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Approaches to human capital development for the changing world of work: Perspectives on medium-sized organisations in South Africa

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Abstract

The Fourth Industrial Revolution (4IR) has catalysed a paradigm shift in workforce demands, urging the cultivation of digital skills and human capital development. In South Africa, where a disproportionately young unemployed population coexists with a reported gap in skilled labour supply, the urgency for mass upskilling and reskilling is paramount. The private sector (i.e. industry) has a critical role to play in this regard. Yet, limited data is available to illustrate the involvement of South African businesses within the education ecosystem, the extent of their activities related to human capital development (including digital skills development), or the effectiveness of their related activities in this regard. Focusing specifically on medium-sized organisations, which are envisaged to contribute greatly towards job creation in the country, this study explored the approaches of these organisations (consisting of 51-250 employees) toward human capital development and the integration of digital skills in the face of evolving work landscapes. Using interviews with key informants and a structured survey of 61 organisations across diverse sectors, the findings revealed that while most organisations offered some form of digital skills training, a notable portion lacked comprehensive structures for organisational learning. Challenges to effective implementation include resource limitations, awareness gaps and resistance to change. The study underscores the crucial role of youth employment accelerators in bridging the gap between inexperienced youth and resource-constrained companies. Additionally, it highlights the need for cultivating soft skills alongside digital competencies. These insights shed light on the nuanced landscape of digital skills development among medium-sized South African organisations, emphasising the imperative need for tailored policies and initiatives to support their pivotal role in driving economic growth and innovation in the 4IR context.

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1 Introduction

Digital transformation within the Fourth Industrial Revolution (4IR), or Industry 4.0, has brought about a paradigm shift with profound implications for the workforce. New or emerging job opportunities, aligned with a reimagined division of labour between humans and machines, require different skills and competencies, thereby positioning skills as "the new currency in the labor market" (Jagannathan, 2021, p. 12). Given the stark mismatch between the skills of the labour force today and the skills increasingly required of jobs in the 4IR (World Economic Forum & PwC, 2021), there is an urgent global movement for mass reskilling (learning new skills for a new job position) and upskilling (learning new skills to perform more effectively in a current role).

Human capital development is particularly critical in South Africa given the country's staggering (disproportionately young) unemployed population, alongside the reported gap between industry labour demands and the quality/quantity of skilled labour supply (Twinomurinzi et al., 2020). Massive national upskilling and reskilling are thus required to build capacity amongst current workers and to facilitate youth entrants into the labour market. South African businesses are required to assume responsibility in this endeavour. Genesis Analytics (2020a, p. 9) advises that "the private sector needs to institutionalise digital skills development by mainstreaming work readiness and on-the-job training for entry-level candidates and developing industry-wide mechanisms for digital re- and up-skilling of existing employees".

Relatively limited data is available to illustrate the involvement of South African businesses as role players within the education ecosystem, the extent of their activities related to human capital development (including digital skills development), or the effectiveness of their related activities in this regard. Medium-sized South African businesses appear to be a particular blind spot, with limited literature available as to how these organisations are navigating the human capacity development requirements and challenges of the future world of work. This is despite the National Development Plan (NDP) envisaging that by 2030, 90% of all jobs should be created by small and medium-sized enterprises (SMEs) (National Planning Commission, 2011), and despite recognition that medium-sized enterprises in fact create the most jobs (Nkosi, 2019).

A research study was therefore undertaken to address the research question: *What are South African medium-sized organisations' current approaches to the development of human capital within the organisation, and the creation of a pipeline for new skills into the organisation to facilitate effective functioning in the changing world of work?* The study focused particularly on digital skills development activities and related pathways. While not providing a comprehensive discussion of the study's findings, the current article presents an overview of some of the key results related to the perspectives and practices of the organisations in relation to digital skills development, as well as challenges in this regard. The remainder of this paper: provides a brief literature review of digital skills development and related challenges within a changing world of work; explains the research methodology; discusses key research findings; and provides a brief conclusion, and recommendations.

