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Sara Heidi Helene Johansson and Kristin Gorseth Henriksen

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## **Abstract**

This master thesis explores the utilization of HR analytics in organizations. As research has presented distinct and partly opposing results regarding HR analytics, our aim was to study whether previous research aligns with the experiences of those working with HR analytics; more specifically of those of consultants and HR managers of international organizations, simultaneously opposing these two viewpoints with each other. Thus, we examine if HR analytics is a fad, as mentioned by some, or if it is as fantastic and detrimental for the success of an organization as others state. Concretely, we aim to answer the research question *“From the perspective of consultants and HR managers, how is HR analytics improving organizational performance?”* Following the results of our study, we added the following sub question that further elaborates the utilization of HR analytics *“What factors are preventing organizations from utilizing efficient HR analytics?”*

The interviewees included 5 consultants and 6 HR managers from international organizations. We used the comparative research design and further, semi-structured interviews to be able to get as rich information as possible, as well as to be able to respond to the interviewees’ information with flexibility.

Our findings conclude that there were no major differences between the consultants and managers in either one of the research questions presented. However, the clearest conclusion from both parties was that HR analytics is still at the descriptive level, which can inhibit organizations from fully utilizing HR analytics for organizational performance. Additionally, as beneficial as it was to find inspiration from other organizations’ ways of utilizing HR analytics, an organization should focus on HR analytics’ initiatives that are relevant for the performance of their own organization. Further, both parties recognized organizational demographics, information technology, and people to be the biggest factors hindering the utilization of HR analytics. This thesis further elaborates on conclusions, future research opportunities and limitations of the study.

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# 1 Introduction

## *1.1 Background to the study*

An economic environment is changing rapidly. Globalization and deregulation of markets, changing stakeholder demands, and continuously increasing competition are examples of the phenomena that have become the new norm for the majority of organizations (Becker & Gerhart, 1996). Essential for the success and survival of an organization in a modern market is that it must incessantly improve its performance by reducing costs, while improving quality, productivity, and speed (Becker et al., 1996; Richard et al., 2009). Along with other organizational activities (i.e., marketing and strategy building), Human Resources (HR) is ultimately judged by its contribution to organizational performance (Richard et al., 2009). Traditionally, HR has been perceived as a cost to be minimized and potentially as a source of efficiency gains, but only very seldom has it been considered as a source of value creation (Becker et al., 1996). However, while a new strategic interest in HR is shifting the focus toward a value creation through human capital, practitioners have started to acknowledge the importance of big data and predictive analytics in achieving business value and increased organizational performance (Becker et al., 1996; Gunasekaran et al., 2016).

HR analytics (also known as People analytics, Talent analytics or Workforce analytics) is an HR tool adopted by an increasing number of organizations. The analytical approach into people and performance management has recently painted pleasant pictures on organizational performance and competitive advantage through effectively analyzing employee data (Davenport et al., 2010). However, as Peeters et al. (2020) address, so far only 16 % of organizations have implemented advanced HR analytics in practice; the low adaptation rate has caused discussion whether or not HR analytics is, in fact, as successful as it is expected to be. A set of contradictory arguments have been placed by different scholars. Angrave et al. (2016) argue that HR analytics might embed an engineering perspective on people management, simultaneously restricting the strategic influence of HR while damaging employee well-being. Gal et al. (2020) placed focus on the opacity of HR analytics, addressing concerns how HR analytics could lead to opposite outcomes in cases where employees do not understand the cause effects of the HR analytics' algorithms - as an example, an overperforming employee could be perceived as an underperforming employee, resulting to termination of the employee.

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Amongst many, Harris et al. (2011) and Mondore et al. (2011), in turn, address HR analytics' contribution to the long-term success of an organization: not only can it prescribe ways to, for example, retain the crucial employees that are at-risk of leaving, effective analysis producing quantified investment returns also helps to reallocate finances into more valuable initiatives. As mentioned by DiClaudio (2019, p. 43), as a result, a new role is being casted on HR as a driver of performance improvement and value through the delivery of powerful insights.

### *1.2 Research gap and questions*

Due to the infancy of HR analytics' utilization and thus, lacking evidence about its effectiveness on organizational outcomes, HR analytics offers a multitude of possible questions to explore. However, as mentioned both by Falletta (2013) and Marler and Boudreau (2017), much more evidence-based information is needed about HR analytics - instead of using shortcuts such as human intuition as the foundation for decision making, HR decisions should embrace evidence. Several academics and consultants have addressed HR's need to reorient toward measurements that combine talent decisions with business performance, while some scholars (e.g., Rasmussen and Ulrich, 2015) have argued that HR analytics with its current pitfalls will fail to add real value to organizations.

The literature in the field of HR analytics currently resembles more hype than substance (van der Togt & Hedegaard Rasmussen, 2017), which might cause further doubts on its actual effectiveness. Aligned with this is the suggestion that HR analytics is only a fad, a swing that has appeared and that will eventually disappear when the inflated expectations placed on it are not fulfilled (Marler & Boudreau, 2017). The current interest in HR analytics is in large amounts purely commercial and promotional, whereas organizations rarely share the same success stories of its business impact (van der Togt et al., 2017). At the same time, as mentioned by Greasley and Thomas (2020), little empirical research on HR analytics has been conducted that would assess organizations' progress in HR analytics and possible obstacles in the utilization of it. The above-mentioned reasons piqued our interest to include both the perspectives of consultants as well as HR managers, and compare the perceptions and analyses of these two parties to get a deeper understanding of HR analytics' ability to impact organizational performance. Therefore, the main purpose of this study is to provide the currently lacking



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evidence-based substance on whether or not, and to what extent, the use of HR analytics is improving organizational performance. Further, we want to address the factors hindering the adoption and use of HR analytics.

Thus, the research question to be answered can be formulated as follows:

*Q: From the perspective of consultants and HR managers, how is HR analytics improving organizational performance?*

Followed with the sub-question:

*Q1: What factors are preventing organizations from utilizing efficient HR analytics?*

Our interest toward HR analytics to organizational performance was a consequence of the above-mentioned hype. Conducting an internship at a large organization, we started discussing HR analytics in regard to current HR trends. After further investigation, we realized that the topic is, as mentioned by Rasmussen and Ulrich (2015), on the verge of becoming a fad without clear evidence-based affirmation on its value. Thus, finding out how today's organizations are using HR analytics as part of their Strategic Human Resource Management (SHRM) when aiming to improve organizational performance, whether it succeeds fulfilling the expectations placed on it, and what factors are hindering the transformation of HR's role into a more business aligned role, raised our interest.

### *1.3 Structure of the study*

This study consists of introduction, literature review, methodology, analysis and results, and finally, discussion, conclusions and further research opportunities. To successfully answer the research questions, the theoretical focus will revolve around HR analytics and Strategic Human Resource Management. We will start the literature review with defining the core concept of HR analytics, after which the study will take a more comprehensive approach to HR analytics. Moving onto Strategic Human Resource Management, the research first elaborates strategic HRM's capability to affect organizational performance. We will then present a strategic HRM framework working as a rationale for HR analytics. Finally, the study discusses the fit and flexibility of SHRM practices.

Chapter 3 consists of methodology. The study explains in detail the research design as well as reasons behind conducting qualitative research with semi-structured interviews. Furthermore, we discuss data collection and analysis before

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addressing the trustworthiness and ethical concerns of the study. Additionally, the limitations of the study are addressed in chapter 3. In analysis and results, the study will reveal the empirical results, classifying our analysis and results under three core themes. In discussion and conclusions, the study will synthesize the empirical findings with existing theoretical frameworks and conclude the results. Lastly, we will provide insights into potential future research.

## **2 Literature review and theoretical focus**

The literature review begins with the topic of HR analytics. As the purpose of the insights created and interventions proposed by HR analytics are meant to contribute to SHRM and align HR practices with objectives that are meaningful to the organization as a whole (Mondore et al., 2011), we then move our focus on SHRM. We begin discussing SHRM by combining it with organizational performance, after which we will present a strategic HRM framework. Finally, we will elaborate on the fit and flexibility of SHRM practices.

### *2.1 HR analytics*

Organizations have the possibility to access vast amounts of diverse data, by sourcing data both from inside and outside an organization. As mentioned earlier, other organizational functions, such as marketing or finance, have been able to utilize the existing data pool, while HR functions have been marked as laggard in making use of the information sources. Although the notion of HR analytics' can be traced to the early 1990s, it has only recently started gaining significant appreciation. (Nair, 2018)

Greasley and Thomas (2020) define HR analytics rather loosely as “including metrics and analytics”, aiming to improve organizational performance through analyzing human capital. However, Bassi (2011) recognizes people having differentiating definitions of HR analytics: some might only think of HR analytics as systematically reporting on HR metrics such as turnover or employee engagement. While this is a component of what HR analytics consists of, it is only a small part of analytics. Davenport et al. (2010) have defined six kinds of analytics, all of which are answering critical talent questions helping an organization toward increased performance. These consist of:

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- Human capital facts (Identifying the key indicators of an organization's overall health)
  - Analytical HR (Identifying the units, departments and/or individuals in need of attention)
  - Human-capital investment analysis (Identifying the actions impacting business performance the greatest)
  - Workforce forecasts (Identifying potential shortages or excesses of key capabilities before they happen)
  - Talent value model (How to ensure that the key personnel is staying inside an organization)
  - Talent supply chain (Identifying talent-related demands, e.g. optimizing work schedules or letting personnel go home early based on predictions)

According to Delen and Demirkan (2013), the three main categories of analytics are descriptive, predictive and prescriptive. Descriptive analytics looks at what has happened in the past and can help identify problems and opportunities. Predictive analytics looks at what or why things will happen in the future, while prescriptive analytics can give the best course of action and rich information by answering what and why organizations should do. People usually think they are good at making decisions, but unfortunately cognitive biases can lead to shortcuts when trying to solve problems (Wright and Snell, 1998). Information overload, the need to act rapidly, remembering information and experiencing lack of meaning can lead to errors in decision making. Therefore, using hard data like HR analytics to make decisions will improve decision making in HR and also help leaders make better decisions (Johnson-Murray et al., 2018). The data can help organizations choose who to hire, who needs to leave the organization, how to construct work teams in order to maximize productivity and who to promote (Gal et al., 2020). However, according to Fernandez and Gallardo-Gallardo (2020), so far only about 15% of executives have changed a business decision based on HR data. They further elaborate how the low-rate results from companies mostly focusing on the descriptive, backward-looking use of HR analytics.

Moreover, HR analytics has the possibility to further enhance the position of HR functions within organizations, making sure that the HR department is involved in decisions that affect business strategy, and at the same time affect long term goals and operational tasks due to its dynamic role (Ben-Gal, 2019). However, this

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approach should be handled with discretion: if executives believe the HR function is embarking on an analytics project to justify itself or its budgets, the outcomes can be viewed with suspicion (Bassi, 2011, p. 16). Hence, resulting in a failure to capitalize on the value stemming from HR analytics.

### *2.1.1 HR analytics and data collection*

Even though there is research showing the positive sides of HR analytics, there is also research showing that organizations struggle to optimize the usage of HR analytics. Fernandez & Gallardo-Gallardo (2020) state that the confusion regarding what analytics in human resource management entails and the lack of clarity on why adoption is prevented in organizations hinders organizations succeeding, in addition to organizations having problems with establishing widely practices.

