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HR analytics-as-practice: a systematic literature review

Authors*: Yanina Espegren[†] and Mårten Hugosson

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Extended abstract

HR analytics (HRA) is a new activity within the field of HR that companies recently have shown a strongly growing interest in. HRA is defined as a technology enabled analysis of HR-related data with the purpose of producing systematized insights and informing HR-related decisions.

The practical interest has generated a stream of research with the aim to increase formal knowledge about the phenomenon. Reflecting these developments several early literature reviews have been conducted (Marler & Boudreau, 2017; Tursunbayeva, Di Lauro & Pagliari, 2018; Chalutz Ben-Gal, 2019; Fernandez & Gallardo-Gallardo, 2021; Margherita, 2021; Qamar & Samad, 2021; Tursunbayeva et al., 2021; Giermindl et al., 2021). These reviews generally portrayed the existing body of research and focus mostly on enabling and hindering factors without clearly departing from theoretical perspectives (apart from Marler & Boudreau (2017) who apply diffusion of innovation theory). The early reviews have thus not been able to create a coherent, holistic formal understanding of the evolving practice of HRA. This paper therefore aims to place the existing flow of HRA research in relation to the practice theory reflecting the general “practice turn” in social sciences (Schatzki et al., 2001; Orlikowski, 2000; Jarzabkowski, 2004; Whittington, 2006;).

Practice theory suggests “practices” being a basic unit of analyses and is argued to provide a new theoretical lens for understanding organizational phenomena (Nicolini, 2013). This study conceptualizes HRA-as-practice and is inspired by the HRM-as-practice framework suggested by Björkman et al. (2014). The framework comprises three major elements: practices, praxis and practitioners and the intersections between them which together constitute the practice of HRM.

Applying this framework to the body of the existing research we conducted a systematic literature review to identify what practices HRA involves, who the HRA practitioners are and

* Yanina Espegren is a PhD student and a lecturer in Business Administration and Management and Mårten Hugosson is an associate professor in Business Administration and Management in Dalarna university, SE-791 88 Falun, Sweden.

[†] Corresponding author. E-mail: yes@du.se

how they enact these practices. Three databases were searched to select articles for the review: Scopus, Web of Science and Business Source Complete. A total of 109 journal articles from the field of business and management were content analysed based on the Björkman et al.'s (2014) framework and the four pre-defined categories: HRA practices, HRA praxis, HRA practitioners and intersections between them.

The analysis reveals that all reviewed articles in one way or another address practices involved in HRA. We synthesized them under the following four related groups. First, HRA practices linked to the *data usage*, such as data management and governance. The category includes practices connected to both HR- and other business data, and data from the external sources, such as market or industry data. Here we also attribute practices of constructing and following different measures, so called metrics or indicators with relevance for the HR- and business strategy. Second, HRA practices linked to *data analysis*. The literature suggests application of different statistical analyses on the different levels of sophistication, distinguishing between descriptive, predictive and occasionally prescriptive and even autonomous (in context of autonomous algorithms) analytics. The most attention is found to be paid to the practice of prediction of valuable HR- and organizational outcomes, such as employee retention or individual and organizational performance. The third group includes practices of producing *data-based insights*. Insights generation is mentioned by almost all the reviewed articles as the central practice of HRA. It includes visualization, storytelling and communication of results produced by data analysis. These practices are argued to be of the great importance for the successful HRA users' buy-in. And, finally, the fourth group includes HRA practices of *decision support*. Improved HR- and business decisions are assumed to be the goal of HRA, so this practice is also discussed by most of the analyzed publications which pay particular attention to evidence-based, user tailored, action oriented and often strategy driven decisions.

Regarding the HRA practitioners, the findings show that not all reviewed articles deal with this element. Some of the analyzed publications omit the question of who perform HRA practices or limit it by the organizational level. Often it is in case of technical papers or publications of promotional character which treat companies as competitors and market actors. Other articles address organizational function/group level, such as HR function/department or HRA teams. But most of the analyzed publications mention and discuss HRA practitioners. Expectedly, HR professionals are a widely discussed group. Interestingly, that HR professionals, such as HR managers, HR business partners and HR

specialists, are seen from two perspectives, both as producers and final consumers of HRA. Not all publications argue for their role as producers of HRA, though, due to different reasons such as lack of analytical skills and business acumen. The analysis shows that the mostly discussed HRA practitioners are members of HRA teams, sometimes also addressed as *HR analysts* who are often not traditional HR professionals. HRA teams are depicted including practitioners from different functional and organizational areas which possess different competences, such as data and technical skills, statistical analysis, visualization and communication, and business and HR knowledge. Our findings suggest that based on the nature of the HRA practices and competences needed to enact them traditional HR professionals as a relevant category of HRA practitioners might be questioned.

HRA praxis is found to be the least addressed category in the reviewed literature. It is worth noting that all analyzed publications address HRA practices, but how they are enacted is discussed in less than half of the articles, which opens up a potentially fruitful area for the future research. HRA praxis in the existing literature is attributed either to detailed contextualized processes of multiple steps in addressing certain problems or a particular mechanism which HRA practitioners use to enact HRA practices. The detailed *processes* often include the following steps: question formulation, finding or collecting the data, building models and measures, conducting analysis, visualization, storytelling, dissemination of results, acting on results and evaluating the actions. Some of the steps intertwine with HRA practices which points to the interconnection of the two elements. The second category of HRA praxis includes different *mechanisms* for HRA practices enactment, such as customization or aligning to decision makers' perceptions of business reality, relationship and networks building, establishing credibility and legitimacy of HRA, strategic commitment, ethical and legal compliance, and employee involvement and benefits.

The intersections between HRA practices, practitioners and praxis are not explicitly discussed in the analyzed literature, i.e. there are no results or arguments that indicate that HRA, intentionally or unintentionally, is regarded as a practice in a theoretical sense. However, the analysis reveals three emerging categories which might arguably act as integrators of the main categories: HRA technology, HRA outcomes and HRA hindrances and facilitators. For example, the intersection between HRA practices and HRA practitioners might be actualized by technology, e.g. statistical modelling, AI and algorithms. The intersection between HR practices and HRA praxis might be attributed to the HRA outcomes. For example, producing data-driven insight (an HRA practice) by engaging in a process of several interrelated steps

(HRA praxis) is guided by the valuable outcomes of such activities, e.g. more informed HR decisions. And, finally, the intersection between HRA practitioners and HRA praxis might be actualized by HRA hinders and facilitators. For example, the everyday actions and behaviors of an HRA analyst can be facilitated by analytical organizational culture but hindered by a lack of a particular competence, e.g. of business acumen.

This paper makes two theoretical contributions. First, it conceptualizes HRA-as-practice, describing what practices are involved in HRA, by whom and how they are enacted based on the existing HRA research. And second, we suggest that HRA technology, HRA outcomes and HRA hinders and facilitators might act at the intersections between the three elements.

This study has also practical implications for the companies who seek to understand how HRA can add organisational value. By conceptualising HRA-as-practice the focus should be on what (HRA practices), who (HRA practitioners) and how (HRA praxis) and how they are interrelated in a particular context.

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