



Advancing economic growth through human capital development in the era of the Fourth Industrial Revolution



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Orientation: Economic growth is a national priority for South Africa, yet poverty, inequality, and unemployment persist. This study examines human capital development (HCD) as a catalyst for growth in the Fourth Industrial Revolution (4IR).

Research purpose: The study identifies critical HCD pillars, skills development, strategic alignment, impact measurement and management challenges and proposes a practical HCD framework suited to South Africa's socio-economic realities.

Motivation for the study: Despite legislation like the *National Skills Development Act*, HCD practices remain inconsistent across sectors. A deeper understanding of HCD's role in workforce development and economic progress is required.

Research approach/design and method: A qualitative design was adopted. Semi-structured interviews with HCD managers were analysed using Braun and Clarke's thematic analysis to identify key themes.

Main findings: Five themes emerged: (1) skills transfer and capability building, (2) alignment of HCD with business strategy, (3) evaluation of HCD return on investment, (4) challenges in adapting to 4IR demands and (5) structured HCD frameworks. These highlight gaps and opportunities for strengthening workforce readiness.

Practical/managerial implications: A four-pillar HCD model is proposed, emphasising skills transfer, adaptability, integration with economic strategies and leveraging 4IR technologies. Implementing Personal Development Plans (PDPs) and Key Performance Indicators (KPIs) is recommended to enhance outcomes.

Contribution/value-add: The study provides a theoretically grounded and empirically informed HCD framework aligned with South Africa's economic priorities, offering actionable insights for policymakers, business leaders and HR professionals to develop a future-ready workforce.

Keywords: Fourth Industrial Revolution; National Development Plan; human capital development; inclusive economic growth; HCD management; legislation; skills development.

Introduction

Economic growth is a key focus of the United Nations' Sustainable Development Goals (SDGs) (Sugiawan et al., 2023; Udeagha et al., 2023). Inclusive economic growth and human capital development (HCD) are increasingly becoming central to international discourse, as well as within South African (SA) organisations and political agendas (Awode & Oduola, 2024; Bareke et al., 2023; Nwankwo, 2023; Sahal et al., 2024). Human capital development plays a pivotal role in addressing sustainability challenges organisations and nations face, including inequality, unemployment and poverty (Campos-García et al., 2024; Nwachukwu, 2024; Tregenna et al., 2021). More recently, the erosion of social cohesion has emerged as a significant threat to organisational and societal stability, exacerbated by internal socio-economic pressures (Pomeroy, 2022). This challenge is particularly pronounced in South Africa, where poverty, unemployment, inequality and economic and political instability persist, compounded by technological disruptions and intergenerational workforce shifts, with limited risk-mitigation strategies in place (Marwala & Mpedi, 2024; McLennan, 2022).

Human capital development is fundamental to organisational resilience and catalyses economic transformation and sustainability (Hall et al., 2022; Hammed et al., 2024). Consequently, HCD

managers are responsible for implementing strategies to address workplace challenges, ensuring that learning organisations function as drivers of economic change (Akpieyi, 2024). Their role extends beyond traditional training initiatives to solving skills deficits and fostering an ethical, competent workforce that can contribute to inclusive economic growth (Ramaphosa, 2021). A well-structured HCD management framework could empower HCD managers to spearhead skills development initiatives that transcend generic training and knowledge dissemination (Akpieyi, 2024). For HCD managers to be effective, they must align their strategies with broader socio-economic goals, ensuring that HCD serves both organisational objectives and the needs of the communities they impact.

In South Africa, the 2030 National Development Plan (NDP) highlights human capital accumulation as a fundamental driver of economic growth and development (Maemu, 2024; Marumo, 2022). Over the years, the NDP has been extensively examined in research (Hartigh, 2015; Matyana & Thusi, 2023), highlighting its role in fostering socio-economic progress by addressing poverty, unemployment and inequality (National Planning Commission, 2019; Tregenna et al., 2021). The NDP aims to cultivate an inclusive economy, enhance institutional capabilities, strengthen governance structures and foster cross-sectoral partnerships (National Planning Commission, 2019). In this regard, South Africa's ability to drive inclusive economic growth is contingent upon creating future-ready workplaces and sustainable job opportunities, which depend on human capital-focused leadership and the commitment of social partners to meaningful societal development (Mabuza, 2021).

