



## Management and Retention of Human Capital During the Era of Post-COVID-19 and Digitalisation

Maluka Harriet Rivalani; Fumani Donald Mabasa; Andani Nethavhani

Department of Business Management, University of Limpopo South Africa

E-mail: harriet.maluka@ul.ac.za, fumani.mabasa@ul.ac.za, andani.nethavhani@ul.ac.za

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### **Abstract**

The COVID-19 pandemic emerged at the time when the world of work was still in the transition process of adapting to the changes brought by the technological advancements linked to the Fourth Industrial Revolution. Both the public sector and private sector had to rely heavily on the use of technology in order to continue to perform effectively. The public sector was hit hard, with members of the public demanding more out of frustration, forcing public servants to go beyond their normal daily duties by swiftly responding to a disaster and delivering the dire need for government services. In the post-COVID-19, organisations from both the public sector and private sector, focus on the implementation of mechanisms that can assist them to recover from the negative impact of the COVID-19 pandemic on their performance. Human capital is regarded as a crucial resource that can assist organisations to have a speedy recovery. The paper seeks to explore the measures that the government can adopt to compete with profit-making organisations in acquiring and managing human capital as well as retaining critical skills during this digital era, in order to ensure recovery and improved service delivery. The approach chosen was an integrated methodology for literature review within the qualitative research paradigm. A comprehensive literature review (secondary data) from credible sources provided a deeper understanding of the changing needs of employees in the new world of work and the trends associated with employee development and retention in today's digital world of work. Content thematic analysis was used to analyse the collected qualitative data. The results provide insight in relation to the new ways of managing and retaining human capital in the new digital world, summarised into eight (8) themes: building a reputable corporate image, creation of lifelong learning culture, value creation, investing in IT infrastructure, provision of recognition and rewards, provision of digital empowerment, provision of career development support and creation of hybrid workplace.

**Keywords:** *Human Capital; Management; Digital Era; Digital Skills; Digital Talent; COVID-19; Technology*

## Introduction

The COVID-19 pandemic emerged at the time when the world of work was still in the transition process of adapting to the changes brought by the technological advancements linked to the Fourth Industrial Revolution (4IR) (Agba & Ocheni, 2020; McGuire, Gazley, Majerus, Mullan & Clements, 2022). The world, governments, organisations, and people were caught improvising, forcing both the public sector and private sector to rely heavily on the use of technology linked to the 4IR in order to continue to perform effectively (Kniffin, 2021). This implies that employees from both sectors were forced to acquire new digital skills in order to cope with the unprecedented changes (Mihalache & Mihalache, 2022).

The public sector and private sector experienced challenges in relation to coping with the changes brought about by the emergence of the COVID-19 pandemic. However, the public sector was hit hard, especially in South Africa. South Africans began to demand urgent public services out of frustrations and uncertainties, compelling public servants (employees) to perform duties which were not necessarily related to their normal daily duties in order to respond swiftly to the pandemic crisis and provide the dire needs of the masses of the public (Mlambo & Masuku, 2020; Alshaabani, Naz, Magda & Rudnak, 2021; Collings, McMackin, Nyberg, & Wright, 2021).

In the post-COVID-19 era, organisations from both the public sector and private sector focused on the implementation of mechanisms that can assist them in recovering from the negative impact the COVID-19 pandemic had on their performance, which requires them to use the 4IR technology (Chanana & Sangeeta, 2021). Fenech, Baguant and Ivanov (2019) emphasise that the impact of the new technology resources on organisational performance and competitiveness should be understood in the light of other resources such as including human capital. Thus, organisations rely on human capital for work to get done, making human capital one of the most crucial resources that can assist organisations in having a speedy recovery (Puhovichova & Jankelova, 2020; Trigunait & Taruna, 2020).