Information should be used to make better decisions in which the organization can achieve a competitive advantage, and thereby increase organizational performance. HR analytics use measurement and analysis to improve the people side of business. For instance, if a person chooses to leave their firm, data is collected regarding turnover. By using metrics to track past performance, and by using analytics to detect patterns and predict future performance, an organization gets actionable information it can use to enhance the HR function in the organization (Fernandez & Gallardo-Gallardo, 2020). Therefore, it is important that individuals looking into HR analytics do not just look at the metrics which give intel about how many have left and if the number has increased over time, but mainly the analytics which explains why and which people are leaving, and what impact it has on the organization. By doing so, an organization can have evidence-based decision making that has the possibility to increase organizational performance in the future and maximizes the benefits of HR analytics (McIver et al., 2018). However, if an organization is small, the HR analytics can operate differently. If one person leaves a small company, it can have a large effect on their turnover rate. Hence, small organizations would need more information in order to figure out if there is a need to improve an area within the organization, for instance by getting additional information through employee exit interviews or external information about market conditions (Johnson-Murray et al., 2018).

When it comes to HR analytics, it is important for an organization to have educated individuals handling the data, as the value of the data is dependent on the

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individual's ability to extract information and insights from them (Johnson-Murray et al., 2018). Unfortunately, despite HR generally having the best access to obtaining HR data, concerns have emerged that HR professionals are not proficient in statistical skills needed for sophisticated analytics (Levenson, 2011), in addition to struggling to lead HR analytics' efforts both from finance and IT perspectives (Bassi, 2011). Some researchers (e.g., Rasmussen and Ulrich, 2015) have even suggested drastic actions to overcome the skill shortages of HR professionals, including those of taking HR analytics out of the HR function.

### *2.1.2 HR analytics and business acumen*

According to Marler and Boudreau (2017), for HR analytics to be successful, three moderators are relevant for organizations. They need to have analytical skills, gain managerial buy-in and have information technology which can facilitate HR analytics. Aligned with this, Johnson-Murray et al. (2018) add how one has to understand people, business and data. Often numbers do not tell the whole story behind a problematic area, for instance retention/turnover rate, and therefore the interpretation is important. One has to look at the analytics in context, both internal and external. An organization's decisions cannot control a global market crisis, which can impact turnover rates, but they can do something about how to adapt according to their employees needs in order to retain valuable employees. It is therefore important that organizations prioritize issues which are important for organizational performance, to be able to adapt to dynamic environments and changing needs (McIver et al., 2018). Furthermore, HR analytics has the ability to identify with precision the commonalities across various environments, as well as identifying environments unique to a specific location (Marler and Boudreau, 2016).

In order to gain managerial buy-in, managers from other departments have to be willing to share access and involve themselves in the process (Marler and Boudreau, 2016). A good starting point is having a CHRO who is deeply involved, having guidelines regarding privacy and security in order to gain trust from employees and coworkers, and communicating success of HR analytics both externally and internally (Green, 2017). Understanding people means understanding why they work, why they leave and what their desires are in their careers. People usually want a more balanced work-life instead of higher salary,

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and therefore what the organization usually thinks the employees want, are in contrast to what the employees actually desire (Sullivan & Baruch, 2009; Boselie, 2014). An analysis of why people leave will give intel to the organization on how to retain talented employees or high performers. It is important to know how to motivate, influence and persuade people in order to ask the right questions and to ensure that the messages from the analytics are delivered in an understanding way for the stakeholders (Johnson-Murray et al., 2018). By questioning them as well as to what the cause could be of people leaving the organization will give a better insight as to what the issue is, from both parties. It will also show what are the most important functions of each employee in order for the organization to have a competitive advantage, because the loss of a high-performing employee can be damaging to the organizational performance. Business is related to the overall strategic business goals of the organization, and if those conducting HR analytics do not have a good understanding of what is important for the organization to have competitive advantage, the analyst will not be able to provide important information about areas the organization needs to do better in (Johnson-Murray et al., 2018). However, as mentioned by Levenson (2011), HR professionals often battle with targeting insights that really matter to organizations.

### *2.1.3 HR analytics driving action*

The HR department is usually quite siloed, being specialized in different areas relating to the human capital of the organization (Fernandez & Gallardo-Gallardo, 2020). However, HR analytics demands a systems perspective to be effective. Therefore, it is important to collaborate with people who have important information which can provide a better understanding and better outcome of the HR analytics. HR analytics is a team sport, and the most advanced HR analytics teams should leverage resources from other departments or outside help in order to have the most efficient process possible (Green, 2017). When putting together a team to solve a problem the organization has, it is important to clearly articulate that their help is wanted and necessary to get a better picture of the situation, and that no one is involved in order to find someone to blame (Johnson-Murray et al., 2018). Having a psychological safe climate is essential in order to get people to share honest knowledge about problematic areas and information they have received by employees. Usually, people think about numbers when it comes to HR analytics,

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but people have access to more data than they are aware of. Casual conversations with colleagues have the potential to offer a lot of qualitative information that one does not get by looking at numbers. Hence, by engaging in conversations and discussions with people from different areas of the organizations, HR analytics is in a better position to find a sustainable solution to problems. Although the need for collective intelligence has been generally recognized for HR analytics, there is little to no evidence that interdepartmental collaborations would take place in organizations, thus maintaining the silo mentalities within them (Fernandez and Gallardo-Gallardo, 2020).

When it comes to how to run HR analytics, Johnson-Murray et al. (2018) recommends starting with creating a hypothesis. In some cases, it can be wise to have multiple hypotheses, in order to make sure that if one hypothesis gets rejected, one can use the others to see if that's the reason for the problem. When looking into turnover, one can for instance make a hypothesis which states that they are not getting enough paid and that is the reason they leave their job. If that is rejected, a hypothesis could be that they are not engaged in their work or that they are not satisfied with their working conditions, for instance relations to other employees. One of the most important factors is that the metrics have clear definitions that everyone is aware of, so that everyone asked has the same assumptions and the HR analytics are easier carried out. An article by Lawler et al. (2004) showed that HR managers feel that their metrics are not good enough in order to solve key business decisions (Fernandez & Gallardo-Gallardo, 2020), which also highlights the need to have metrics that are standardized and able to detect reasons why things are not working in the optimal way for organizations. The metrics in HR analytics can either be lagging, describing what has happened in the past, or leading indicators of the organization's progress towards a goal and strategy execution (Coco et al., 2011; Johnson-Murray et al., 2018). Utilizing these metrics, organizations have a better chance of succeeding for instance when it comes to recruitment, turnover, and organizational performance. However, utilizing these metrics can prove to be difficult, as organizations may struggle with incompatible or excessive systems that do not meet the organizational needs (Coco et al., 2011).

When presenting the results stemming from HR analytics to stakeholders, it is important to think about how to relay the findings to avoid biases that can make them more resistant or supportive of the findings. Using storytelling to relay the

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findings have shown to have positive results, because it can trigger emotions (Fernandez & Gallardo-Gallardo, 2020). The findings must be presented in a persuasive way, for it to have an impact and to be able to contribute to better decisions in the future. Storytelling which combines data with relevant examples to employees will be more understandable and clearer. Hence, stakeholders are likely to be more engaged and feel that the message is important. Johnson-Murray et al. (2018, p. 107) also advise that data is presented graphically or pictorially, because then the information will be easier to receive, in contrast to presenting a list of numbers. Despite the advantages of storytelling, Rasmussen and Ulrich (2015) have recognized the possible detrimental effects of this method. As addressed by them, data can be collected and misused to support one's own agenda, without the data representing the reality. Thus, searching biased data, or ignoring or covering harmful data produced by HR analytics can have injurious consequences for organizational performance.

As Pasquale (2015) states, it is important that the data is made transparent by clearly articulating their scope, type and quality, and that both the data and conclusion is open to ratings or evaluations to see if the algorithms are correct (Gal et al., 2020). By doing this, it will show whether HR analytics is worth investing time and money in, and whether changing behaviors or decision making is worth doing. Focus groups, surveys, interviews and data are methods an organization can use to evaluate change initiatives (Johnson-Murray et al., 2018). Using hypotheses and clearly communicating what changes are expected, will make the stakeholders more positive in regard to making sure that changes are made. Using HR analytics during selection and talent technology, the analytics' most positive attribute is the predictive value it has. An organization has the opportunity to analyze the skills and attributes of high-performers and those who do not perform well enough. This gives organizations valuable information about what they should look for in future hiring of employees, in addition to predictive information about who they should avoid hiring (Walford-Wright & Scott-Jackson, 2018). Therefore, if done right, organizations have the opportunity to save time and money, if the HR analytics are applied and adapted according to their organizational needs.



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## *2.2 Strategic Human Resource Management (SHRM)*

### *2.2.1 SHRM and performance*

In recent decades organizations have started to realize that HR can potentially be one, if not the most, important source of superior performance and competitive advantage (Luna-Arocas and Camps, 2008). SHRM, defined by Kaufman (2015), consists of choosing, aligning and integrating an organization's HRM in a way that best enables human capital to contribute to business objectives. However, the multitude of impacting factors have made it challenging to separate the effects of HR on organizational performance (Becker et al., 2001). The primary goal of SHRM, as addressed by Sivathanu and Pillai (2020), is to increase organizational performance in terms of financial outcomes and productivity of the organization. This view is challenged by Dyer and Reeves (1995), who classify the possible outcomes as follows:

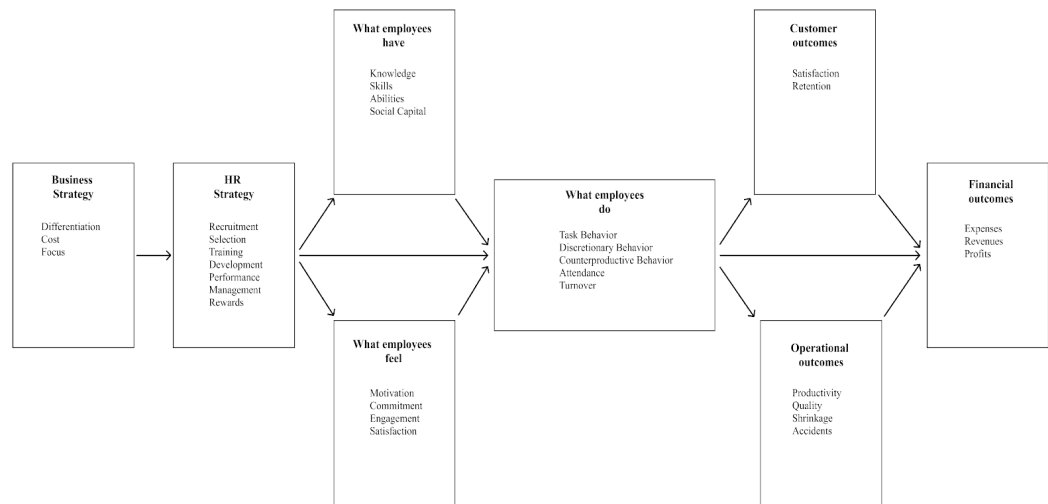
- HR outcomes (absenteeism, turnover, individual or group performance), in addition to employee attraction and management/employee relation (Delaney & Huselid 1996 in Ho, 2008)
- Organizational outcomes (productivity, quality, service)
- Financial or accounting outcomes (ROI, return on assets, stock value)

What makes a more strategic role difficult to achieve for HR is the fact that the influence of HR practices on organizational performance are challenging to measure. Strategic HR drivers such as engaged workforce or development of essential employee competencies, in all its vagueness, fail to convince executives of HR's value to the business. These drivers are so broad that organizations simply do not know what actions to take to achieve them (Becker et al., 2001). Levenson (2015), on the other hand, criticizes organizations' tendency to focus too much on return on investment (ROI) in human capital initiatives. Instead, Levenson (2015) mentions how a better approach would be to specify how the initiatives undertaken support building and maintaining the organizational capability for strategy execution. Thus, a legitimate strategic HR function builds the credibility of HR initiatives, further enhancing influence over resource allocation and decision-making authority (Mitchell et al., 2013).

