Abstract

Purpose – Driven by the rapidly accelerating pace of technology-enabled developments within human resource management (HRM), human resource (HR) analytics is infiltrating the research and business agenda. As one of the first in its field, the purpose of this paper is to explore what the future of HR analytics might look like.

Design/methodology/approach – Using a sample of 20 practitioners of HR analytics, based in 11 large Dutch organizations, the authors investigated what the application, value, structure, and system support of HR analytics might look like in 2025.

Findings – The findings suggest that, by 2025, HR analytics will have become an established discipline, will have a proven impact on business outcomes, and will have a strong influence in operational and strategic decision making. Furthermore, the development of HR analytics will be characterized by integration, with data and IT infrastructure integrated across disciplines and even across organizational boundaries. Moreover, the HR analytics function may very well be subsumed in a central analytics function – transcending individual disciplines such as marketing, finance, and HRM.

Practical implications – The results of the research imply that HR analytics, as a separate function, department, or team, may very well cease to exist, even before it reaches maturity.

Originality/value – Empirical research on HR analytics is scarce, and studies on scenarios, values, and structures of expected developments in HR analytics are non-existent. This research intends to contribute to a better understanding of the development of HR analytics, to facilitate business and HR leaders in taking informed decisions on investing in the further development of the HR analytics discipline. Such investments may lead to an enhanced HR analytics capability within organizations, and cultivate the fact-based and data-driven culture that many organizations and leaders try to pursue.

Keywords HR analytics, People analytics, Workforce analytics

Paper type Research paper

No one can predict the future course of the HR profession. No one can predict how HR practices will change in the future. Thinking about the future, however, helps us to prepare for it. Thinking about the future may lead to innovative insights. Thinking about the future may help to change today’s HR practices in positive ways (Ulrich, 1997, p. 231).

Many of the changes taking place today, and probably even more so in the future, will be driven by new technological advancements and the increased availability of human resource (HR) data.

As the title of this paper suggests, we are looking toward future developments in HR analytics. Critics could question the relevance of this topic since HR analytics has only just started to mature in business and academia and, probably, we do not have yet enough data to explore its future. However, we would argue that periods witnessing speedy business transformations are exactly the right moments to look to the future developments of HR analytics if human resource management (HRM) research is to increase its societal and academic relevance (see discussion in the special issue of Human Resource Management, May-June, 2015).
There are various approaches to analyzing what “will, could, or hopefully should happen in the future,” and “in principle two different aims of a future study can be identified” (Höjer and Mattsson, 2000, p. 614). The first aim is related to the motivation to know what the future will bring, so that timely business adjustments can be made and foreseeable risks minimized. The other aim is related to the belief that, if we know the future, we can influence its developments in a timely way by planning and implementing changes. In this paper, we present a study pointing toward some possible developments and risks in HR analytics. We first present a short historical outline that positions HR analytics in the HRM contextual continuum.

In the 1980s, the early automation of some HRM processes (mainly payroll and data administration) attracted scholarly attention that primarily focused on examining factors that affected the adoption of an HR information system (HRIS) and the identification of HR practices that could be automated (DeSanctis, 1986; Mathys and LaVan, 1982; Lederer, 1984; Magnus and Grossman, 1985; Taylor and Davis, 1989). That research taught academics and practitioners a great deal about establishing a set of technological requirements that has to be met for HRISs to succeed, including the customization and integration of HRISs, interfacing with corporate information systems, and centralizing records (Magnus and Grossman, 1985). However, businesses reported only limited use of HRISs, and academic research was very limited.

The 1990s saw more rapid and more intensive developments in both academic research and everyday business practice. In this decade, the usage of information systems for HRM was limited, albeit slowly increasing, and researchers started collecting evidence that HRISs could reduce the administration in HRM processes. Organizations showed increasing awareness of the broader possibilities of implementing computer systems in HRM (Kossek et al., 1994; Mathieson, 1993; Hannon et al., 1996; Haines and Petit, 1997). This decade showed increasing interest in HRISs among scholars, although academic publications were still trying to “catch up” with the growing HRIS practice. While these two decades (1980s and 1990s) brought awareness and a slow acceptance, albeit still with considerable doubt, of information systems in HR practice, the years that followed showed rapid growth and an increasing interrelatedness between information systems and HR practices, mostly due to developments with the internet. In historical terms, the internet’s takeover of the global communication landscape was almost instant: it facilitated only 1 percent of information flows through two-way telecommunication networks in 1993, but 51 percent by 2000, and more than 97 percent of the telecommunicated information exchange by 2007 (Hilbert and López, 2011).

In the 2000s, the HRM function seemed to take on board many of the technological developments becoming available. The term electronic HRM (e-HRM) appeared in practice, and the academic community accelerated its efforts to understand the two decades of e-HRM/HRIS practice. Companies broadened the scope of e-HRM applications: although administrative e-HRM remained the most popular application (62 percent of companies), there was increased use of strategic applications such as talent acquisition services (61 percent), performance management (52 percent), and compensation management (49 percent) (CedarCrestone, 2006). This decade also saw numerous publications and academic discussions reported in the proceedings of newly emerging e-HRM conferences (Bondarouk and Ruel, 2009).

Forward to today, and the explosion in self-reporting on social media facilitates the datafication of sentiments, emotions, interactions, and relationships, with the outcome that our personal and professional lives become increasingly “datafied” (Strong, 2015). “Big data” has made its entry into the business vocabulary, and has become a catch-all term to describe data that is large in volume, high in velocity, diverse in variety, exhaustive in scope, fine-grained in resolution, relational in nature, but still flexible (Kitchin, 2014; Strong, 2015). In the light of
these developments, organizations are no longer cautious about digitizing personnel management. Administrative applications for payroll administration and record keeping are still the most popular, with many now operated by end-users through self-portals, but companies are broadening the scope of HRM applications. Applications that are more strategic, such as talent acquisition services, form a leitmotif on the digital HRM stage.

In parallel with the digitalization of HRM, opportunities are being created for HR professionals to use the data generated by technologies to support HRM and business solutions, and in particular to support decision making. Already in 2005, Boudreau and Ramstad (2005) were advocating that “the traditional service-oriented HR focus must be extended to a “decision science” that enhances decisions about human capital” (p. 129). They argued that with such a paradigm shift – which in fact is comparable to the earlier evolutions in more mature strategic functions such as finance and marketing – the HR function could actually find out what it means to be “strategic.” The use of HR decision science could enhance decisions about people, just as “the marketing decision science enhances decisions about customers, and the finance decision science enhances decisions about money” (Boudreau and Ramstad, 2005, p. 131). Only now, more than a decade later, does it seem that the paradigm has finally shifted. Businesses have, however, opted for more a popular form of language, using the terms HR analytics, workforce analytics, or people analytics. Inspired by success stories of organizations generating up to $100 million in savings, while at the same time improving the engagement and productivity of employees, advanced HR analytics is fast becoming mainstream (Fecheyr-Lippens et al., 2015) and increasingly considered as an indispensable HR tool (Boston Consulting Group, 2014).

