

# An exploration of key human resource practitioner competencies in a digitally transformed organisation



## Authors:

Michiel J. van den Berg<sup>1</sup> 

Marius W. Stander<sup>1</sup> 

Leoni van der Vaart<sup>1</sup> 

## Affiliations:

<sup>1</sup>Opentia Research Focus Area, School of Industrial Psychology and Human Resource Management, Faculty of Economic and Management Sciences, North-West University, Vanderbijlpark, South Africa

## Corresponding author:

Leoni van der Vaart,  
12772356@g.nwu.ac.za

## Dates:

Received: 28 May 2020

Accepted: 29 Sept. 2020

Published: 08 Dec. 2020

## How to cite this article:

Van den Berg, M.J., Stander, M.W., & Van der Vaart, L. (2020). An exploration of key human resource practitioner competencies in a digitally transformed organisation. *SA Journal of Human Resource Management/SA Tydskrif vir Menslikehulpbronbestuur*, 18(0), a1404. <https://doi.org/10.4102/sajhrm.v18i0.1404>

## Copyright:

© 2020. The Authors.  
Licensee: AOSIS. This work is licensed under the Creative Commons Attribution License.

## Read online:



Scan this QR code with your smart phone or mobile device to read online.

**Orientation:** Digital transformation lies at the heart of what has been termed the Fourth Industrial Revolution, and many researchers consider this as one of the most significant drivers of change in the area of human resource management. For this reason, organisations and human resource practitioners (HRPs) are encouraged to re-evaluate their roles to ensure that they are able to impact the business performance.

**Research purpose:** This study reflects upon the potentially unique competency requirements of the HRP in a digitally transformed organisation by exploring the perceptions of the line partner.

**Motivation for the study:** Digitalisation is transforming the roles of HRPs. Consequently, HRPs may need a different set of competencies. Despite the transformation and the associated change in competency requirements, little knowledge exists regarding the HRP competencies needed (especially in digitally transformed organisations).

**Research approach/design and method:** The researcher identified 43 senior line partners through a purposive sampling procedure to participate in semi-structured interviews. Nineteen participants completed the interview process. The researcher analysed the interview data using thematic analysis.

**Main findings:** The main themes are the ability to design, extract, understand, analyse, interpret and apply information (data); continuous learning; stakeholder relationship management; and cultivating positive organisational practices.

**Practical/managerial implications:** The exploration of competencies provides organisations with additional context in terms of the complexity of the environment for the HRP, and provides a model that can be utilised for talent management.

**Contribution/value-add:** This study contributes to the limited knowledge regarding HR competencies in digitally transformed organisations, especially from the perspective of line partners.

**Keywords:** digitalisation; digitally transformed organisation; HR transformation; HR competencies; talent management.

## Introduction

Digitalisation is at the heart of the Fourth Industrial Revolution (Schwab, 2016). Digitalisation, or digital transformation, propelled us into an era within which digital business models and digitally driven business processes are the cornerstones of company operations (Abolhassan, 2017; Cianni & Steckler, 2017). Digitalisation refers to the increasing penetration of digital technologies in society (with concomitant changes in the connection of individuals and their behaviours), whereas digital transformation refers to the managed adaptation to digitalisation to ensure sustainable value creation for the organisation (Gimpel & Röglinger, 2015).

Corporations are fuelling digital transformation to enhance engagement with their customers, empower employees, optimise operations and transform products and services (Bilgeri, Fleisch, Gebauer, & Wortmann, 2019). Digital transformation not only creates opportunities but also presents challenges (Schwab, 2016). The increased use of digital technology complicates the ways in which employees are managed, and process automation reduces the employee population as robots replace employees (Makridakis, 2017). On top of this, < 50% of executives believe that their organisations have the resources and capabilities in place to execute and support their company's digital transformation strategy (DiRomualdo, El-Khoury, & Girimonte, 2018).

Traditional human resource management (HRM) support models are no longer adequate to demonstrate HR's contributions to the business (Garcia-Arroyo & Osca, 2019). This lack of contribution comes at a time when the increased use of digital technology is enabling HRM functions to collect, store and utilise data, resulting in one of the most significant drivers of change (Stone, Deadrick, Lukaszewski, & Johnson, 2015). There is, however, an opportunity for the HRM function if it decides to adopt digital technology for operational impact and delivery (Ulrich, Younger, Brockbank, & Ulrich, 2012). Although support for digital adoption is widely recognised, Deloitte's Global Human Capital Trends Report indicates that HRM departments are failing to keep up with technological innovations and development (Bersin, Pelster, Schwartz, & Van der Vyver, 2017), with as few as 35% of global human resource practitioners (HRPs) rating their HRM capabilities as good (Bersin et al., 2017).

Over the last decade, the HRP has made significant strides in moving from the role of caretaker and record-keeper to a place of strategic importance in the boardroom (Kavanagh, Thite, & Johnson, 2009). Based on the re-positioning of the HRP, accompanied with the nature of the HRM function, the HRP is now perfectly positioned to guide the organisation through the rapid era of digital disruption (Zeoli & Billeter, 2019). This positioning, however, only holds true if the HRP is transformed and has the right competencies for the journey. However, a literature gap exists in terms of the required HR competencies within the context of digitally transformed organisations (DTO). Existing literature only provides us with HR competency models that are relevant within a general context.

## Research purpose and objectives

The purpose of this study was to explore the key HRP competencies needed in a DTO. The study focused explicitly on identifying and describing these competencies from the perspective of the line partner as a business partner. Most HR competency models are compiled with the input from the HRP and with little input from business. Wright, McMahan, Snell and Gerhart (2001) suggested that feedback from senior-level line partners is an invaluable method of ascertaining competency requirements, as these senior managers use HR services on both individual and people manager levels. For the purpose of this study, the term 'competency' is defined as knowledge, skills and attributes (Ulrich, Younger, Brockbank, & Ulrich, 2016).

## Literature review

### Digitalisation and the human resource management function, human resource management operating model and the role of the human resource practitioner

The adoption of a specific HRM operating model is driven by numerous factors, including the company's objectives, the external environment, market conditions and the availability of labour (Harrop, 2017). With the introduction of digital

technology and the likes of artificial intelligence (AI) and machine learning (ML), the HRM function possesses the ability to leapfrog other support functions and is progressively becoming more digitalised (Makridakis, 2017).

Digital technologies are changing the ways in which HR services are delivered to ensure greater customer focus, in-depth analytics and an all-round higher level of performance (DiRomualdo et al., 2018). Humans are being complemented by machines, which is causing process redesigns and a complete overhaul of HR service delivery (Guszcza, Lewis, & Evans-Greenwood, 2017). These process changes are affecting all areas of HR, with AI leading to rapid process acceleration and efficiencies in recruitment, replacing manual curriculum vitae (CV) screening by automated bots that complete such tasks in seconds (Kashyape, 2018).

Digital process management provides the HR function and managers with more transparency and greater access to previously closed data sets (Abolhassan, 2017). This enhanced visibility also comes with an additional layer of accountability to ensure data privacy, cybersecurity and fraud prevention (Rao, 2018). With so much of emerging technology available, higher levels of judgement will be needed as interconnected data sensors enable real-time monitoring of employees, raising privacy and security flags (Bondarouk & Brewster, 2016). The back-office services of HR are experiencing the most significant redesign with the automation of transactional tasks (Zeoli & Billeter, 2019). The use of digital technology does not stop with automation by means of AI. Other technologies, such as robotics and virtual and augmented reality, are being employed to enhance the HR experience (Parry & Battista, 2019).

Historically, the HRP has struggled to demonstrate a direct business impact (Panayotopoulou & Papalexandris, 2004). In this regard, digitally enabled human capital analytics, where analytical processes are applied to human capital management to improve employee performance, are proving to be a game-changer for the HRP (Dutta, 2018). As digital enablement continues, more HR analytics are moving to 'push' reporting that enables line partners to see relevant data in real time (Bersin et al., 2017). This revolution is influencing the perception of the HRP value-add and at the same time inducing HRPs to take on a more significant role in organisations (Kaji, Hurley, Gangopadhyay, Bhat, & Khan, 2019). To influence the perception of line partners with regard to the HR value-add, the HRP will have to use a full suite of digital tools to produce a positive business impact (Dutta, 2018).