2.2.2 Strategic HRM framework

A strategic HRM framework is a roadmap focusing on important outcomes and factors influencing the outcomes. It reveals both the long-term strategic capabilities while not forgetting the short-term potential benefits. In the context of HR analytics, the framework might provide guidance on what variables and linkages to delve into and how to harness them into long-term and short-term performance improvements (McIver et al., 2018). One of these strategic HRM frameworks is provided by Wright (2008; see also Boselie et al., 2005), illustrating the relationship between business strategy, HRM, and performance (figure 1).

Figure 1. Strategic HRM Framework (Wright, 2008; adapted by McIver et al., 2018)



The framework highlights the initial impact of strategic HR practices by demonstrating that it is the employees’ feelings and possessions that work as mediators between HR practices and organizational performance (Wright, 2008). This is aligned with the AMO framework, suggesting that the better the HR practices enhance employees’ abilities, motivation and opportunities to contribute to organizational performance, the higher the performance gains from these practices will be (Obeidat et al., 2016). Hence, an organization engaging in questions around AMO would increase the chances for identifying options for improved performance and productivity (Levenson, 2011).

As addressed by McIver et al. (2018), it might be tempting for an organization to base decisions on narrow insights without including a broader image of cause-effect relationships. Only a strategic and integrated view will realize that, for example, turnover or absenteeism might be a consequence of deeper organizational issues instead of the criteria used in selection (McIver et al., 2018). A solution

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lacking strategic, deeply integrated focus would therefore suggest organizations to base their decisions on isolated metrics without seeing the full context.

### *2.2.3 Fit and flexibility*

In some cases, the HR function might have their own input without linkages to the overall business strategy. These loose HR strategies, as concluded by Lawler et al. (2004), are usually doomed in the first place as they exclude the real needs of an organization, in terms of talent. Therefore, as briefly mentioned earlier, the key to increased organizational performance is to assure a fit between strategy and HRM. Wright and Snell (1998) state that the fit should be both horizontal, fitting the various HRM practices together, as well as vertical, involving the alignment of HRM practices with the firm's strategic management process.

In addition to the roles of horizontal and vertical complementarity, congruence and synergy (Kaufman and Miller, 2011), an optimal strategic HRM choice should be concerned with developing the flexible capability to adapt and meet the diverse and changing organizational requirements (Wright and Snell, 1998). Sanchez (1995) separates two types of flexibility, the first being resource flexibility and the other coordination flexibility. An organization with high resource flexibility can apply the resource into a larger range of alternative situations, while costs, time and difficulty to switch the use remain low. High coordination flexibility, in turn, defines how an organization is able to smoothly resynthesize its strategies, reconfigure the chain of resources and redeploy the resources (Sanchez, 1995).

However, Snell (1992, p. 293) states how "it may be clear that managers should match preferred human resource management practices to strategy, there is no compelling evidence to suggest that they will, or can, do so". Thus, to leverage both flexibility and fit in HRM practices, practitioners ought to understand the required skills and behaviors for the strategy implementation, and HRM practices eliciting them (Snell, 1992). Effective HR professionals not only understand the operations and functions in the organization, they are also proficient in business acumen. They employ the required knowledge, skills and abilities to collect and analyze data, and interpret and promote findings that evaluate HR initiatives and inform business decisions and recommendations (Johnson-Murray et al., 2018). Nevertheless, too often individuals process information in a way that misjudges true probabilities,

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apply inappropriate heuristics or base decisions on biased estimates, resulting in difficulties achieving fit and competitive advantage (Wright and Snell, 1998) .

### 3 Method

This chapter begins with restating the research questions and the importance of the study, in addition to presenting our research design and why it is applicable for this study. Second, we will explain our data collection process, emphasizing the selection of the interviewees and the collection of the data, following with a description of data management and analysis. Finally, we address the trustworthiness and ethical concerns of the study together with its limitations.

#### *3.1. Research questions and research design*

In the present study, we are aiming to answer the following research questions:

*Q: From the perspective of consultants and HR Managers, how is HR analytics improving organizational performance?*

*Q1: What factors are preventing organizations from utilizing efficient HR analytics?*

As pointed out earlier, the research of predictive HR analytics is still in its infancy with further need for evidence-based information. Previous studies have resulted in somewhat bipolar findings about the effectiveness and hindrances of HR analytics, therefore we have posited our thesis to take a qualitative approach. As Merriam and Tisdell (2016) define qualitative studies as “words as data”, Palinkas et al. (2013) address that qualitative approach is typically being used in cases where the purpose is to explore and obtain depth of understanding as to the reasons for success or failure. We see this particularly fitting for our study where the objective is to gain better and further insight to HR analytics effectiveness and hindrances through the perceptions and analyses of consultants and HR Managers.

Organizations have not typically shared the same successes of HR analytics than what the promotional literature embeds, indicating that there may be differences between consultants and HR managers of how HR analytics is understood by the two parties. Hence, our study also aims to research whether differences exist in the views of how HR analytics can improve organizational performance and the factors hindering the utilization of it. The research design of our study is closest to the comparative design where identical methods are used in

contrasting cases and comparisons between them are made to be able to understand the phenomena better (Bell et al., 2019). We used qualitative interviews, more specifically semi-structured interviews in collecting data both from consultants and HR managers working with HR analytics, therefore being aligned with Merriam et al. (2016) statement on how getting good data in an interview is dependent on asking well-chosen open-ended questions that can be followed up with probes or requests for more detail. The goal with these descriptive and exploratory questions, as mentioned by Vogt et al. (2012), is to learn as much as possible of the viewpoints and beliefs of an interviewee. We built two separate interview guides, one for the consultants and one for the HR managers (see appendix A and B), which included relevant themes for the study: HR analytics, organizational performance and Strategic Human Resource Management. Based on these themes we built tentative interview questions to cover, but as mentioned by Adams (2015), the agenda for semi-structured interview is never carved in stone. This enabled us as interviewers to ask follow-up questions to provide the interviewee with opportunities to highlight and elaborate aspects that they felt are the most valuable.

*3.2. Interview objectives and data collection*

Typical for qualitative research, we used purposeful sampling in the selection of the interviewees. Thus, we identified and selected interviewees that are knowledgeable and experienced with HR analytics and are therefore able to provide detailed and generalizable information (Palinkas et al., 2013). As addressed by Merriam et al. (2016), a selection criteria must be determined to select a suitable sample from which the most can be learned. In our study, the selection criteria can be seen in table 1. However, implementing too many or too detailed criteria would not serve the purpose of the study, keeping in mind that HR analytics is still only used by a fraction of organizations.

Consultants	HR Managers
Advices in and solves organizational problems including HR analytics	HR analytics is currently used in the organization to gain insights and influence organizational decisions

· Possesses several years' experience in HR analytics	· Minimum of 1 year experience in HR analytics
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*Table 1. Selection criteria*

We used the social media channel LinkedIn as our main channel for identifying and contacting prospective interviewees. We conducted conditional searches on LinkedIn that took the example form of “(“Head of HR” OR “HR Manager”) and (“HR analytics”).” Furthermore, we built a prospect pipeline of interviewees and contacted all of them to discover whether they possess the required knowledge and experience for the study, and if they would be willing to participate in the semi-structured interview.

The HR managers as well as the consultants in our study, comprise of individuals scattered across European time zones. We conducted interviews with 11 participants, each participant representing either a consultant (5) or an HR Manager (6) working with HR analytics. As mentioned by Falletta (2013), international organizations are more likely to perform broader HR analytics' practices; from this perspective it is only natural that the organizations in our study represent such companies. The summary of the interviews can be seen in the appendix C.

A few days before each interview, we sent the interviewees the interview guide by email to help them prepare for the interview. Due to the Covid-19 pandemic, all of the interviews were conducted through video calls. We used the video meeting tools Zoom and Microsoft Teams, which enabled us to conduct the interviews in real-time, while following the safety guidelines set by the Norwegian government. We conducted one semi-structured interview with each consultant and HR manager selected for the study, so that only one interviewee was present at each interview. As it can be easier for a consultant to know whether or not they possess the required knowledge about HR analytics, this is not necessarily as simple and straightforward for the HR managers. In some occasions the practice of HR analytics is a divided responsibility between many individuals within an organization. Thus, it could be challenging to find the best informant for the research - we became aware of this when some of the primary contacts either first had to discuss inside the organization who would be the best interviewee or directly propose another interviewee. In the beginning of each interview, we asked the interviewees for permission to record the

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interviews. As all of them agreed, we recorded the interviews for transcription and further data analysis.

### *3.3. Data management and analysis*

One of the main challenges with qualitative research is the rapidly developing complex dataset that is reliant and unstructured by its nature (Bell et al. 2013). For this reason and to better keep up with the interviews, we started transcribing the data simultaneously alongside data collection.

Since our analysis aims to reveal in-depth knowledge, experiences, beliefs of consultants and HR managers, we decided to transcribe the interviews in their full existence. This approach is especially suitable for studies such as ours that aim to identify patterns and salient themes, but also demonstrate variations in how the phenomena is experienced (McLellan et al., 2003). Transcribing the interviews fully meant that we also included incomplete sentences, mispronunciations and nonverbal sounds such as laughs into the transcriptions. The total length of the transcriptions became 97 pages. Right after transcribing the interviews, we started to analyze the data, conducting a thematic analysis that according to Nowell et al. (2017), can be used for trustworthy and insightful findings. Additionally, as highlighted by Nowell et al. (2017), thematic analysis is particularly useful for examining the perspectives of different participants, further highlighting similarities and dissimilarities between the perspectives.

After deeply familiarizing ourselves with the data gathered, we gave equal attention to each data item in identification of interesting aspects. We started to search for and extract themes through patterns in codes implemented into the data set (Nowell et al., 2017). Since our study aims to improve the existing theories and evidence of HR analytics, we applied deductive coding in the data analysis; the codes stemmed from the interview guides (Ranney et al., 2015), and our pre-existing understandings of what might be of importance (Neale, 2016). However, as addressed by Neale (2016), deductive codes can oftentimes be supplemented by inductive codes to discover surprising findings, which was also the case in our study. Despite using deductive coding, we made sure not to be too strongly guided by theory, aligned with King's (2004; in Nowell et al., 2017) recommendation of not neglecting themes that might be of no direct relevance. To successfully manage the data set, we created a coding framework on Excel spreadsheet, having the

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interviewees on the left side of the framework, and code names on the top of the framework. Further, we gathered snippets of data on to the framework to correspond with the correct interviewee and code and support the emerging themes. As addressed by King (2004), using a framework such as this forces the researcher to justify the inclusion of each code. When patterns in codes started to support each other, we were able to develop several themes where the data within the theme cohered together but that were clearly distinct from each other (Nowell et al., 2017). Finally, after naming and considering the fit of each theme, these themes were developed into research findings.

### *3.4. Trustworthiness and ethical concerns of the study*

In qualitative research the trustworthiness is dependent on the researcher's ability to rigorously describe the execution of the study and the practices used in data collection and analysis (Tracy, 2010). To increase trustworthiness of our study, we have provided an audit trail by portraying in detail the research process with transparency (Merriam & Grenier, 2019). This included describing the reasons behind the selection of semi-structured interviews, sampling of the interviewees as well as describing the formulation of the findings.

Second, as addressed by Bell et al. (2019), triangulation has been a widely used practice in qualitative studies to enhance the study credibility. As we only used semi-structured interviews to collect information and formulate the findings, it might be that triangulation would result in greater confidence or richness in findings. Regardless of only using semi-structured interviews in data collection, the credibility of our study, however, is enhanced by the data being analyzed by two researchers (Nowell et al., 2017). Further, to enhance confirmability, we have aimed to control bias through following, rather than leading, the semi-structured interviews, and staying open to unfolding findings by maintaining a self-critical attitude and asking follow-up questions to ensure we understand the interviewees correctly (Thomas & Magilvy, 2011).