Overall, scholarly studies addressing the future of HRM have been less common than in other fields. For example, in his literature review of Delphi studies published between 1995 and 2002, De Meyrick (2003) identified eleven studies concerning future developments in information technology but none concerning HRM. Studies have been conducted on anticipated practical business challenges, for example, concerning e-commerce (Addison, 2003) and future tourism potential (Kaynak et al., 1994). Similarly, management studies have focused on the future of management (Schwarz, 2008) and the future of knowledge management systems (Nevo and Chan, 2007). The limited studies concerning future HRM have addressed strategic HRM (Lepak and Shaw, 2008), the development of future HRM practices (Robinson et al., 2007), and a survey predicting future HR trends (Hayes and Kearney, 2001). Other studies considering the future of HRM have included human resource (HR) development (McGuire and Cseh, 2006; Hatcher and Colton, 2007), country-specific studies (Lin, 1997), a workplace stress study among HR professionals (Loo, 1996) and also suggestions for the focus of future HRM research (Huselid, 2011). However, our search of scholarly databases, published books, various conference proceedings, and the latest e-HRM and HRIS reviews (Bondarouk and Furtmueller, 2012; Marler and Fisher, 2013; Van Geffen et al., 2013; Ruel and Bondarouk, 2014), and reviews on future study directions (De Meyrick, 2003) has failed to uncover any scholarly articles addressing the future of HR analytics.

The present study therefore aims to contribute to the development of HR analytics, as a field of research that can usefully inform business, by exploring how HR analytics will look in the future. More specifically, this study investigates what practitioners of HR analytics, working for major Dutch organizations, think HR analytics will look like in 2025. There is a danger that a timespan of ten years could encourage wild speculation since today’s environmental dynamics often make organizations reluctant to look even three years ahead. However, information technology landscapes, decision-making cultures, and analytical capabilities will not change overnight within organizations. By adopting a timespan of ten years, we aim to elicit perspectives that go beyond the limitations that harsher restrictions may place on broadmindedness. The central research question addressed in this study is therefore:

RQ1. What will HR analytics look like in 2025?
By providing a point of reference in the development of HR analytics, we hope to facilitate business and HR leaders in taking informed decisions on investing in the further development of the HR analytics discipline. Such investments may lead to an enhanced HR analytics capability within organizations, and cultivate the fact-based and data-driven culture that many organizations and leaders try to pursue.

Furthermore, based on the insights obtained from the study, we will offer a research agenda that could improve the scientific robustness of debates concerning HR analytics. Moreover, we will advocate a new wave of scholarly research focusing on the development of HR analytics as a business discipline, including its impact on the HRM function and on organizations as a whole.

**Conceptualizing HR analytics**

What do we actually mean by the term HR analytics? Analytics, in general, refers to “the use of analysis, data and systematic reasoning to make decisions” (Davenport *et al.*, 2010, p. 4). Adding the “HR” component to the concept implies that these analyses, data and systematic reasoning concern the people who are (in whatever way) related to the organization. Although the very few scholarly writings on HR analytics mostly lack explicit definitions of the concept, they inform us that HR analytics includes “rigorously tracking HR investments and outcomes” (Ulrich and Dulebohn, 2015, p. 202) and that “statistical techniques and experimental approaches can be used to tease out the causal relationship” (Lawler *et al.*, 2004, p. 4) between these HR practices or policies and organizational performance outcomes. As such, HR analytics is a methodology for developing innovative insights (Smeyers and Delmotte, 2013). This implies that HR analytics is a process, and not simply a tool that produces valuable insights at the push of a button. It is “first a mental framework, a logistical progression, and second a set of statistical operations” (Fitz-enz and Mattox II, 2014, p. 2). The “garbage in – garbage out” adage applies here: poor data combined with brilliant analyses will produce little value, just as a terrific data set will not be of much help if the analyses lack rigor. In a similar vein, without a relevant and well-formulated research question, any insights derived from the data and analyses will lack strategic value. Furthermore, providing innovative insights is not the ultimate goal of HR analytics: the object is to bring “decision making support to the management of people in organizations” (KPMG, 2013, p. 4). Based on the above discussion, and inspired by Smeyers (2012), we define HR analytics as: the systematic identification and quantification of the people-drivers of business outcomes, with the purpose of making better decisions.

As already noted, the terms HR analytics, workforce analytics, and people analytics coexist and are often used interchangeably. However, we would argue that the different labels go beyond simple semantics because they determine what we consider to be outcomes and how we determine success of HR/workforce/people analytics. HR analytics could, for example, suggest that the responsibility for identifying and quantifying the people-drivers of business outcomes lies within the HR function or department. However, from a business perspective, it does not matter at all which team or department conducts the analytics. Moreover, as Ulrich (1997) observes, strategic HR is owned, directed, and used by line managers. Consequently, the business must bear the responsibility for employee-related analytics of any kind. The label “workforce analytics” is effectively detached from the HR function, but may still have an exploitative association. Nevertheless, some leading software vendors (e.g. Workday, SAP’s SuccessFactors) use the term workforce analytics for their products. “People analytics” may be the most neutral and employee-friendly label, and it is, for example, consistently used by Google who, in general, avoid the term HRs and refer to their HR department as “People Operations.” Usage of a specific label tends to be a matter of consistency in specific product or business language and/or related to philosophy. In this paper, we adopt the label HR analytics since this label dominates in the Dutch context where our study was conducted.
It is not unusual for the terms metrics and analytics to be used interchangeably. However, in our view, it is important to distinguish between them. Influenced by Fitz-enz’ (1984) work on the measurement of HRM and Kaplan and Norton’s (1996) introduction of the balanced scorecard, the use of metrics in HRM has gained in popularity since the 1980s. Metrics such as “absence rate,” “cost of hire,” and “time to fill jobs” have been increasingly applied in HRM practice. In essence, metrics allow data “to be viewed from different perspectives and in different formats” (Liberatore and Luo, 2010, p. 315), for example, by using tables, charts, and dashboards that summarize and visualize the raw data in a more comprehensible manner. Although valuable, and perhaps even necessary (e.g. in performance appraisal), metrics are insufficient to drive HRM since a clear understanding of “what causes what” is also required (Huselid, 2015). In other words, metrics do not provide a robust insight into why something occurred, what explains differences in outcomes, or what the likelihood is that an event will reoccur in the future. In the process of conducting analytics in terms of Porter’s (1985) value chain, as Google does in their people analytics activities, metrics precede analytics. Since a value chain essentially describes a series of transformations in which inputs are transformed into outputs, and each transformation adds value to the product, the value chain of HR analytics evolves from opinions through data, metrics, analytics, and insights, and eventually leads to actions (Dekas, 2011). Given that HR analytics explicitly involves linking people characteristics, HR practices or policies, and business outcomes, the analytics concept is distinct and the term should not be used interchangeably with the term metrics.

Although many HR strategists predict a promising future for HR analytics, organizations are struggling to make HR analytics an organizational reality. Currently, the capabilities required in HR analytics are not well-developed (Carlson and Kavanagh, 2012; Wolfe et al., 2006), and some even suggest that “HR and people analytics” represents one of the major capability gaps in today’s HR practice (Deloitte, 2015). In a global study conducted by Deloitte among more than 3,300 business and HR leaders from 106 countries, only 35 percent of the respondents indicated that HR analytics was “under active development” in their organization, and only 8.44 percent of the respondents believed that their organizations had a strong HR analytics team in place. Most organizations, even large multinationals, lack a clear vision of the future of HR analytics within their company. Insights from academia may be expected, but empirical research on HR analytics and its development is virtually non-existent (see, for an exception, Boudreau and Ramstad, 2005).