To optimise the HRP's opportunity to add value, HRPs need to assist their organisations in building strategic flexibility to preserve and develop their competitive advantage (Sekhar, Patwardhan, & Vyas, 2016). The HRP should contribute to the organisation to a far greater extent. It will be critical for the HRP to ascertain the advantages and disadvantages of digitalisation for employees and the broader organisation

(Gartner Inc, 2018). The HRP, therefore, has an extended gatekeeper role in guaranteeing that companies use digital technology with high levels of judgement, as these decisions will have far-reaching effects on the organisational culture and the lives of employees (DiRomualdo et al., 2018).

Ultimately, digital disruption is no longer merely a way to change the business landscape, but instead has become a survival tactic and long-term strategy (Andriole, 2018). Companies must identify the core competencies necessary to remain competitive. This places additional responsibility upon organisations and the HRP to re-educate, retrain and replace the necessary competencies to ensure competitiveness through digital transformation (Andriole, 2018). To lead and support an organisational digital transformation strategy, the HRPs need to shift their focus towards the identification and building of digital capabilities, including new emerging capabilities such as 'risk management, simplicity, connection and innovation; doing so will enhance company performance' (Ulrich & Dulebohn, 2015, p. 195). Accordingly, the development of digital capabilities should be the goal of the HRM function, and the HRP has a unique opportunity through digitalisation to provide enhanced company support if the choice is to embrace digital competency development (Ulrich & Dulebohn, 2015). The HRM function has a dual role to fulfil in enhancing the HR competency levels and challenging the business and leaders to adapt to the changing digital paradigm (Frey & Osborne, 2017).

## Human resource competencies for digital transformation

Digital technology and big data have infiltrated all areas of business life and the HRP's role is no exception (Scholz, 2017). Digital transformation plays a crucial role within the current organisational context, increasing the need for aligned HR competencies. Based on a digital era competency evaluation, four key competencies are required of the HRP for success in a DTO. These competencies are 'business knowledge, HR expertise, change management and technology expertise' (Bengtsson & Bloom, 2017, p. 28). Within the DTO context, HRPs require analytical capabilities and data modelling skills that go far beyond what has previously been required (Lipton, 2017). In a DTO, HR competence is necessary in managing the data produced by technology, and more than this, the ability to plan interventions accordingly (Manuti & De Palma, 2017). Lipton (2017, p. 50) adds to the specific DTO competency focus by saying that 'the ever-increasing pace of innovation and constant emergence of new technology has made competencies like risk-taking and tolerance for ambiguity critical, too'. Betchoo (2016, p. 3) also contributed by saying that the development of digitally aligned competencies revolves around being more 'agile, people-oriented, innovative, connected, aligned and efficient'.

With the DTO context in mind, the Chartered Institute of Personnel Development (CIPD) emphasised the impact of digitalisation to such an extent that they have espoused

'digital working' as one of the core competencies within the 'HR Professional Map', stating that (CIPD, 2018):

[D]igital working is about understanding the role of technology and the impact it has on people and the people function. It is knowing the latest technology offerings and understanding how they can improve productivity and help more collaborative work. (p. 1)

Similarly, the Industrial and Labour Relations (ILR) School included the competency of 'technology champion' in its competency framework, defining it as 'the ability to recognize emerging technological trends that will impact business performance, and to champion technology usage throughout the company to drive adoption' (Kelly & Rapp, 2016, p. 6).

In South Africa, the SA Board for People Practices (SABPP) supports the digital context-driven view, adding that HRPs require competencies in the technology space if they are going to add value in the digital era (Subban, 2016a). The SABPP has placed so much emphasis on the DTO context that it has assigned the following naming convention to the aligned competency: 'Citizenship for the future – innovation, technology and sustainability' (Meyer, 2012, p. 3). The SABPP has gone even further and included the competency of 'innovator' into the national HR competency model and defined it as being a 'citizen of the future', which is defined as 'the ability to drive innovation, optimise technology and contribute to sustainability of organisations' (Subban, 2016b, p. 2). In 2016, the RBL Group introduced a revised HR competency model with nine competencies divided into three sections (Ulrich & Brockbank, 2016). In this model, Ulrich and Brockbank (2016, p. 20) nominate the competency of 'technology and media integrator' as key for HRP success in the digital era, explaining it as (Ulrich & Brockbank, 2016):

[H]R professionals must be able to leverage technology and technological tools to support their efforts to create high performing organisations. They also rely on social media to recruit, retain, develop and engage human capital. (p. 27)

The above literature supports the view that the digital revolution has changed the way HR delivers processes and services (DiRomualdo et al., 2018). Because of digitalisation, the HRP is now being complemented by a wide array of digital technology, which has directly affected the knowledge, skills and attributes required in a digital environment (Guszcza et al., 2017).

## Research design

### Research approach and strategy

A qualitative descriptive design, from an interpretive paradigm, was used. The design is appropriate as it provides basic descriptions of the phenomenon (i.e. competencies requirements of the HRP from the perspective of the line partners) whilst taking context into account (i.e. a DTO) (Sandelowski, 2010). As this study was interested in the interpretation of the perceptions of line partners, the researcher assumed an interpretive stance

(Elliott & Timulak, 2005). Following on the interpretive approach, the researcher was not in search for 'truths' about the research participants' experiences, but rather to explore how they make meaning from their experiences (Davis & Michelle, 2011).

### Research setting, entrée and establishing researcher roles

The researcher purposively chose a multinational organisation at the forefront of digital transformation for this study. The environment is rich with best-in-class systems and processes and characterised by a high performing culture (i.e. fast-paced and outcomes-based). At the same time, employees in this environment are encouraged to think big, to innovate and to challenge the status quo in order to stay at the forefront of digital transformation. The researcher is employed in the organisation and it was important that the researcher remains impartial and mindful of any personal biases. In this regard, there was no sponsorship of this research project by the organisation and the study was conducted purely for academic research purposes.

Because of the accessibility permitted within the organisation, the researcher assumed a direct approach to entrée, which raised a few ethical considerations. The researcher obtained permission from the organisation to conduct the research through a multi-level sign-off process. The working relationship between the researcher and the prospective participants did not place the researcher in a position of authority, nor was there any potential for influencing the research participants. Although a collaborative employment relationship existed with the organisation, there were no personal relationships with the study participants that might affect the insider/outsider independence of the researcher.

### Research participants and sampling methods

The aim of this research was to explore the impact of digitalisation on the competency requirements of HRPs from the perspective of the line partner. Consequently, the sample consisted of line partners with deep insights into both digitalisation and the role and competency requirements of HRPs. The researcher employed a purposive sampling technique for this study based on the following two criteria: (1) the participants needed to be senior managers within the company and (2) the participants needed to have a background of working in a DTO. Such participants have sufficient experience in working with HRPs to formulate competency requirements whilst taking context into account in their formulation.

Purposive sampling methods place primary emphasis on data saturation to ensure that the research continues until no new substantive information emerges (Hennink, Kaiser, & Marconi, 2017). The researcher invited 43 qualifying senior managers to contribute to the study, of whom 21 accepted the invitation. Two participants, however, later withdrew

because of work commitments. The remaining 19 participants that accepted the invitation were interviewed. Data saturation was reached after the ninth interview. The majority of the participants were males (95%), older than 40 years of age (58%) and occupying senior management positions (95%). Only 26% of the participants were employed for less than a year, whereas the majority (69%) were employed for between 2 and 6 years. The demographic information of the sample is representative of the overall employee population in terms of gender, race, age and tenure on senior management level.