In the Fourth Industrial Revolution (4IR) era, organisations must prioritise reskilling, upskilling and cross-skilling initiatives to enhance workforce adaptability, agility and resilience (Marwala, 2020; Spavall & Jansen, 2019; Ontong, 2023). The contemporary workplace is increasingly shaped by capability gaps, technological disruptions, resistance to change, political interferences, diversity challenges and gender-based inequalities (Ontong, 2023). A key concern is the mismatch between employers' skill requirements and the available talent pool, which continues to hinder organisational performance and sustainability (Ontong, 2023). To address this challenge, businesses must actively invest in developing 4IR-relevant skills to enhance long-term viability and competitiveness (Bodibe, 2024; Hashim, 2018; Mayer, 2024). In South Africa, an ecological approach is required to integrate existing socio-economic resources and promote a sustainable future (Ramaphosa, 2021). However, Zand et al. (2018), along with Ngobeni et al. (2023), argue that the country's economic instability and political uncertainty hinder the development of sustainable education and training curricula (Damoah, 2024). In addition, there is a growing demand for agile learning models that incorporate innovation, creativity and problem-solving skills across diverse economic sectors (Ossiannilsson, 2022; Rajaram, 2023).

Despite international advancements in HCD, South Africa's public sector workspaces lag in achieving inclusive economic growth and workforce capacitation (Van der Walt et al., 2023). This study explores the current state of HCD in South Africa and its role in fostering inclusive economic growth, specifically focusing on skills development challenges faced by HCD managers in the public sector. Using Human Capital Theory (HCT) as the theoretical foundation, the study contributes to developing an HCD framework that aligns with South Africa's evolving socio-economic landscape. It is against this background that the following research objectives and questions were formulated:

Research objectives:

- To explore the role of HCD in advancing inclusive economic growth in South Africa, particularly within the context of the 4IR.
- To examine the key challenges HCD managers in the SA public sector face in implementing effective skills development strategies aligned with national economic goals.

Research questions:

- *How does HCD contribute to inclusive economic growth within the SA context, particularly in light of the 4IR?*
- *What are the primary challenges faced by HCD managers in the public sector when implementing skills development strategies aimed at addressing skills mismatches and economic transformation?*

Literature review

Human capital theory

Human capital theory, as originally articulated by Schultz (1961) and Becker (1962), posits that investments in education, training and skills development generate economic value by enhancing individual productivity, which ultimately drives broader economic growth. Becker's (1993) expansion of the theory incorporated not only formal knowledge and skills but also health and accumulated human capabilities as determinants of economic performance. More recent scholarship has further nuanced HCT by emphasising socio-emotional skills, ethical orientation and adaptability as critical human capital components, especially in increasingly complex and dynamic work environments (Almendarez, 2013; Tomer, 2016).

However, despite its foundational status, HCT is not without critiques and contradictions that warrant attention. Traditional HCT assumes a relatively linear, predictable relationship between education or training and productivity outcomes, often underestimating the contextual, social and systemic factors that influence skill utilisation and economic returns. For example, the theory tends to privilege formal education while downplaying informal learning and tacit knowledge, which are vital in many sectors (Becker, 1993; Green, 2021). Moreover, HCT has been critiqued for insufficiently addressing issues of equity and inclusivity, often overlooking how socio-economic inequalities shape

access to and benefits from human capital investments (Allais, 2021; Ramaphosa, 2021).