As addressed by Krefting (1991), the purpose of qualitative research is to learn from the interviewees and describe a specific phenomenon or experience. We have aimed to provide a thick description of their experiences regarding HR analytics to illustrate the complex nature - thus, enabling the readers of our study to make their own conclusions of the transferability of our findings (Tracy, 2010). However, we



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want to address a few limitations regarding the sample and data collection. First, the total number of consultants and HR managers (11) participating in the study was limited. Although we are satisfied with the number of interviewees, accessing further themes and findings might require broadening the pool of interviewees as well as including other participants, for instance line managers. Second, and as mentioned above, due to the Covid-19 pandemic, all interviews were conducted as online interviews. As some interviewees had fluctuations in the quality of their connection, transcribing parts of the interviews became challenging or nearly impossible, as warned by Bell et al. (2019).

The ethical concerns of a study typically revolve around informant consent, informant harm, invasion of privacy and informant deception (Bell et al., 2019). Within our study, we have followed good ethical standards aligned with those of Bell et al. (2019). All interviewees were given enough information about the study in order for the interviewees to willingly participate. The interviewees were also provided with the interview guide prior to each interview to get an even deeper understanding of our academic interest and the purpose of the study. Additionally, every interviewee gave their consent to record the interviews for further data analysis. In the beginning of each interview, we also addressed the confidentiality of the shared information. This includes the anonymity of the interviewees as well as their employers, and deletion of the recorded interviews and shared data when no longer needed. Finally, we acknowledge other researchers' achievements by using respectable referencing of their work.

## **4 Analysis and Results**

In this chapter the focus is on the analysis and results of our empirical research. The analysis and results have been divided into three main themes. The chapter will begin by revealing the perceived importance of HR analytics, after which we address findings in organizational data culture. Finally, the emphasis will be placed on HR analytics' ability to influence organizational performance. As the study values the anonymity of the interviewees, the interviewees are presented either with the abbreviation C (Consultants) or M (Managers).

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#### *4.1 Perceived importance of HR analytics*

The importance of HR analytics and the evidence-based decision making enabled by HR analytics was addressed by both the consultants and managers of our study. Both parties found HR analytics becoming an essential part of driving organizational performance in the future, especially in large organizations. However, although the utilization of HR analytics was highly encouraged, its infancy was addressed as consultants (i.e., C3) argued that the use of HR analytics today is not yet resulting in extensive advantages in performance.

*“This is a need to have and not a nice to have for any organization above, let's say a hundred employees, because I think that the HR personnel within an organization does so much running around and waists so much time without a system that can help them, give them support and make data driven decision” (C2)*

*“I've been following this and I see that it's more and more important to focus on this analytics.” (C4)*

*“I think if you don't, then you're not gonna be able to keep up with your competition. But for now it's still not a big enough area that you really fall behind in competition, but more and more companies are realizing that they need to look into this.” (C3)*

Both the consultants and managers also agreed on the differences in HR analytics adoption, depending on the size of the organization. As the needs of a large organization exceed the needs of a smaller organization, larger organizations generally have to adopt more comprehensive HR analytics. Consequently, the adoption and use of HR analytics became slower in organizations with greater needs, resulting from a greater quantity of data to be handled and organizational risks to be encountered.

*“A smaller company would generally need a less comprehensive system, they need something like “set this in place, and I need to focus on the sick leave and send a notification about someone's 60th birthday”. While, if you have 50.000 employees, you need the analytics, the ability to forecast, a completely different monster to take care of, in comparison to organizations with 10 or 15 employees”. (C2)*

*“I think the bigger the company, the bigger the challenge -- They spend years sorting out the data because they are comparing apples and bananas.” (C4)*

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*“I think my company is a bit late, a bit slow, I think small companies are better in using data. I think my company has a lot of data but I don’t think we’re in a forefront, to put it that way. -- The challenge is to do something, like you say predicting the future, but also looking into how we can be more valuable for the business, what does business need to do with us.” (M1)*

Consultants and the most experienced managers with HR analytics acknowledged that the idea of what HR analytics consists of, is often suppressed or misunderstood by organizations.

*“I have to say that this word “analytics” has been used consistently wrong for 30 years. And people misuse it in terms of reporting or management reporting or technology or something else” (M3)*

*“When people hear the term HR analytics, they think about only doing an analysis of HR data. But that is only one dimension of things” (C4)*

Aligned with these concerns, we found support for HR managers misunderstanding what HR analytics comprises. As identified above by M3, HR analytics was most commonly suppressed to only consist of management reporting, rather than including advanced analytics going beyond the HR function.

*“I would say it is just an analytical approach of all the processes HR does. It doesn’t necessarily have to do anything with data” (M1)*

*“I wouldn’t call it analytics from my analytics perspective, but it is part of the analytics role to be the one who provides these reports to managers when they need them” (C3)*

Instead, the main value of HR analytics for organizational performance was recognized to be about seeking answers to specific business challenges. To find answers to the identified business challenges, HR professionals should aim to create hypotheses to begin with. Further, the hypotheses need to be supported or not supported by HR analytics. Once the links between business and employees have been confirmed through HR analytics, the links can be utilized in decision making. Thus, instead of being an ongoing activity, HR analytics was a rather project-based function.

*“Analytics is about answering business questions, it’s answering a hypothesis, proving or disproving a hypothesis, so it’s not a report in a system, it’s not a management report, it’s not a dashboard, it’s about answering a business question” (M3)*

*“After having dived into the topic of HR analytics, I think it’s the link between a business challenge and HR practice or human capital in a broad sense, and see -- what we’re doing within the HR field affecting the business performance. --If you look at analytics, it’s not necessarily an ongoing activity. It’s project based” (C4)*

*“If you see from a plain statistical point of view, you run a hypothesis and then you test your hypothesis. -- So it’s not a question of wrong and right, it’s about improving your accuracy” (M2)*

The consultants were especially encouraging HR professionals to communicate with management to reveal what is important for the organization. A common experience amongst the consultants was that often HR professionals are not aware of the real issues inside an organization, and discussions with management help to uncover relevant business challenges to be answered. Utilizing HR analytics for answering irrelevant business challenges made achieving the organizational buy-in more challenging and thus, failed to improve both organizational performance and strategic position of HR. However, HR analytics was able to reveal problem areas that should be better prioritized. Example of this is the statement of M4, where a country unit felt a constant need to open more positions, but insights from HR analytics showed that the unit should focus on solving how to efficiently fill up the existing positions.

*“We’ve seen examples of analytics groups doing some kind of analytic project and then present the results and then the comment from the management is like “Well, interesting, but we don’t have a problem with this. It’s interesting that you see there’s a connection with A and B, but that’s not a problem here.” So it’s about choosing your battles” (C4)*

*“It was an HR analytics conference and some people stood up and talked about the amazing work that they had done in predicting attrition. And they were asked the question, “Has this managed you to solve your attrition problem?” To which their answer was “We don’t have an attrition problem” (C1)*

*" We have every year this workforce planning process, so now we have countries like “X” exploding, they double the revenue every year, but what you see is they have 20 open positions, and still ask for another 10 new positions. Then we say to them, fill your open positions before asking for more new positions, because you keep on having an issue to get the positions filled. Also in this way, data or*

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*HR analytics helps to get HR into this strategic HR position, where you can really talk to the business about what we see as a risk for reaching results " (M4)*

All the consultants identified how the majority of organizations are currently focusing solely on the historical data provided by descriptive analytics, including reports and dashboards. The focus on historical data was seen as problematic by the consultants, as it fails to add any real business value and thus, hinder the strategic positioning of HR. Interviews with the managers confirmed the consultant's identification, as most of them expressed their organization to be in the beginning of their HR analytics journey.

*"We are relatively immature within the HR analytics field. It is very much descriptive; Just visualizing data, that's using tools, excel tools, various forms" (M5)*

*"I'm just thinking of my career now and the HR systems, 99% of the information and data that is being looked at, is historical" (M3)*

*"Most of the companies are in the descriptive analytics level. When it comes to predictive analytics, I think very few can raise their hand and say "I'm here". Even larger companies" (C4)*

However, both managers and consultants acknowledged the existing hype toward HR analytics. Interestingly, both parties gave out a suspicion that companies may be prone to impression management. The consultants and managers had experienced cases where organizations were not being truthful in their use of HR analytics by giving out impressions that they are past the descriptive use, further reinforcing the existing hype.

*"Quite a lot of companies say that they're doing more than they actually are. To be honest that's the sense I get. At least not outwards they're not honest about...Sometimes they even want to show you that "we're doing this and this" but if you start thinking, I'm not sure if you really do it. I think you're still on the descriptive phase like the rest of us but you're trying to pretend that you're not" (M5)*

*"One is that many companies... it is always trending to talk about analytics, there are not many companies that are actually at that level yet" (C5)*

As mentioned earlier, HR analytics should be used to answer business challenges relevant for a specific organization. The consultants were especially concerned of

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organizations mimicking each other in the use of HR analytics, rather than focusing on the organizational requirements and altering HR analytics for those requirements. Thus, if HR analytics has been implemented by mimicking other organizations, its influence on performance is endangered to become less effective.

*“We do a lot of things in HR, we talk about best practices so we follow other companies and do like copy-paste. But when it comes down to it, does it work here? -- I think HR people need to reach out, find their own organization to get inspiration. Not to copy, but to get inspiration” (C4)*

*“I definitely had roles like this where people go, “everyone’s doing people analytics and we’re not, we need to step up”. Without going “we have got a need for people analytics to do x, y and z” (C1)*

The interviewees, both consultants as well as managers, shared an understanding of HR analytics requiring collaboration. As HR functions is functioning as a facilitator for HR analytics, producing valuable insights should include professionals across business functions, all of whom are possessing different knowledge and understanding. The composition of each HR analytics’ initiative team was therefore seen to be dependent on the challenges to be solved.

*“It should involve people across the business, but at the right point, at the point you’re ready as an HR function to proactively help solve business problems. Break down those data silos, between HR and the business. Because most real business problems, don’t just need business data or HR data, you got to blend the two of them” (C1)*

*“Depending on your business, you need to adapt your team very much to your business challenges” (M5)*

*“You also need involvement, not from the management, but from who are out there within the field of what you are looking into.” (C4)*

#### *4.2. HR analytics and data culture*

Various challenges in organizations’ data culture were identified, all of which hinder the utilization of HR analytics. First, both consultants and managers addressed the dangers of adopting too complex systems that exceed the organizational needs. Thus, HR analytics was not only prone to becoming too expensive as an investment, but also becoming detached from the real issues underlying in an organization that HR analytics was trying to solve.

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*“I also see that a lot of companies, that the first thing they start of when they would like to get going with analytics is that “oh we need these analytical tools, and we need this and we need business intelligence and what have you..” and these kinds of investments often hinders the adoption of analytics -- If you get too complicated, then you can have an analytics that becomes too expensive and become detached from the organization again“ (C1)*

*“So I think when my company went for that search out in the world to see what system we should use, they chose the one that can probably do the most and more. Sometimes I think the systems that only do exactly what you want is better. But at the same time when you start looking at what should the system do, they say “but it would be nice if it could do that, and maybe could do that too, and maybe in the future it would be nice if it did this.” But then you end up with a system that is very complicated.” (M1)*

Second, organizations experienced challenges with data input. Despite HR functions leading HR analytics efforts, it involves merging data from different internal functions. Accessibility of data was one of the key hindrances identified by the managers and consultants, as our interviewees had experienced resistance getting access to data from other departments. Additionally, HR analytics was not able to utilize the potential data as a consequence of employees neglecting the data input, as can be seen from M1.