A search in the Web of Science database with the search term “HR analytics” yielded only a handful of results (e.g. Aral et al., 2012; Ulrich and Dulebohn, 2015), and the terms “workforce analytics” and “people analytics” were no more successful. A possible explanation for the apparent lack of scholarly attention to HR analytics may be that HR analytics is considered as no more than yet another new HRM tool; or, perhaps, the organizational struggle to get HR analytics implemented is perceived to be comparable with regular change management challenges, and therefore does not attract widespread interest among scholars. However, in our view, such perspectives underestimate the transformational potential of HR analytics. That is, the emergence of HR analytics may very well enable existential changes in the HRM function, and perhaps in organizations as a whole.

One can observe a rapidly accelerating pace of technology-enabled developments within HRM. These enable HRM to be treated as a decision science and consequently allow HR analytics to infiltrate the research and business agenda. In this paper, we argue that we – as scholars – may not have as much time as we would like to think about and question the usefulness, applicability, and/or complexity of HR analytics, and that we should focus on delivering empirical evidence on its development and its relevance for science and business practice. Particularly, we encourage scholars to leap into the future and consider developments in HR analytics. In our view, this will bring real value to knowledge
development and to businesses. As outlined above, given the rapid developments within e-HRM/HRIS, we may miss crucial developments if we do not undertake joint research to explore the future of HR analytics. Given that researchers and the business world are already witnessing the future of HR analytics today, there is a growing demand to understand it now in order to inform knowledge and the practice community about scenarios, values, and structures of approaching developments in HR analytics.

A multidimensional view of the future of HR analytics
Having discussed the main terms and definitions related to HR analytics, we now turn to the discussions about the future evolution of HR analytics, which is dominated by models that primarily focus on the evolution of the analytical component itself. For example, in his book “The new HR analytics,” Fitz-enz (2010) discusses the five-step value ladder of measurement. Starting with the first step, “recording,” which, according to Fitz-enz (2010), marks the beginning of HRs measurement in 1978, one can (via the steps relating, comparing, and understanding) reach the fifth step “predicting” where you should be “able to predict organizational outcomes for a given human capital investment” (p. 10). Other classifications ascend from descriptive analytics, through correlation analytics, to predictive/prescriptive analytics (Sesil, 2014), or from operational reporting, through advanced reporting and advanced analytics, to predictive analytics (Bersin by Deloitte, 2013). Whatever classification system is applied, it only tells one small part of the story: that organizations aim to move toward what they consider to be the holy grail of HR analytics: predictive analytics (Harvard Business Review, 2013). However, there is much more to HR analytics than measurements and statistics. Cascio and Boudreau (2011), for example, emphasize the need to develop “logic models” in order to truly understand relationships between variables or numbers. Without logic models, they argue, it is impossible to know where to look for insights. Consequently, the positioning of HR analytics within the organizational structure, such as within the HR department or within a general business intelligence department, may considerably influence the logic models that are developed. This in turn will influence the insights that are generated and the value added.

That there is much more to HR analytics than only measurements, statistics, and some logical reasoning was illustrated by Coolen and IJselstein (2015). In their article “A practitioner’s view on HR analytics” they introduce the HR analytics capability wheel and argue that “only those organizations that manage to create and maintain a balanced blend of different relevant capabilities will be successful in HR analytics” (Coolen and IJselstein, 2015, p. 1). These “relevant capabilities” were described as perspectives, and include: the business perspective (having a proper understanding of business challenges and strategy); the HRs perspective (knowing about HR processes, available HR data, and ethics of analyzing employee data); the consultant perspective (“selling HR analytics to business” and presenting results in a convincing manner); the data scientist perspective (conducting statistical analyses, and also being able to work with more cutting edge developments such as machine learning algorithms); the IT architect perspective (understanding the HR IT landscape and data warehousing); and the software perspective (in-depth knowledge of working with analytical software, depending on whether this is outsourced or conducted in-house) (Coolen and IJselstein, 2015). The last two perspectives demonstrate the relevance of technology-enabled developments within HRM in general, and specifically in HR analytics. One should not forget that information technology in HR analytics is not only aimed at collecting and storing data, but also at linking and analyzing data, as well as facilitating the convincing visualization and presentation of the results and insights. Coolen (2015) even foresees that “the next big thing in HR analytics is the use of business-user-friendly self-service analytical software.”

The above discussion at least shows that a one-dimensional perspective, focusing exclusively on, for example, the statistical or Information Technology elements of HR
analytics, provides an incomplete and likely distorted and unreliable picture of the future of HR analytics. We therefore adopt a multidimensional perspective in studying HR analytics. Inspired by a study on the “State of HR analytics” conducted by the Center for Advanced Human Resource Studies at the Cornell University (CAHRS, 2010), we will explore the future of HR analytics using four central topics:

1. application (goals, organizational themes, problems, and challenges of an application);
2. value (added value as perceived by the organization, and influence on decision making);
3. structure (positioning, organization, and involved actors); and
4. system support (support from Information Technology).

Based on the identification of these core topics, we have refined our central research question into:

RQ2. What will HR analytics look like in 2025 in terms of its application, value, structure, and system support?

**Method**

**Sample**

We collected the data for this study from members of a Dutch HR analytics practitioners group plus people suggested by these members. The HR analytics practitioners group was formed in 2014 by HR analytics professionals from some of the Netherlands’ largest organizations who now meet on a quarterly basis with the main purpose of exchanging knowledge and experiences related to HR analytics. Initially, 41 people were contacted by e-mail or telephone to ask whether they were willing to participate in the research. A questionnaire was sent out to the 29 people who had agreed to participate and, of these, 20 responded. In two cases, more than one respondent had jointly completed a single questionnaire, resulting in 17 returned questionnaires. Most of the respondents had job titles such as “manager HR metrics and analytics,” “program manager HR analytics,” “consultant HR analytics,” and “advisor HR analytics.” The sample also included a “manager HR reporting,” a “manager HR operations,” and an “HR account manager,” all of whom who were responsible for aspects of HR analytics within their company. Further, two PhD candidates who were employed by a company, and focusing exclusively on HR analytics, participated in the survey. The 20 respondents were employed in a total of 11 large Dutch organizations, each with between 4,000 and 90,000 employees, active in the banking, insurance, utilities, pensions, biotechnology, petrochemicals, research, and consultancy sectors.