The advent of the 4IR poses significant challenges to traditional HCT assumptions. The rapid integration of artificial intelligence (AI), robotics, Internet of Things (IoT) and other technologies is reshaping skill demands and work patterns in ways that question the sufficiency of conventional education and training models (Schwab, 2016). The 4IR highlights the need for lifelong learning, agility and digital fluency, exposing a tension between static skill acquisition and the dynamic, continuous reskilling required in practice (Hashim, 2018; Tight, 2019). This disrupts the conventional human capital logic that often envisages education as a one-time investment with predictable returns.

In response to these shifts, HCD expands the scope of HCT by emphasising not just skills acquisition but also ethical leadership, inclusivity and responsiveness to societal needs (Joshi, 2018; Ramaphosa, 2021). Nevertheless, the literature reveals inconsistencies in defining and operationalising concepts such as 'inclusive economy' and 'ecological approaches'. These are frequently invoked but remain vague, limiting their practical application and empirical examination (Allais, 2021; Ndou, 2024). This ambiguity represents a critical gap where further theoretical refinement and empirical investigation are needed, especially in contexts such as South Africa with persistent socio-economic inequalities.

In addition, contemporary human capital management (HCM) debates highlight a shift from traditional top-down leadership to more compassionate, value-based approaches that promote employee engagement and organisational transformation (Bolman & Deal, 2017; Newton, 2019). This shift challenges earlier HCT frameworks that emphasised productivity over well-being and suggests a necessary reconciliation between human capital as an economic asset and as a social, ethical entity.

Workplace transformation, particularly in the public sector, underscores these tensions by demanding not only technological adoption but also capacity building, ethical governance and service delivery innovation (Vilakazi & Moore, 2023; Shava, 2024). This multifaceted challenge requires HCD and HCM frameworks that are adaptive, inclusive and context-sensitive, contrasting with the often rigid and linear assumptions embedded in classical HCT.

Lastly, emerging economic growth theories that prioritise innovation, knowledge and creativity as core competitive advantages (Bodibe, 2024; Schuett, 2015) further problematise traditional HCT. They call for integrated skill development encompassing technical, soft and ethical competencies aligned with local socio-economic realities. This complexity suggests that HCT's explanatory power is limited without incorporating broader social, ethical and systemic dimensions.

Human capital theory provides a foundational but evolving framework to understand the nexus between investment in people and economic performance. However, its traditional assumptions are increasingly challenged by the dynamic demands of the 4IR, persistent inequality and shifting leadership paradigms. By integrating inclusivity, ethical leadership, continuous learning and community engagement, this study contributes to the body of knowledge by proposing a more holistic and contextually relevant HCD framework. This integrated approach is critical for cultivating a resilient, future-ready workforce capable of contributing meaningfully to sustainable and inclusive development in South Africa and beyond.

Economic growth and human capital development

Economic growth remains a central focus of the United Nations' SDGs (Sugiawan et al., 2023; Udeagha et al., 2023). Inclusive economic growth and HCD have emerged as pivotal topics in international and SA discourse, spanning business, politics and academia (Awode & Oduola, 2024; Bareke et al., 2023; Nwankwo, 2023; Sahal et al., 2024). Human capital development is deeply interconnected with key socio-economic challenges such as inequality, unemployment and poverty, which impact the sustainability of both organisations and nations (Campos-García et al., 2024; Nwachukwu, 2024; Tregenna et al., 2021). More recently, the erosion of social cohesion has intensified, posing a growing threat to organisations and societies that are increasingly fragmented by internal and external forces (Pomeroy, 2022). In South Africa, these risks are further compounded by poverty, unemployment, inequality, political instability, rapid technological advancements and intergenerational shifts, all with limited mitigating measures in place (Marwala & Mpedi, 2024; McLennan, 2022).