*“That’s a big challenge because if we want to be able to do something with data, we need people to log the data and we need them to be willing to cooperate with us, to provide the data.” (C3)*

*“They (HR) sometimes struggle getting access to business data from finance, and finance is telling HR that “you can’t get our data because you’re not privileged”” (C4)*

*“When we talk about Workday for employees, they say “oh please do I have to go to Workday and do this?”, that’s when it’s counterproductive to have systems that the people actually don’t want to put in the data” (M1)*

Information from HR analytics was found to be used to improve decision making in an organization; therefore special focus had to be on ensuring the data quality through sufficient data governance. Unless data used by HR analytics is reliable, the analytics insights cannot be used as part of decision making as they do not reveal the correct status of the organization. The quality of data was one of the main challenges identified by almost all of the interviewees.

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*“I worked at a couple of very large firms and when I just looked at their data, I could see people under twenty years old or people who are four years old, which of course are data quality mistakes. So you need to have a really strong data quality process; that everybody gets checked, that everything in the system is correct.” (M4)*

Alongside the above-mentioned system complexity, four out of six managers identified that disconnected systems were working as hindrances for achieving valuable insights. Difficulties in exploiting multiple sources of data were only giving out unidimensional reports of the organization, rather than rich, cross-functional insights.

*“Then we have talent data in a different system, we have recruitment data in a completely different system. And that prevents us from easily merging the data because what you need to do with HR analytics, you need solid data foundations, you need solid systems. And that’s not something we have today.” (M5)*

*“That’s what we have been struggling a lot (with), that our systems haven’t been connected together, or the data hasn’t been connected that well together so it’s been very difficult to make those cross-functional applications and insights.” (M6)*

Whereas technology and software were causing roadblocks for the efficient adoption and use of HR analytics, it was also the people inside an organization that were hindering HR analytics. First, rather than being an organizational decision, interviews with the managers revealed that the decision whether to adopt HR analytics was dependent on the mindset of the HR managers. As a consequence, the use of HR analytics became inconsistent within the HR function as well as across organizational divisions with different HR managers.

*“The boss who hired me, who’s very focused on analytics. She got a new job and we got a new boss. So now we’re not as focused on the analytics.” (C3)*

*“That’s also why we have different maturity because we have very much a mindset question of the leaders running the organization.” (M5)*

*“Some managers say “I don’t care, we have so tight schedule and we need to deliver on the financials, I don’t have time to go through things, let’s just move on”.” (M1)*



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In comparison to other organizational functions (i.e., finance), the consultants addressed that organizations have typically not seen value in HR data for organizational performance. Hence, the low appreciation for HR data has resulted in organizations not prioritizing HR analytics initiatives, as seen in C5's statement.

*"I don't think it's necessarily HR that is worse, it's everything regarding HR, so managers and other departments also don't see the value in data, in HR data. So it's not HR people specifically, it's just everything regarding HR". (C3)*

*"In meetings with the CEO, every other function would bring data, imagine a finance function coming to a quarterly meeting with the CEO and not bringing any data at all. It wouldn't happen, right? But routinely for years and years HR have been doing that." (C1)*

*"They told me "OK if you want to just go ahead, we're not going to give you any budget neither resources and you have to do this in your extra time because you have your own responsibilities"" (C5)*

To accomplish the lacking appreciation for HR data, HR should aim to convince leadership of the potentials of HR analytics. Instead of experimenting with too ambitious initiatives, consultants and managers both agreed that HR should first start establishing credibility through simple business-oriented proposals. These simple initiatives should provide advantageous information for the management, and nudge management to ask further questions of HR analytics' usefulness for performance.

*"I think in order to succeed, HR needs to start with some low-hanging fruits, you have to actually go to management with something that is quite obvious, simple to go through and show them. Once you have some enthusiastic leaders, build and stand on the shoulder of those, and then you can move forward. I think a big challenge is if you start with very large analytics projects and you kind of fail, then you have been set back for quite some time because then the management won't listen to you" (C4)*

*"It spikes their interest and then we can actually do more when we show them what we can do. So getting to the point where you have valid data to actually show them this is what your organization looks like and these are actually some decisions you could make based on the information we can give you." (C3)*

*"So if you just provide them with data, they will come with questions. But if you can't even give them data, you'll have no questions, you will have no pulls in the organization. So you have to share, you have to give for them to start thinking,*

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*start asking the questions and then you will have a pull for HR analytics instead of a push.” (M5)*

We found indications, both from consultants and managers, that the slow adoption of HR analytics and the general low appreciation for HR data might be a generational issue in HR. Representing a relatively new and growing area, the older generations may not be as analytically accustomed to utilize HR analytics as the younger generations.

*“The younger generation, we grow up with a lot of surveys and a lot of understanding of what companies, what brands, what they need the data for, what they can accomplish with data. -- But other generations feel overwhelmed with all the surveys, they feel overwhelmed with having to log everything and they can't see the purpose the same way.” (C3)*

*“If you think about an HR leadership team, your average age is past 40, 50, 55? Something like that, so in the first 10, 15, 20 years of their career they've probably not been any people analytics, so they haven't formed an opinion of what works well” (C1)*

*“If you want to have a more analytics driven organization, you also need to have a bit more of an analytics driven mindset, so I think that's something that's actually changing. Your generation is probably going to be a bit more focused on numbers” (M5)*

One of the key concerns recognized by consultants as well as managers, potentially being dependent on the previously mentioned generational aspect, was HR's incompetence in analytical skills. Analytical incompetence were seen to work as obstacles in the utilization of HR analytics. Not only has this resulted in organizations thinking of how to improve the analytical skills of HR professionals', on occasions organizations have also started to think of alternative ways to successfully conduct HR analytics; possibly resulting in detrimental actions for HR, including bypassing or replacing the HR function in the process. If acted upon, the strategic position of HR would be significantly worsened.

*“A second topic is the data savviness of HR managers and HR business partners, a large topic in HR analytics is how to bring in your HR manager to the data driven whatever.” (M4)*

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*“HR is very much behind the curve when it comes to data and analytics, and, the data revolution, that’s kind of re-embedded since 2010, HR has done its best to sort of ignore it or skirt around the edges of it.” (C1)*

*“I think when you start to talk about analytics, you are touching on areas that are really quite uncomfortable to the normal HR person, they are not used to dealing with numbers, not used to using numbers as the evidence for doing something. They generate not numbers, but people. -- One of my thoughts has been that maybe the way to do HR analytics is to bypass HR.” (M3)*

Despite HR professionals’ incompetence in HR analytics’, the managers in our study also revealed that HR professionals possess a tendency to disprove the insights produced by HR analytics. The most common way to disprove the insights was done by searching for potential pitfalls in the accuracy of data, again indicating the scarcity of the statistical skills in HR and reinforcing the presence of gut feelings. We found several indications of HR professionals doubting the insights, a few of them represented below.

*“When I’ve been presenting them, it has been... they try to find an issue in the data that will disprove it. I remember at (company) doing a study on compensation and pay, and we were missing a certain population in Mexico’s pay. And they said “oh, it’s invalid because you’re missing these hourly paid workers in Mexico” and I said “well they represent 0,02% of the total salary bill of the company, do you think that makes a difference?” And they had to admit that no” (M3)*

*“But I can with relative certainty say that this data I’m presenting is 99% correct, maybe 98. And it’s strong enough to make a decision on. Sometimes they start “are we always interested in getting 100% accuracy in data, or is 98% good enough?” If it’s 120 people that left last year or if it’s 117, does it matter for the discussion we’re having?” (M5)*

At the same time, when presenting the data findings, we found support for HR aggregating the data. On instances like these, HR thought of data aggregation as a necessity to tone down the various possible answers to a business challenge. From this point of view, the purpose of the data aggregation was to ease decision making.

*“But you have to look at a lot of examples and aggregate the data before you can actually work and start bringing that discussion on the table, because you can’t look at one case here and one case there because they will all spit an explanation that the manager was flawed, the candidates went on hold and you*

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*had to put a role on hold. I mean there are many reasons, so that's why you need to look at the data at an aggregated level to make a decision after the data" (M1)*

However, consultants and the most experienced managers found data aggregation extremely problematic in solving organizational pain points. According to them, data aggregation was hiding the various real problems underlying an organization, painting a polished picture of the state and well-being of the organization. A common example came from attrition rates, where an aggregated rate was not revealing various issues stemming from differentiating workforce segments.

*"The other thing which I think the HR department makes a big mistake is aggregating data. -- I said "well, unfortunately that's the aggregated result, it means nothing." And they went "ooh, what do you mean?", all shocked. And I said it hides that in north of Finland the attrition rate was 0,01, nobody was leaving, whereas in Hungary in a new factory that had been built the attrition rate was 14% in the first year. So there were two problems (too high attrition rate in one country and too low attrition in another country) but overall they felt it was fine." (M3)*

*"If you look at the average of 15 000 people, it was quite low, 7 to 8%. But then they kind of looked at "so what's the turnover of those who have been here less than a year?" and it was 25%. That's huge. So that made me think that we look at averages." (C4)*

One of the main benefits of HR analytics was that it can, in cases like these, disaggregate the data to pinpoint where the underlying organizational problems occur. Opposite to data aggregation, HR analytics was capable of enhancing problem-solving by making the findings more actionable and nudging decision making so that the right actions were being undertaken at the right time, at the right place.

*"I think one of the things that analytics needs to do is disaggregate the data and find the kind of hot spots and cold spots because the problem with HR with that kind of overall analytic or even in this case not even an analytic but just a report, is that it's not actionable. And if you have these overall findings you either don't take action or you take the wrong action." (M3)*

#### *4.3. HR analytics and organizational performance*

According to the interviews with the managers, organizations still seemed to define organizational performance strongly through financial growth.

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*“I think the classic of organizational performance is the quarterly report. It is a financial measure, and I think that has been the indicator of organizational performance. And then, you can argue that that’s reflected in share price, or earning per share, development. And of course, a lot of financial measures that you can follow, you know, revenue.” (M3)*

*“For us, organizational performance is financial numbers, the value that we give to shareholders. At the same time, it is not about financial benefits for customers, it is for shareholders.” (M2)*

Simultaneously, both parties recognized how HR has, throughout history, been looked upon as a cost. However, through the adoption of HR analytics, HR functions have started to reposition themselves away from being a cost, toward being a valuable investment for broader business objectives. Examining linkages between HR and organizational performance as well as undertaking initiatives, for example in learning and development or retention, to improve performance, has become possible only after HR analytics.

*“We’re not generating any revenue. We are just an additional cost. So that’s why we need to ensure that we are working efficiently and providing these services with good quality. -- this year we already have several plans on how we reach out from the HR function towards the business, so for instance what is our impact in learning. So if our sales people are doing focused learning, learning programs, do we see better sales performance? So these kind of topics were absolutely out of reach even until this year” (M6)*

*“The average cost of a person leaving, they say, is similar to that person’s first year salary. There is big value to these things. Without HR analytics and something to back up advice, they were looking at HR as a cost. Analytics will help us to move from that view to HR as an investment.” (C4)*

Consultants identified that the typical use cases for HR analytics vary depending on current global themes. The ongoing Covid-19 pandemic has forced organizations to redesign crucial parts of the organizations, therefore emphasizing the importance of workforce planning. For instance, preventing shortfalls in key capabilities or analyzing the future excesses or shortages in the number of overall staff has a direct effect on both the quality and productivity and thus, performance of an organization. An alternative suggestion was that organizations focus on workforce planning due to its familiarity to HR professionals rather than because of its importance, supporting the previous finding of HR’s scarcity in analytical skills.

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*“If you talk about the specific area that comes often, it is workforce planning. I think that's where most of the companies are focused on now, as opposed to there have been other times it was more about satisfaction. It can be due to the current situation of the pandemic, that they need to restructure the organization, that the common theme now is workforce planning.” (C5)*

*“I think that is why they stick to headcount; it is so comfortable to them.” (M3)*

However, our findings support the perceived importance of workforce planning, especially in terms of competency building. Majority of the managers addressed that the skill sets they possess today are changing along with the industry they operate in. Organizations used HR analytics as a tool to identify the shortages in the skills and capabilities of their employees to understand what the key competencies they need to develop and acquire to successfully perform in the future.