2 Literature review

2. 1 Skills Development in a Changing World of Work

While the 4IR is expected to reignite productivity and create millions of jobs in different sectors of the economy (Li, 2022; Magwentshu et al., 2019), there unsurprisingly is a lot of uncertainty surrounding the significant job transition and task replacement that will result from automation. This includes growing controversy concerning what the workforce of the future will look like (Harambee, 2020). Globally, including in South Africa, much of the public debate reflects fears that technology is going to 'eat people's jobs' (Li, 2022; Magwentshu et al., 2019). Despite this bleak perspective, forecasts by the World Economic Forum have indicated that, by 2025, while 85 million jobs could be displaced, 97 million new jobs might emerge (World Economic Forum, 2020). Similarly, McKinsey and Company predicted that in South Africa, 3.3 million existing jobs across the different sectors could be displaced by 2030, however, 4.5 million new jobs could potentially be created (Magwentshu et al., 2019). According to Ellingrud et al. (2020), operationally intensive sectors, which include manufacturing, transportation and retail will experience a greater magnitude of change compared to other industries. The repetitive nature of the tasks involved in the operations makes these sectors especially suitable for automation and digitisation (Li, 2022). Nevertheless, there is consensus among major role players in industry and government that, overall, more jobs will be created than lost.

Navigating the delicate balance between opportunities and threats, and attaining the envisaged economic prosperity, societal progress and individual development in this new world of work are greatly dependent on all relevant stakeholders being able to "… instigate reform in education and training systems, labour market policies, business approaches to developing skills, employment arrangements and existing social contracts" (NEDLAC, 2019, p. 58). This requires collaborative multi-stakeholder effort and a strong and interconnected ecosystem that is fully committed to a shared agenda (Genesis Analytics, 2020a; Jagannathan, 2021; Li, 2022; World Economic Forum & PwC, 2021).

Emphasis is particularly placed on preparing and equipping the current and future workforce considering that, by 2025, half of employees globally will need reskilling (Li, 2022). Employees will increasingly need to possess a multidimensional set of skills and competencies that are dynamic and interactive (World Bank, 2021). Digital competence is a crucial skill requirement along with a complement of soft skills that will enable citizens to navigate the transition to the digital world of work successfully and perform more effectively (International Labour Organization, 2021).

Current economic structures are however scrambling to address the rapidly growing misalignment between the current skills of workers and the needs of the evolving (digital) global economy. This is true for both developed and developing countries (Harambee, 2020; PwC, 2019; Schueler, 2021), including South Africa (Twinomurinzi et al. 2020). The world is therefore witnessing the accelerated implementation of ambitious upskilling and reskilling agendas across different sectors of the economy (World Economic Forum & PwC, 2021). This is particularly necessary in countries like South Africa, where massive retrenchments are already a reality (Maisiri & Van Dyk, 2021). While these skilling agendas are being spearheaded by government, civil society, education and business, it has been advocated that businesses have a responsibility to take the lead in facilitating strategic upskilling and reskilling of their employees (Maisiri & Van Dyk, 2021).

Preparing individuals for the demands of the current and future workforce requires businesses to employ a range of educational approaches that encompass traditional and non-traditional methods. These non-traditional methods include supporting students during their studies, providing internships for hands-on experience, and offering continued learning programmes for current staff (Genesis Analytics, 2020b). The need for more rapid processes of skills development in the changing world of work has increased recognition of the value and necessity of non-traditional skills development methods (Li, 2022).

In reality, most businesses are generally not following through on innovative and best practice recommendations for organisational skills development (see Baker, 2019; Billing et al., 2021; and Lundberg & Westerman, 2020). While ample South African literature is available identifying the skills for the 21st-century workforce (e.g. Craffert et al., 2014; Department of Communications and Digital Technologies, 2020; Department of Higher Education and Training, 2022; Harambee, 2020; LGSETA, 2021; Maisiri & Van Dyk, 2021; Twinomurinzi et al., 2020), limited information exists regarding the involvement of South African businesses – specifically medium-sized organisations – and the extent and effectiveness of their skilling activities. A study by Samuel and Moagi (2022) did however focus on skills development strategies of organisations towards transitioning the existing workforce given the changing world of work. The authors highlighted the importance of factors such as stakeholder relationships and the need for leadership to embrace the concept of being a learning organisation. No mention is, however, made of the size of the participating organisations (i.e. small, medium or large companies).

Research does suggest that smaller organisations generally fare better at skilling efforts than their larger counterparts, reportedly due to smaller organisations being more familiar with their employees, being able to create a more accurate baseline of skills, as well as the fact that "they often benefit from greater transparency around the organization's needs" (Billing et al., 2021). These findings are therefore somewhat promising for medium-sized organisations – the focus of this study.

2. 2 Challenges to Digital Skills Development

Despite recognition of the crucial role of upskilling and reskilling, the practice is not without challenges. The training requirements of the workforce are financially costly (World Economic Forum & PwC, 2021). Some organisations are simply unwilling to pay, perceiving it more as an expense than an investment (Li, 2022). Other necessary resources that organisations may lack include time and personnel to provide training opportunities to employees within organisations (Bughin et al., 2018). In some cases, organisations may have the resources but not know how to effectively allocate them to achieve maximum impact (Bughin et al., 2018).

