsiveness as well as quantifiable outputs instead of physical presence or conventional supervision. These systems are able to reinforce accountability and maintain flexibility and autonomy. Leaders should be keen on fostering inclusive digital cultures that can facilitate psychological safety, employee well-being, lifelong learning, and trustful collaboration. Workers in hybrid settings might feel isolated, digitally tired, and have communication issues and a lack of organizational identification. Hence, managers ought to develop frequent communication habits, participatory processes, and enabling digital work patterns so that the remote and on-premise staff are given an equivalent visibility and prospects. The top management must also support the initiatives to digitalize with the organizational strategies, values and long term sustainability. Digital transformation does not qualify to be a strictly technological initiative; it is best perceived as an organizational change process led by leadership and it incorporates people, processes, technology and culture. Empirical research on leadership competencies, transformation processes, and

multidimensional organizational outcomes through the prism of digital transformation has not been conducted previously, and previous studies have focused on leadership and digital transformation separately. The available literature is usually industry-focused or technology-oriented and usually does not address human and leadership aspects of hybrid employment. This paper fills these gaps by providing an integrative conceptual model, a multi-outcome viewpoint of engagement, productivity, innovation, and resilience, and practicality in both hybrid and digitally empowered workplaces. The empirical research on the proposed conceptual model needs to be conducted in the future by testing the hypothesis with both quantitative and qualitative approaches. Longitudinal research can be used to study the effectiveness of leadership over a time period and cross-cultural studies may be used to study the differences between the context. It is advisable that further research should be conducted on the artificial intelligence, algorithmic management, and analytics-based leadership.

7. Conclusion

The management of fluid workforce in a hybrid work environment must be operated virtually, which necessitates a complete redefinition of the definition of leadership roles, management practices and organizational capabilities. With hybrid work becoming a permanent aspect of modern business, leaders can no longer afford to rely solely on conventional supervision, being physically present, or using control in management. Instead, they need to build online leadership skills that integrate tech savvy, relationship building, online communications, empowerment of employees, ethical governance and change management. The paper points out that digital transformation cannot be considered as the use of digital tools or platforms. Instead, it should be viewed as a socio-technical change process that is led by the leaders where people, technology, culture and organizational strategy are closely related. Leaders who are effective are essential in making sure that digital systems promote employee engagement, productivity, innovation, well-being and resilience in an organization. The contribution of this paper to the existing body of literature is the combination of the e-leadership perspective, transformational leadership perspective, digital transformation perspective, and hybrid workforce management perspective. The suggested conceptual model describes the relationship between leadership competencies as the main antecedents of digital transformation processes, and how the latter impacts workforce and organizational outcomes. In practice, the research offers practical information to managers who would like to develop sustainable hybrid work systems. It underlines the importance of performance management that is based on outcomes, integrative digital cultures, lifelong learning, and contextualized leadership practices. Overall, the study draws the conclusion that hybrid work is not as successful as it is based on the use of technology but rather the quality of leadership that will direct the use of technology.

References

1. Akhtar, P., Khan, Z., Tarba, S., & Jayawickrama, U. (2018). The Internet of Things, dynamic data and information processing capabilities, and operational agility. *Technological Forecasting and Social Change*, 136, 307–316.
2. AlNuaimi, B. K., Singh, S. K., Ren, S., Budhwar, P., & Vorobyev, D. (2022). Mastering digital transformation: The nexus between leadership, agility, and digital strategy. *Journal of Business Research*, 145, 636–648.
3. Ancillo, A. de L., del Val Núñez, M. T., & Gavrilá, S. G. (2021). Workplace change within the COVID-19 context: A grounded theory approach. *Economic Research-Ekonomska Istraživanja*, 34(1), 2297–2316.
4. Ardito, L., Raby, S., Albino, V., & Bertoldi, B. (2021). The duality of digital and environmental orientations in the context of SMEs: Implications for innovation performance. *Journal of Business Research*, 123, 44–56.
5. Avolio, B. J., & Bass, B. M. (2004). *MLQ: Multifactor leadership questionnaire*. Mind Garden.
6. Bakker, A. B., & Albrecht, S. (2018). Work engagement: Current trends. *Career Development International*, 23(1), 4–11.
7. Bartsch, S., Weber, E., Büttgen, M., & Huber, A. (2021). Leadership matters in crisis-induced digital transformation: How to lead service employees effectively during the COVID-19 pandemic. *Journal of Service Management*, 32(1), 71–85.

