
1. Introduction to the *Research Handbook on Human Resource Management and Disruptive Technologies*

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OVERALL AIM OF THE EDITED VOLUME

The past decades have witnessed the emergence of many technologies – such as artificial intelligence, online platforms, internet of things and social robots, to name but a few – that have fundamentally altered human resource management (HRM), work and performance management, work-life balance, organization dynamics and discussions about the future of work. The discussions they enforce are in some ways new, but in many ways they ring a strong bell of familiarity for those who have been in HRM practice and research for a longer time. To us, the main questions remain: How should HRM research and practice respond to the observation that the technologies are evolving rapidly and aggressively, with unclear trajectories into the future, when no one in the scholarly and practitioner community can easily make an overview of existing technologies? What are the general principles that have to be developed to design technological arrangements for management of people matters in organizations? These questions confront researchers around the world, and it is the objective of this handbook to offer insights into answering them both in general and with respect to specific emerging disruptive technologies. Our objectives are to help better understand the HRM challenges posed by disruptive technologies and to develop generalizable propositions to respond to them.

Another challenge posed by emerging disruptive technologies is directly linked to their hi-tech nature and the limited knowledge that most HRM researchers and practitioners have about how they work and why, and what the possible applications and consequences of their deployment are. Despite the increasing role that technology plays in how HRM and organizational actors behave, researchers in HRM and organizational behaviour still and often avoid theorizing about it (see for an overview, Landers and Marin, 2021). To this end, a variety of chapters in this edited volume explicitly address and model technology from a social science perspective. We are convinced that this approach will allow us to understand who and what is disrupted; and what disrupts it all. To facilitate this approach, we invited the contributors to this edited volume to discuss the disruptive nature of technologies and the work and organizational processes that are most influenced by entanglement with technologies. We also address critical management issues such as the ethics of these disruptions,

digital human rights in the work environment, manipulation of digital HR information, dignity and meaningfulness of digital work, power issues and the like.

This handbook focuses on current discussions and future directions for research on HRM and disruptive technologies. For a decade, the discussions have no longer centred around whether we need technologies in HRM; rather, insights are needed into how to best utilize the existing knowledge about HRM and technology and how to incorporate insights and design issues about disruptive technologies in the scholarly and practitioners' knowledge. This handbook will combine traditional approaches with the latest insights into the role of disruptive technologies in HRM and work management.

UNPACKING THE INTERFACES OF HRM AND DISRUPTIVE TECHNOLOGIES

Disruptive Technologies and Digital Disruption

In this edited volume, the chapters focus on information technologies that involve computers for transmitting, storing, creating and/or exchanging information and which are associated with some kind of interruption or change in business practice. The manifestation of disruptive technologies is manifold, as is the way technology-based disruption is conceptualized in the literature. Similarly, the chapters in this edited volume focus on different types of emerging technologies that (may) have a disruptive effect. Salient examples of such technologies and the management activities they afford include artificial intelligence (Strohmeier and Piazza, 2015; Vrontis et al., 2022), online platforms (Duggan et al., 2020; Kuhn et al., 2021), algorithmic management (Kellogg et al., 2020; Lamers et al., 2022), the internet of things (Sestino et al., 2020; Strohmeier, 2020a), wearables (Garcia-Arroyo and Osca, 2021) and cobots (Habraken and Bondarouk, 2017).

The academic literature and the chapters in this book alike show that the notion of disruption can be understood in different ways (Strohmeier, 2020b; Minbaeva, 2021; Møller et al., 2017). Technology-based disruption (or digital disruption) can be broadly defined as a change process that involves the use of digital artefacts (Møller et al., 2017). It is these very digital artefacts (such as artificial intelligence, platforms, etc.) that play a role in bringing about change processes and which we refer to as disruptive technologies. The plurality in definitions of disruptive technologies and digital disruption becomes salient – among others – by the difference in ‘what’ is disrupted. The new era of technological innovation, in which new generations of digital technologies are converging and undergoing widespread integration, is making whole new fields possible, including artificial intelligence, robotics and digital twins. These technologies have the potential to radically alter work life, organizational practices and social and economic institutions in organizations. Societal disruption may well be necessary and desirable for responding to pressing global problems such as climate change and energy transition. But the technologies also raise tough

questions that are in need of HRM evaluation. A complication is they may affect the basic concepts and values that we normally appeal to in our organizational cultures and routines, such as the concept of jobs, work, workplace, responsibility and accountability. That is, digital technologies can play a role in bringing about changes in the work practices and routines of individual workers (Drost, 2023; Van den Broek et al., 2021), (HR) management processes (Minbaeva, 2021; Strohmeier, 2020b), business models (Markides and Oyon, 2010) or entire industries (Vesti et al., 2017). Equally, disruptive technologies bring about change to academic research. Digital technologies such as artificial intelligence afford novel methodologies for the empirical study of HRM, work and organizations, for instance, to analyse big datasets and/or uncover patterns of data that traditional analytical techniques do not afford. Moreover, digital techniques disrupt the conceptual basis that underpins management research (Landers and Marin, 2021; Minbaeva, 2021). Salient examples are online labour platforms, which eradicate the employment relationship as the key touchstone of HRM research (Keegan and Meijerink, 2023), or the datafication of work, which reconfigures organizational control mechanisms (Schafheitle et al., 2020).