### Data collection and recording method

Semi-structured interviews were conducted. According to Silverman (2016), interviews produce efficient data about the phenomenon of interest in accordance with interviewees' experiences. Semi-structured interviews aid in keeping the data extraction uniform whilst at the same time allowing participants the freedom to render individual accounts of their experiences. Additional probing enabled the researcher to gather rich, deep and detailed accounts of the participants' experiences (Lincoln, 1995). In this way, detailed subjective descriptions of competency requirements can be provided that are in line with the research design employed.

The following questions formed part of the semi-structured interviews:

- What in your view is a DTO? Would you deem your organisation to be one?
- What in your view is the impact of a DTO on the role of an HRP?
- In your view, what general competencies (knowledge, skills and attributes) do HRPs need to be successful in a DTO?
- Which of the competencies mentioned above do you regard as the most critical for organisational success and why?

The researcher recorded all the interviews in order to facilitate in-depth data analysis. The interviews were conducted in English, which aided with the transcribing process. In terms of informed consent and confidentiality, the researcher assigned the participants numbers (presented as 'Interviewee #' throughout the article) that form the basis of reporting.

### Strategies employed to ensure data quality and integrity

To establish trustworthiness, the researcher focused on credibility, transferability, conformability and dependability (Krefting, 1991). To ensure *credibility*, the present study used thick descriptions of the phenomenon under investigation, peer review and debriefing. *Transferability* of the research findings was ensured by providing a detailed description of the research setting, sampling method and sample size. The researcher ensured *confirmability* by demonstrating that the findings emerged from the data and not the researcher's own

predispositions. The researcher and peer reviewer co-coded and reviewed the raw data independently. The researcher also made use of probing questions and paraphrasing to clarify participants' statements (Morrow, 2005). In order to improve the *dependability* of the study, the researcher documented the various elements of the data-gathering procedure. The researcher evaluated the effectiveness of the research process through critical reflection (Shenton, 2004), and ensured dependability by creating an audit trail for both the research process and the research findings.

## Data analysis and interpretation

Thematic analysis (TA), a data analysis method used to identify and analyse patterns in qualitative data (Clarke & Braun, 2013), was employed. Clarke and Braun (2013) outline six phases within the TA process and stress that it is a non-linear process. The following steps were taken to ensure rigour throughout the six phases: Phase (1), *familiarisation with the data*; (2) the researcher performed *extensive coding*; (3) *searching for themes*; (4) *reviewing themes*; (5) *the naming convention of themes* was aligned to similar names from the literature; and (6) *writing up* all the information.

## Ethical consideration

Ethical approval was granted by the research ethics committee of the university (clearance number: NWU-00813-18-A7) as well as the Department of Human Resource Management at the organisation. Once ethical approval had been obtained, the researcher submitted the relevant approval and research process to the organisation for final approval to proceed. Following all the relevant approvals, an invitation to participate in the research was sent to all the participants. Ethical consideration was given to matters of privacy, confidentiality and anonymity, the termination of participants' involvement and the provision of research attention. Participation was voluntary and it was made clear that participants could withdraw from the study at any time if they wished so.

## Findings

In this section, the research findings are outlined according to the themes that emerged. In order to obtain an in-depth understanding of the impact of digitalisation on the competency requirements of the HRP, it was essential to explore whether or not the environment/organisational context within which the study was conducted could be classified as a DTO. Consequently, the interviews began by asking the participants to explain their understanding of a DTO and if they would deem their organisation to be one. The feedback from participants was overwhelmingly one-sided, with the vast majority commenting that the organisation could be described as digitally transformed. As evidence for this feedback, the participants substantiated their views with tangible examples that they identified as digitally transformed. This is a just confirmation of the original selection of the organisation as a DTO. Interviewee feedback is given verbatim.

For example, when asked about the definition of a DTO, Interviewee #7 (SnMgr, SoftDev, 22/07/19) stated the following:

'Digitally transformed for me would mean that we use data internally to optimise or move us as fast as possible in terms of taking risks, or helping customers, or making decisions and having that data be something that makes us more productive and more efficient and smarter about outcomes' and 'There is a significant advantage in what I would consider a DTO to be able to filter out a lot of the noise and provide useful information that is actionable and relevant.'

Following the DTO contextual setting, a detailed TA was conducted, and four core themes emerged from the interviews. These themes revealed that the key competencies of an HRP within a DTO were identified as: (1) *contextualising HR data and information*, (2) *continuous learning*, (3) *stakeholder relationship management* and (4) *cultivating positive organisational practice*. These four themes, along with the required knowledge, skills and attributes, are summarised in Table 1.

### Theme 1: Contextualising human resource data and information

Being part of a DTO, differing from traditional organisations, demands a thorough understanding of the context of the business. The HRP needs some information technology (IT) knowledge and skills and should be able to use data generated within a digital business context to contribute to organisational success.

#### Subtheme 1: Knowledge, insight and understanding of the business context

A deep understanding of the specific organisational business context was one of the principal subthemes. The participants reported possessing an appreciation of the digital business context as a vital ingredient for HRP success. Emphasising the link with knowledge of the business environment, Interviewee #12 (MMgr, SoftDev, 12/08/19) added:

'The HRP needs to have both the technical know-how and a deep understanding of the nature of the environment. I think if you are coming from a pure HR background into this [technical] environment, I think you would struggle actually because all of a sudden you are expected to engage in conversation that is completely foreign.'

It is evident that the line partners regarded the specific technical environmental elements as key, as Interviewee #19 (MMgr, SoftDev, 05/09/19) referred to the level of general engagement and understanding by stating:

'I think for a successful HRP, they need to have at least an appreciation of the tech space and what is going on here; they must be able to talk the language of a tech environment. So just having some tech awareness so that it is relatable so that they at least have that base understanding.'

#### Subtheme 2: Information technology knowledge and practical skills, specifically in the area of digitalisation

The appreciation of the business context in Subtheme 1 aligns closely with the next theme, which focuses on the practical IT and/or digitally informed skills. Because of the nature of the

**TABLE 1:** Core and sub-themes of the study.

Number (#)	Core themes	Knowledge	Skills	Attributes
1	Contextualising HR data and information	Knowledge of the business and business context	Digital skills in terms of the design, extraction, analysis interpretation and application of digital data	An ability and a willingness to learn
		Knowledge of IT technology	Speak the language of a technological environment	Design thinking
		Knowledge of digitalisation		Critical analytical thinking Ability to utilise digital data Proactively analyse trends and implement solutions
2	Continuous learning	Knowledge of the complex business environment	The skill to identify the impact of the environment on the business	The ability to deal with ambiguity
		Knowledge of legal matters	Optimising automation	The ability to deal with multiple challenges
		Knowledge of recent practices	Managing information and data	The ability to apply sound judgement
		Knowledge of automation		The ability to be agile and adaptive
3	Stakeholder relationship management	Knowledge of the environment and customers	Skills to influence virtually	The ability to engage across geographical, cultural and language dimensions
		Knowledge of diverse cultures	Excellent verbal and non-verbal communication skills	Communicating with impact
		Knowledge of communication channels	Skills to communicate virtually	Managing diversity
4	Cultivating positive organisational practice	Knowledge of key labour legislation and organisational policies	Creating and maintaining a cohesive cultural ecosystem	Ethical mindset
		Understanding of the regulatory model	Demonstrating empathetic advice in the digital interface	Maintaining the organisational culture and moral fibre
		Understanding of the challenges that come with the DTO	Interpreting data	Driving employee value proposition
		Knowing what drives tech employees	The use of AI, ML and other digital technology	Culture and wellness custodian Protector of privacy Building humane organisations

AI, artificial intelligence; DTO, digitally transformed organisation; ML, machine learning.

business environment in a DTO, most of the participants highlighted the need for both an aptitude and interest in the technological space. Interviewee #7 (SnMgr, SoftDev, 22/07/19) reported the importance of this by stating:

‘The digital HRP is going to be highly ineffective if they cannot understand all of the [technical] capabilities that are available to them to be efficient, productive and effective. If you do not fully understand ML, or if you do not fully understand AI and the tools that are available, then you are probably going to be pretty ineffective in your role.’