Human capital development is essential for organisational sustainability and broader economic transformation (Hall et al., 2022; Hamed et al., 2024). As key drivers of this process, HCD managers are tasked with designing and implementing strategies to address workplace challenges and foster learning organisations capable of driving meaningful change (Akpieyi, 2024). They play a fundamental role in enabling employees to achieve developmental goals aligned with organisational objectives (Gomide et al., 2024; Gumede & Govender, 2022). In addition to resolving skills shortages Li (2022), they contribute to cultivating a skilled, ethical and proficient workforce essential for inclusive economic growth (Ramaphosa, 2021). An HCD management framework could enhance the ability of HCD managers to implement skill development initiatives that extend beyond traditional training and knowledge acquisition (Akpieyi, 2024). To be effective, they must adopt a community-centred approach, ensuring that HCD strategies align with broader societal needs.

The role of the National Development Plan

The SA NDP 2030 underscores human capital accumulation as a fundamental pillar of economic growth and development (Maemu, 2024; Marumo, 2022). Over the past decade, extensive research has examined the NDP's role in addressing the country's socio-economic challenges (Hartigh, 2015; Matyana & Thusi, 2023). The NDP aims to foster an inclusive economy, build capabilities, strengthen state capacity and promote collaborative leadership and partnerships (National Planning Commission, 2019). Achieving inclusive economic growth necessitates workplace transformation and the creation of new job opportunities, both of which rely on human capital-focused leadership and genuine commitment from social partners (Mabuza, 2021). In the era of the 4IR, the demand for reskilling, upskilling and cross-skilling has intensified. Adaptability, agility, resilience and the ability to develop new capabilities are crucial for creating sustainable work environments (Marwala, 2020; Ontong, 2023; Spaull & Jansen, 2019). The modern workplace faces numerous challenges, including skills mismatches, technological deficiencies, resistance to change, political interference, cultural intolerance and gender-based disparities (Ontong, 2023). A significant challenge is a disconnect between the skills employers demand and those available in the labour market, leading to organisational inefficiencies and failures (Ontong, 2023). Organisations must proactively align their strategies with 4IR demands to ensure workforce sustainability (Bodibe, 2024; Hashim, 2018; Mayer, 2024). South Africa requires an integrated ecological framework to consolidate socio-economic resources and create a sustainable future (Ramaphosa, 2021). However, current economic and political conditions are not conducive to sustainable curriculum development, hampering skill-building initiatives (Damoah, 2024; Ngobeni et al., 2023; Zand et al., 2018). This has heightened the demand for innovative learning models that cultivate critical, agile and creative problem-solving skills across multiple sectors (Ossiannilsson, 2022; Rajaram, 2023). Despite international progress, South Africa's public sector lags in achieving the HCD and economic capacitation levels seen in other global contexts (Van der Walt et al., 2023).

Situating human capital development in the South African context

In South Africa, the imperative to develop human capital is deeply intertwined with the country's socio-economic transformation agenda. Persistently high levels of unemployment, inequality and skills shortages have made HCD a national priority (National Planning Commission, 2012; StatsSA, 2023). Recognising the need to align workforce capabilities with economic growth objectives, the SA government has implemented a robust policy and legislative framework to drive skills development and human capital investment. Central to this framework is the *Skills Development Act (No. 97 of 1998)*, which was enacted to improve the skills of the national workforce, enhance productivity and promote employment equity. The *Act* established institutions such as the Sector Education and Training Authorities (SETAs) and

the National Skills Authority (NSA) to coordinate and fund sector-specific training initiatives to encourage employer participation in structured learning programmes (Department of Higher Education and Training [DHET] 2020). The *Skills Development Act* complements the objectives of the NDP (2030) by aiming to create a skilled, capable and employable workforce, thereby supporting inclusive and sustainable economic growth (NPC, 2012). These legislative interventions are particularly significant in the context of the 4IR, where the rapid evolution of technology is reshaping the labour market and increasing the demand for future-fit skills such as data analytics, AI and digital literacy (Mhlanga & Dzingirai, 2024). As such, the effectiveness of HCD strategies depends not only on government policy but also on the strategic leadership of HCD practitioners who can anticipate skill needs, design inclusive development programmes and align talent pipelines with national economic objectives.

