




The evolution of HRM practices: big data, data analytics, and new forms of work

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Today's digital economy presents HRM with new challenges related to changes in the “language” of business. In fact, firms rely ever more heavily on employees skilled in understanding both the language of business operations and that of business-related data. However, often employees do not have the combined skills of data analytics and management. With the relative ease with which data is available from digital sources and the increase in computational power, employees are often called to make data driven decisions that affect firm standard operations, functions, and eventually performance. Consequently, value creation through (big) data does not solely depend on a firm's ability to analyze big data, but it also requires management capabilities such as leadership, training, talent management, employee upskilling and the creation of an evidence-based, data-driven culture (Mcafee et al. 2012; Rodgers et al. 2023).

Furthermore, fast paced changes in technology, computing and communication facilitate changes in the work environment (Mcafee et al. 2012), often referred to

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as Work 4.0 (Shamim et al. 2021, 2020). Many firms have introduced analytics based on big data to increase efficiency and quality of their decisions (Angrave et al. 2016; Shamim et al. 2021), enable change and enhance agility. Others use leaps in IT development for the implementation of artificial intelligence (AI) and automated cognitive systems such as intelligent and self-learning autonomous agents thereby trying to leverage efficiencies arising from human–machine interactions (Rodgers et al. 2023). Many of these technologies are said to be performance-enhancing at the firm level (Zeng and Glaister 2018), with beneficial effects on knowledge creation (Pauleen, and Wang 2017; Khan et al., 2017), innovation (Chae 2019) and decision making (Acharya et al. 2018). However, the impact of big data applications on employees have not been explored with much detail yet, neither do we know if the workforce has received sufficient training to use new work technologies in a responsible way.

Many of these technology-enabled work practices have unknown consequences on the health and well-being of employees, their willingness to embrace change and other work relevant employee and organizational level outcomes (Shah et al. 2017). Furthermore, the continuous collaborative exchange between human beings and automated-cognitive systems increasingly substitutes human face-to-face interaction. For example, the NHS in the UK started using decision support software to carry out an initial diagnose before sending patients to GPs. But sole reliance on data for decision-making might hurt the self-esteem of highly skilled and experienced employees. Human–machine interactions shape more and more the daily experiences of employees and thus become an essential determinant in the employment relationship which poses completely new challenges and problems that HRM professionals need to master. All these developments contribute to defining change under the umbrella of Work 4.0, they have a long-lasting impact on the work of HR professionals and traditional HR practices which still needs to be understood.

This explains the rationale behind this Special Issue. More specifically, it was set up with the aim to provide a space for the dissemination of empirical and theoretical insights on how the challenges, issues, concerns, and opportunities generated by Work 4.0 can be handled. The Special Issue aims at developing an understanding of where current theories fall short of capturing the new scenario and need to be extended, changed, or dropped. A particular focus should be given to individual level attitudes, behaviors, associated HRM practices and organizational level outcomes that shape day-to-day working lives.

1 The process

We advertised the open call for papers through our networks and at major conferences such as the European Academy of Management annual meeting. Here in particular, we encouraged contributors to the track on “New forms of work, data analytics and big data” to consider submitting their work. Overall, we received a total of 41 submissions. Of those, 17 manuscripts (i.e., 41%) were desk rejected, primarily because they did not fit with the aims of the Special Issue. Another 12 manuscripts (i.e., 29%) were evaluated negatively and thus eventually rejected. One manuscript

was withdrawn. Ultimately, we accepted 11 manuscripts (29%). Before final acceptance was granted, the handling guest editor shared the manuscript with the guest editorial team for final approval and potential further comments. In our decision making we tried to strike a balance between conceptual and empirical works, both quantitative and qualitative. We hope that our selection of manuscripts will find the interest of RMSC's readership.

2 The contributions

Our Special Issue starts off with three literature review articles that, to some extent, lay the foundations for the topics discussed in some of the empirical works also present in this collection. These contributions are then followed by two conceptual contributions. Next the section of empirical papers has a focus on HRM and its connection to AI and data analytics. We conclude with the topic of innovative behavior. In the following sections we briefly introduce the articles.

(a) *Literature review studies*

In the first contribution, Philip Korherr and Dominik Kanbach conduct a systematic review of 75 articles to identify human-related capabilities necessary for organizations to implement big data analytics (BDA) in organizations. In a second step they develop a taxonomy of required capabilities. As the authors state, "With our taxonomy we want to help giving this highly dynamic phenomenon a tangible form for academics, and practitioners, to provide guidance for navigating through further developments in the field of applied BDA."