Interviewee #10 (MMgr, SoftDev, 08/08/19) tried to clarify the level of IT proficiency required and stated that:

‘IT literacy does not mean being able to use Outlook. IT literacy is thinking in terms of tooling and process and knowing how it should be executed with the use of technology.’

### Subtheme 3: The ability to utilise (design, extract, understand and apply) data in such a way that it can be leveraged to produce a positive business impact

Subtheme 3 focuses on the ability to utilise digital data. This theme received an overwhelming amount of support from almost all the research participants. Participants reported the importance of information utilisation in the information age and data as the main currency. Participants mentioned multiple layers of utilisation and Interviewee #13 (MMgr, SoftDev, 13/08/19) supported the utilisation of data by stating, ‘the whole point of digital transformation is to create a history that you can look back upon and obtain data to actually support decisions going forward’. Interviewee #1 (SnMgr, SoftDev, 02/07/19) added that ‘the core of any DTO is going to be data’.

Participants mentioned different levels of sophistication with regard to data utilisation, but Interviewee #1 (SnMgr, SoftDev, 02/07/19) emphasised the ability to analyse, interpret and apply the insights from data for business impact by stating that:

‘There are vast amounts of data that we are not tapping into that would help us make much better decisions, help us spot problems, challenges and opportunities earlier, and know very quickly whether interventions are working.’

Interviewee #17 (SnMgr, SoftDev, 05/09/19) also underscored the amount of data available by noting:

‘In a digital world, I think what makes it easier is that you can actually codify all of those [people practice] scenarios. Digitalisation gives people the ability to get more information, more access.’

## Theme 2: Continuous learning

In the changing world of work, and more so in a DTO with rapid change, it is expected from a practitioner to manage ambiguity and an unpredictable business environment. Learning agility will be important to make judgements in situations with limited historical evidence to rely on. In a DTO, the risk of errors will increase, demanding a certain level of resilience to ‘bounce’ back after mishaps.

### Subtheme 1: The ability to deal with ambiguity

Continuous learning was the second core theme, emphasising the necessity for HRPs to effectively engage and interact with their surroundings. Based on the rapid pace of change within

the DTO environment, Subtheme 1 refers to the ability of the HRP to deal with ambiguity. Interviewee #6 (SnMgr, SoftDev, 19/07/19) mentioned the changing business environment and the potential impact this might have on the HRP: 'the role of HR is radically transformed in a DTO, and there would be a psychological and strategic role to fill and not a transactional one'. Interviewee #8 (SnMgr, SoftDev, 24/07/19) focused on the rapid number of changes by stating, 'it is difficult for the HRP to keep up-to-date with the digitised playbooks and work instructions'. Interviewee #14 (MMgr, SoftDev, 13/08/19) agreed with this view and added, 'based on the change in the operational environment, you need someone [HRP] who is comfortable taking on multiple challenges at the same time, comfortable with ambiguity'.

### Subtheme 2: The ability to apply sound judgement

The second subtheme was the ability to apply sound judgement. This mainly stems from the complex and layered decision-making model that exists within the digitally transformed environment. Interviewee #9 (MMgr, SoftDev, 08/08/19) commented on the complexity of the environment within which the HRP operates and added that:

'It is an incredibly soft dynamic space that they [HRP] work in, and then you have this really hard edge with things like the economics of the business or kinds of legal aspects where there is very little room to wiggle because of the ramifications they can have. They [HRP] need to know when to be soft and when to be hard.'

Interviewee #14 (MMgr, SoftDev, 13/08/19) shared this view:

'In a DTO, a lot of HR services would be self-service for the customers and HR would be handling the exceptions cases. The HRPs in a DTO will apply much more judgement and operate in the grey. They will make context-driven judgement applications.'

### Subtheme 3: Being agile and adaptive

The pace and speed of business execution have rapidly accelerated in the digital era, and the HRP operating within a DTO needs to be agile to adapt and adopt new practices and ways of working. Interviewee #6 (SnMgr, SoftDev, 19/07/19) emphasised this point, noting:

'Being a DTO means that you're now engaging with customers through digital channels, you're automating. By being more agile and lightweight, you [HRP] are able to say yes to deliver on customer needs.'

Interviewee #3 (SnMgr, SoftDev, 04/07/19) commented on the changing business environment by stating, 'the HRP needs to be able to recognise the changing needs of the employees and the changing needs of the business and the market'.

### Subtheme 4: Resilience

Resilience is the fourth subtheme. This subtheme is closely linked to the subtheme of ambiguity, judgement and agility needed in the DTO environment. The following quote by Interviewee #3 (SnMgr, SoftDev, 04/07/19) frames this ability well:

'The HRP needs to have a different level of resilience in a DTO, based on the added complexities of time zones, cultures, fast pace, etc.'

Interviewee #11 (MMgr, SoftDev, 12/08/19) agreed with this view and stated:

'In a DTO, you are going to see large volumes and a fast pace. Information and data will flow through rapidly, and thus, you will need to have more resilience.'

### Theme 3: Stakeholder relationship management

In DTO-driven organisations with complex business models and a high level of digitisation and automation, allowing a line manager access to information needs HRPs who can clearly communicate on technology-related topics. The ability to effectively engage, interact and communicate with various stakeholders is high on the priority list.

#### Subtheme 1: Excellent verbal and non-verbal communication skills:

Communication skills, both verbal and non-verbal, were another subtheme referenced by the participants. In a DTO, HRPs will engage with multiple stakeholders across a variety of geographical, cultural and language dimensions and the ability to draft clear, concise and culturally sensitive communication is a critical competency. Interviewee #2 (MMgr, SoftDev, 04/07/19) underscored both the complexity and importance of the communication competency in a DTO by stating:

'Knowing how and how best to reach out to individuals, how to set priorities on different requests because you no longer hear a tone of voice, you are no longer face-to-face with that person, you can no longer see their expressions or whatever the case may be.'

This is amplified by the numerous mediums through which communication is distributed in a DTO environment. Interviewee #8 (SnMgr, SoftDev, 24/07/19) emphasised this by saying:

'In a DTO, the HR practitioner can be overwhelmed with the various channels through which to communicate, with the result that they may focus their attention on the medium and not the message.'

Interviewee #3 (SnMgr, SoftDev, 04/07/19) focused more upon the nature of the business model that created additional complexity and added that: 'due to the global matrix environment, we almost operate in a disjointed manner, very remotely. We need to be virtually connected and on the same brainwave'.

### Theme 4: Cultivating positive organisational practice

In a fast-moving business environment, the HRP needs to play a critical role in employee wellness. With the availability of information, the HRP must ensure confidentiality and the privacy of personal information. The ability to understand, value, integrate and protect the core values and rights of all employees whilst aligning it to the organisation values is a core competence in a DTO.

#### Subtheme 1: Functioning as wellness and cultural custodian:

Within the cultivating positive organisational practice core theme, the subtheme of functioning as wellness and cultural custodian was derived from the interviews. Interviewee #1

(SnMgr, SoftDev, 02/07/19) commented on the importance of maintaining the organisational culture and moral fibre and emphasised the additional responsibility that the HRP has as follows:

'I mean keeping the organisation honest, keeping the organisation humane. Because it is going to be very easy to slip into automating all the things, the software does all the things and software is not particularly good at being humane.'

Interviewee #7 (SnMgr, SoftDev, 22/07/19) agreed with this and added:

'At some point in time maybe there is a situation where the HR interface with the employees is digital and not human, and I just do not know how satisfactory that would be to the employee.'