The role of human capital development managers

Human capital development managers oversee micro-level training and development, ensuring that individuals and teams within organisations acquire essential competencies (Tight, 2019). As strategic enablers, they are responsible for aligning skill development initiatives with broader organisational objectives (Pease, 2015). By fostering human cognitive growth and knowledge acquisition, HCD managers enhance productivity and organisational performance (Tomer, 2016).

In the public sector, HCD managers face unique challenges, including skill shortages, emotional and psychological stress and increasing digital demands (Betcho, 2016). They often struggle to balance government policy directives with public service delivery's technical and operational needs (ADB, 2013). Public sector inertia, coupled with bureaucratic inefficiencies, further hinders progress. Private-sector lessons in clarity, motivation, alignment and data-driven decision-making could improve public sector performance (ADB, 2013). To be effective, HCD managers require a conducive learning environment supported by transformational learning approaches. These may include coaching, mentoring, academic training, online learning, industry research and literature reviews. Employee learning and growth are critical components of the public sector's Balanced Scorecard, reinforcing HCD as a strategic priority (Pooe, 2013). Human capital-focused leadership, particularly in the 4IR, must prioritise community impact and sustainability (Mabuza, 2021; Marwala, 2020). Future HCD managers must develop innovative, solution-oriented skills and the 4IR systems thinking to optimise business processes and automate HCD functions (Alexander, 2021; Mayer, 2024; Somfula, 2023). Business efficiency now depends on skill transferability, reskilling, upskilling and accurate workforce planning to maximise return on investment (ROI) (Li, 2022). Self-efficacy is crucial in driving service excellence and achieving organisational goals under new leadership paradigms (Ren & Shen, 2024).

The South African context

Given South Africa's socio-economic disparities, there is an urgent need for adequate skills development and utilisation to drive economic growth (Abedian et al., 2018). Nzimande (2021) asserts that the country requires critical skills to enable citizens to participate meaningfully in the 4IR. Investing in HCD is essential for driving economic recovery and promoting equitable growth by reducing inequality, unemployment and poverty. (Shuaibu & Oladayo, 2016).

However, systemic challenges persist. Allais (2021) highlights that inequality, casualised labour markets, dependence on cheap labour and reliance on imported technology hinder vocational education, skills transfer and the development of new sectoral skills. These challenges are particularly pronounced in the public sector, where inefficiencies, lack of expertise and poor service delivery remain pressing concerns across municipal, provincial and national government departments. Human capital development managers must continuously assess organisational training needs in alignment with macro-level objectives, integrating individual performance agreements and personal development plans (PDPs). To ensure due diligence and mitigate risks, HCD should be managed at multiple levels, with key result areas measured through key performance indicators (KPIs) embedded in both organisational and individual performance agreements.

South Africa's economic growth is mainly constrained by the 'triple challenge' of poverty, unemployment and inequality (Tregenna et al., 2021). Economic, social and technological factors, including rising unemployment, workplace culture, public sector inefficiencies and the broader global economy, shape HCD. Nassazi (2013) emphasises that employees play a pivotal role in institutional success and must be equipped with practical training to drive radical economic transformation. However, the NDP 2030 remains inadequately implemented, and efforts to build a capable, skilled and ethical state continue to face significant obstacles (Hartigh, 2015).

In addition, economic instability, rising fuel prices (Rossouw, 2017), debates on land expropriation (Le Roux 2018) and discussions on privatisation (Head, 2018) further complicate the economic landscape. While privatisation is increasingly seen as a potential strategy for economic growth, it demands specialised skill sets and targeted human resource development initiatives to support a mindset shift. Given South Africa's reliance on foreign trade and investment, the country remains vulnerable to global economic slowdowns (Ontong, 2023). It must be embedded within national management frameworks to position HCD as a strategic solution for economic growth (SA Government, 2017). Human capital development practitioners should work closely with human resource management (HRM) and line managers to align skills development with organisational and national objectives. However, political instability, declining foreign investment and governance issues hinder

sustainable development (Lamprecht, 2017; Mobius, 2017). Addressing these constraints requires a coherent, skills-based strategy to enhance workforce capabilities, foster economic resilience and ensure long-term growth.