The second article is authored by Monica Santana and Mirta Díaz-Fernández and it presents a systematic review on AI implementation. Integrating more than 400 documents in their analysis the authors trace the development of AI-related competences in the chosen literature. The article concludes with proposing three major areas for enquiry in future research, i.e. (1) AI-digital competencies-firm performance, (2) the impact of AI and big data on diverse variables such as HR or innovation and (3) self-efficacy, acceptance/resistance level towards AI developments.

Third, Araz Zirar asks himself "Can artificial intelligence's limitations drive innovative work behaviour?" and addresses this question via a systematic literature review. In his work he interprets what he finds using reflexive thematic analysis. His focus is on the shortcomings of AI-based technologies. The propositions derived will provide a useful platform for future investigations on the relationship between AI and innovative work behaviors.

(b) *Conceptual studies*

The fourth piece in our collection is a purely conceptual work created by Tony Silard, Mary Beth Watson-Manheim and Nuno Lopes who develop several propositions on technology-mediated communication and its impact on workplace

relationships. The work is timely and thought provoking as it acknowledges the post-pandemic work context that will retain remote interactions among coworkers.

The fifth article, with the provocative title “Saying Yes to Mess” written by Dinuka Herath and Shelley Harrington offers a theoretical discussion that attempts to connect ideas of disorganization with dynamic capabilities. Similarly, to Silard et al. they acknowledge the challenges arising from the changed work contexts. The marriage between disorganization and dynamic capabilities is difficult to be achieved, but Herath and Harrington have assembled much food for further thought on these matters.

(c) *HRM and AI/Data analytics studies*

The following articles put the attention to HR practices and HR analytics. In their contribution, Leonie Mollet and Stephanie Kaudela–Baum present a compelling case study on HRM competencies in agile organizations. As the first empirical work in our Special Issue, their main question is “How do organisations use HR practices to foster agility?” Based on the findings they argue for HR capabilities to be understood as distributed, shared practices.

Next, Felix Wirges and Ann–Katrin Neyer study the uptake of HR analytics in Germany, Austria and Switzerland. Their qualitative analysis offers intriguing insights into the views of HR managers regarding the relatively new discipline of HR analytics.

A contribution by Alina Koechling, Marius Wehner and Josephine Warkocz investigates affective responses to AI in the recruitment process. The work presents a quasi-experiment on applicant reactions to being interviewed by an AI-tool. The insights generated have strong relevance for applicant attraction and pick up a recent trend in recruitment.

Lukas Heidt, Felix Gauger and Andreas Pfnuer present evidence from a large survey on work from home attitudes and the role of HRM in this context. The article picks up the remote work topic already featured in Silard et al. earlier in this collection and also agile organizations as seen in Mollet and Kaudela–Baum. Hence the manuscript provides additional quantitative evidence on these topics.

(d) *Innovation studies*

The Special Issue concludes with one article focused on innovative work behaviors and innovation capabilities in general. Najam Zia, Ladislav Burita and Yumei Yang discuss results from an analysis of survey data collected from manufacturing managers in Pakistan. Hence, the manuscript offers a snapshot on how innovative capabilities are perceived in a developing country.

The results of the research featured in the Special Issue provides evidence-based guidelines for HRM and general management practitioners with regards to enhancing the employment relationship, the well-being of employees in their workplaces, applicant attraction and capability development. Thus, the work presented here enhances our understanding on how the division of roles between machines and humans and related data analytics can be designed such that it enables higher

organizational performance. Thus, in offering a platform where researchers present latest insights on big data, data analytics and new forms of work, this Special Issue offers a frame on which to base organizational responses in the face of the next (incoming) wave of technological innovation. Many questions still remain open, but we do believe that this Special Issue successfully advances our knowledge and understanding of the complicated relationship between HRM and an increasingly digitalized workplace.

We hope that our selection of manuscripts will find the interest of RMSC's readership and that the thought-provoking arguments presented will act as a cross-fertilizer and catalyst of the management of new technologies for the enhancement of workplaces in general. It hopefully also stimulates more research on new forms of work, big data and data analytics.

With this in mind, we would like to thank all contributing authors for their patience in the review process and their attention to detail when carrying out their revisions which gave rise to the excellent works assembled here. Furthermore, we would like to thank all colleagues who committed their time to act as reviewers and assisted authors in developing their manuscripts further. All journals, and editors rely on the timeliness and thoughtfulness of reviewers' comments, and we are thankful for the contributions of our reviewer pool. Ultimately, as guest editors, we want to thank the editors in-chief of the *Review of Managerial Science*, Prof. Ralf Ewert and Prof. Sascha Kraus, without whom the special issue would not have been possible.

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