According to some, digital disruption occurs when the entity that is affected by a disruptive technology is marginalized or even completely displaced (Strohmeier, 2020b). This implies that disruptive technologies are an external factor, outside the control of the disrupted entity (e.g. an individual or organizational unit) that needs to be responded to reactively. Others suggest that organizations (or individuals) proactively operate digital technologies to bring disruption, for instance, by establishing a new venture that introduces a new digital product or market that disrupts the business of incumbent firms (Markides and Oyon, 2010; Vesti et al., 2017). As such, while digital disruptive technologies may be welcomed as opportunities for some, they may present a threat to others. Taken together, the notions of digital technologies and digital disruption have been approached in many different ways. It is not our aim to offer a unified conceptualization of these terms in this book. Instead, we seek to highlight the various ways in which digital technologies manifest and the disruptive effects they bring about. In fact, the chapters in this edited volume offer a rich overview of the many ways that disruptive technologies and HRM intersect. As we outline next, these intersections can be conceptualized along different lines, which served as the basis for the outline of the current edited volume.

Human Resource Management and Digital Disruption

For the purpose of this book, we define the notion of HRM broadly, along two lines. First, a portion of the chapters in this book either focus on individual HRM activities, such as hiring or job design, while others adopt a systemic perspective; the other group of chapters examine a range of HRM activities, how they appear in bundles (i.e. HRM systems) and their interrelations with disruptive technologies. Second, besides focusing on individual or bundles of HRM activities, the chapters in this edited volume also examine disruptive technologies in relation to activities and domains that are adjoined to HRM, such as leadership, industrial relations, corporate

governance, platform labour, work and organization psychology and business information systems.

These different perspectives open the road to think about the various intersections between HRM and disruptive technologies. From the chapters included in this book, a total of four themes emerged along which this book is structured. In setting the stage, the first set of chapters (Part II) offer a conceptual basis as well as a critical reflection on HRM and disruptive technologies. Specifically, Part II includes chapters on fashions and fads in debates on artificial intelligence and the future of jobs (Bondarouk and Ruël, Chapter 2), the need and ways to overcome the dominant fatalistic investigation of the negative consequences of algorithmic management (Parent-Rocheleau et al., Chapter 3), the biases that are encoded in AI-enabled HRM and the role of HRM and AI developers in addressing them (Soleimani et al., Chapter 4), the role of digital governance in addressing the ethical dilemmas of digital technologies at work (Salgado-Craido and Fernández-Aller, Chapter 5) and the role of organizational learning in support trade unions to respond to workplace disruptions created by algorithmic management (Howayeck, Chapter 6).

Part III of the book interrogates the HRM activities of disruptive and/or disrupted organizations. The chapters in this section examine how HRM and leadership activities enable organizations to respond to being disrupted by digital technologies as well as the role that HRM activities play in organizations that are considered to be disruptive (e.g. disrupting the business model of incumbent firms or industries). First, Keegan and Meijerink (Chapter 7) conceptually reflect on how HRM activities take shape in online labour platforms – such as Uber and Deliveroo, which are seen as poster-child examples of the digital disruption of the transportation industry – and specifically, how the special nature of these platforms disrupts extant thinking on fit in HRM systems. Second, Bauwens and Cortellazzo (Chapter 8), synthesize the literature on e-leadership, virtual team leadership and digital leadership. In doing so, they unpack the role of leadership in dealing with the challenges of disruptive technologies in organizations. Finally, Meijerink (Chapter 9) discusses how disruptive technologies require HRM research to examine the role of customers in value creation processes and outlines a set of HRM systems that foster value co-creation among employees and customers.

Besides contributing to digital disruption and strategies to cope with disruptive technologies, HRM activities are disrupted by digital artefacts too. Accordingly, Part IV of the book includes contributions that centre on the changes brought to HRM activities by digital technologies. This section starts off with a bibliometric analysis by Za and colleagues (Chapter 10), which provides an overview of literature themes on the disruptive nature of artificial intelligence for HRM research and practice. This is followed by the work of Bumann and Wasserman (Chapter 11), which uncovers how HR managers can operate digital technologies such as chatbots to engage workers who otherwise are underserved and deprived of using digital devices at work. Third, the chapter by Wiblen (Chapter 12) provides a guide to managers that wish to use digital technologies for talent management purposes. This is complemented by the work of Khoreva et al. (Chapter 13), which offers an empirical account

of the ways in which technological advances shape and alter talent management systems in 36 multinational corporations in Finland. Finally, van den Broek and colleagues (Chapter 14) conclude Part IV by reporting on an empirical study into the consequences of an AI hiring tool for the role of HR professionals.