Mefi and Asoba (2021) asserted that in order to maintain a competitive advantage during the era of 4IR and the post-COVID-19 pandemic, organisations should build superior human capital. Human capital is defined as employees' knowledge, skills, attitudes, aptitudes, and other acquired traits contributing to production (Goode, 1959 in Duan, Zhou, Cai, Gong, Zhao & Ai, 2022). This means that organisations need to acquire employees with relevant knowledge, skills, and competencies relevant for the digital era. It however serves no purpose to attract and build superior human capital within an organisation if the organisation fails to manage them in a manner that keeps them motivated or fails to put in place mechanisms to ensure the retention of human capital (Trigunait & Taruna, 2020; Ulrich, 2020).

Digital human capital can be seen as a future requirement in order for all organisations to survive (Madzimure & Baloyi, 2022). The changing nature of the world of work as a result of both the unforeseen (such as the COVID-19 pandemic) and the foreseen (such as the 4IR), forces organisations in the whole world, both public and private sectors, to focus on the creation of a digital workplace and workforce that is highly competitive in the use of digital technologies (Khubulova, Smagina, Ivanchenko & Marfutenko, 2022). The digital era increases the demand for well-qualified employees with the ability to work anywhere, and those employees require improved working conditions and remuneration (Dabic, Maley, Svarc & Pocek, 2023). Although there are differences between the public-serving operating nature of the public sector and the profit-driven private sector (Onyoin, 2020), they both need to attract, develop, and retain talent in order to achieve their objectives (Yahiaoui, Anser & Lahouel, 2015). Thus, in the digital era, both the public and the private sector compete for digital human capital.

Nguyen, Le and Vu (2022) asserted that developed countries have already fully adopted technological innovations while developing countries are still in the process. The demand for efficient service delivery from governments around the world forces the government to come up with new

innovative ways to provide digital public services (Arias & Maçada, 2018). In South Africa, the limited examples of digital public services available include SARS eFiling, an online process of submitting tax returns (<https://www.sarsefiling.co.za>), eHomeAffairs offered by the Department of Home Affairs to make online applications and payment, attach supporting documents and secure an appointment at a convenient branch (<https://ehome.dha.gov.za>) to as well as those provided by the Transport Department in relation to the renewal of motor vehicles and drivers' licences (<https://online.natis.gov.za>).

The effective provision of digital services requires digital human capital, which places the government in direct competition for digital human capital with the private sector. Thus, the research findings of Laine and Ma (2017), suggest that the public sector tends to choose low quality while the private sector chooses high quality should be addressed in relation to human capital in the digital era. The public sector relies on public servants as government employees, to provide digital public services, which necessitate the consideration of the needs of its employees in the digital era such as the provision of digital skills through training and the introduction of hybrid work modes (Dabic, et al., 2023).

Historically, the public sector tends to be more concerned with employee well-being and good relations with trade unions while the private sector is more performance-oriented. This assisted the public sector in attracting and retaining human capital. However, Knies, Borst, Leisink, and Farnale (2022) found out that in the modern era, the private sector has shifted to become socially responsible-oriented, making it perceived as “the model employer”. This implies that the private sector has taken away the main competitive advantage that the public sector historically had, making the competition to attract and retain human capital to become tougher for the public sector.

This paper explores the measures that the public sector (government) can adopt to compete with profit-making organisations in acquiring and managing human capital as well as in retaining critical skills during this digital era, in order to ensure recovery and improved service delivery. An integrated literature review in relation to the acquirement and management of human capital as well as the retention of human capital was conducted in order to understand the best strategies that government (public sector) and other public institutions can adopt from the private sector in order to compete fairly in relation to human capital and continue to provide public services in the digital era. The remainder of the paper is organised to include the literature review (both theoretical and empirical), the research methodology, the results, and findings as well as recommendations and conclusion.