8. Bloom, N., Liang, J., Roberts, J., & Ying, Z. J. (2015). Does working from home work? Evidence from a Chinese experiment. *The Quarterly Journal of Economics*, 130(1), 165–218.
9. Bresciani, S., Huarng, K.-H., Malhotra, A., & Ferraris, A. (2021). Digital transformation as a springboard for product, process and business model innovation. In *Journal of Business Research* (Vol. 128, pp. 204–210). Elsevier. <https://www.sciencedirect.com/science/article/pii/S0148296321000734>
10. Caligiuri, P., De Cieri, H., Minbaeva, D., Verbeke, A., & Zimmermann, A. (2022). International HRM Insights for Navigating the COVID-19 Pandemic: Implications for Future Research and Practice. In M. A. Mithani, R. Narula, I. Surdu, & A. Verbeke (Eds.), *Crises and Disruptions in International Business* (pp. 417–454). Springer International Publishing. https://doi.org/10.1007/978-3-030-80383-4_17
11. Chatterjee, S., Chaudhuri, R., Vrontis, D., & Basile, G. (2022). Digital transformation and entrepreneurship process in SMEs of India: A moderating role of adoption of AI-CRM capability and strategic planning. *Journal of Strategy and Management*, 15(3), 416–433.
12. Choudhury, P. (Raj), Foroughi, C., & Larson, B. (2021). WORK-FROM-ANYWHERE: The productivity effects of geographic flexibility. *Strategic Management Journal*, 42(4), 655–683. <https://doi.org/10.1002/smj.3251>
13. Contreras, F., Baykal, E., & Abid, G. (2020). E-leadership and teleworking in times of COVID-19 and beyond: What we know and where do we go. *Frontiers in Psychology*, 11, 590271.
14. Cortellazzo, L., Bruni, E., & Zampieri, R. (2019). The role of leadership in a digitalized world: A review. *Frontiers in Psychology*, 10, 456340.
15. Demirkan, H., Spohrer, J. C., & Welser, J. J. (2016). Digital innovation and strategic transformation. *IT Professional*, 18(6), 14–18.
16. Denning, S. (2022). *The age of agile: How smart companies are transforming the way work gets done*. HarperCollins Leadership.
17. Dowling, B., Goldstein, D., Park, M., & Price, H. (2022). Hybrid work: Making it fit with your diversity, equity, and inclusion strategy. *The McKinsey Quarterly*, 4, 1–9.
18. Doz, Y. L., & Kosonen, M. (2010). Embedding strategic agility: A leadership agenda for accelerating business model renewal. *Long Range Planning*, 43(2–3), 370–382.
19. Duchek, S. (2020). Organizational resilience: A capability-based conceptualization. *Business Research*, 13(1), 215–246. <https://doi.org/10.1007/s40685-019-0085-7>
20. Eberl, J. K., & Drews, P. (2021). Digital Leadership – Mountain or Molehill? A Literature Review. In F. Ahlemann, R. Schütte, & S. Stieglitz (Eds.), *Innovation Through Information Systems* (Vol. 48, pp. 223–237). Springer International Publishing. https://doi.org/10.1007/978-3-030-86800-0_17
21. Efimov, I., Harth, V., & Mache, S. (2020). Health-oriented self-and employee leadership in virtual teams: A qualitative study with virtual leaders. *International Journal of Environmental Research and Public Health*, 17(18), 6519.
22. Felstead, A., & Reuschke, D. (2023). A flash in the pan or a permanent change? The growth of homeworking during the pandemic and its effect on employee productivity in the UK. *Information Technology & People*, 36(5), 1960–1981.
23. Ferreira, R., Pereira, R., Bianchi, I. S., & Da Silva, M. M. (2021). Decision factors for remote work adoption: Advantages, disadvantages, driving forces and challenges. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(1), 70.
24. Franken, E., Bentley, T., Shafaei, A., Farr-Wharton, B., Onnis, L., & Omari, M. (2021). Forced flexibility and remote working: Opportunities and challenges in the new normal. *Journal of Management & Organization*, 27(6), 1131–1149.
25. Gierlich-Joas, M., Hess, T., & Neuburger, R. (2020). More self-organization, more control—or even both? Inverse transparency as a digital leadership concept. *Business Research*, 13(3), 921–947. <https://doi.org/10.1007/s40685-020-00130-0>
26. Gilson, L. L., Costa, P., O’Neill, T. A., & Maynard, M. T. (2021). Putting the “TEAM” back into virtual teams. *Organizational Dynamics*, 50(1), 100847.
27. Goleman, D. (1998). *Working with emotional intelligence*. Bantam.
28. Gratton, L. (2021). How to do hybrid right. *Harvard Business Review*, 99(3), 65–74.