**Data collection**

Qualitative data were collected from open-ended questions through a survey that was distributed by e-mail. The survey was made up of seven questions covering the four central topics: application, value, structure, and system support. Two questions related to the “application” topic: “What will be the main goals in applying HR analytics in 2025?” and “On what organizational themes/problems/challenges will HR analytics be focused in 2025?” For “value,” there were again two questions: “To what extent will organizations value HR analytics in 2025?” and “To what extent will HR analytics influence decision-making in 2025?” Similarly, for “structure,” the questions were: “Which internal and external actors will be involved in conducting HR analytics in 2025 and what will be their roles and responsibilities?” and “How will HR analytics be positioned/organized within organizations in 2025?” Finally, the “system support” topic was covered by a single question: “How will information technology support HR analytics in 2025?” Each of the seven questions was followed up by the question: “and how does this differ from the current situation?”
Data analysis

The analytical hierarchy described by Spencer et al. (2003a) has been applied in analyzing the data. Although this analytical structure can generally be applied in analyzing qualitative data, it is especially suitable for thematic, largely cross-sectional analyses based on the interpretation of meanings (Spencer et al., 2003a). The structure is made up of three phases: data management (phase 1), descriptive accounts (phase 2), and explanatory accounts (phase 3). The aim of these three phases is to gradually move up the “ladder of analytical abstraction” (Carley, 1990) while progressing from description to explanation (Miles and Huberman, 1994).

**Phase 1: data management.** In the data management phase, data should be labeled, sorted, and synthesized based on a generated set of themes and concepts (Spencer et al., 2003b). In the present study, an index with an a priori set of themes was created. The index comprised four main themes, based on the four central topics of the study (i.e. 1: application; 2: value; 3: structure; 4: system support). Since respondents were asked to describe how the 2025 situation differed from the current situation, each main theme was divided into two subthemes: “current” and “future” (e.g. 1.1 application – current; 1.2 application – future). Finally, these subthemes were further divided, based on specific elements addressed in the questions (e.g. 1.1.1 application – current – goals; 1.2.4 application – future – challenges).

Indexing the raw data involved labeling particular data elements with the appropriate theme number as provided in the index (e.g. 1.1.1 or 1.2.4). The indexing was carried out using Atlas.ti software and resulted in 320 labeled fragments. During the indexing process, two additional themes were added to the index: “data” and “definition.” The next step in the process was to create a thematic chart. Thematic charting is a process that involves “summarizing the key point of each piece of data – while retaining its context and the language in which it was expressed – and placing this in the thematic matrix” (Spencer et al., 2003b, p. 231). In the created matrix, each of the survey responses was allocated a row, while each subtheme was allocated a column. Following this, the indexed fragments were then copied into the chart and synthesized in additional columns to reduce the data to a more manageable amount. In line with the guidelines of Spencer et al. (2003b), we aimed to retain as much as possible of the original wording provided by the respondents in order to keep interpretation to a minimum and also to retain material whose relevance was not immediately clear.

**Phase 2: descriptive accounts.** During the second phase of the data analysis, descriptive accounts were created. In essence, this comes down to identifying key dimensions and refining categories (Spencer et al., 2003a). The process involved looking for similarities among the synthesized fragments across all cases (i.e. respondents) within a theme. Subsequently, the fragments were sorted to distill the key dimensions within the range of sorted data fragments, and to formulate categories. This process was largely iterative and involved moving from the document in which the synthesized fragments were sorted, to the thematic chart, to the original survey data, and back again. The categories and key dimensions that were identified are presented in Table I.

**Phase 3: explanatory accounts.** The third phase of the analyses involved developing explanatory accounts. During this phase, we sought patterns of associations within the data and then attempted to account for why these patterns occurred. As described by Spencer et al. (2003b, p. 252), this phase involves “a mix of reading through synthesized data, following leads as they are discovered, studying patterns, sometimes re-reading full transcripts, and generally thinking around the data.” For example, during the descriptive accounts phase it became clear that respondents predicted a general trend toward decision making becoming more evidence based, regardless of the discipline in which the decisions were made. Delving deeper during this explorative accounts phase revealed that one of the drivers of this trend was the entry of a new generation into management. The explanatory accounts developed are described in the results section.
### The rise (and fall?) of HR analytics

<table>
<thead>
<tr>
<th>2015 situation</th>
<th>2025 situation</th>
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<tbody>
<tr>
<td><strong>Application</strong></td>
<td><strong>Goals</strong></td>
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<tr>
<td>Goals</td>
<td>Fostering fact-based organizational decision making</td>
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<td></td>
<td>Developing evidence-based mindset within HR</td>
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<td></td>
<td>Determining HR drivers for business outcomes</td>
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<td>Proving effectiveness of HR analytics cycle</td>
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<td></td>
<td>Transforming organizational models</td>
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<td></td>
<td>Managing data privacy and increasing volumes</td>
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<td><strong>Analytical focus</strong></td>
<td>Analytical focus</td>
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<td>Metrics and reporting</td>
<td>Predictive analytics</td>
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<tr>
<td>Historic and current situation</td>
<td>Data integration</td>
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<tr>
<td>Simple statistics such as cross-tabulations</td>
<td>Standardization of measurements</td>
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<td></td>
<td>Standardization of analytical approach and tools</td>
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<tr>
<td><strong>Themes</strong></td>
<td>Themes</td>
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<tr>
<td>Mainly driven by HR challenges</td>
<td>More overarching organizational themes</td>
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<tr>
<td>Often independent from business issues</td>
<td>Largely the same HR elements in themes</td>
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<tr>
<td>Traditional KPI related</td>
<td>Increased complexity of themes</td>
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<td></td>
<td>Influenced by developments in data availability</td>
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<td><strong>Value</strong></td>
<td>Established and valued discipline with proven impact</td>
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<td>Relatively unknown</td>
<td>Strong influence on operational and strategic decision making</td>
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<tr>
<td>Added value largely unproven</td>
<td>Benefiting from general trend of “evidence-based decision making”</td>
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<tr>
<td>Limited influence on decision making (due to current general image and involvement of HR, lack of readiness among HR business partners, and general unfamiliarity with fact-based decision making among business managers)</td>
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<tr>
<td><strong>Structure</strong></td>
<td>Positioning</td>
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<td>Positioned within the HR function</td>
<td>Scenario A: positioned within central HR function</td>
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<tr>
<td>Limited ties with other disciplines</td>
<td>Scenario B: positioned within central analytical function (dominant scenario)</td>
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<td>Internal actors involved</td>
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<td></td>
<td>Analysts (executing analyses, securing quality of insights)</td>
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<td></td>
<td>Business (posing relevant questions, making data available, interpreting results, supporting interventions)</td>
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<td></td>
<td>Consultants (translating business challenges into research questions, advising on outcomes in a way that makes them appealing)</td>
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<td></td>
<td>Employees (how far do employees want to go?)</td>
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<td>External actors involved</td>
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<td>Educators (universities, research centers)</td>
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<td>Knowledge partners (universities, consultancies)</td>
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<td>Data providers</td>
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<td>External data analysts</td>
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<td>Data security parties (government, data protection authorities)</td>
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<td><strong>System support</strong></td>
<td>Technology as main driver of HR analytics</td>
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<td>Fragmented and outdated IT landscape</td>
<td>System integration</td>
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<tr>
<td>Data warehousing lacks usefulness</td>
<td>From automation to artificial intelligence</td>
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<tr>
<td>Time-consuming data retrieval and preparation</td>
<td>Self-service analytics</td>
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<td>From reporting to analyzing</td>
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| Table I | HR analytics: 2015 and 2025 situations |
Results

In this section, we will present the results of the analyses for each central topic of the study (i.e. application, value, structure, and system support) in turn. For each topic, we will first discuss the situation in 2015, followed by the predicted situation in 2025. An overview of the findings is presented in Table I.