## ***Literature Review***

### **Theoretical Literature**

The public sector, like the private sector, is forced to create a digital workplace, which requires them to take digital initiatives aimed at improving their operational effectiveness (Bakar, Deraman, Tarmiji, Yusoff & Kama, 2020). Employees' ability to adapt to new technology and solve critical problems as well as to creatively deal with new challenges are key components of building a digital workplace with digital human capital (Benson, Johnson & Kuchinke, 2002). Hence, the Technology-Organization-Environment (TOE) theory and Human Capital theory are relevant in understanding the importance of acquiring and managing human capital as well as retaining human capital in the digital era.

#### ***Technology-Organisation-Environment Theory***

The TOE theory explains information technology (IT) innovation at the organisational level by focusing on technology, organisation, and environment as dimensions that influence IT innovation in any organisation. The technological dimension includes taking into consideration the current and new technologies existing within the market, which would enable an organisation to compete in the market effectively and fairly in the most effortless and cost-saving manner. In this digital era, such technologies

are linked to the 4IR (Awa, Ukoha & Igwe, 2017; Bakar et al., 2020; Bryan & Zuva, 2021; Nguyen et al., 2022).

The organisational dimension contains all the resources and organisational features, which could enable the organisation to operate effectively. The resources that organisations should acquire include digital infrastructure and capital, including human capital while organisational features include organisational processes, organisational culture, and organisational structure as well as communication channels. The environmental dimension involves the nature of the industry and the conditions within which the organisation operates, which could influence the ability of the organisation to use new technology in order to compete effectively (Awa, et al., 2017; Bakar et al., 2020; Bryan & Zuva, 2021; Nguyen et al., 2022).

The TOE is relevant in this paper because it implies that the public sector (government) should use the current era's technologies of the 4IR and assess its own features and capabilities in line with the external environment, including its competitors (private sector) as well as the legislation in order to continue to provide improved services to the public. This means that in adopting the 4IR technologies, the public sector (government) should assess its current digital human capital inventory, and if needs be, compete with the private sector to acquire the best digital human capital needed to use the 4IR to provide digital public services.

### *Human Capital Theory*

Human capital theory explains humans as important capital in an organisation from the economic point of view and was introduced and revised by economists such as Clark (1957), Schultz (1961), Mincer (1962), Roussakis and List (1968), Smith (1973), Becker (1993), Marshall (1993), and Walras (1998) (Khaykin, Lapinskas, & Kochergina, 2022). The human capital theory emphasises the importance of both an individual employee as a person and the competence an employee possesses, which assist the organisation in achieving its objectives. These include an employees' knowledge, experience, as well as physical and mental abilities, which enable the organisation to have the economic ability to provide future services (van der Merwe, 2010; Wuttaphan, 2017; Khaykin et al., 2022).

The human capital theory emphasises that organisations must invest in human capital through education, training, and health in order to gain a competitive advantage because employees with higher levels of skills tend to be more productive (Wuttaphan, 2017). However, Jasson and Govender (2017) asserted that in order to ensure that organisations receive a return on their human capital investment, retention strategies must be implemented. The human capital theory is relevant in this paper because it implies that the public sector should ensure that it has human capital with the required knowledge, skills, and abilities to effectively use the 4IR technology. This involves effective processes of attracting, developing, managing, and retaining human capital.

### *Empirical Literature*

Research findings show that the creation of a digital workplace requires four main elements, namely, the use of technology, changes in value creation, structural changes, and financial resources, which also have an impact on the development and management of digital human capital (Guerra, Danvila-del-Valle & Méndez-Suárez, 2023). In their study, Madzimure and Baloyi (2022) found that the effective use of technology requires organisations to prioritise continuous reskilling and upskilling of employees in relation to the new technology. So, there should be employees who are fully equipped with skills to use the 4IR in the public sector.

Wuttaphan (2017) regards the modern view of human capital as a source of value creation to the organisation because organisations rely on employees' skills in order to enhance organisational

performance. Guerra et al. (2023) considered changes in value creation as being important in the process of building a digital workplace. This implies that organisations should ensure that alignment exists between their business strategies and the employees' required digital skills in order to create a digital workplace, as informed by the latest technology.