*“We need our employees to develop their skills and not get stuck with some skills and capabilities that are no longer as much value as they used to. -- We're moving onto new times where we might need to have new types of employees with new skills that might require other types of support or development options that might desire other types of cultures. So it might not always help to rely on your experiences because it depends on where you're going, and the world is changing constantly.” (C3)*

*“Obviously you need to hire that many people, that's a challenge in itself, and then you need to hire the people with right competencies, and we are looking for highly skilled people” (M5)*

*“Every year we are going through what are our strategic targets, what are our plans to for example upskill our people where we see that there is a skill-gap, so the HR analytics part is there to identify what are those places we should focus on and how much should we focus our resources to deliver those trainings for instance.” (M6)*

Additionally, consultants identified turnover to be a second general use case for HR analytics.

*“Predicting attrition is still the easiest most obvious use of predictive analytics within HR.” (C5)*

Our findings aligned with the statements of the consultants, as the managers described their focus on workforce planning and attrition prediction. In terms of attrition prediction, HR analytics was found helpful to uncover the realities behind

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an employee leaving, as it was recognized that the real reasons are not usually addressed publicly. For instance, it was typical for organizations to seek linkages between attrition data and line management, as can be seen in both M4 and M2.

*“We have the key roles for the future” (M1)*

*“We have every year this workforce planning process” (M4)*

*“When people are leaving (our company), we use this data to understand whether they are leaving because of external factors, related to private lives or opportunities in other companies, or are we doing something wrong from (our company’s) side? -- People usually say it is because of the salary, but actually they almost never tell you the truth. Based on the data, you can better analyze if some managers in, for instance marketing, have higher levels of turnover, and if there is another problem.” (M4)*

*“For example, if attrition is happening, unless I combine my attrition data with my exit data and realize that there is a pattern that line managers who have low people managers scores, have high attrition, I can’t explore the value of this data.” (M2)*

However, as addressed earlier, individuals possess different definitions of what is seen as HR analytics. Not everyone agreed workforce planning in terms of headcount forecasting to be HR analytics.

*“Of course people predict and forecast headcount, people forecast personnel cost but it’s not analytics, it’s managers entering... you know “my headcount will be 10 this month, 11 next month, 10 the month after...” it’s forecasting, not predictive analytics.” (M3)*

Some of the managers and consultants experienced problems with unclear cross-organizational definitions. Unclear definitions increased the ambiguity of the metrics, resulting in less actionable HR analytics.

*“One company that I worked for had a new thing one year which was that every employee has the right to a great line manager. -- How do you differentiate between poor, good, great and excellent?” (C1)*

*“You could think that’s an easy thing to pull. You go into the system and pull a start date, and then comes the problem: what is the start date? Is it when you start in this company or is it when you start in another part of (the company), is it when you were re-hired? A lot of variables come in. You really need to have strong data and definitions, what does the data mean for everyone.” (M5)*

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Interviews with both consultants and managers revealed that HR analytics can be used to tailor the onboarding process for increased productivity. One of the suggestions was to prolong the onboarding process to minimize the time it takes to reach maximum productivity. Another idea was to identify managers who are fast at successfully onboarding new employees and learn from them.

*“Most onboarding programs, when you are looking at the Norwegian market, they last for up to six months. But when you ask the same companies “how long does it take to get the new hire up to 100 % productivity?” they say 1 year. So, why are we stopping the onboarding at six months? If we moved on, and prolonged the onboarding, how much could we reduce the time for productivity?” (C4)*

*“Because what you need to do when you onboard this many people, you want to see how fast we can get them into production. How fast is the onboarding process? So we were starting to see where we know we have manager projects, where we have... who are really really fast onboarding people, and we can see from time reports that we have a high productivity rate, what is separating these managers from other managers? What can we learn? So that’s one way you can do predictive analytics or HR analytics to see what is working and what is not in terms of the onboarding process.” (M5)*

Consultants and managers both explained HR analytics to be helpful in achieving organizational understanding of diversity and inclusion, and finding the core of the problems in the area that may affect performance. Whereas decisions on diversity and inclusion still seem to be greatly affected by gut feelings and assumptions, the data provided by HR analytics forced organizations to reformulate the questions to be asked, as can be noticed from C1.

*“The strategy for the following year was “we need to recruit more women into senior roles”. I don’t disagree with that, but the data is telling something different. Because, for the previous two years the recruitment was at a higher level than the existing population, the problem was that the attrition rate was even higher than the recruitment rate. -- Whereas what the first thing to do is improve retention, because recruitment is currently doing a great job, so by saying they need to recruit more women, you’re almost saying we’re not hiring enough, when the reality was we were, but we couldn’t keep them. Then that kicks off the insights project to say “why can’t we retain women?” (C1)*

*“I remember in my former company having a discussion with one of the HR leads about equal pay, and she claimed women were significantly lower paid than men in that company and I said that might be true, it’s a good... you know, it’s a reasonable assumption but let’s look at the data. And it turned out that it was*



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*actually... I think it was 9 out of 11 grades in that company when women were paid more.” (M3)*

All of the interviewees identified HR analytics as enabling HR to make better human capital decisions. Often HR analytics was helping organizations to take actions that first seemed counterintuitive, as they worked against gut feelings.

*“HR analytics helps make decisions based on insight not instinct, also it helps you make better decisions, better people decisions. It also helps you make decisions you didn’t know you needed to take.” (C1)*

Aligned with this, we found several proof cases from both the consultants and managers that revealed surprising findings in organizations’ human capital impacting organizational performance. However, uncovering surprising findings typically required experimenting with data, which the majority of today’s organizations do not yet possess the resources for. The opportunities for surprising findings are various. In the case of M3, driving emotional engagement resulted in increased turnover and in the case of C1, sales revenue increased significantly after recruiting employees with counterintuitive attributes.

*“Everyone said you know, drive engagement and it would drive performance. What we found from the data was, and this was emotional and rational engagement separately measured, we found that actually driving emotional engagement meant people left the company faster, which nobody saw coming and everyone was like “oh, is that really true?”. And it was because they were heartbroken, they couldn’t do what they wanted to do and it wasn’t so bad that they were leaving but what it meant that the people who were staying in the company were the rationally engaged people; people whose heart or passion wasn’t there but couldn’t afford to leave the company” (M3)*

*“They ran loads of psychometric tests and things like that on all of their sales people, to identify what attributes of successful sales reps. And they were things that they didn’t expect. And then they basically said to the HR functions, hire for and develop those attributes. And that resulted in a 40% increase in sales. But the things that they were hiring for were something that HR professionals would never have come up with are attributes they need to look for in a sales rep. It was only by looking at the data, only by looking at left field things, that they made that difference.” (C1)*

A few of the managers from large international organizations brought up the locally diversified organizational challenges and cultural differences between countries

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and nationalities. The purpose of HR analytics then was to unravel and gain confirmation of locally distributed issues, and help HR to understand how to best alter initiatives for each location to solve the locally occurring problems.

*“It is a very different way of doing HR in a country like Mexico than in Germany. This is also exactly what the data helps us see, where we need to focus. -- For instance, a big topic in the USA now is diversity after Black Lives Matter, so they need to really make dashboards about how many people are of color, and how many people they have from different places. In Europe, we are in a situation where certain countries cannot correlate this data. For instance, in the Middle East, nobody is even willing to collect this data. So we have very different needs from the markets”. (M4)*

*“We are operating in 60 countries or so; typically, the western countries are much more vocal about everything and the eastern countries, Asian countries - we rarely hear from them. So, we can't rely fully on feedback (about) what is working and what is not. But when we have data, we can be sure that that's representing something that is part of the reality” (M6)*

We found evidence that HR analytics can also help organizations identify the risks associated with their human capital. The risks were associated with the flexibility and structure of the human capital, shedding light on how well the organization was able to adapt to rapid changes. Additionally, the risks were associated with how the organization incentivized its employees, and whether it was causing further threats to performance.

*“They could see what's the risk of the business based on demographics, who can work from home, what age groups, do we have anything that we see that we have problems actually delivering or we have no problem at all? -- This is kind of an analytics thing as well: what is possible, where is the business risk? And I think quite a lot of companies have now had an eye-opener when it comes to analyzing business risk. How can we handle this and this the next time?” (C4)*

*“This chat went first to the head of HR and said “you got a five billion dollar risk” and within a week he was in the CEO's office saying “well how do we manage this risk, what do we do differently?” and it was because they had a bonus plan, their bonus program was rewarding these people and enabling them to leave the company early. So they had to change their whole philosophy of reward and keep these people in their positions and not retire early while they built the capacity and the competence to fill those positions. So that's a sort of impact that analytics has, or should have.” (M3)*

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However, as agreed by both consultants and managers, there are dangers related to the use of HR analytics. Although the purpose of HR analytics is to influence decision making by giving evidence-based insights of the human capital, it can lead to negative consequences and dilemmas about how to proceed. Especially in terms of attrition, HR analytics was concerned to create immediate bias in managers' minds, possibly resulting in discrimination of certain employees.

*"We do give that report to HR leads but it's a dangerous thing to give people. Because it doesn't mean that people will leave, it's not a certainty that because you're in this category, because the system identifies you to a high risk of leaving the company, that you will leave the company. -- So lets say I predicted that you're going to leave the company, high risk of leaving the company, and we're now having a merit-round, a salary review round. Do I spend my salary budget on you or not? " (M3)*

*"The locals always stay much longer in the company than not-locals. Of course that is normal, because after two years, being in another country, you start to think about whether you will stay or will you move back, what will be your next step. You don't have your home base here. To use this data, can you, like, start to discriminate, not hire people from different nationalities?" (M4)*

Further, insights that were prone to cause biases also created difficulties for HR professionals on how to utilize the data insights.

*"So the thing is like, you know some things, but it is really hard to use them." (M4)*

*"Where do you draw the cutoff line between employees you action and employees you don't action? What are your interventions going to be? HR is not ready to act off the back off predictive analytics, when it comes to things like predicting attrition" (C1)*

An additional issue that some of the managers as well as consultants had experience with, was the hidden agendas of the HR. In these cases, HR analytics was a tool that was misused by HR to collect skewed data in order to use it as evidence to back up HR's own desires. Fortunately, as addressed by C1, the requirements for GDPR have made succeeding with hidden agendas more difficult.

*"Also at (our company), people want to use the data in the way they want to, and you also cannot really stop it. I've seen it before. It is like hidden agendas or you have politics and then sometimes the real issues that come out of the data are not really addressed. It is also sometimes really hard to address it." (M4)*

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*“HR has always got away with or got, you know, some promise of instinct where everybody knows that it's moved into the realm where you can back up your instincts or disprove your instincts using data -- GDPR has helped massively in that area because you are supposed to ask, why do you need that data? I need to know for GDPR reasons, right? You can hide behind it. Because then they'll tell you what they're trying to do. And then what you can do is go, “well, have you also thought about asking for this data? Or approaching it in this way?” (C1)*

As addressed earlier, HR analytics and the initiatives stemming from the insights need to achieve a buy-in from management of the organization. Storytelling, and the way insights are being presented and communicated has a huge importance in the creation of the buy-in. The consultants and managers labelled storytelling as crucial for driving further action. To succeed in storytelling, one had to be confident of the data and convey the messages to others in a simplistic manner, yet so that the story evoked feelings of action in the recipients.