Another key barrier lies in organisation leaders' lack of a clear understanding of the effect of automation and digitisation on current and future skills requirements (Harambee, 2020; Li, 2022). A Belgian study revealed relatively low levels of digital skills of especially middle to senior people in organisations (often aged 50 years and older) and reported that these individuals lack the competence to understand the impact of technology on the workplace and broader society (Verhaert et al., 2022).

The speed at which new technologies and job requirements are evolving also requires organisations to constantly update their training initiatives and programmes (Bughin et al., 2018; Lundberg & Westerman, 2020). In reality, the rate at which new training programmes emerge, notably, does not correspond with the rate of technological change. Furthermore, there is no one-size-fits-all workforce training approach. Identifying the most appropriate and effective training content and/or learning approach to upskilling and reskilling the workforce is not always easy. Organisations are having to shift from their traditional ways of training, sharing information and collaborating (Genesis Analytics, 2020a; International Labour Organization, 2022).

Organisations will also have to contend not only with workers' resistance to change, but also their lack of motivation and ambition to reskill or upskill themselves (Agrawal et al., 2020; Dhanpat et al., 2020). The resistance can stem from limited time, but also from fear of change or of losing one's job, and a lack of interest in training as a result of age and a negative perception of the training being offered (Agrawal et al., 2020; Dhanpat et al., 2020).

The following section discusses the methodology that was followed in conducting the study.

3 Methodology

The study adopted a multi-method research design, which combines different research methods, allowing for diversity in the methodology. The methods can include, but are not limited to, "open-ended questions and examining multiple data sources, which can take the form of field-based interviews, observations, document analysis, and examination of audiovisual materials" (Davis et al., 2013, p. 1249). The term itself is generic, encompassing a range of research strategies that may be strategically deployed throughout a research project and breach the qualitative/quantitative divide, to be practised within either camp or both (McKendrick, 1999). Accordingly, the present study capitalised on the strengths of both qualitative and quantitative strategies through utilising both key informant interviews, as well as a structured survey.

Convenience sampling was used to identify and conduct interviews with four subject matter experts from industry, government and academia. The term 'expert respondent' is used in reporting to refer to these individuals in respect of their anonymity, which was a condition of their participation. The interviews took place between February and March 2023. They were conducted (and recorded) through online video conferencing tools and lasted between 60 and 75 minutes. The recordings were transcribed and analysed using thematic analysis techniques with the aid of ATLAS ti© version 23, a computer-assisted qualitative data analysis software tool.

The study also utilised a structured survey, consisting of mostly closed questions, with several carefully designed open questions to obtain a more nuanced perspective on identified topics. The design of the questionnaire and selection of questions was leveraged on national and provincial studies (see Craffert et al., 2014 and #SkillsBoostWesternCape, 2019). While the questions were grouped under several themes, the current article pertains primarily to questions included the under the themes of 'skills development practices' and 'organisational challenges'.

The target population of medium-sized organisations was based on the criterion of number of employees, as defined by the Department of Small Business Development (2019) as organisations comprised of between 51 and 250 employees. The survey was directed specifically towards individuals who were responsible for or possessed broad knowledge of human capital development within the organisation. The study aimed to obtain participation from one respondent per organisation.

A database of medium-sized organisations, adhering to the criteria described above, was used for the sampling of research participants. Participating organisations were distributed across the nine main Standard Industrial Classification (SIC) codes, summarised in **Table** 1. While organisations were selected from different sectors to ensure a more diverse perspective on the research topic, the study purposefully excluded organisations operating in the telecommunications and information technology sectors from the sample, as it can be expected that they may be more progressive in technological innovations and have a more distinct focus on workforce digital skills talent.

The survey was initially piloted with respondents representing five medium-sized organisations, to test construct validity and the participants' understanding of the questions. The survey was then adapted accordingly. Sixty-one medium-sized South African organisations participated in the study. The survey data was collected between January and March 2023 by means of telephonic interviews.

Sector	Sample size
Agriculture, forestry and fishing	2
Community, Social and Personal Services	12
Construction	3
Electricity, Gas and Water Supply	4
Financial Intermediation Insurance, Real Estate and Business Services	17
Manufacturing	10
Mining and quarrying	5
Transportation and storage	5
Wholesale and retail trade, repair of motor vehicles and motorcycles	3
Total	61

Table 1: Sector distribution of organisations

4 Results and discussion

The results of the study are discussed and interpreted under the following broad themes, based on insights from both the survey and key informant interviews: (i) Organisations' perspectives regarding the changing world of work in the 4IR, (ii) Digital skills development practices, and (iii) Digital skills development challenges faced by medium-sized organisations.