Research design

The current study adopted an interpretivist qualitative research approach to explore the construction and interpretation of HCT through the subjective experiences of SA HCD managers (Greener & Martelli, 2018). This approach was guided by interpretive and theoretical frameworks, which shaped the study's focus on HCD (Creswell, 2016). By adopting an interpretivist paradigm, the study aimed to capture the lived experiences of HCD managers as they occurred in real-world settings. Creswell (2016) emphasises that to understand the meanings individuals assign to social or human problems, researchers should employ an emerging qualitative approach that prioritises naturalistic inquiry. This involves collecting data in participants' natural environments, ensuring sensitivity to the individuals and the contexts under study. Furthermore, this approach facilitated rich and open dialogue between the researcher and participants, enhancing the flow of information. According to Creswell (2016), qualitative research is a situated activity that immerses the researcher in the participants' world, utilising a range of interpretive and material practices to make that world visible. By leveraging this methodology, the study provided deep insights into HCD managers' perspectives, contributing to a nuanced understanding of HCT within the SA context.

Research strategy

The study adopted a phenomenological research strategy, an inductive, descriptive approach focused on understanding how individuals experience a phenomenon rather than simply identifying what it entails (Whitehead, 2012; Zahavi, 2019). Phenomenology was chosen for its ability to capture lived experiences and the meaning-making processes of participants. Unlike methods that seek causal explanations, it emphasises rich, subjective descriptions (Whitehead, 2012). Integrating interpretive insights reveals the deeper significance of experiences within social and professional contexts. This approach ensures participants' voices remain central, fostering a comprehensive, authentic understanding of human behaviours, perceptions and beliefs.

Research method

The study was conducted in public sector departments and private companies in Gauteng, South Africa, including global corporations with local entities. Two top-tier corporate companies were selected based on their strong training, development and staff retention strategies. These companies are recognised for nurturing talent and enabling employees to maximise their potential while contributing meaningfully to the organisation. Their efforts focus on economic opportunity, education and inclusivity, where they strive to make a significant impact. Companies leveraging technology

and innovation to address global challenges, such as those in this study, offer valuable insights for developing an HCD management framework. In addition, both private-sector companies have training subsidiaries that provide large-scale training, conferences, webinars and seminars to the general public. These initiatives further reinforce their commitment to HCD, positioning them as key contributors to workforce growth and organisational success.

Sample and sampling

This study employed purposive and snowball sampling techniques to gather insights from HCD experts across the public and private sectors (Welman et al., 2005). Snowball sampling allowed the researcher to expand participation beyond the initially selected respondents, leveraging participants' networks to identify additional experts. Participants provided holistic insights into HCD operational efficiencies, challenges, collaboration, innovation, knowledge management and stakeholder communication. Given foreign participation in these departments and South Africa's challenging economic climate, various HCD challenges were evident. However, while the data collected were sufficient for this study, they did not fully capture all challenges at the service delivery level. A total of 25 managers from public and private-sector organisations were invited, with 15 ultimately participating in the interviews (see Table 1).

Although not presented in Table 1, additional demographic data were collected during the interviews to provide further context to participants' perspectives. These included age, gender, first language and ethnic background. This demographic information enriched the analysis by highlighting how personal and cultural backgrounds may shape HCD managers' experiences, interpretations of HCD and their approaches to addressing skills development challenges in the 4IR context.