*“You need storytelling. Simple story. So for each challenge, you suggest actions. And those stories can be very simple. The best thing is if you can create a story with one or two pages and a picture. This is the situation, this is what we have seen, this is what we are going to do. And by doing this, we are achieving this.” (C4)*

*“You will always have some people who doubt the data. But you need to be able to explain how and if the data is solid or not.” (M5)*

*“Storytelling is critical. -- I think the weakest link is the humans at the moment - that don't either understand or don't know how to tell a story, how to convey the story in terms that drive action. -- The CEO presented to the HR leadership team, and really interesting stuff, it was six o'clock in the evening and it had been meetings all day, everyone was on the edge of their chair when he was telling “did you realize that 30% of your top performers left the company in this location on this date?” And everyone “ooh”. He said; “was that what you intended?” \*laughter\*. And the person responsible for that particular part of the company went red and then he said that's not good; “six months later another 30 % of your top performers left from the same place - is that what you intended? Could you have used those resources better, could you have deployed them better?” And you should have seen the people, these are HR leaders and the head of HR, on the edge of their chair. Next morning we signed up this lad, for an internship for two years” (M3)*

The consultants were especially highlighting the importance of measuring the impact of the initiatives stemming from HR analytics insights. HR professionals, as

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described by the consultants, are still unfamiliar with measuring the progress and impact of HR initiatives. This can be a hindering factor for organizations to fully utilize HR analytics, because they are not able to prove that initiatives taken actually have an impact on organizational performance

*“HR will often say, we’ve run all these programs, we’ve done these training interventions, we’ve done this, that and the other. And I think a lot of the frustration that can often become from the business side is that they go, “great, so what, what difference has that made? -- Work that out and measure a baseline, then work out what your interventions are and you can measure progress. And again rabbit in the headlights moment when they’re like “We don’t know any of that” (C1)*

*“I always suggest after six months let's do an analysis to see if there is any change -- And I think that's the only way you can actually prove your theories and your findings. Otherwise, there will still be some feelings” (C5)*

Aligned with the consultants' suspicions, we discovered from the managers that organizations do not measure the impact of their human capital initiatives. They engage in various initiatives, but either the lack of resources devoted to HR analytics' initiatives or challenges in knowing how to measure the performance gains, prevented organizations from measuring the progress.

*“In terms of production you can say “oh if we produce so many more products, then the outcome will be this, we can sell more and we’ll earn this much more”. With people it’s harder to calculate that return on investment.” (C3)*

*“It’s nothing we’re measuring today, no. But maybe one day. Right now it’s just me and (name), and we have a lot on our table so...” (M5)*

*“No, we have not gone to that stage. What we have moved to is defining a lot of interventions based on data” (M2)*

Finally, both managers and consultants found that taking the context into account and by looking at the internal environment can help provide solutions to problems and therefore further enhance organizational performance.

*“I found a relationship which was for every employee happy in the company in the store they were getting 1.3% higher sales in that day” (C5)*

*“They wanted to know what from the people perspective drove store profitability....It turns out to be manager tenure, how experienced the manager had been. And so the biggest mistake they could make when opening new stores*

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*was to hire new managers because, and the reason why it was manager tenure, was that experienced managers knew how to avoid waste better. So inexperienced managers didn't train employees very well, high degree of waste particularly in milk apparently, so the insight, what they gained from this was to transfer managers to new stores when opening new stores, rather than hiring new managers." (M3)*

## **5 Discussion and conclusions**

Aligned with the identified research gap, this study aims to reveal how HR analytics improves organizational performance as well as recognize the hindering factors in the utilization of HR analytics. We have combined the analyses of consultants, often seen as representing the promotional side of HR analytics, with those of HR managers working with HR analytics, thus representing the factual side of HR analytics. This chapter reflects the empirical findings against the theoretical frameworks of HR analytics and SHRM to provide answers to the research questions. Furthermore, the study addresses the recommendations for future research.

### *5.1. HR analytics & organizational performance*

The result from the analysis showed that there were no major differences between the consultants and managers, and therefore there are no clear contradictions between the two parties. Despite the contradictory theory about HR analytics being a fad or not, we believe due to the results of our study, that HR analytics can increase organizational performance, aligned with DiClaudio (2019) view of HR as a driver of performance. As our findings reveal, HR analytics is starting to become a necessity; however, it is important for organizations to get past the early adoption phase and have a clear vision of what HR analytics can contribute to in their own organization. For an organization to fully benefit from HR analytics, it is important to focus on the struggles of their own organization rather than mimic other organizations' ways of utilizing HR analytics. If they do, they risk spending a lot of time and money on something that will not have such an effect on organizational performance. This view is aligned with theory regarding high-performance work practices (e.g., Messersmith & Guthrie, 2010) which is about finding ways of creating valuable, rare and costly to imitate human capital and therefore increase organizational performance. Additionally, it was recommended that those responsible for HR analytics could collaborate with other organizational functions,

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having the composition of the team dependent on the HR analytics' initiative. Thus, getting access to additional data, knowledge, and skills to drive analytics as efficiently as possible, further having a greater impact on organizational performance (Green, 2017).

In relation to Dyer and Reeves (1995) possible outcomes of human resources on performance, this study reveals that all three outcomes are part of HR analytics. Both smaller and larger companies used HR analytics for HR outcomes that involve absenteeism, turnover, individual or group performance. These are also aligned with Davenport et al., (2010) human capital facts, analytical HR and talent value model because they prioritize an organization's overall health, individuals in need of attention and focusing on retaining key personnel. Employee management like headcount showed to be one of the most widespread usages of HR analytics, even though there are some differences in opinions regarding if headcount is good utilization of HR analytics. For instance, Bassi (2011) mentions that reporting systematically on HR metrics is not good utilization of HR analytics, as it does not add any real value for organizational performance. In addition to this, HR analytics is used to examine whether employees need training and development and can therefore help attract employees by showing that they prioritize their human capital and focus on competency building. Hence, prioritizing the abilities, motivation, and opportunities of the employees, also called the AMO framework, organizations can better identify ways to increase organizational performance (Levenson, 2011; Obeidat et al., 2016). Second, HR analytics gives organizational outcomes affecting productivity, quality and service of an organization (Dyer and Reeves, 1995). This is aligned with Davenport et al. (2010) analytics workforce forecasts and talent supply chain, giving insights as to what can affect the productivity of an organization. As mentioned previously, analytics is seen as a need to have, to be able to keep up with the competition and respond to market fluctuations successfully. It can help answer questions related to productivity and help the organization's understanding of what is needed to reach a higher level of efficiency. For instance, the results related to onboarding processes in organizations showed that companies can reach full potential in a new employee faster by extending the onboarding process to go beyond six months, or by assigning the onboarding responsibility to managers who have previously been successful at having a high productivity rate. It can find underlying causes or elements which are not costly,

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but greatly affect the productivity of employees, for instance a good working environment. In addition, it can prepare organizations for risks as HR analytics can find costly elements that organizations should be aware of and try to eliminate. Finally, in terms of financial or accounting outcomes (Dyer and Reeves, 1995), findings show that HR is typically seen as a costly department incapable of generating any revenue. As organizational performance was strongly representing the financial growth of an organization, some HR managers in our study also felt the financial pressure. Levenson (2015) has criticized organizations focusing too much on return on investment when it comes to human capital initiatives, but our study shows that organizations are starting to focus more on human capital initiatives that can contribute to enhanced organizational performance, rather than solely focusing on what can affect the financial aspect urgently. Some of the interviewees mentioned that human capital is starting to gain more attention, as organizations are starting to recognize the vitality of HR data for the success of an organization, aligning with Johnson-Murray (2018) view of prioritizing the people side of the business. Thus, to contribute to the overall organizational performance, HR can take advantage of HR analytics by identifying inefficiencies, organizational threats and achieving an increased understanding of its human capital, thus indirectly influencing the financial performance. One way to do that is to perform a human-capital investment analysis (Davenport et al. 2010). Then the HR department can contribute to support the overall business strategy, get a seat at the table, and increase their influence in the organization.

The study further revealed that organizations use HR analytics to enhance HR practices in different ways. As Wright (2008) states, it is the employees' feelings and possessions that can work as mediators between HR practices and organizational performance. When it comes to turnover and attrition prediction, some of the organizations used exit interviews to understand why they were not able to keep some of their employees. By incorporating this as an HR practice, they gained valuable knowledge about what underlying factors affected employees' decisions to leave, for instance few opportunities, external factors or if it was something related to the organization. Using HR analytics this way, the organization can be more aware of what is important to the employees, and better capable of retaining wanted human capital, aligning with Sullivan and Baruch (2009). Related to this, workforce planning was used by most organizations to gain



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insight into what the future can mean for the organizations. Predicting attrition can help with the strategic game plan for organizations' recruitment process, by having more knowledge about who is likely to leave and what knowledge gap is needed to be covered. Being prepared for changing competition, markets and customer expectations can help organizations reach their strategic goals, in addition to helping organizations restructure their organizations if needed, for instance due to Covid-19. According to Wright and Snell (1998), being able to do this will be optimal when organizations meet challenges. In addition, being prepared can help organizations save time and money, be better at risk management and have better organizational performance. Another area that HR analytics has shown to be successful in helping with, is to get a better understanding of diversity and inclusion. Analytics can help to disclose whether there are differences in equality between women and men, or if there is a need to take actions to reach the equality objective. Marler and Boudreau (2016) stated that HR analytics has the ability to be precise and identify commonalities across various environments while at the same time identifying environments unique to a specific location. However, as our study showed, it is important especially for large international companies to disaggregate data to find diversity and equality issues locally. Therefore, HR analytics is beneficial for organizations that want to be proactive and avoid making wrong decisions that fail to solve the locally distributed challenges. Additionally, due to HR analytics usability in many different situations and for different purposes, HR analytics can be seen as a tool with high resource flexibility aligned with Sanchez (1995), if utilized according to business objectives.

Interviewees with longer experience in HR analytics mentioned storytelling to be a crucial part of HR analytics. Storytelling is used to get stakeholders and other employees to understand what the results are in a way that can be considered compelling. By referring to the emotional aspect of people and presenting the findings graphically, others can get more engaged and want to contribute to further analytics after understanding the value of it better (Johnson-Murray et al. 2018; Fernandez and Gallardo-Gallardo. 2020). Despite this, it seemed like this was not the understanding of most of the HR managers and some consultants, as they did not mention this as important in relation to HR analytics. This further shows that there are differences in opinions or knowledge, when it comes to what is of importance in theory and in practice.

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Even though all interviewees were positive about HR analytics, it became clear that not all were at the level they wanted. Most of them used only descriptive analytics, while some used predictive for recruitment. It became clear that the interviewees would like to be on a more advanced level than descriptive analytics, partly to be able to have a greater impact on business decisions, aligned with Fernandez and Gallardo-Gallardo (2020) who stated that descriptive analytics lead to low-rate results that can undermine HR analytics' role in an organization. Descriptive can be limiting in that it does not provide information about what is likely to happen in the future or give the best course of action, therefore not giving strategic advice for the organizations. Hence, the possibility of making a wrong decision that can affect organizational performance in a negative way in the future increases. The goal for most interviewees was to be able to have prescriptive analytics that can provide rich information about what the best course of action is. However, contrary to the beliefs that predictive and prescriptive analytics can contribute to enhanced organizational performance, our study revealed that such insights can lead to cognitive biases. There is a need to be aware that insights provided by HR analytics are possibilities, rather than certainties, further increasing the importance of interpretation of the insights (Johnson-Murray et al., 2018). For instance, analytic insights about turnover intentions should be handled with care, as organizations cannot know for sure that turnover of specific employees will happen, aligned with what Wright and Snell (1998) state about avoiding shortcuts based on information. Hence, if the insights provided by HR analytics is handled by employees who know how to interpret the information and relay it to stakeholders in their company, HR analytics has the possibility to improve organizational performance, especially if organizations have technology and systems that are more advanced than descriptive analytics.