4. 1 Organisations' Perspectives Regarding the Changing World of Work in the 4IR

Given the emphasis on the changing world of work, it was fitting to explore whether the organisations reported any changes regarding overall organisation staff within recent years. The study found that although a small number of organisations "had to reduce staff or eliminate certain jobs" over the previous three-year period, a more significant number "had to increase staff" (see **Figure** 1). While the numbers were minimal, this finding supports forecasts of authorities emphasising the opportunities of new jobs emerging during the 4IR, as opposed to merely the simplified – and bleak – assumption of diminishing employment prospects (Jagannathan, 2021; World Economic Forum, 2020). Expert respondents also aligned with these authorities, noting that there are not only many vacant positions in the country as a result of new emerging roles, but that South Africa could create significant new jobs through reshoring currently outsourced digital work. However, this only becomes possible once sufficient numbers of citizens are appropriate digitally skilled.

"… it's twofold. It's how do we accelerate the skills so that we can fill the current vacancies. But there's a much, much bigger opportunity in South Africa to reshore all the digital jobs that are sitting offshore. And how do we get access to that? We can't bring those jobs back until we know that we've got a skill pool that can actually handle the work, and kind of feed the attrition." (expert respondent)

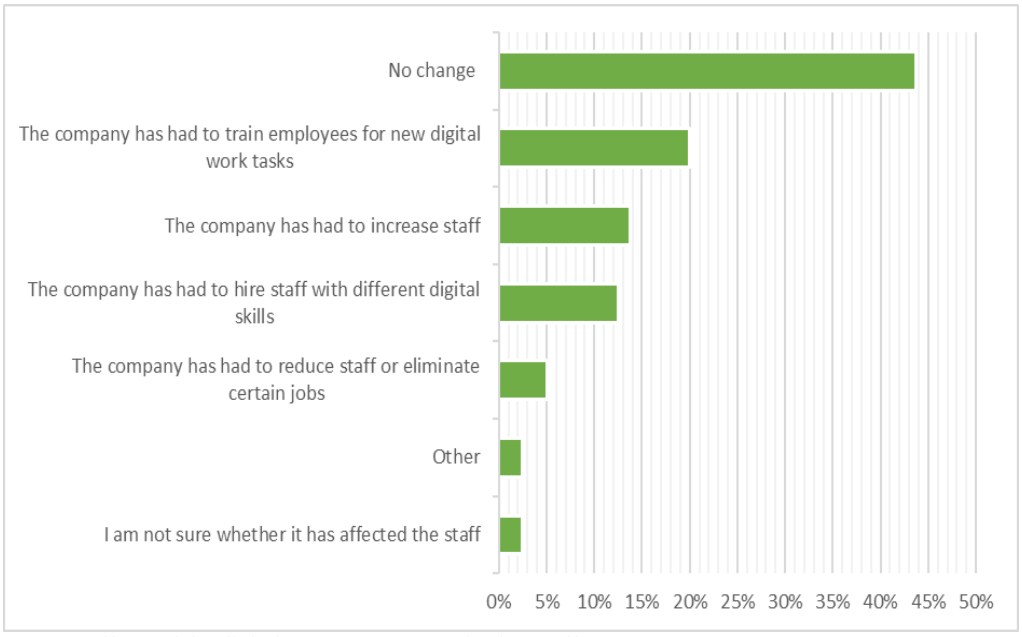

Figure 1: Effects of the digital economy on organisation staff

Figure 1 above also alludes to the growing importance of digital skills, as the participants reported that their organisations "had to train employees for new digital work tasks" and/or "had to hire staff with different digital skills". The fact that the former trend (upskilling) was more common than the latter is encouraging in that it entails the development of human capital within the organisation, rather than retrenching workers – which is reportedly already occurring at an alarming rate in countries like South Africa (Maisiri & Van Dyk, 2021). The expert interviews also noted that there is incentive for organisations to adopt this approach in that it is more cost-effective.

More than half of the respondents indicated no change to staff over the previous three-year period. This finding may be viewed through different lenses. It could, for example, be interpreted positively, in the sense that no layoffs occurred during the tumultuous global pandemic – a reflection of stability and resilience on the part of the organisations and signifying a prioritisation of employee retention. However, it may also be an indication of stagnation and a lack of progression and adaptation to the demands of the 4IR. Moreover, in an era characterised by a rapidly changing world of work, a lack of change could be associated with a fear of change, and a lack of change management strategies which embrace new talent, technologies, and/or skill sets necessary for innovation and growth.