The book concludes in Part V with a section on the digital disruption of work processes and practices. While the other sections predominantly focus on the intersection between HRM and disruptive technologies on the organization level and technology-based change to HRM function, the final section focuses on the implications for individual employees and the way they perform their work. First, Stegehuis and Bondarouk (Chapter 15) examine the disruptive effect of digital technologies on workers and how these effects differ between end-user generations. Second, Khoreva and Einola (Chapter 16) conceptualize AI as a new organizational actor and rely on paradox theory to highlight the complex coexistence and interactions between workers and AI-as-a-colleague. Third, Rogiers and colleagues (Chapter 17) empirically uncover the tensions and disruptions that emerge when employees rely on internal labour platforms to perform part-time, fixed-term projects within the bounds of an organization, while Shaba et al. (Chapter 18) discuss the introduction of cobots at work and how these simultaneously have negative and positive effects on individual aspects of work such as autonomy, task variety and skill development opportunities. This section concludes with two studies on remote and hybrid working: Gartner et al. (Chapter 19) detail an agenda for future research that examines the impact of hybrid working for HRM activities, while Peters et al. (Chapter 20) test hypotheses on the relationship between collegial isolation and contextual work performance and the mediating role of relatedness in remote work settings.

REFERENCES

- Drost, J. (2023). *The Irony of Rankings*. PhD Thesis. University of Twente, The Netherlands.
- Duggan, J., U. Sherman, R. Carbery and A. McDonnell (2020). Algorithmic management and app-work in the gig economy: A research agenda for employment relations and HRM. *Human Resource Management Journal*, 30(1), 114–32.
- Garcia-Arroyo, J., and A. Osca (2021). Big data contributions to human resource management: a systematic review. *The International Journal of Human Resource Management*, 32(20), 4337–62.
- Habraken, M., and T. Bondarouk (2017). Smart industry research in the field of HRM: Resetting job design as an example of upcoming challenges. In: *Electronic HRM in the smart era* (pp. 221–59). Emerald Publishing Limited.
- Keegan, A., and J. Meijerink (2023). Dynamism and realignment in the HR architecture: Online labor platform ecosystems and the key role of contractors. *Human Resource Management*, 62(1), 15–29.
- Kellogg, K.C., M.A. Valentine and A. Christin (2020). Algorithms at work: The new contested terrain of control. *Academy of Management Annals*, 14(1), 366–410.
- Kuhn, K.M., J. Meijerink, and A. Keegan (2021). Human resource management and the gig economy: Challenges and opportunities at the intersection between organizational HR decision-makers and digital labor platforms. *Research in Personnel and Human Resources Management*, 39, 1–46.

- Lamers, L., J. Meijerink, G. Jansen and M. Boon (2022). A Capability Approach to worker dignity under Algorithmic Management. *Ethics and Information Technology*, 24(1), 10.
- Landers, R.N., and S. Marin (2021). Theory and technology in organizational psychology: A review of technology integration paradigms and their effects on the validity of theory. *Annual Review of Organizational Psychology and Organizational Behavior*, 8, 235–58.
- Markides, C.C., and D. Oyon (2010). What to do against disruptive business models (when and how to play two games at once). *MIT Sloan Management Review*.
- Minbaeva, D. (2021). Disrupted HR? *Human Resource Management Review*, 31(4), 100820.
- Møller, L., F. Gertsen, S.S. Johansen and C. Rosenstand (2017). Characterizing digital disruption in the general theory of disruptive innovation. In: *ISPIM Innovation Symposium* (p. 1). The International Society for Professional Innovation Management (ISPIM).
- Schafheitle, S., A. Weibel, I. Ebert, G. Kasper, C. Schank and U. Leicht-Deobald (2020). No stone left unturned? Toward a framework for the impact of datafication technologies on organizational control. *Academy of Management Discoveries*, 6(3), 455–87.
- Sestino, A., M.I. Prete, L. Piper and G. Guido (2020). Internet of Things and Big Data as enablers for business digitalization strategies. *Technovation*, 98, 102173.
- Strohmeier, S. (2020a). Smart HRM – a Delphi study on the application and consequences of the Internet of Things in Human Resource Management. *The International Journal of Human Resource Management*, 31(18), 2289–318.
- Strohmeier, S. (2020b) Digital human resource management: A conceptual clarification. *German Journal of Human Resource Management*, 34(3), 345–65.
- Strohmeier, S., and F. Piazza (2015). Artificial intelligence techniques in human resource management – a conceptual exploration. *Intelligent Techniques in Engineering Management: Theory and Applications*, 149–72.
- Van den Broek, E., A. Sergeeva and M. Huysman (2021). When the machine meets the expert: An ethnography of developing AI for hiring. *MIS Quarterly*, 45(3).
- Vesti, H., C. Nielsen, C.A.F. Rosenstand, M. Massaro and M. Lund (2017, December). Structured literature review of disruptive innovation theory within the digital domain. In *The ISPIM Innovation Summit*.
- Vrontis, D., M. Christofi, V. Pereira, S. Tarba, A. Makrides E. and Trichina (2022). Artificial intelligence, robotics, advanced technologies and human resource management: a systematic review. *The International Journal of Human Resource Management*, 33(6), 1237–66.