Application of HR analytics in 2015

The first central topic of this study is the application of HR analytics. Results concerning the current situation can be grouped into three categories: the goals of HR analytics, its current analytical focus, and the substantive themes on which the HR analytics is focused. Looking at the current goals of HR analytics, respondents indicated that the primary current concern was to actually establish HR analytics. Several underlying elements were mentioned. First, it involves proving added value to the business by demonstrating that interventions driven by HR analytics realize measurable business improvements. Second, it implies exploring how and under what circumstances HR analytics can be applied within the organization, and be implemented within its daily business routines. In also involves assessing what capabilities are needed to execute HR analytics and what the HR analytics department might look like in terms of number of FTEs, the job profiles required, and responsibilities. Here, an organization’s legal department and consultancy companies can offer advice. The third element in establishing HR analytics is creating awareness. Respondents indicated that the concept of HR analytics is often rather unknown within organizations and, when known, often considered as an experimental platform within HR—something that does not warrant much attention from business management and something they are reluctant to apply. One respondent indicated that most managers would be happy if HR was just able to provide standard metrics. Given this “situation,” attempts are made to create awareness among HR business partners as to the purpose and value of HR analytics, and to explain that HR analytics is a tool for both HR and for the wider business. A fourth aspect mentioned by the respondents was the need to build alliances, both within and beyond HR. Within HR, the aim should be to deepen collaboration with its disciplines (e.g. training and development and compensation and benefits) while outside of the HR domain explicit and transparent collaborations are needed with linking departments, such as control, and compliance. The final element identified concerning the establishment of HR analytics was to create a foundation for conducting analyses. This might involve gathering business cases that could be analyzed, obtaining access to data sources, and acquiring the proper analytical tooling.

The second category that emerged from responses, concerns the current analytical focus in the application of HR analytics. People involved in HR analytics currently spend the majority of their time on the basic reporting and the calculation of metrics. Actual analytics, where variables are compared to each other, only forms a very limited part of their work. Further, such analytics mostly involve simple statistics such as cross-tabulations. Furthermore, the primary focus is on gaining historical insights, rather than on prospective insights obtained from predictive analytics. It was also indicated that the analytical focus is on data that are already available within the boundaries of the organization, rather than on data that may need to be gathered or that are available outside of the organization, such as through social media data or from personal devices.

The third category covers the substantive themes on which HR analytics is focused. Although there seems to be a consensus that HR analytics aims to contribute to business outcomes, various respondents indicated that HR analytics is often focused exclusively on HR themes, meaning that HR data are combined with other HR data, without relating them to business outcomes. Explanations suggested by the respondents included that HR primarily focuses on its own HR organization, and thus on solving HR-specific issues, rather
than on wider business issues, and also that business data are often hard to gather or impossible to link directly to HR data. Further, although several concrete areas were mentioned where HR analytics was conducted (e.g. management development, employee value proposition creation, strategic resource planning, talent management, and performance management) it was also noted that the primary focus of HR analytics is on traditional key performance indicators, such as absenteeism and the percentage of women in management jobs. The focus on such themes may be explained by the continued focus on reporting and metrics, rather than on true analytics.

Application of HR analytics in 2025

The results addressing the future application of HR analytics showed a very different picture. First, the central objective in 2025 was predicted to be fostering fact-based organizational decision making, referring to evidence-based ways of working and decision making in general. This implies being information driven, rather than relying on gut feeling. As a second objective, in a similar vein, respondents mentioned the development of an evidence-based mindset, but specifically within HR. It was commented that HR is often considered as a somewhat soft profession that relies on hunches, experience, and the course of history. HR should become able to build stronger argumentations based on models and numbers so that business disciplines with a more quantitative orientation take them seriously. The third central objective mentioned referred to determining the HR drivers of business outcomes. Such HR drivers could be in any HR domain, and should be considered in the broadest sense possible. One respondent also indicated that the scope of HR analytics, which is currently limited to an organization’s own employees, should be expanded to cover the flexible workforce. In relation to this, business outcomes were, however, mainly referred to in general terms, such as improving the performance, efficiency, or effectiveness of the organization, optimizing operational costs, or increasing the organization’s impact on its clients. The fourth goal concerned proving that interventions driven by HR analytics realized measurable improvement. More generally, it was mentioned that the aim would be to make HR analytics sufficiently mature to be able to complete the full HR analytics cycle, which starts with analyzing a business case, followed by producing insights from these analytics, implementing an intervention, executing a follow-up measurement, and determining the costs and benefits of the intervention based on its results. The fifth goal of HR analytics concerned the transformation of established organizational models. According to several respondents, HR analytics could ensure lean and agile organizational structures that could be established based on an optimal combination of people characteristics and skills on the one hand, and strategic business targets on the other. Work roles would then be tailored to human capabilities and characteristics, rather than the other way around. The final goal, which is perhaps the most challenging, is to manage data privacy as well as the growing data volumes. As one respondent stated, we can be sure that more data will be available in 2025, new forms of data will be collected, and these will be accessible to provide new information and new insights. Challenges in this respect will be to determine which data to use, how to structure the data, how to protect them and, in the end, how best to utilize them. As the respondent observed, most companies currently struggle to maintain one separate database storing people’s data, not to mention the ten that may be present in 2025. Complying with data privacy legislation and keeping the trust of the people will be additional challenges. This is seen as particularly challenging given the thin line between privacy intrusion and business progression. Data privacy will therefore be an influential factor in shaping the future of HR analytics.

In the second category, the analytical focus, the central element mentioned by the respondents was the focus on predictive analytics, or predictive modeling. Such analytics could, for example, be focused on predicting peaks in employee turnover or changes in levels
of engagement. In more general terms, the purpose of predictive analytics will be less reactive. The second element within this category was the emphasis on data integration. Data from outside the HR domain (e.g. financial and marketing data), but also data from beyond the organizational boundaries (e.g. data from personal gadgets), should be combined. With regard to data analyses, these fields are now operating as silos – separate worlds. The benefits of integration will be that it simplifies the analytical process, and enables the analysis of more advanced, complex, and overarching strategic issues that cover multiple businesses and staff functions. The third element related to the future analytical focus concerned the standardization of measurements. On the one hand, standardization implies clearly defining and conceptualizing concepts such as performance in order to clarify what they mean and entail. On the other hand, it implies the development of reliable and valid measurements for such concepts, with the purpose of facilitating organizations in conducting cross-country and cross-cultural HR analytics. A fourth aspect that came out of our analyses was the standardization of the analytical approach and tools. It was perceived that HR analytics would reach a certain level of maturity by 2025, implying higher levels of standardization, resulting in automated calculations and dashboards automatically reporting the effect-sizes of relationships. Further, this maturity would also bring forward a proven and optimized HR analytics toolkit for facilitating data preparation, data blending, analyses, and storytelling. One respondent indicated that standardization would also support further education and knowledge management on HR analytics, which would be crucial in ramping up future HR analytics capacity.