4. 2 Digital Skills Development Practices

The investigation explored the internal structure of the organisations in terms of key functions and resources required for effective human capital development. Despite nearly all of the organisations (97%, or 59 of 61) reporting a dedicated or distinct person and/or department responsible for Human Resources (HR) issues (see **Figure** 2), fewer organisations (although still a majority of the sample) had critical core components in place for learning and development, including a person and/or department responsible for employee learning and development (training) (79%, or 48 of 61); a staff training plan or skills development strategy (82%, or 49 of 61); or a staff development/training budget (79%, or 48 of 61).

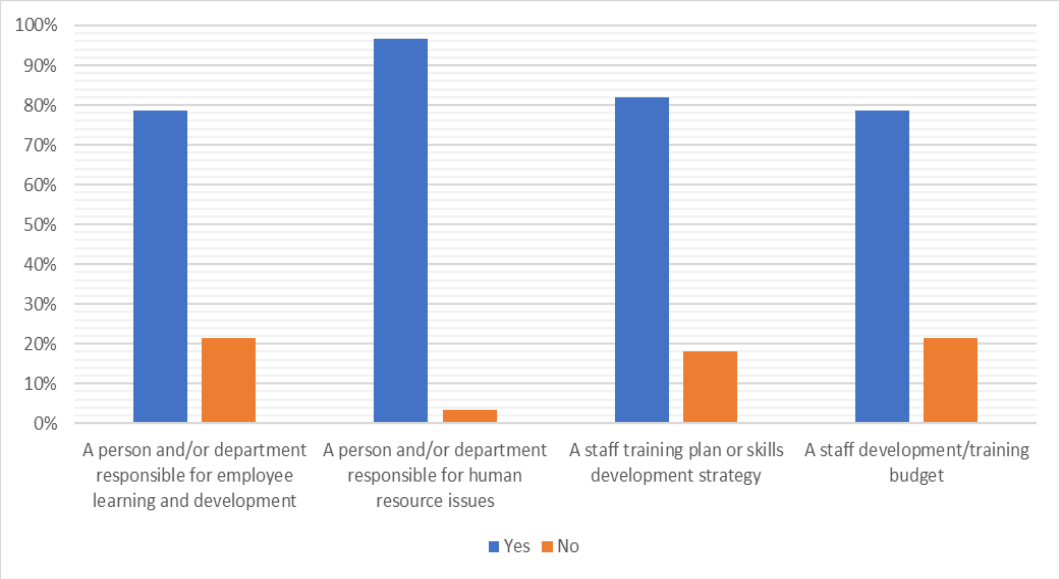

Figure 2: Human Resources and Learning and Development strategy and structure

To explore the various forms of digital skills training offered by the (61) surveyed organisations, this research study drew on the Digital Skills Framework One (DSFOne), which distinguishes between skills for various categories or classifications of workers, namely (i) digital skills for non-technical staff (e.g. sales people, administrative staff); (ii) advanced digital skills for ICT practitioners; and (iii) digital skills for leaders (organisation decision-makers) (Claassen, 2021).

Approximately three-quarters (74%, or 45 of 61) of respondents confirmed that their organisations offered some form of the aforementioned categories of digital skills training and were reportedly primarily motivated by: (i) human capital development being central to the organisation's strategy, (ii) the need to handle changes within the organisation, (iii) an identified need to train employees on new technologies, and (iv) improving employee retention. Slightly more than one-quarter (26%, or 16 of 61) of respondents reported that their organisations offered no digital skills training whatsoever – a concerning proportion given the critical nature of digital skills development for workers across sectors and industries (Jagannathan, 2021; Li, 2022; World Economic Forum & PwC, 2021). Interestingly, the greatest proportion of the organisations that were not offering any level of digital skills training fell within the manufacturing sector (as illustrated in **Figure** 3), which is notable, given that this sector is one that reportedly "will experience a greater magnitude of change compared to other industries" (Ellingrud et al., 2020).