Maintaining a wellness balance is challenging in any environment; however, in a DTO, this is especially true because of the speed and rigour of the business operations. Interviewee #8 (SnMgr, SoftDev, 24/07/19) commented on the interconnected components by stating, 'the collective wellbeing of the DTO stems from having the right culture and the HRP is part of the bigger ecosystem'. Interviewee #7 (SnMgr, SoftDev, 22/07/19) asked, 'could an employee get the same kind of empathetic advice from the digital interface?' Interviewee #12 (MMgr, SoftDev, 12/08/19) also added to this by cautioning the HRM function: 'the more efficient and digitised an organisation becomes, the more the HRP could become disconnected from the employees'. Interviewee #19 (MMgr, SoftDev, 05/09/19) also made this point and said:

'We should have an understanding of the challenges that come with that [DTO]. What drives tech employees? What are the unique characteristics associated with the performance of tech employees? How do they differ from other employees that we have across in the business?'

**Subtheme 2: Functioning as the protector of privacy:** A number of participants referred to data privacy as another of the subthemes supporting the core theme of functioning as wellness and cultural custodian. Interviewee #13 (MMgr, SoftDev, 13/08/19) was wary of the potential volume of new data being generated and how this was being processed, stating:

'You [company] now have an increased amount of information that you need to process. And there is always the risk of not processing it in the right way. Usually, we just interpret the signals we get from the systems. The problem with data utilisation is that you don't necessarily know if you are interpreting the data in the right manner. The use of AI, ML and other digital technology should be closely guarded.'

In a bid to highlight the rigorous access standards that should be in place, Interviewee #8 (SnMgr, SoftDev, 24/07/19) noted the following: 'an understanding of the regulatory model is a necessity for those who want to gain access to information and those who want to restrict access to it'.

## Discussion

Four themes and accompanying subthemes are reported in the previous section. In this section, the findings are analysed

in relation to the literature, thereby combining inductive and deductive approaches. This allows the participants' voices to be interpreted in a broader model of existing knowledge and enables an in-depth understanding of the research findings.

As a starting point, it is essential to highlight the alignment between the definitions of a DTO, as referenced by the research participants, and those provided within the literature. Although it is beyond the scope of this research, alignment is important for contextualisation. In defining digitalisation, Betchoo (2016) referred to the interconnected nature of digital technology as one of its primary elements, with social media, mobility, analytics, cloud computing and the Internet as critical examples. The use of advanced technology for data collection, storage and processing was also referenced with powerful tools such as AI and ML, seen as the differentiating technologies in a DTO (Brynjolfsson & McAfee, 2014; Davenport & Kirby, 2016). Keywords cited by the research participants include 'data usage', 'data optimisation', 'actionable insights', 'connection', 'tool usage', 'customer enablement', 'decision-making', 'increased productivity', 'efficiency' and 'service delivery'. These keywords also form part of the definitions of digitalisation (i.e. the increasing penetration of digital technologies in society with the associated changes in the connection of individuals and their behaviours) and digital transformation ('managed adaptation of companies in light of progressing digitalisation in order to assure sustainable value creation') (Gimpel & Röglinger, 2015, p. 5). It can, therefore, be concluded that employees unanimously perceived the participating organisation as a DTO.

Based on the DTO contextual environment, the study participants were asked to identify the critical HRP competencies in a DTO. With the assistance of TA, participant feedback was grouped into four core themes within the findings section of the research article. The discussion of these four themes, in relation to the literature review, is presented next.

## Contextualising human resource data and information

To demonstrate the importance of having knowledge, *insight and understanding of the business context*, most of the participants highlighted business insights or business acumen as the cornerstone of effectiveness in a DTO. Understanding this context and the impact of digital technology on all aspects of the organisation is seen as critical for HR success (Kelly & Rapp, 2016). Understanding the business context and being digitally knowledgeable are competencies cited by both the literature (Kashyape, 2018) and the interviewees as crucial for HRP success in a DTO. Within the literature, words such as 'speed', 'execution', 'tech-savvy' and a whole host of digital technology phrases from big data to ML capture the DTO context (Davenport & Kirby, 2016, p. 46).

When comparing *contextualising HR data and information* with existing literature, there is a large degree of alignment. Both the Society for Human Resources Management

(SHRM, 2016, p. 32) and CIPD (2018, p. 6) simply call this competency 'business acumen'. The Australian Human Resources Institute (AHRI, 2015, p. 3) refers to this competency in their 'Model of Excellence' and defines it as being 'business-driven'. The University of Cornell's ILR School, in turn, uses the terms 'business acumen and business contributor' to demonstrate the focus required (Kelly & Rapp, 2016, p. 6). In South Africa, the SABPP refers to 'organisational capability', whilst one of the four pillars of the competency model is HR and business knowledge (Meyer, 2012, p. 4). In the most recent research conducted by the RBL Group, they refer to 'strategic positioner' (Ulrich et al., 2016, p. 6). When compared with the synthesis of current HR competency models by Vu (2017, p. 5), there is an intersection in the area defined as 'business-related' (Vu, 2017, p. 5).

To demonstrate the importance of having *information technology knowledge and practical skills*, specifically in the area of digitalisation, Buchanan, Kelley and Hatch (2016) made specific reference to the competency of being digitally well informed when they identified current global HR trends. They indicated that the new breed of chief executive officers (CEO) is progressively getting younger, more global and more technologically informed, resulting in an increased need for HR functions to follow suit. Collecting, storing and processing HR data are becoming critical aspects of the HR agenda (Manyika et al., 2016). Research conducted by Bersin et al. (2017) found that the HRM function is transforming as a result of the availability of big data sets for studying employee behaviours to identify levers for performance enhancement. The availability of data is accelerating as digital enablement continues and wearable devices and the Internet of Things create more data in real time (Bersin et al., 2017). The research participants agreed with this and added that data are much more visible now and that as a result, identifying trends is much easier. It is, therefore, important that HRPs not only understand data, but also identify where in the organisation data are created, how to capture these data and how to put systems in place to extract and report on the data. Makridakis (2017) agrees with the sentiment of data utilisation and commented that the availability of powerful tools such as AI and ML had provided HR with the ability to advance their business insights and execution rapidly.

When comparing *information technology knowledge and practical skills* to the existing literature, CIPD (2018, p. 8) refers to 'digital working'. The AHRI (2015, p. 1) refers to these competencies in their 'Model of Excellence' and defines it as being 'business-driven'. The University of Cornell's ILR School, in turn, referred to 'technology champion' (Kelly & Rapp, 2016, p. 9). In South Africa, the SABPP refers to this as being 'citizenship for future innovation, technology and sustainability' (Meyer, 2012, p. 4). In the most recent research conducted by the RBL Group, they refer to 'technology and media integrator' (Ulrich et al., 2016, p. 6). When compared to the synthesis of current HR competency models by Vu (2017, p. 5), there is an intersection in the following areas: 'HR tools, practices and process-related'.

To demonstrate the importance of having the *ability to utilise (design, extract, understand and apply) data* in such a way that it can be leveraged to produce a positive business impact, Parry and Battista (2019) said that there are numerous digital tools such as robotics, and virtual and augmented reality that can be utilised to enhance performance. The availability of data makes this data analysis possible, and Abolhassan (2017) noted that HRPs now have access to previously closed data sets that enable them to create more transparency. This transparency through data enables the HRP to make sound data-driven arguments for change in the organisation. In her analysis of the perception that HR adds value to the business, Dutta (2018) encouraged HR to make more use of the digital tools at its disposal. Dutta (2018) further said that, in particular, data science and intelligence tools should be utilised as the differentiators of success. Automation and AI therefore not only complement the work of the HRP, but they also bring the challenge of acquiring new competencies (Guszcza et al., 2017). This 'cognitive collaboration' should be regarded as a significant benefit, and Guszcza et al. (2017, p. 6) added that when humans and computers work in an augmented relationship, they think better together. When comparing the *ability to utilise data* with the existing literature, CIPD (2018, p. 7) refers to 'analytics and creating value', whilst the University of Cornell's ILR School refers to 'data and analytics' (Kelly & Rapp, 2016, p. 8). The SABPP refers to 'solution creation and implementation' and lists 'analytics and measurement' as one of the HR capabilities (Meyer, 2012, p. 4), and the RBL Group refers to 'analytics designer and interpreter' (Ulrich et al., 2016, p. 6).