When it came to the specific themes on which HR analytics would be focused in 2025, a great variety of HR themes and practices were mentioned, including leadership, recruitment, succession planning, strategic workforce planning, retention management, flexibilization, virtual and self-steering teams, e-HRM, talent management, employability, employee health, compensation and benefits, diversity, and engagement. Several respondents thought that the themes dominating in 2025 would not be that different from the current situation. However, the complexity of the cases would increase, the themes will concentrate more on overarching organizational challenges, and HR themes will increasingly be addressed in conjunction with business data and data from other disciplines. In addition, the developments in “big data,” such as the accessibility of social media data, will influence the themes being addressed in 2025. Furthermore, and understandably, it was stressed that the themes, just as the related challenges, would differ among organizations. Retail organizations may, for example, be more focused on performance in terms of profit and business revenue, whereas non-profit organizations, such as many hospitals, may be more interested in optimizing efficiency or patient satisfaction. Some of the likely future themes for HR analytics mentioned by the respondents are: the relationship between strategic personnel planning and sales or productivity; finding the right balance between different types of contracts, such a permanent contracts, fixed-term contracts, and contacts with self-employed workers; the impact of new ways of working, such as flexible rather than fixed workplaces, on employee productivity; performance in virtual teams vs performance in a more traditional setting; effects of self-service e-HRM tools compared to shared service centers; and smart health, for example, adjusting work pressures for people vulnerable to burnout.

Value of HR analytics in 2015

The second central topic of this study was value, focusing on the added value of HR analytics as perceived by the organization, and the influence of HR analytics on decision making. First, HR analytics is still a relatively unknown practice in many organizations, both within HR and in the wider business. In general, analytics projects are often considered to be something additional, rather than something elementary. A current challenge is to explain what HR analytics actually is, and what its purpose is. Today, early-adapters of HR
analytics are trying to convince their organizations of its value. Moreover, the respondents stressed that HR analytics still has to prove its added value. It was stated that HR analytics creates large expectations, but has yet to deliver concrete results. Organizations tend to see HR analytics as a boat they cannot miss, but not as an activity that is already able to add significant business value. HR analytics has yet to be embraced by the business, is not prioritized, and therefore generally does not influence business decision making. Several related causes were mentioned. One being that HR is generally not involved, or taken seriously, in business decision making. This is likely to restrict the influence of HR analytics since this usually originates within the HR function. Second, it was mentioned that HR business partners were not yet ready to apply a more statistical and analytical approach in their collaboration with the business. Further, one respondent stated that findings coming from analytics are often hard to grasp by less data-savvy individuals, a description seen as applying to many within HR. A third explanation was that basing decisions on an extensive use of data and analytics was something new for many business managers, that there is currently still plenty of room to rely on gut feeling. Overall, it was considered that business managers often find it hard to understand, accept, and adopt the application of analytics in decision making.

Value of HR analytics in 2025

With regard to the value of HR analytics in the future, the general perception among respondents was that, by 2025, HR analytics will be an established practice within organizations. It will have proven its added value, and even necessity, in tackling business problems. Consequently, many comments were made arguing that HR analytics will be a major influence in future decision making in both the HR and the business domains. Some illustrative comments were: “managers will consider HR analytics an unmistakable link in underpinning and making strategic choices,” “in ten years, no single decision within the HR domain will be made without a clear business case supported by statistical data,” and “HR analytics will be seen as a viable addition to existing decision-making tools.” At the time, however, nuances were made with regard to the increasing relevance of HR analytics. The main one was that the development of HR analytics will have benefited from the general trend toward evidence-based decision making. Analytics will have become an inevitable part of decision making and organizational improvement. One respondent predicted that, around 2025, there will be a movement that is not dissimilar to lean six sigma, where interventions and rewards will be accurately tracked and their contributions to business results measured. One of the drivers for the expected general development of evidence-based decision making was seen as the entry of newer generations into management positions. Inevitably, as noted by another respondent, there will still be a core of decision makers – born around or before 1970 – who will continue to rely on gut feeling. In some final nuances, it was argued that the rise of HR analytics will depend on the extent to which HR is able to demonstrate a track record in HR analytics, and the extent to which data sources can be combined. However, HR analytics was widely expected to be of considerable value for organizations in 2025.

Structure of HR analytics in 2015

The third central topic of this study was structure, focusing on the positioning and organization of HR analytics, as well as the actors involved. In most cases, HR analytics is currently organized as a specialized team and positioned within the HR function. Most teams or departments, often called “HR analytics” or “HR metrics and analytics,” are still fairly new, and still exploring their ideal composition, role, and responsibilities. Where organizations do have an HR analytics team in place, its typical size is about five FTE. As noted earlier, the adoption of HR analytics mostly originates within the HR function, an
approach which was heavily criticized by one respondent who argued that it is easier to teach HR to a statistical programmer than statistical programming to an HR professional. Nevertheless, the primary actor currently involved in HR analytics is HR itself. A few respondents mentioned the role of the HR business partner – being to liaise with management. Advice based on HR analytics, and desires concerning reporting and analytics, are discussed between the HR analytics experts and the HR business partner. Connections linking the HR analytics team to other HR disciplines, and especially to other disciplines outside the HR domain, are limited. It was mentioned that, in some cases, finance departments were involved to facilitate joint reporting, “internal departments” were involved because of data privacy aspects, and that early adopters among management might play a part. It was stated that only a few progressive organizations are collaborating internally with legal, finance, and marketing departments, and with works councils, or have well-established ties with labor unions, specialized consultancy companies, and universities. However, these are still the exceptions. One respondent explained that, in his organization, the marketing and sales disciplines were collaborating in a big data team, but that HR was not yet involved. In a similar vein, several respondents stated that there were several analytics teams within their organization, but that these were mainly positioned within a specific function such as marketing or finance. In addition, one respondent indicated that the business units themselves initiated HR analytics projects.

Structure of HR analytics in 2025

The findings with regard to the future structure of HR analytics can be grouped into three categories: the positioning of HR analytics in organizations, the internal actors involved, and the external actors involved. First, concerning the future positioning of HR analytics, many comments were made on where HR analytics would be positioned in 2025. In essence, there were three groups of responses. Three respondents were not sure whether HR analytics would be positioned within a company-wide big data team, or as a separate team within the central HR function, or that an HR analytics team might reside anywhere within the organization provided its link to the decision makers was short. A second group of seven respondents argued that HR analytics would remain within HR, and have become an integral part of each center of excellence covering aspects such as training, performance management, and compensations and benefits. In this scenario, an intensive collaboration is foreseen with the HR business partner, who would also need to have become more analytical. However, several respondents argued that the HR function as we now know it, will disappear, or at least change fundamentally. The HR function will have a stronger quantitative orientation and there will be much less opportunity for HR advisors to rely on gut feeling. This brings us to the third group of responses. Half of the respondents (ten) expected HR analytics to have become integrated in an organization-wide analytical team or function. This team will function independently of disciplines and focus areas, and identify valuable business cases and opportunities to improve business performance. Such a team will cover all functional areas of potential relevance, including HRs. Various labels for such a team were suggested in the responses, including enterprise analytics, big data team, central analytics center, and business intelligence team. Further, it was argued that such a team could be positioned in an operations or a strategy department. The bottom line is that, in this future scenario, HR analytics will cease to exist as a separate discipline within the HR domain.