The digitalisation of the workplace necessitates structural changes such as organisational structure, organisational processes, and organisational culture (Awa, et al., 2017; Bakar et al., 2020; Bryan & Zuva, 2021; Nguyen et al., 2022; Guerra et al., 2023). In their study, Jonathan (2020) discovered that the effective introduction of digital technology depends on IT alignment, which requires structural changes such as adjusting business processes, organisational structures, and human capital. Thus, the public sector should make structural changes in order to ensure that the new digital technology is aligned with the overall organisational factors.

Financial resources involve organisations' duty to invest on top of a range of IT infrastructures that will enable adaptation to the digital workplace and assist human capital to work effectively (Awa, et al., 2017; Bakar et al., 2020; Bryan & Zuva, 2021; Madzimure & Baloyi, 2022; Nguyen et al., 2022). Financial resources also play an important role in attracting, developing, and integrating human capital with multi-dimensional technology as well as the retention of human capital (Wuttaphan, 2017; Awa, et al., 2017; Bakar et al., 2020; Bryan and Zuva, 2021; Nguyen et al., 2022).

A study conducted by Khubulova et al. (2022) revealed that in order to digitalize human capital, there are four important elements to consider, namely, digital skills and knowledge, digital workflow, management, and digital technologies, which are aimed at modifying the human capital paradigm. Firstly, digital skills and knowledge require the provision of advanced training in relation to the use of digital technologies, taking into consideration the latest technologies in the market. This also includes the introduction of a life-learning environment that would keep employees' skills and knowledge updated.

Secondly, the digital workflow involves the creation of an environment that would enable collaborative interactive networks in order to manage the personal effectiveness of each employee. Thus, such an environment should allow collaboration not to only take place physically, but also virtually. Thirdly, the management of human capital involves the identification of employees' digital potential in order to properly engage each employee in the digital transformation. Thus, each employee's digital training needs should be identified in order to provide the individual developmental plan. Lastly, digital technologies involve the introduction of digital technologies at the workplace in line with the organisational needs and objectives (Khubulova, et al., 2022).

The organisation's ability to attract, develop and retain human capital is regarded as the most important requirement in the digital era. Guerra et al. (2023) emphasised that the attraction and retention of digital human capital require new strategies of attracting, managing, and retaining human capital as well as the creation of new organisational culture and business (operational) processes. Sakka, Ghadi and Goldman (2022) support the prediction that in future, organisations will not hire but attract highly skilled talent by creating relationships, they will not train but create a learning environment, they will not manage but collaborate with the highly skilled talent, and they will not retain but build relationship with the highly skilled talent.

Although organisations in the digital era can attract human capital through various digital platforms, Singh et al. (2020) emphasise that an organisation need to build a reputable corporate image to attract motivated and competent employees. In their study, Asanbekova and Maksüdünov (2018) found that organisations with better image attract larger and higher-quality human capital. Thus, corporate image is used by human capital to make the overall evaluation of an organisation's attributes in order to decide whether to be part of the organisation or not.

The importance of developing digital human capital is emphasised by Madzimure and Baloyi (2022). They discovered in their study, that digital empowerment through training equips employees with digital skills, which enables them to perform their duties with confidence and innovativeness. Digital empowerment enables employees to know how to adopt new technology and use their knowledge to solve problem digital-related problems and address new challenges in a creative way (Bakar, et al., 2020). Thus, digital empowerment also fosters employees' creativity and digitalisation skills (Dabic et al., 2023). On-the-job training was found to increase retention of human capital than off-the-job training as well as specific training than general training (Patil & Patel, 2022).