29. Harney, B., & Gubbins, C. (2024). Human Resource Development (HRD) Meets Human Resource Management (HRM): A Skills Based Agenda for a FRAGILE World Order. *Advances in Developing Human Resources*, 26(4), 160–178. <https://doi.org/10.1177/15234223241267922>
30. He, Y., Cheng, C., & Wang, L. (2025). Unmasking the effects of E-leadership on virtual team effectiveness by an integrated fsQCA and NCA method. *PLoS One*, 20(9), e0331500.
31. Hess, T., Matt, C., Benlian, A., & Wiesböck, F. (2016). Options for formulating a digital transformation strategy. *Mis Quarterly Executive*, 15(2). <https://search.ebscohost.com/login.aspx?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=15401960&AN=115879199&h=QyVwVRj0ZIOg7sMRTNzRQApGAYeYo204HYsgFcdVL6/JdayO+Xl7oLQDQO3IHOPYd+opvZ8Kw8unkt p8OPzeHA==&crl=c>
32. Iivari, N., Sharma, S., & Ventä-Olkkonen, L. (2020). Digital transformation of everyday life—How COVID-19 pandemic transformed the basic education of the young generation and why information management research should care? *International Journal of Information Management*, 55, 102183.
33. Jung, D. I., Chow, C., & Wu, A. (2003). The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. *The Leadership Quarterly*, 14(4–5), 525–544.
34. Kähkönen, T. (2023). Remote work during the COVID-19 pandemic: Identification of working life impacts, employees' data protection abilities and trust outcomes. *Journal of Organizational Change Management*, 36(3), 472–492.
35. Kane, G. C., Palmer, D., & Phillips, A. N. (2019). *Accelerating digital innovation inside and out*. MIT Sloan Management Review. <https://www.sadil.ws/handle/123456789/14>
36. Kudyba, S. (2020). COVID-19 and the Acceleration of Digital Transformation and the Future of Work. *Information Systems Management*, 37(4), 284–287. <https://doi.org/10.1080/10580530.2020.1818903>
37. Larson, B. Z., Vroman, S. R., & Makarius, E. E. (2020). A guide to managing your (newly) remote workers. *Harvard Business Review*, 18(2), 27–35.
38. Lund, S., Madgavkar, A., Manyika, J., Smit, S., Ellingrud, K., Meaney, M., & Robinson, O. (2021). The future of work after COVID-19. *McKinsey Global Institute*, 18. <https://www.voced.edu.au/content/ngv:89731>
39. Marsh, E., Vallejos, E. P., & Spence, A. (2022). The digital workplace and its dark side: An integrative review. *Computers in Human Behavior*, 128, 107118.
40. O'Reilly, C. A., & Tushman, M. L. (2013). Organizational Ambidexterity: Past, Present, and Future. *Academy of Management Perspectives*, 27(4), 324–338. <https://doi.org/10.5465/amp.2013.0025>
41. Schein, E. H. (2010). *Organizational culture and leadership* (Vol. 2). John Wiley & Sons. [https://books.google.com/books?hl=en&lr=&id=DIghlT34jCUC&oi=fnd&pg=PR9&dq=12.%09Schein,+E.+H.+\(2010\).+Organizational+Culture+and+Leadership+\(4th+ed.\).+Jossey-Bass.&ots=ft44rRfBS&sig=lik0BKcske5X39TNUymz3FyDc3o](https://books.google.com/books?hl=en&lr=&id=DIghlT34jCUC&oi=fnd&pg=PR9&dq=12.%09Schein,+E.+H.+(2010).+Organizational+Culture+and+Leadership+(4th+ed.).+Jossey-Bass.&ots=ft44rRfBS&sig=lik0BKcske5X39TNUymz3FyDc3o)
42. Vakola, M. (2014). What's in there for me? Individual readiness to change and the perceived impact of organizational change. *Leadership & Organization Development Journal*, 35(3), 195–209.
43. Westerman, G., Bonnet, D., & McAfee, A. (2014). *Leading digital: Turning technology into business transformation*. Harvard Business Press. [https://books.google.com/books?hl=en&lr=&id=Fh9eBAAQBAJ&oi=fnd&pg=PR4&dq=17.%09Westerman,+G.,+Bonnet,+D.,+%26+McAfee,+A.+\(2014\).+Leading+Digital:+Turning+Technology+into+Business+Transformation.+Harvard+Business+Review+Press.&ots=oaSqy4Zmua&sig=QtTQq_MvGp8BFLWM6r4XpWCWn6U](https://books.google.com/books?hl=en&lr=&id=Fh9eBAAQBAJ&oi=fnd&pg=PR4&dq=17.%09Westerman,+G.,+Bonnet,+D.,+%26+McAfee,+A.+(2014).+Leading+Digital:+Turning+Technology+into+Business+Transformation.+Harvard+Business+Review+Press.&ots=oaSqy4Zmua&sig=QtTQq_MvGp8BFLWM6r4XpWCWn6U)
44. Yaseen, M. (2025). The Impact of Transformational Leadership on Employee Performance: Mediating Roles Of Employee Engagement and Job Satisfaction. *JRMSI-Jurnal Riset Manajemen Sains Indonesia*, 16(2), 17–31.