## Continuous learning

To demonstrate the importance of the *ability to deal with ambiguity*, Parry and Battista (2019) commented that uncertainty and ambiguity are the new normal. Research participants echoed the view that the ever-changing and ambiguous environment is here to stay and added that the HRP needs to be adaptable and willing to change. Human resource practitioners need to be able to navigate this changing environment, not only for themselves but also to help the business and their internal customers (i.e. employees) to make sense of the changes (Stephan, Uzawa, Volini, Walsh, & Yoshida, 2016). Stephan et al. (2016) observed that HR must play a significant role in assisting employees in making sense of digital technology and guiding them through the highly ambiguous transformational journey. When comparing the *ability to deal with ambiguity* to existing competency literature, the RBL Group adds the competency of 'paradox navigator' (Ulrich et al., 2016, p. 6). The ability to self-navigate and, at the same time, guide and assist line partners and employees through the rapid change journey requires a number of unique competencies. In comparison with current competency model literature, SHRM (2016, p. 27) referred to this as 'navigation'.

Bondarouk and Brewster (2016) stated that with so much emerging technology available, *superior levels of judgement* are

needed as additional data and visibility continue to raise the privacy and security concerns. To demonstrate the importance of the ability to apply sound judgement, the research interviewees added by saying that HR has the additional accountability to help the business stop, analyse and determine a constructive path forward. Additionally, the research participants added that within a DTO, most of the hygiene or transactional HR activities have been automated and, as a result, interactions with HRP are strategic, requiring higher levels of judgement. DiRomualdo et al. (2018) highlighted the importance of this and added that these high judgement scenarios might have far-reaching effects on the organisation and the lives of employees. Rao (2018) added to this by saying that the elements of a highly ambiguous environment, fuelled by scenarios of high judgement, created a very complex environment in which HRPs need to operate. When comparing *superior levels of judgement* to the existing literature, SHRM (2016, p. 27) referred to 'organisational leadership' as being essential for success, whilst the SABPP referred to 'leadership and personal credibility' (Meyer, 2012, p. 4). The RBL Group adds the competency of 'credible activist' and 'paradox navigator' (Ulrich et al., 2016, p. 6).

To demonstrate the importance of the ability to be *agile and adaptive*, the study participants added that speed of execution is vital within the DTO environment where communication channels and culture are largely different. Rao (2018) postulated that the combination of a variety of geographical locations, backgrounds and mindsets creates the need for a review of how we manage this workforce within which different communication styles and mechanisms are needed. Based on the disruption caused by the introduction of digital technology, the HRPs are forced to adapt and re-evaluate their roles (Panayotopoulou & Papalexandris, 2004). When comparing *agility and adaptability* to the current literature, CIPD (2018, p. 9) and AHRI (2015, p. 5) mentioned the importance of 'managing change' or being a 'change leader'. In comparison with the synthesis of current HR competency models by Vu (2017, p. 5), the theme of 'change' was cited.

To demonstrate the importance of *resilience*, the study participants commented that, because of the complexities of global working, time zone differences, different cultures, ample amounts of data and a fast-paced environment, the HRP requires a different level of resilience. Bhatia (2016) stated that the HRP is required to innovate, accelerate the speed of execution and adapt to new digital leadership roles. Oswald and Kleinemeier (2017, p. 76) argued that 'as digitization increases the speed and intensity of change, employees should also possess more fundamental competencies like dealing with complexity and increased tempo; they ought also to be resilient'. When comparing *resilience* with current competency model literature, AHRI (2015, p. 3) referred to an 'expert practitioner'.

## Stakeholder relationship management

When comparing the competency theme of *stakeholder relationship management* with the current literature, SHRM

(2016, p. 37) refers to 'consultation'. The ILR includes the competency of 'external stakeholder relationships' (Kelly & Rapp, 2016, p. 9) and the SABPP refers to these competencies as 'leadership and personal credibility' (Meyer, 2012, p. 4). To demonstrate the importance of having excellent *verbal and non-verbal communication skills*, several participants highlighted that in a high percentage of cases, the HRP would be communicating an undesirable outcome and, as such, an astute communicator is needed. The study participants added that because of the complexity of multiple cultures and geographies, the phrasing of communication is vital. The Society for Human Resources Management (2016, p. 46) competency model also reported the need for excellent communication skills with such importance that it is regarded as one of their nine core competencies and defined as 'the ability to effectively exchange information with stakeholders'. The ILR added a competency of 'internal boundary spanner' (Kelly & Rapp, 2016, p. 9), whilst the SABPPs HR model also supports the importance of communication and defines this competency as follows: 'Interpersonal and communication skills: All HR work depends on successful relationships, and excellent interpersonal and communication skills are of utmost importance'. Research participants emphasised this even more by saying that, because of most of the communication being digital in the global matrix environment, HRPs need to be expert communicators with one of the participants commenting that the HRP needs to be on the same 'brain wave' as the rest of the organisation.

## Cultivating positive organisational practice

To demonstrate the importance of functioning as *wellness and cultural custodian*, Frey and Osborne (2017) commented that the potential impact of automation and job displacement could have a significant impact on the employee population, adding that the HRM function has a pivotal role to play as the custodian of organisational values (Frey & Osborne, 2017). This view was also shared during the research process, and they added that, because of the pace of change in a DTO, the culture could be very volatile. The study participants also commented on the consequences of atomisation and said that a less human interface has an impact on the culture as people are still going to need human engagement. Brown et al. (2017) added to this risk and stressed that a 'less human' organisation may have a severe impact on employees at a time when business leaders are already wrestling with unprecedented individual risks. Manuti and De Palma (2017) commented that the interaction between man and machine could also be beneficial to workforce wellness as technologies such as AI and ML could serve as an early warning system for the manager in terms of job satisfaction and even employee burnout. Parry and Battista (2019), however, said that it was the role of the HRP to monitor and maintain the wellness equilibrium within the organisation.

When comparing *wellness and cultural custodian* with the current literature, SHRM (2016, p. 50) refers to this competency as 'global and cultural effectiveness', whilst

CIPD (2018, p. 5), in turn, mentions the importance of 'managing culture and behaviours'. The AHRI (2015, p. 4), in turn, refers to the importance of 'a workplace and workforce designer, and a culture and change leader'. The RBL Group adds the competency of the 'culture and change champion' (Ulrich et al., 2016, p. 6). When comparing the competency of contextualising HR data and information with the synthesis of current HR competency models by Vu (2017), the competency of 'organisational culture' was again common.

To demonstrate the importance of functioning as the *protector of privacy*, Stulgienė and Čiutienė (2012) noted that, in their view, HRM policies and processes were lagging behind DTO trends. The study participants also stressed the importance of privacy and the interpretation of data. Data, and more specifically HR data, can be interpreted in multiple ways and with different contextual layers and, as such, research participants cautioned on the extraction of a binary result. The view that HR and data management policies and practices are lagging behind the digital curve is exacerbated by the volume and transparency of the data available (Rao, 2018). When comparing the *protector of privacy* to the current literature, SHRM (2016, p. 22) emphasised the importance of 'ethical practice', whilst AHRI (2015, p. 4) referred to being an 'ethical and credible activist'.

When comparing the competencies identified through the research with existing competency models, it became evident that the literature provided overwhelming support for all the competencies highlighted by the research participants. What is less evident is the importance of these competencies for HRP success within the DTO context, as opposed to a non-DTO environment. For example, participants deemed the contextualisation of HR data and information as essential for success. Additionally, continuous learning emphasises the ability of HRPs to deal with ambiguity and to be able to adapt and apply good judgement. These skills are essential in a DTO environment characterised by speed and the automation of routine HR tasks. Human resource practitioners also need to apply high-level decision-making, even more so than in a non-DTO environment. Therefore, it is important to not simply look at the alignment between the competencies identified in the current study and previous research, but also evaluate the level of importance for HRP success in the DTO as highlighted by the study participants.