Guerra et al. (2023) asserted that retention of human capital is more important than acquiring talent and urged organisations to be proactive in retaining human capital through better talent management practices than those of their competitors. Trigunait and Taruna (2020) emphasise that retention of human capital in the digital era requires special strategies and skills. Co-designing careers and supporting self-directed learning programmes were found to assist in attracting and retaining highly skilled digital talent but the highly competitive nature of the highly skilled digital talent requires special retention measures in order to avoid losing them because of competitors' poaching (Dery & Sebastian, 2017).

Wuttaphan (2017) suggested that retention can be done by providing challenging opportunities, recognition, and rewards. Dery and Sebastian (2017) found that hybrid approaches to talent management assist with the retention of digital talent as they make provision for flexible employment and the highly connected workplaces using hybrid approaches enable freelancers to fill the digital skills gaps. Dabic, et al. (2023) found that employees in the digital era prefer hybrid work modes. Hence, creating flexible working models assists in retaining highly skilled talent rather than losing them (Dery & Sebastian, 2017).

## ***Methodology***

A qualitative approach in the form of an integrated literature review was adopted in this paper. An integrated literature review is appropriate when the aim is to provide general knowledge and to expand on the theoretical foundation of the specific topic by incorporating viewpoints and insights from various studies instead of covering all articles published on the topic (Snyder, 2019). Consequently, an integrated comprehensive literature review of previous research studies in relation to acquiring and managing human capital as well as retaining human capital in the digital age was conducted from various sources and databases such as EBSCOhost, Emerald, Google Scholar, ProQuest, Research Gate, ScienceDirect and Springer.

The following keywords were used for this search: human capital, management, digital era, digital skills, digital talent, COVID-19, and technology. The collected data was critically analysed and examined to ensure the advancement of knowledge by systematically identifying certain words, concepts, characters, themes, or sentences relating to acquiring and managing human capital as well as retaining human capital in the digital age as suggested by Snyder (2019).

## ***Results and Discussion***

The secondary data collected in relation to managing and retaining human capital in the era of post-COVID-19 and digitalisation was analysed by focussing on the themes related to the two main areas relevant to this paper, namely, managing human capital and retention of human capital. Thus, managing human capital involves all processes relating to acquiring and managing human capital while retention

focuses on practices aimed at retaining the existing human capital within the organisation. The presentation of the results and discussion is in line with these two main areas.

### **Managing human capital**

The results of the integrated literature review in relation to managing human capital in the digital era yielded four themes, which are linked to the actions which the public sector can implement in order to ensure access to human capital with digital skills needed in the digital era. These include practices to compete successfully and acquire human capital from the market and actions aimed at developing current employees. These themes are, building a reputable corporate image, creating of a life-long learning culture, value creation, and investing in IT infrastructure.

A reputable corporate image is regarded as one of the most important factors in relation to the attraction of highly skilled human capital (Maksüdünov, 2018; Sakka et al., 2022; Singh et al. 2020). Human capital prefers to work for top-tier employers with good reputations (Coetzee, Roythorne-Jacobs & Tebele, 2022). Thus, the public sector should build a reputable corporate image in order to attract higher-quality digital human capital, which includes attracting human capital through various digital platforms (Singh et al., 2020), provision of digital skills through digital training (Khubulova, et al., 2022) and introduction of hybrid work modes (Dery & Sebastian, 2017; Dabic, et al., 2023).

Life-long learning culture creates an environment that welcomes continuous learning, which provides an opportunity for employees to acquire skills and advanced skills as well as reskilling and upskilling opportunities in order to successfully respond to the changing demands as a result of technological advancement and the dynamics of the external environment (Wuttaphan, 2017; Khubulova et al., 2022; Madzimure & Baloyi, 2022, Sakka et al., 2022). This implies that the public sector should not only rely on acquiring human capital externally but should also create a new organisational culture that values continuous learning, which will make it possible to continuously develop human capital according to the forecasted needs (Guerra et al., 2023)

Value creation requires ascertaining that there is alignment between the organisational structures and objectives, the new technology (IT infrastructures) and the skills required in order to operate effectively in the digital era (Jonathan, 2020; Guerra et al., 2023). This implies that the public sector should ensure that there are relevant technologies to efficiently deliver public services, including digital public services, and the highly skilled employees in those technologies as well as revising the organisational structure in order to be aligned to the new technology.