Data collection method

The study employed a qualitative, idiographic research design aimed at deeply understanding individual perspectives on HCD management within SA workplaces. Idiographic approaches focus on the in-depth exploration of specific cases to uncover rich, contextually grounded insights (De Luca Picione, 2015; Miśkiewicz, 2018). This approach typically involves qualitative methods such as case studies (Abazov, 2021; Kharazishvili et al., 2020; Kharazishvili et al., 2021; Miśkiewicz, 2021), interviews (Kuzior et al., 2021a; Kuzior et al., 2021b; Kwilinski et al., 2020) and observations

TABLE 1: Sample and participants of the study.

Entity	Sector	Manager	Number of participants
Department A	Public	Line manager, Middle manager, Senior manager	3
Department B	Public	Line manager, Middle manager, Senior manager	3
Department C	Public	Line manager, Middle manager, Senior manager	3
Company A	Private	Line manager, Middle manager, Senior manager	3
Company B	Private	Line manager, Middle manager, Senior manager	3
Total	-	-	15

(Kwilinski et al., 2022; Shareia, 2016; Tkachenko et al., 2019;). It enables researchers to investigate complex organisational issues by uncovering context-specific factors that influence decision-making and behaviour (Lehnert et al., 2016; Saługa et al., 2020). Moreover, the idiographic method is particularly valuable for identifying nuanced patterns and themes that may be overlooked by more generalised or nomothetic research designs. Ethical considerations were observed throughout the study, and research limitations were acknowledged. Semi-structured interviews were conducted both in person and through virtual platforms (MS Teams and Zoom), and lasted between 30 min and 60 min. These sessions enabled active observation and deep listening, thereby enhancing the richness of the data collected. In addition to interviews, direct observations and an extensive literature review were used to triangulate data and inform the development of a comprehensive management framework aimed at supporting inclusive economic growth in South Africa's emerging economy. While Astalin (2013) highlights the flexibility of qualitative methods, the study also implemented strategies to ensure trustworthiness. Credibility was strengthened through methodological triangulation, and transferability was supported by providing contextual descriptions.

Data management and storage

The collected data were secured and stored in the researcher's personal laptop computer storage system. Chesnay (2015) indicates that laptop computers require vigilance to enhance data security because they are more portable than desktop computers; locking the device when it is not in use and creating a strong password is paramount in case of loss or theft. Data were secured by locking the device when not in use with a password-protected folder.

Data analysis

The researchers conducted a thematic analysis following Braun and Clarke's (2021) approach. This study applied Braun and Clarke's (2021) thematic analysis approach, which provides a systematic, flexible method for identifying, analysing and reporting patterns (themes) within qualitative data. The process involved six key phases:

1. Familiarisation with data – The researchers immersed themselves in the data by reading transcripts multiple times.
2. Generating initial codes – Meaningful data segments were systematically coded.
3. Searching for themes – Codes were grouped into broader themes reflecting key patterns.
4. Reviewing themes – Themes were refined by checking coherence within and across data.
5. Defining and naming themes – Each theme was clearly defined to capture its essence.
6. Producing the report – Themes were presented through narratives, participant quotations and visual representations.

This approach ensured a rigorous, structured analysis, capturing the richness of HCD managers' experiences while contributing to developing a user-friendly HCD management framework. Initially, themes and codes were handwritten and then manually transferred into an Excel spreadsheet for further organisation. Given the critical role of HCD in addressing political and socio-economic development challenges, it is essential to position HCD strategically on the national agenda. Developing an HCD management framework could contribute to HCD at all levels, fostering inclusive economic growth. The researcher aims to create a practical, user-friendly framework to support current HCD managers and future researchers. A high-level visual representation of the coding process is provided next, while detailed coding was conducted manually in Excel and finalised using ATLAS.ti software for comprehensive analysis.