## Limitations and recommendations

There were a few noteworthy limitations of this study. The first limitation is based on the exclusion of the HRP from this research, meaning that a self-reflected view from the HRP could not be obtained. A second limitation was the generalisability of the research results caused because of the focus on the DTO context, and as a result, this limited the data gathering to a single company. The last limitation arises from the timing of the research. The researcher gathered participants' views at a single point in time, and as

such, the research relied heavily on primary data of the interviews, providing a limited opportunity to verify these perspectives.

The following recommendations were made: HRPs need to utilise the additional visibility created of the HRP competencies for self-development within a DTO context. Organisations need to encourage proactive engagement between line partners and their HR practitioners to ensure transparency in terms of competency expectations. Organisations should utilise the HRP competencies within a DTO context to tailor attraction, development and performance management programmes. Industrial and organisational psychology practice should be adopted to modify the current educational curriculum to include digital competencies.

## Conclusion

To explore the potentially unique competency requirements of the HRP, the researcher interviewed senior managers who operate within the DTO environment to gain their perspectives about the impact and key competency requirements of the HRP. The findings of this research demonstrated that the HRP requires key competencies in the following areas: (1) contextualising HR data and information, (2) continuous learning, (3) stakeholder relationship management and (4) cultivating positive organisational practice.

## Acknowledgements

### Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

### Authors' contributions

M.J.v.d.B. acted as the primary researcher as this study formed part of his master's research. He conceptualised the article, collected the data, interpreted the research results and shared in the writing of the article. M.W.S. and L.v.d.V. acted as the supervisor and co-supervisor, respectively. They played an advisory role, assisting in the conceptualisation of the study, interpretation of the research results and refining the research article.

### Funding information

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

### Data availability statement

Data sharing will be done in line with ethics requirements. The data is the intellectual property of the North-West University and will be provided upon reasonable requests to the corresponding author.

## Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

## References

- Abolhassan, F. (2017). *The drivers of digital transformation: Why there's no way around the cloud*. Cham: Springer.
- Andriole, S.J. (2018). Skills and competencies for digital transformation. *IT Professional Magazine*, 20(6), 78–81. <https://doi.org/10.1109/MITP.2018.2876926>
- Australian Human Resources Institute [AHRI]. (2015). *AHRI's model of excellence*. Retrieved from <https://www.ahri.com.au/about-us/model-of-excellence/>
- Bengtsson, C., & Bloom, M. (2017). *Human resource management in a digital era: A qualitative study of HR managers' perceptions of digitalization and its implications for HRM*. Unpublished master's dissertation, Lund University School of Economics and Management.
- Bersin, J., Pelster, B., Schwartz, J., & Van der Vyver, B. (2017). *Rewriting the rules for the digital age: 2017 Global human capital trends*. Retrieved from <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/HumanCapital/hc-2017-global-human-capital-trends-gx.pdf>
- Betchoo, N.K. (2016). *Digital transformation and its impact on human resource management: A case analysis of two unrelated businesses in the Mauritian public service* [Conference proceeding]. 2016 IEEE international conference on emerging technologies and innovative business practices for the transformation of societies (EmergiTech), Balaclava, Mauritius, 03–06 August. Retrieved from <https://ieeexplore.ieee.org/document/7737328>
- Bhatia, P.P. (2016). Racing ahead with technology: Digital HR through smartphones. *IUP Journal of Information Technology*, 12(4), 36–47.
- Bilgeri, D., Gebauer, H., Fleisch, E., & Wortmann, F. (2019). Driving process innovation with IoT field data. *MIS Quarterly Executive*, 18(3), 25–17. <https://doi.org/10.17705/2msqe.00016>
- Bondarouk, T., & Brewster, C. (2016). Conceptualising the future of HRM and technology research. *The International Journal of Human Resource Management*, 27(21), 2652–2671. <https://doi.org/10.1080/09585192.2016.1232296>
- Brown, J., Gosling, T., Sethi, B., Sheppard, B., Stubbings, C., Sviokla, J., & Zarubina, D. (2017). *Workforce of the future: The competing forces shaping 2030*. Retrieved from <https://www.pwc.com/gx/en/services/people-organisation/workforce-of-the-future/workforce-of-the-future-the-competing-forces-shaping-2030-pwc.pdf>
- Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. New York, NY: WW Norton & Company.
- Buchanan, J., Kelley, B., & Hatch, A. (2016). *Digital workplace and culture: How digital technologies are changing the workforce and how enterprises can adapt and evolve*. Retrieved from <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/human-capital/us-cons-digital-workplace-and-culture.pdf>
- Chartered Institute of Personnel Development [CIPD]. (2018). *The CIPD profession map*. Copyright Chartered Institute of Personnel and Development. Retrieved from <https://www.cipd.co.uk/learn/profession-map>
- Cianni, M., & Steckler, S. (2017). Transforming organizations to a digital world. *People & Strategy*, 40(2), 14–19. Retrieved from <http://go.galegroup.com/ps/i.do?id=GALE%7CA491982126&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=19464606&p=AONE&sw=w>
- Clarke, V., & Braun, V. (2013). Teaching thematic analysis: Overcoming challenges and developing strategies for effective learning. *The Psychologist*, 26(2), 120–123. Retrieved from <http://eprints.uwe.ac.uk/21155/3/Teaching%20thematic%20analysis%20Research%20Repository%20version.pdf>
- Davenport, T.H., & Kirby, J. (2016). *Only humans need apply: Winners and losers in the age of smart machines*. New York, NY: Harper.
- Davis, C.H., & Michelle, C. (2011). Q methodology in audience research: Bridging the qualitative/quantitative 'divide'. *Journal of Audience and Reception Studies*, 8(2), 527–561. Retrieved from [https://www.waikato.ac.nz/\\_data/assets/pdf\\_file/0005/148424/4a-Davis-Michelle.pdf](https://www.waikato.ac.nz/_data/assets/pdf_file/0005/148424/4a-Davis-Michelle.pdf)
- DiRomualdo, A., El-Khoury, D., & Girimonte, F. (2018). HR in the digital age: How digital technology will change HR's organization structure, processes and roles. *Strategic HR Review*, 17(5), 234–242. <https://doi.org/10.1108/SHR-08-2018-0074>
- Dutta, D. (2018). *Social media and technology trends in HRM: Cases in recruitment and talent management*. Retrieved from <https://www.intechopen.com/download/pdf/63271>
- Elliott, R., & Timulak, L. (2005). Descriptive and interpretive approaches to qualitative research. In J. Miles & P. Gilbert (Eds.), *A handbook of research methods for clinical and health psychology* (pp. 147–159). Oxford: Oxford University.
- Frey, C.B., & Osborne, M.A. (2017). The future of employment: How susceptible are jobs to computerisation? *Technological Forecasting and Social Change*, 114(1), 254–280. <https://doi.org/10.1016/j.techfore.2016.08.019>
- Garcia-Arroyo, J., & Osca, A. (2019). Big data contributions to human resource management: A systematic review. Online publication. *The International Journal of Human Resource Management*, 1–26. <https://doi.org/10.1080/09585192.2019.1674357>
- Gartner Inc. (2018). *The CEO 20 pulse on the future of work*. Retrieved from <http://www.portailrh.org/lecercle/pdf/Gartner-CEO-20-pulse-on-The-Future-of-Work.pdf>
- Gimpel, H., & Röglinger, M. (2015). *Digital transformation: Changes and chances – Insights based on an empirical study*. Fraunhofer Institute for Applied Information Technology FIT. Retrieved from <https://fim-rc.de/Paperbibliothek/Veroeffentlich/542/wi-542.pdf>
- Guszcza, J., Lewis, H., & Evans-Greenwood, P. (2017). Cognitive collaboration: Why humans and computers think better together. *Deloitte Review*, 1(20), 7–30. Retrieved from <https://www2.deloitte.com/us/en/insights/deloitte-review/issue-20/augmented-intelligence-human-computer-collaboration.html>
- Harrop, J.J. (2017). Assessment and recommendations for effective HR service delivery model implementation for organizations. *Middle East Journal of Business*, 12(1), 23–27. Retrieved from [http://www.mejb.com/upgrade\\_flash/Jan2017/HR.pdf](http://www.mejb.com/upgrade_flash/Jan2017/HR.pdf)
- Hennink, M.M., Kaiser, B.N., & Marconi, V.C. (2017). Code saturation versus meaning saturation: How many interviews are enough? *Qualitative Health Research*, 27(4), 591–608. <https://doi.org/10.1177/1049732316665344>
- Kaji, J., Hurley, B., Gangopadhyay, N., Bhat, R., & Khan, A. (2019). *2019 Deloitte global human capital trends*. Retrieved from [https://www2.deloitte.com/content/dam/insights/us/articles/5136\\_HC-Trends-2019/DI\\_HC-Trends-2019.pdf](https://www2.deloitte.com/content/dam/insights/us/articles/5136_HC-Trends-2019/DI_HC-Trends-2019.pdf)
- Kashyape, A. (2018). *HR jobs: Will artificial intelligence retire recruiters?* Retrieved from <https://www.financialexpress.com/jobs/hr-jobs-will-ai-retire-recruiters/1227482/>
- Kavanagh, M.J., Thite, M., & Johnson, R.D. (2009). The future of HRIS: Emerging trends in HRM and IT. In M.J. Kavanagh & R.D. Johnson (Eds.), *Human resource information systems: Basics, applications, and future directions* (pp. 409–418). Thousand Oaks, CA: Sage.
- Kelly, C., & Rapp, K. (2016). *The HR function in 2021: Models & competencies* [Video file]. Retrieved from <http://www.cornell.edu/video/hr-function-2021-models-competencies>
- Krefting, L. (1991). Rigor in qualitative research: The assessment of trustworthiness. *American Journal of Occupational Therapy*, 45(3), 214–222. <https://doi.org/10.5014/ajot.45.3.214>
- Lincoln, Y.S. (1995). Emerging criteria for quality in qualitative and interpretive research. *Qualitative Inquiry*, 1(3), 275–289. <https://doi.org/10.1177/107780049500100301>
- Lipton, A. (2017). The internet of people delivers new ways of learning. *The Professional Journal of HR People + Strategy*, 40(3), 49–51. Retrieved from <https://go.gale.com/ps/anonymous?id=GALE%7CA499598709&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=19464606&p=AONE&sw=w>
- Makridakis, S. (2017). The forthcoming artificial intelligence (AI) revolution: Its impact on society and firms. *Futures*, 90(1), 46–60. <https://doi.org/10.1016/j.futures.2017.03.006>
- Manuti, A., & De Palma, P.D. (2017). *Digital HR: A critical management approach to the digitalization of organizations*. Cham: Springer.
- Manyika, J., Lund, S., Bughin, J., Woetzel, J., Stamenov, K., & Dhingra, D. (2016). *Digital globalization: The new era of global flows*. Retrieved from <https://www.mckinsey.com/~media/McKinsey/Business%20Functions/McKinsey%20Digital/Our%20Insights/Digital%20Globalization%20The%20New%20Era%20of%20Global%20Flows/MGI-Digital-globalization-Full-report.aspx>
- Meyer, M. (2012). *The new National HR competency model: How do you measure up?* Retrieved from <https://www.scribd.com/document/133352138/HR-Competency-Model-Assessment>
- Morrow, S.L. (2005). Quality and trustworthiness in qualitative research in counseling psychology. *Journal of Counseling Psychology*, 52(2), 250–260. <https://doi.org/10.1037/0022-0167.52.2.250>
- Oswald, G., & Kleinemeier, M. (2017). *Shaping the digital enterprise*. Berlin: Springer.
- Panayotopoulou, L., & Papalexandris, N. (2004). Examining the link between HRP orientation and firm performance. *Personnel Review*, 33(5), 499–520. <https://doi.org/10.1108/00483480410550125>
- Parry, E., & Battista, V. (2019). *The impact of emerging technologies on work: A review of the evidence and implications for the human resource function*. Retrieved from <https://emeraldopenresearch.com/articles/1-5/v1/pdf>
- Rao, M.M. (2018). A study of digitalization in HRM and its effectiveness in execution of HR strategies and policies. *HELIX*, 8(6), 4220–4222. <https://doi.org/10.29042/2018-4220-4222>
- Sandelowski, M. (2010). What's in a name? Qualitative description revisited. *Research in Nursing and Health*, 33(1), 77–84. <https://doi.org/10.1002/nur.20362>
- Scholz, T.M. (2017). *Big data in organizations and the role of human resource management: A complex systems theory-based conceptualization*. Frankfurt: Peter Lang.
- Schwab, K. (2016). *The fourth industrial revolution*. New York, NY: Crown Business.
- Sekhar, C., Patwardhan, M., & Vyas, V. (2016). A study of HR flexibility and firm performance: A perspective from IT industry. *Global Journal of Flexible Systems Management*, 17(1), 57–75. <https://doi.org/10.1007/s40171-015-0120-2>
- Shenton, A.K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2), 63–75. <https://doi.org/10.3233/efi-2004-22201>
- Silverman, D. (2016). *Qualitative research*. Thousand Oaks, CA: Sage.
- Society for Human Resources Management [SHRM]. (2016). *SHRM competency model*. Retrieved from <https://www.shrm.org/learningandcareer/career/pages/shrm-competency-model.aspx>
- Stephan, M., Uzawa, S., Volini, E., Walsh, B., & Yoshida, R. (2016). *Digital HR revolution, not evolution*. Retrieved from <https://www2.deloitte.com/content/dam/Deloitte/co/Documents/human-capital/Digital%20HR%20Revolution%20not%20evolution.pdf>