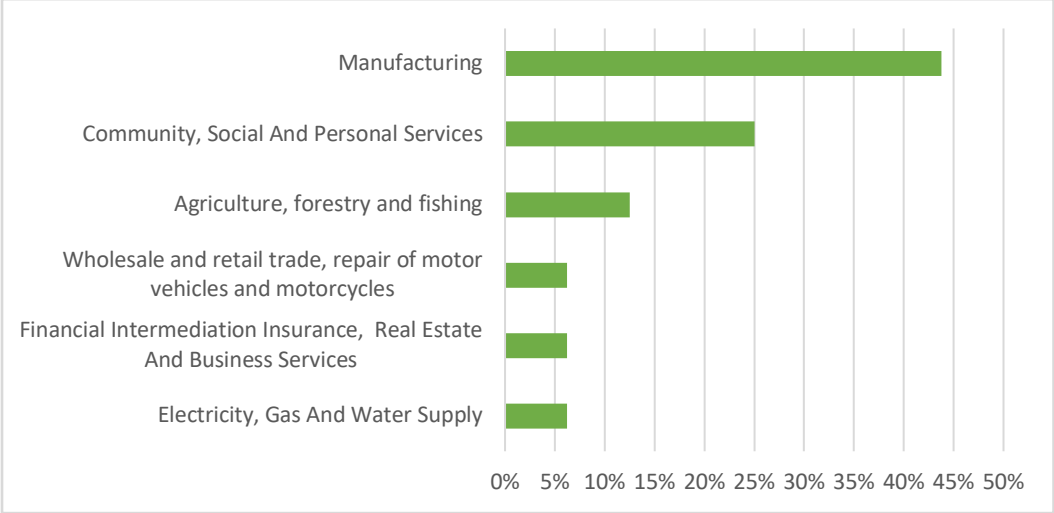

Figure 3: Percentage of organisations that did not offer any digital skills training based on sector

Amongst respondents whose organisations do provide some form of digital skills training to staff, 39% (24 of 61) reported that considerable training was offered in at least one of the three categories (viz. digital skills for non-technical staff; advanced digital skills for ICT practitioners; and digital skills for leaders); while 34% (21 of 61) stated that some or minimal training was offered. The sector most prominent amongst those offering considerable digital skills training was the Financial, Insurance, Real Estate & Business Services industry. A more specific depiction of the extent of training offered in each of the three worker categories is presented in **Figure** 4.

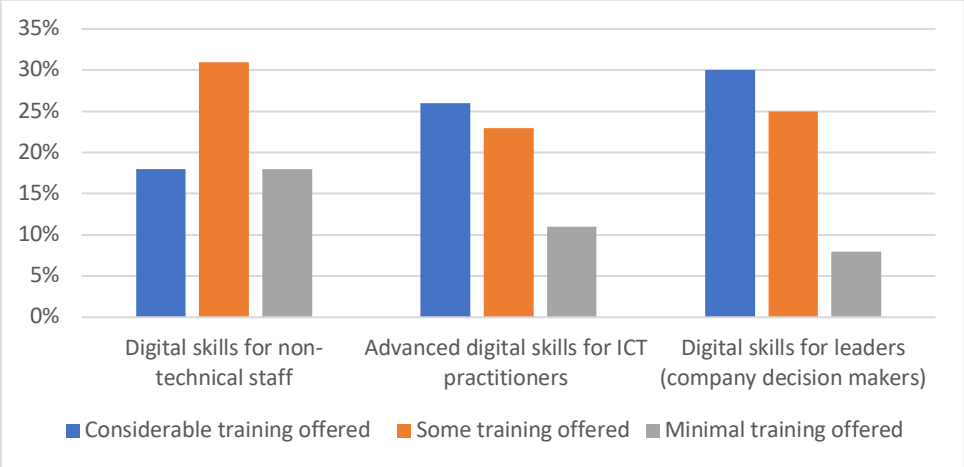

Figure 4: Digital skills training offered to staff across worker categories

An interesting contrast is that a higher number of survey respondents reported that their organisations provided digital skills training to non-technical staff, rather than to ICT practitioners or those specifically at the leadership (decision-making) level. Surprisingly, in organisations where digital skills training was offered to leaders, it was to a greater extent compared to the training provided to the other two worker categories. This may allude to a shift in priorities within organisations, where preference is on leadership empowerment in digital skills, which could indicate a strategic emphasis on

driving technological advancements from the top down. However, this could raise concerns about the potential impact on the overall digital readiness when certain staff categories receive more extensive training than others, potentially creating skill gaps across different organisational levels.

The study further sort to explore the nature of the digital skills development in which organisations were engaging considering the important distinction between the concepts of upskilling and reskilling. A considerable majority of respondents reported that both upskilling and reskilling were occurring within their organisations. As has also been reported in literature (ESEI International Business School, 2021), upskilling was the more common of the two approaches: 87% (39 of 45) reported upskilling, while 76% (34 of 45) reported reskilling occurring in their organisations (see **Figure** 5).