The second category of comments concerning the future structure of HR analytics addressed the internal actors that will be involved. As one might expect, the analysts will play a central role. Some referred specifically to HR analysts, others to general analysts and stated that the analytical role could be fulfilled by, for example, statisticians, econometricians, mathematicians, and data scientist “types of people.” This group would
be responsible for not only executing analyses, but also for continuing to propagate the added value of HR analytics and to speak up when research results should not be slavishly followed, for example, if results were significant but not sufficiently robust. Further, it was foreseen that these analysts would not be working in isolation but cooperating closely with people in HR, finance, IT, marketing, and on the board, in order to acquire the necessary information and data to develop useful insights and to influence decision making.

A second major internal actor is expected to be the business or, more specifically, board members, directors, and line managers. Their role in HR analytics will involve formulating relevant business questions, ensuring that the relevant business data are made available, and supporting interventions that are based on insights from the analytics. Further, they will be interpreting the results from the analytics, and explaining their limitations and nuances. A few of the respondents expected the HR business partner to have a supportive role in this, and foresaw HR management playing a role in establishing HR analytics’ position in the organization. These comments were based on a 2025 perspective where HR analytics was still part of HR. Some of the respondents who foresaw a broader and general analytics function, considered consultants (either internal or external) as an important actor. These consultants would translate business challenges into research questions and have some understanding of statistics in order to properly guide the analysts. They would need the ability to advise on the outcomes in a way that was appealing to management, implying that they should also be able to link the outcomes to the business strategy and to the challenges facing management. A final actor that arose from the analyses, although only mentioned by one respondent, was the employees themselves on which HR analytics is focused. The development of HR analytics is, according to the respondent, largely dependent on where one draws the line in using employee data to base decisions upon. In the light of the growing importance of data privacy, the employee can be considered a very relevant actor, as well as a potentially constraining factor.

Several groups of external actors could be identified within the third category of comments regarding the future structure of HR analytics. The first group involved educators – universities and research centers. Respondents expected that, by 2025, universities would be offering HR analytics courses and that the first graduates from a fully focused data analytics curriculum would have entered the labor market. One respondent felt the time was now right to establish studies that would not only deliver good candidates for HR analytics jobs, but would also nurture research in this field. This brings us to the second group, knowledge partners, consisting of universities or consultancies, that will help in broadening knowledge. The third group mentioned consisted of data providers. Our respondents predicted that, in the future, there will be more data sources and more parties offering additional external data that will be being integrated in HR analytics. Fourthly, external data analysts will be involved in data management, statistical analysis, and benchmarking. The final group identified concerns parties involved in data security. As one respondent stressed, there is a thin line between privacy intrusion and business progression. Therefore, actors such as the government and data protection authorities will be playing an increasingly active role in preventing HR analytics becoming another “big brother watching you.”

System support of HR analytics in 2015
The fourth and last central topic of this study was system support, focusing on the support of information technology for HR analytics. The current system support for HR analytics is characterized by fragmented and outdated IT landscapes. Respondents commented that multiple systems are used to store data, and that various tools and platforms are in use to execute analyses and visualize results. Overall, the IT support for conducting HR analytics is considered limiting. One respondent indicated that, in most organizations, legacy systems
are hindering progress with HR analytics and that this can be considered as the main obstacle today. Examples of systems currently used to support HR analytics are outdated versions of business objects and Excel, with e-mail and SharePoint mainly being used to distribute reports.

It was also mentioned that even if data warehouses are in place for HR analytics, their usefulness is limited because they primarily contain HR data. Business data is often not available, or only provided on an ad hoc basis. There is little visionary thinking on how to develop a system architecture that facilitates the proper execution of HR analytics. This is perhaps because, as one respondent indicated, there is insufficient contact between HR analytics people and IT staff. The relationship can be classified as distant, with both speaking a “different language.”

The main issue with this lack of system support for conducting HR analytics is considered to be the time consequently absorbed in data retrieval, data cleaning, and data restructuring and organizing – that is on preparing the data for analysis. Although these activities may be automated to some extent, a great deal of HR analytics amounts to “manual labor.”

System support of HR analytics in 2025
In general, information technology is considered as the main driver of HR analytics in 2025. It was said that, without good tools, it will be impossible to make solid analyses. Further, the more an organization internalizes HR analytics, the greater will be the need to develop supportive information technologies. Nevertheless, as one respondent stressed, there are other drivers of HR analytics success, and IT is a means to an end and not a goal in itself.

By far, the most comments on future IT support for HR analytics concerned the integration of systems. Respondents referred to organization-wide systems, data in one single place, data from all disciplines centralized in one database, and the infrastructure for analytics being in one spot. All the comments essentially boiled down to information technology providing an infrastructure in which HR data could be combined with financial and other business- and performance-related data.

Further, one of the main developments foreseen by the respondents concerned the automation of HR analytics. They saw this as including, for example, the automation of data collection by constantly running queries on the databases, and thus automatically reporting metrics, and then making additional calculations. Nevertheless, they expected the data to still require cleaning and to some extent interpretation, such that manual actions would still be an important part of the process. However, at the same time, they recognized that software is becoming increasingly smart, and that artificial intelligence is advancing. Consequently, less human capacity may be needed for data management in the future.

Another related element raised by several respondents was the development of analytics as a self-service for managers. This implies the ability to run HR analytics at any time, in any place, and on any device or, as one respondent put it, doing HR analytics “on the fly.” They saw the device-independent execution of HR analytics being facilitated by the use of a data warehouse in which HR and business data are combined.

Furthermore, respondents indicated that the focus of supporting information technology will shift from reporting to analyzing. Whereas current software is often focused on dashboarding and displaying metrics, with progress mainly in terms of more advanced reporting solutions, the respondents predicted a shift in focus to analytical solutions with visualization capabilities and the statistical power to, for example, develop predictive models.

Discussion
The central question addressed in this study was: What will HR analytics look like in 2025 in terms of its application, value, structure, and system support? Based on the views of a
sample of 20 Dutch HR analytics practitioners, we concluded that the future development of HR analytics will probably be driven by an emphasis on integration. First, an integration of data is foreseen. While the current focus of HR analytics is largely on HR challenges, and thus primarily uses HR data, the future emphasis is seen to be increasingly on overarching organizational challenges requiring data beyond the boundaries of the HR domain and even of the organization as a whole. The integration of employee data with data from finance, sales, marketing, social media, and personal devices is anticipated. Second, an integrated IT infrastructure is needed to facilitate the use of multi-source data in analyses. Regardless of whether this integration involves the implementation of organization-wide systems or data warehouses, the data from all disciplines should be centralized in a single database to facilitate their combined analyses. Third, the integration of the governance of the various existing analytics functions is foreseen. Today, analytics teams in various disciplines tend to operate rather independently of each other and, by 2025, a centralized analytics function may very well be established. This function will then be focusing on identifying opportunities for improving business performance while addressing all the relevant functional areas, including HRs. Consequently, HR analytics as a separate team, function, discipline, or practice could very well cease to exist. Paradoxically, taking an “outside in” approach and transcending its own functional boundaries actually seems a prerequisite for HR analytics to be of relevance (Rasmussen and Ulrich, 2015).