### *5.2. Hindering factors of HR analytics*

The second purpose of the study was to gain further understanding of the possible obstacles in the utilization of HR analytics, as the hindering factors have not yet been properly researched (Greasley and Thomas, 2020). Similarly to the findings discussed above in terms of organizational performance, no significant differences were found between the findings stemming from the consultants and the HR managers - rather, similar factors were identified by both of the parties represented

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apart from a few exceptions. The following factor groups were identified to influence the utilization of HR analytics: organizational demographics, information technology (IT), and people, thus partly aligning with the findings of Marler and Boudreau (2017).

Despite Johnson-Murray et al. (2018) recognizing HR analytics operating differently depending on the size of the organization, previous research has been scarce in identifying organizational demographics as one of the hindrances in the adoption of HR analytics. In organizational demographics, especially the size of the organization as well as the industry sector an organization was operating in, were found to slow down the utilization of analytics in HR. The larger the organization is, the more data it can be assumed to withhold, and the more requirements and expectations the organization has for HR analytics. Second, organizations that operate in dynamic industries are prone to face various risks threatening their performance on the market. For organizations like these, it is more important to be prepared for the possible rapid changes by adopting more advanced analytics, such as that of predictive analytics. To conclude, big data sets to be handled as well as market volatility result in more time-consuming and expensive implementation processes.

Our findings were aligned with Marler and Boudreau's (2017) identification of how IT can work as a significant impediment to HR analytics. Although they mention how HRM IT should be capturing cross-functional data to produce rich reports, scorecards and dashboards, our findings represent a different reality. Majority of the managers participating in the study were contending with disconnected systems and thus, integrating HR data with data from other organizational functions became cumbersome. These organizations were lacking systems that would communicate with each other and retrieve data from all of the existing systems without the need for manual input. Our study also reinforced Coco et al.'s (2011) finding of redundant systems as technological hindrances. Whereas the adopted infrastructure should be broad enough to cover important HR areas affecting business performance, we found evidence that organizations may be prone to selecting and adopting HR analytics' tools that go beyond organizational needs. Although the reasons behind this may be explained with SHRM, as it was addressed that an optimal strategic HRM is developing flexible capabilities to meet the changing organizational requirements (Wright and Snell, 1998), our study

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recognized how these redundant tools detached HR analytics from the current organizational challenges, while making the utilization of it more complex. As the final hindering technological factor, we identified data governance, specifically unclear definitions of metrics and data quality. While Johnson-Murray et al. (2018) highlighted the importance of harmonious cross-organizational definitions of metrics, the study indicated that organizations struggle with unstandardized definitions. Hence, ambiguity of the definitions delayed HR analytics' initiatives as organizations spent time clarifying suitable data to produce wanted insights. Additionally, as both Pasquale (2015) and Gal et al. (2020) encouraged organizations to improve data governance by openly evaluating the quality of data being used, our study found no clear indications that organizations would engage in such activities. Contrary, data quality emerged to be one of the key hindering factors for HR analytics as both the consultants and HR managers were concerned of organizations using unreliable data in HR analytics, further damaging the trustworthiness of the insights and usability of them as part of decision making.

The people factors identified in the study were among the strongest factors hindering HR analytics. Aligned with previous research (e.g., Bassi, 2011; Levenson, 2011) our study recognized the lack of analytical understanding and incompetence of HR professionals in analytical skills. Levenson (2011), for instance, stated how HR professionals often fail targeting challenges worthy for the organization. This concern was matching the concerns of the consultants of our study, who further elaborated that instead of finding inspiration from other organizations' use cases of HR analytics, organizations are prone to directly mimic them. Therefore, our study agrees with the statement of Snell (1992) by indicating that HR professionals, although expected to do so, may not succeed in matching the HRM practices to strategy, hence, resulting in low organizational buy-in for HR analytics. The buy-in was further damaged by HR professionals' inability to prove the worth of HR analytics. Our findings revealed that the HR managers of our study struggled to measure if the HR analytics' initiatives actually had an impact on performance, as measuring the performance effects proved to be difficult. Not only was this seen as concerning by the consultants as it leaves room for assumptions; failing to measure concrete performance improvements also counteracts with Mitchell et al. (2013) who emphasize how the focus should be on building the credibility of HR initiatives. Second, our study found out that the decision to adopt

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and utilize HR analytics is dependent on the mindset of HR managers within an organization, rather than being an organizational decision. Whereas Bassi (2011) briefly identifies this issue, she argues that organizations' top management rarely has enough knowledge to require HR analytics, thus placing the responsibility of the adoption decision upon HR professionals. However, due to HR professionals' skepticism toward HR analytics' insights, lack of analytical skills as well as business acumen in terms of promoting irrelevant findings, the utilization of HR analytics remains slow. Simultaneously, our study identified the generational challenge of HR analytics; HR analytics might be foreign to many HR professionals representing older generations because the value of HR data was yet to be discovered in the past and the need for analytical skills remained unnecessary.

Because of the current scarcity of analytical competencies in HR, the importance of cross-organizational collaboration was recognized by both parties, however, it was especially highlighted by the consultants for driving successful HR analytics' initiatives - aligning with Green's (2017) clarification how HR analytics should leverage internal or external resources for better HR analytics' outcomes. Yet, our findings confirmed the presence of silo mentalities (Fernandez and Gallardo-Gallardo, 2020) as both parties had experienced resistance for interdepartmental co-operations within organizations, specifically in regards to providing data for enriched insights. Hence, to fully utilize HR analytics for organizational performance, the silo mentalities remain to be removed.

### *5.3. Conclusions and future research*

The study has provided further insights of HR analytics' ability to improve organizational performance, as well as elaborating the hindering factors in the utilization of it. Unique to our study, we have combined two differentiating viewpoints to deeply understand the ways in which organizations' HR functions use HR analytics in creation of organizational value and why they fail to do so. Knowingly, previous research has not combined the promotional viewpoints of consultants with the factual viewpoints of HR managers. While we did not find significant contradictions between the two parties, we believe that this finding alone is an important contribution to the literature of HR analytics.

Despite both consultants and HR managers being represented in this study, our study did not elaborate whether organizations that have been leveraging external

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partners, such as consultants, have been more successful in utilizing HR analytics for organizational performance than those organizations who have conducted HR analytics only through internal involvement. This research opportunity is similar to van den Heuvel & Bondarouk's (2017, p. 174) research recommendation "How are external partners selected, and are there downsides to external involvement?". Second, aligned with Marler and Boudreau's (2017) statement, this study has been focused on researching HR analytics' impact on organizational performance across the vast array of HRM practices. Further research should focus on studying the impact of HR analytics in terms of specific HRM practices, such as training and development or recruitment. Finally, we encourage researchers to conduct future studies with other than comparative research design used in our study. For instance, it would be interesting to research the progress of sample organizations in HR analytics by using longitudinal design. Collecting data from the sample organizations at least thrice at different periods of time (Ployhart & Ward, 2011) is undoubtedly time consuming, but would possibly reveal interesting insights of the progress of companies in HR analytics, the changes it has brought on organizational performance as well as recognizing how organizations overcome the factors hindering the utilization of HR analytics. Overall, the opportunities for future research in HR analytics remain vast.

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## **APPENDICES**

### **Appendix A**

Interview guide, Consultants

#### **Subject 1: HR analytics**

##### **Definition**

Q1: How do you define HR Analytics?

Q1.1: Do you advise in all descriptive, predictive and/or prescriptive analytics?

Q1.2: Do you have any concrete examples of how you use the different types of HR analytics?

##### **Personal interest**

Q2: When did your interest in HR Analytics begin? And why?

Q3: What is your responsibility related to HR analytics? How does HR Analytics appear in your work?

##### **Functionality**

Q4: What do you think predictive HR Analytics can contribute to?

Q5: What are the typical expectations of the companies when they adopt predictive HR Analytics, and does it match the reality?

Q5.1: What areas do organizations typically want to improve through the usage of predictive HR Analytics?

Q6: Does usually your firm contact other organizations to provide them with HR analytic solutions, or do organizations contact you?

Q7: What are the upsides and the downsides of predictive HR Analytics that you tell an organisation that is considering adopting it?

Q8: What departments under an organization do you usually recommend taking part when implementing HR Analytics?

#### **Subject 2: Organizational performance**

##### **Definition**

Q1: How do you define organizational performance?

Q2: How do you recommend measuring organizational performance?

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## **HR Analytics & performance**

Q3: Where do you see predictive HR Analytics fits the picture when talking about organizational performance?

Q4: How do you think an organization's performance would differ with/without the use of predictive HR Analytics?

## **Subject 3: Strategic Human Resource Management**

### **Definition**

Q1: How do you define Strategic Human Resource Management?

Q2: Could you critically explain the importance of strategic HRM for meeting organizational objectives?

### **High Performance Work Systems (HPWS)**

Q3: High-performance work systems treat HR practices as bundles. Do you recommend a company making analyses based on a single practice level or a bundle level?

### **Decision making**

Q4: Do you think (predictive) HR Analytics can impact the strategic decision making in an organization's HR department? If so, how?

Q5: Have you ever experienced HR Analytics negatively affecting organizational decisions?

### **Closing question:**

Is there anything you would like to add that has not been mentioned yet? What do you think we should have asked you about that we have not?

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## **Appendix B**

Interview guide, Managers

### **Subject 1: HR analytics**

#### **Definition**

Q1: How do you define HR analytics?

Q1.1: Do you use descriptive, predictive and/or prescriptive HR analytics?

#### **Personal & Company interest**

Q2: When did you and your company's interest in HR analytics begin? And how?

Q2.1: If you hired a consultancy firm in order to get HR analytics installed, how was this experience?

Q3: How does HR Analytics appear in your work?

Q3.1: What specific challenges/improvements did you or your organization experience by starting to use HR analytics?

#### **Functionality**

Q4: What do you think HR analytics can contribute to?

Q5: How does your company use HR analytics?

Q5.1: Do you have any concrete examples of how you have used the different types?

Q6: Would you change anything about how your company uses HR analytics?

Q7: Which departments are involved in HR analytics? Is it just the HR department or more?

### **Subject 2: Organizational performance**

#### **Definition**

Q1: How do you define organizational performance?

Q2: How do you measure organizational performance?

#### **HR Analytics & performance**

Q3: Where do you see HR Analytics fits the picture when talking about organizational performance?

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Q4: How do you think your organization's performance would differ with/without the use of HR Analytics?

### **Subject 3: Strategic Human Resource Management**

#### **Definition**

Q1: How do you define Strategic Human Resource Management?

Q2: Could you critically explain the importance of strategic HRM for meeting organizational objectives?

Q3: In what ways is your organization engaging in SHRM practices?

#### **HPWS**

Q4: High-performance work systems treat HR practices as bundles. Does your company make analyses based on a single practice level or a bundle level?

#### **Decision making**

Q5: Do you think HR Analytics has impacted the strategic decision making in your HR department? If so, how?

#### **Closing question:**

Is there anything you would like to add that has not been mentioned yet?

Do you think we should have asked you about something that we haven't?



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**Appendix C**

## Summary of the interviews

<b>Identification</b>	<b>Interviewee</b>	<b>Title</b>	<b>Duration, minutes</b>
C1	Consultant	Lead People Analytics Consultant	60
C2	Consultant	Country Director, Consultancy and Sales	41
C3	Consultant	HR Analytics Consultant	42
C4	Consultant	HR Advisor, HR Course Responsible	53
C5	Consultant	Senior Consultant, People and Workforce Analytics	44
M1	HR Manager	Head of Recruitment	52
M2	HR Manager	Head of HR	20
M3	HR Manager	Head of HR Technology	60
M4	HR Manager	Global Head of HR Analytics	58
M5	HR Manager	Director, Workforce Planning & HR Analytics	40
M6	HR Manager	HR Analytics and Headcount Planning Manager	50

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