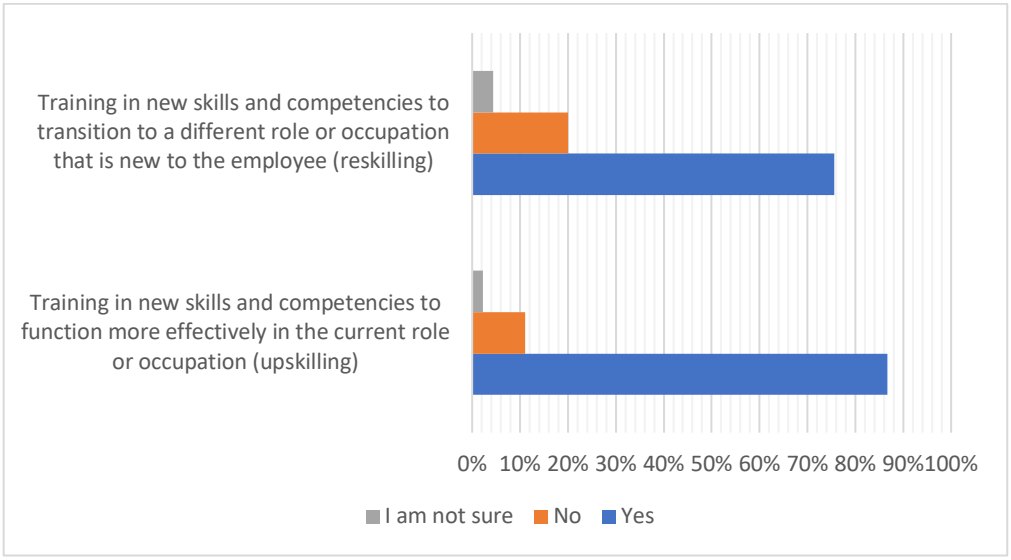

Figure 5: Digital skills development opportunities (reskilling and upskilling)

While this discussion has centred on practices related specifically to the development of digital skills, the study findings also placed strong emphasis on the critical nature of soft skills. One expert respondent provided useful contextual understanding of the South African predicament, in which a large proportion of the unemployed youth population have never been exposed to a formally employed role model and lack even basic understanding of "what going to work means". Interventions are therefore required to "craft a work ethic" (expert respondent) amongst youth and support them in developing the "social behaviours for work" (expert respondent). This includes a concerted focus on shaping the individual's mindset and attitude, in view of them taking ownership and responsibility for their own futures.

This level of investment in human capital development is typically outside the purview of SMEs. Interviews with expert respondents have highlighted the instrumental contribution of youth employment accelerators in bridging the gap between young, inexperienced job-seekers on the one hand, and industry on the other. This is achieved through developing the requisite soft skills, providing an opportunity for some form of practical work experience and enabling the young people to "start building what we call or refer to as a work muscle" (expert respondent) before transitioning into employment. It is promising that more than half of surveyed organisations reported making use of such programmes (at least in their digital skills development programmes).

4. 3 Digital Skills Development Challenges Faced by Medium-Sized Organisations

A range of constraining factors emerged during the study, which either presented a challenge for organisations in implementing digital skills interventions to some extent or contributed to decisions not to undertake such training at all. The top four factors identified as either major or somewhat significant challenges were limited time, financial constraints, limited human resources, and infrastructure challenges. Limited time to implement learning and development interventions was a significant challenge that emerged from both survey and expert respondents. In essence, the heavy (often tedious) workload of many within the divisions that would typically oversee learning and development left little time for the often creative and progressive thinking involved in organisational change within the 4IR. An expert respondent stated that "there's a lot of things that have to happen in that [Human Resources] office. There is hardly any time for the forward positioning."

Another challenge was financial constraints. Global bodies advocating for digital skills training of the workforce across sectors are not oblivious to the "financially costly" nature of these endeavours (World Economic Forum & PwC, 2021). As previously mentioned, some organisations are just not able and/or willing to pay, perceiving it as more of an expense than an investment (Li, 2022). Interviews with experts in industry shed light on the challenge of limited financial resources, specifically within SMEs as opposed to larger organisations. Essentially, "[smaller organisations] haven't got the money all the time to start investing in work readiness skills. So, as a starting point, there's no funding…" (expert respondent). Moreover, the technology itself is prohibitively expensive to the extent that it becomes a significant barrier for smaller organisations, hindering their ability to implement the required staff learning and development interventions.