- Stone, D.L., Deadrick, D.L., Lukaszewski, K.M., & Johnson, R. (2015). The influence of technology on the future of human resource management. *Human Resource Management Review*, 25(2), 216–231. <https://doi.org/10.1016/j.hrmmr.2015.01.002>
- Stulgienė, A., & Čiutienė, R. (2012). HRM challenges in transition to project management (project-based organization). *Economics and Management*, 17(3), 1214–1218. <https://doi.org/10.5755/j01.em.17.3.2145>
- Subban, L. (2016a). SABPP fact sheet: HR technology. *South African Board of People Practices*, 7(1), 1–20.
- Subban, L. (2016b). SABPP fact sheet: Innovation in HR. *South African Board of People Practices*, 6(1), 1–23.
- Ulrich, D., & Brockbank, W. (2016). HR Business Partner model: Past and future perspectives: International waters-HR strategy. *HR Future*, 2016(12), 16–21.
- Ulrich, D., & Dulebohn, J.H. (2015). Are we there yet? What's next for HR? *HRP Review*, 25(2), 188–204. <https://doi.org/10.1016/j.hrmmr.2015.01.004>
- Ulrich, D., Younger, J., Brockbank, W., & Ulrich, M. (2012). *HR from the outside in: Six competencies for the future of human resources*. New York, NY: McGraw Hill.
- Ulrich, D., Younger, J., Brockbank, W., & Ulrich, M. (2016). *2016 HR competency model*. Retrieved from [https://www.apg.pt/downloads/file954\\_pt.pdf](https://www.apg.pt/downloads/file954_pt.pdf)
- Vu, G.T.H. (2017). A critical review of human resource competency model: Evolvement in required competencies for human resource professionals. *Journal of Economics, Business and Management*, 5(12), 357–365. <https://doi.org/10.18178/joebm.2017.5.12.539>
- Wright, P., McMahan, G., Snell, S., & Gerhart, B. (2001). Comparing line and HR executives' perceptions of HR effectiveness: Services, roles, and contributions. *Human Resource Management*, 40(2), 111–123. <https://doi.org/10.1002/hrm.1002>
- Zeoli, M.L., & Billeter, K. (2019). Transforming HR to be more digital (and more human). *Workforce Solutions Review*, 10(1), 4–7. Retrieved from <https://ihrim.org/wsr-home/archives/#1585236224990-f040b067-9d7b>