Technology was seen as the main driver of the development of HR analytics. This does not surprise us given the historical overview presented earlier in this paper: HR analytics came out of the “HRM and Technology” research stream, and it is not difficult to see their interconnections. Developments are seen in not only integrating the currently fragmented IT landscape but also in automating data collection and data preparation activities, which are currently perceived as taking up considerable time by the HR analytics professionals. Furthermore, offering self-service applications to line management to facilitate analyses has the potential to speed up the development of HR analytics considerably. Is the “technological sky” unlimited? Probably not – as powerfully mentioned by one of the respondents, there is a thin line between business progression and privacy intrusion. Analytics using employee data can probably only go as far, and develop as fast, as the employees accept. While organizations have to comply with data privacy legislation, they may be more dependent on establishing trust with their employees if they are to use “their” data for the good of the business.

Limitations and future research
One of the strengths of this research may also be its main limitation. The sample used in this study consisted of practitioners active in HR analytics, as either a manager, an advisor, or a PhD candidate. One could argue that such a group knows best where HR analytics is coming from, where it currently stands, and where it is heading, because of their own experiences within their organization, or because they are involved in professional networks with others adept in HR analytics, or because they are informed by the literature on the “datafication” of society, organizations, and HR. However, it may also be that such a sample is biased to some degree. It would be valuable in future research to include business managers who are supposed to be served by HR analytics, and by IT specialists who may have better insight into how IT is currently supporting business analytics and therefore may be better placed to predict how technology will facilitate the development of HR analytics in the years ahead.

Another limitation concerns the inclusion of organizations from a wide spread of industries. Given the rather early stage of HR analytics research, adopting such a broad sample of organizations helps in gaining a general impression of the state of HR analytics and its plausible and most likely developments over the next decade. However, a sector- or
industry-focused approach could have provided deeper insights. For example, the extent to which an organization already has a rather analytical or “evidence-based” culture, or houses analytical capabilities in its operating core, may very well-influence the degree of support that can be expected from the business when introducing and promoting HR analytics. It may very well be that within companies that generally have to forecast decades ahead, for example, those in the petrochemical industry, that there is a more analytical corporate culture than within utility companies which until recently were state-owned. Another aspect that may influence the development of HR analytics within companies is the perceived quality and image of the HR function. Is HR represented at the C-level and involved in strategic decision making? Is HR perceived as a genuine business partner, or is it considered to be a group of people who simply organize the recruitment process and reimburse travel costs? Qualitative research on the development and future state of HR analytics could be strengthened, deepened, and nuanced by classifying organizations in terms of their HR maturity and the extent of their analytical culture.

Finally, in this study, we did not explore the perceived likelihood of the predicted future developments within HR analytics. Therefore, it remains unclear, for example, how likely it is that HR analytics will remain within the HRM function rather than become part of a centralized analytics function. Moreover, such developments may very well differ among organizations, depending on the organization’s governance, the maturity of their HRM function, and so on. Scenario research or Delphi studies could teach us more about which developments are likely to occur in specific contexts.

As outlined at the start of this paper, we are advocating a new wave of scholarly research focusing on the development of the business discipline of HR analytics, including its impact on the HRM function and on organizations as a whole. The results of the study indicate that universities are viewed as one of the external actors involved in HR analytics: as both an educator of future (HR) analysts and as a knowledge partner. The significant infiltration of HR analytics into the HRM agenda, and increasingly also into the business agenda, provides scholars with an opportunity to help steer the development of HR analytics. However, the scholarly contribution should start by asking relevant questions. Based on insights from our study, we believe that the relevant questions include: “How and to what extent does the decision-making influence of centrally positioned analytics teams differ from that of analytics teams positioned within individual disciplines?”; “What drivers are behind the development of an evidence-based organizational culture?”; “What preconditions will allow employees to let organizations use ‘their data’ for HR analytics purposes, and what are the boundaries?”; “To what extent do organizations comply with legislation when conducting HR analytics projects?”; “To what extent does the availability of self-service technologies for conducting HR analytics influence decision-making, and to what extent are such technologies already developed, implemented, and used?”; “What analytical software requirements would facilitate self-service HR analytics in going beyond advanced reporting on metrics?”; “In what way and to what extent does the involvement of external knowledge partners and data analysts pay off?”; “How are external partners selected, and are there downsides to external involvement?”; and, finally, “What can HR learn from the earlier transformation of the marketing and finance functions into a decision science?”

Furthermore, basic descriptive research that provides insight into the current state of HR analytics would be of value. Such research could provide insights into what HR analytics teams look like in terms of their size and their roles and responsibilities, the extent to which they actually focus on HR analytics as opposed to reporting metrics, and where such teams are positioned within organizations, who supervises them, and how they are connected with other disciplines. Such insights would enable the identification of trends in the development of HR analytics, and therefore help in steering its future development.
Managerial implications
Since the beginning of the global economic crisis around 2008, many investments in IT have been put on hold. The speed of technological advances may have also discouraged or prolonged decision making, simply because investments become risky with new technologies possibly being outdated before they are even implemented. However, many organizations are working with fragmented and outdated IT landscapes that need to be replaced. One example of current trends is that on-premise enterprise resource planning systems are increasingly being replaced by off-premise cloud solutions. Our study points to the need to build a solid IT infrastructure that can support evidence-based decision-making. Given that many organizations are in the process of making major IT investment decisions, they need to be aware that improving their (HR) analytics capabilities will impose additional specific requirements for new (HR) technologies. These requirements may include the provision of self-service capabilities for conducting analyses, user-friendly automation of data cleaning and data collection, the possibility of conducting genuine predictive analytics, and the ability to report results in a visually attractive manner that can help convince business leaders.

Furthermore, our study may help HR managers and business leaders to decide where in their organization to position HR analytics capabilities. Many HR directors and managers, and a steadily growing number of business managers, consider HR analytics as a boat they cannot afford to miss. However, establishing an HR analytics team staffed only by HR people, and positioning the team within the HR function, may not be a recipe for success. As this study shows, such an approach may make it difficult to get commitment from the wider business, to obtain data from other disciplines, and, more significantly, the HR analytics team may even be dismantled before it reaches maturity. Regarding this last concern, many respondents foresaw a centrally positioned analytics team transcending the individual disciplines. Given the general trend of increasingly basing decisions on analytics, other disciplines may very well establish analytics teams. As such, it may be more effective, and cost-efficient, to establish a central analytics team right away.

Concluding thoughts
Our research suggests that HR analytics will have a major influence on decision making in organizations in the coming years. Further, HR analytics is likely to influence the composition and role of HRM as a function. It can help to ensure lean and agile organizational structures that are based on an optimum combination of people characteristics and skills on the one hand, and strategic business targets on the other. In so doing, HR analytics has the potential to transform organizational models. Overall, this study has aimed to make a modest contribution to the understanding of HR analytics by providing a glimpse into its future. As Ulrich stated, “no one can predict the future course of the HR profession,” and we would add neither of HR analytics. Nevertheless, as HR scholars, we should be part of it.

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**Corresponding author**

Sjoerd van den Heuvel can be contacted at: sjoerd.vandenheuvel@hu.nl

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