Beyond the financial barrier, there is often also limited human capacity, which may result in lower prioritisation of learning and development, or very limited flexibility in these practices. The staff members who are generally responsible for learning and development are often "thinly stretched" (expert respondent) and have difficulty providing the level of mentoring solutions required by, for instance, entry-level workers. The organisations do not have the latitude to provide employment opportunities – and essentially "take a risk" (expert respondent) – on young, entry-level workers with limited experience. This challenge is reportedly more prominent among SMEs than larger organisations – the latter having the advantage of more resources and are reportedly more likely to have human capital development (as well as a direct focus on the development of typically excluded groupings) embedded in their value systems, HR practices and policies.

Infrastructure constraints were another prominent hurdle, closely related to the challenge of limited financial and material resources. Internet connection, devices, and adequate venues posed a distinct barrier and were notably the most significant amongst the reported 'major challenges' of digital skills training implementation. This is to be expected in South Africa, which not only has great disparities in the quality of internet connectivity in various regions (Statistics South Africa, 2022), but – even more pressing – is plagued with the stark challenge of load shedding, which is "crippling" and "tearing through businesses" across the country (BusinessTech, 2023; Hendricks, 2023). Unsurprisingly, load shedding was the most frequently noted challenge in the open-ended component of the survey. It is also important to note that SMEs are disproportionately affected in this regard. The measures required for merely maintaining standard operational functioning in this context are strikingly expensive and out of reach for most businesses and have huge financial implications even for larger organisations able to invest in such measures (BusinessTech, 2023).

While these were the top challenges, other less prominent challenges included a lack of awareness and understanding of the need for digital skills amongst those responsible for driving the learning and development agenda; limited support from leadership; lack of interest among employees; and a lack of alignment between the skills development policy and regulatory environment on the one hand, and what is required within organisations on the other.

Finally, it is useful to note the reasons presented by the quarter of survey respondents whose organisations did not provide any form of digital skills training. The most reported explanation for this was that there is 'no need for training – digital skills are not very important in the organisation', while the second most reported reason was that there is 'no need for training – workers are fully digitally skilled' (see **Figure** 6). While these views were not necessarily held by senior leaders within the organisation (although 7% of the total sample of respondents hold senior management positions), by far the majority of the survey respondents (84%) were in positions of 'human resources/training/personnel manager or director', and therefore involved in the human capital development of staff members. Given this context, these views, which may be indicative of an unconducive environment for the digital skills development of staff, are particularly concerning – and a far cry from the call for "transformer CLOs" who prioritise human capital development and reshape organisational culture (Lundberg & Westerman, 2020).

Figure 6: Top reasons for not implementing digital skills training (amongst organisations that do not provide training)

5 Conclusion

This research study explored the practices and approaches to human capital development within businesses, with a specific focus on digital skills development in medium-sized South African organisations. While most surveyed organisations have initiated digital skills training interventions, a significant number of these are described as minimal in nature and a considerable number of organisations have not implemented any such initiatives whatsoever. Many organisations also lacked the seemingly critical structures required to effectively facilitate organisational learning and development (for example, a skills development strategy or staff development budget).

The study also provided insight into the challenges contributing to the effective implementation of digital skills development interventions. Prominent amongst these are limited time, financial constraints, limited human resources, and infrastructure challenges. There also appears to be an enduring lack of awareness or understanding of the critical nature of digital skills development within work environments, concerningly amongst those primarily responsible for the human capital development of staff members. Finally, the study revealed an urgent need to develop the requisite soft skills that will be increasingly important in future work environments.

In contributing to a limited body of knowledge exploring medium-sized South African organisations' response to digital transformation in the 4IR, the findings of this study allude to various policies and initiatives that can effectively support these critical stakeholders in their efforts to navigate the changing working landscape. This includes (but is not limited to): (i) Raising awareness and educating companies – particularly business leaders – on the impact of automation and the relevance and implications thereof for their own organisations and workers; (ii) Soft skills must be given due recognition in skills development agendas, and interventions towards this end must be recognised by funding bodies; (iii) Development of standard training material (designed specifically in view of the South African context) focused on digital competencies, which are required by workers across sectors, in view of reducing companies' uncertainty in navigating the skills development process; and (iv) Strengthening partnerships and increasing collaborative initiatives between medium-sized companies and youth employment accelerator organisations to enable businesses to significantly increase their uptake of early-career entrants. The implementation of these measures would be useful, if not instrumental, in enabling medium-sized South African organisations to more effectively function as a critical role player in the skills development of the South African workforce – and ultimately driving economic growth, innovation and competitiveness.

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