Investing in IT infrastructure can assist organisations to use various digital platforms to attract potential digital human capital (Singh et al., 2020). The top-of-the-range IT infrastructure enables the organisation to ensure collaborative interactive networks, which assist in managing the effectiveness of each individual human capital, both physically and virtually (Sakka et al., 2022). Hybrid work modes are regarded as being important determinants for choosing potential employers by digital human capital in the digital era (Dabic, et al., 2023).

### **Retention of Human Capital**

There are four themes deduced from the results of the integrated literature review regarding the practices which the public sector can utilise in relation to the retention of human capital in the digital age. These themes include the provision of recognition and rewards, the provision of digital empowerment, the provision of career development support and the creation of a hybrid workplace.

Recognition and rewards are regarded as strategies that can be used to effectively retain human capital. Dabic (2023) emphasised that highly skilled human capital prefers improved working conditions and remuneration. Thus, the public sector should be prepared to compensate their human capital in line

with their competitors in order to prevent losing them. Dery and Sebastian (2017) asserted that it is important to put mechanisms in place to prevent human capital loss because competitors who fail to empower their own human capital are more likely to poach the already skilled human capital.

Digital empowerment provides employees with the opportunity to continuously update their digital skills, which enables them to grow and become more confident and creative in relation to the use of new technology (Madzimore & Baloyi, 2022). Dabic et al. (2023) asserted that digital empowerment nurtures employees' creativity and digitalisation skills and employees whose needs for growth are taken care of are more likely to remain with their organisation. Patil and Patel (2022) support this by stating that employees who receive on-the-job training are more likely to retain their membership.

The provision of career development support is important in the digital era because employees' career needs continuously change in response to the changing nature of the world of work. There should be co-designing of careers and supporting self-directed learning programmes with more emphasis on autonomy, independence, and flexibility, whereby employees take a lead in terms of their career aspirations with the support of the organisation (Dery & Sebastian, 2017; Coetzee et al., 2022).

The creation of a hybrid workplace in the digital era is important in the digital era because workforce mobility and virtual workspaces have become the new normalcy (Coetzee et al., 2022) and highly skilled talent in the digital era prefer hybrid work modes (Dabic, et al., 2023). The introduction of hybrid work modes enables flexible working models, giving the organisation an opportunity to access and retain the highly digital human capital with the scarce skills needed to provide services as full-time employees, part-time employees or freelancers and fill the digital skills.

### ***Theoretical and Practical Contributions***

It is apparent from the discussion that the traditional competitive advantage that the public sector relied on in the past in order to attract and retain human capital no longer exists. The focus on the well-being of employees which was associated with the public sector has been copied in the private sector, while the public sector never adopted the profit-seeking strategies that the private sector uses to attract and retain high-quality human capital through remuneration and performance-based incentives (Knies et al, 2022). This implies that in the digital era, the public sector has to devise new mechanisms to attract and retain highly competent human capital. The paper systematically integrated literature on the acquirement, management, and retention of human capital, which the public sector can implement in an attempt to manage and retain human capital that would enable the sector to continue to provide public services and digital public services as well as the probable introduction of new digital public services in the digital era.

### ***Conclusion***

The changes brought by the emergence of COVID-19 and the introduction of the 4IR technologies caused major changes in the world of work. The post-COVID-19 era forces organisations, both in the public sector and the private sector, to devise mechanisms for speedy recovery, with human capital at the forefront. However, historically, the two sectors had different focuses and priorities, but both require human capital in order to achieve their objectives. The paper examined secondary data to understand the human capital management and retention strategies which the public sector can utilise in the post-COVID-19 and digitalisation era in order to compete successfully with the private sector to acquire, manage and retain digital human capital.



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