Quality criteria

This study ensured data quality and integrity by adhering to Lincoln and Guba's (1985) trustworthiness criteria: credibility, transferability, dependability and confirmability. Credibility was established through data triangulation, combining semi-structured interviews, observations and literature reviews to validate findings. Member checking allowed participants to review their responses for accuracy, while peer debriefing with fellow researchers helped refine interpretations and minimise bias (Merriam, 1998). Transferability was enhanced by providing detailed descriptions of participants, their organisational settings and the broader industry landscape, ensuring that findings are relevant to similar contexts (Houghton et al., 2013; Polit & Beck, 2012). Dependability was maintained through a comprehensive audit trail, documenting research decisions and data collection processes for future replication. In addition, an independent researcher reviewed the coding process to ensure consistency and logical coherence across participant responses (Polit & Beck, 2012).

Confirmability was achieved through reflexivity, where the researcher maintained a journal to reflect on potential biases critically. Direct participant quotations were incorporated to support interpretations with raw data, ensuring transparency. The use of ATLAS.ti software minimised researcher subjectivity by systematically organising and coding responses (Cope, 2014). These strategies ensured a rigorous and reliable study, contributing to HCD management research.

Ethical considerations

Ethical approval to conduct this study was obtained from the University of Johannesburg, College of Business and Economics (IPPM-2019 276 [M]). This study adhered to key ethical principles, including confidentiality, voluntary participation, data management, safety and non-victimisation (Wiles, 2013). Participant identities remained anonymous, and informed consent was obtained without coercion. Permissions from relevant authorities were secured before data collection (Creswell, 2016). To ensure integrity, no vested interests

influenced site selection, allowing diverse perspectives. Ethical safeguards included avoiding deception, respecting cultural norms, preventing power imbalances and not falsifying data. Communication was clear, and data security was prioritised. The researcher committed to protecting participant rights, preserving raw data and upholding ethical research standards throughout the study.

Results

Framing the findings: Themes within the strategic pillars framework

The findings presented in this study are organised around two key analytical concepts: themes and pillars. Themes represent patterns and key ideas that emerged directly from participants' responses during the thematic analysis of qualitative data. They capture what is happening and what is important from the perspective of the participants regarding HCD practices and challenges. Pillars, in contrast, are broader, overarching strategic dimensions that serve as a conceptual framework within which these themes are interpreted. These pillars, such as skills transfer, economic growth, the new world of work and HCD in the 4IR, are drawn from existing literature and theory, providing a high-level structure that aligns and organises the empirically derived themes.

This dual approach allows for a data-driven presentation of participants' views (themes), while simultaneously situating these findings within established strategic areas of HCD (pillars). Employing this structure enhances the interpretability and practical relevance of the findings, enabling a clearer connection between empirical insights and strategic priorities in HCD.

The thematic analysis identified five key themes aligned with the HCD pillars, reflecting skills development, business strategy, economic impact and challenges in adapting to the 4IR. Each theme was further broken down into codes representing recurring patterns in participant responses. These codes offer deeper insight into systemic issues and opportunities within HCD. The responses to the primary and secondary questions were clustered into these five themes aligned with the four HCD pillars, as indicated in Table 2.

The ATLAS.ti word cloud building function enabled the researcher to view the frequency of terms used from the interview transcripts. These codes appeared at varying frequencies among participants and are further highlighted in Table 3. The thematic frequency analysis of HCD pillars highlights the key focus areas within HCD derived from the study's qualitative data. The most frequently occurring theme was HCD ROI (25%), which strongly emphasises measuring the effectiveness of HCD training interventions and their impact on economic growth. This aligns with Pillar 1 – Skills Transfer, which underscores the importance of knowledge dissemination and capability building.

TABLE 2: Themes linked to human capital development pillars.

Themes	Linkage to HCD Pillars	HCD pillars
Theme 1: HCD PM	↔ This theme focuses on the skills and capabilities of HCD line managers within the context of the 4IR technologies and new ways of working. It aligns with the pillar's emphasis on adapting HCD practices to the changing landscape of work.	Pillar 4 – HCD in the 4IR
Theme 2: HCD business strategic objectives	↔ Aligning HCD with business strategic objectives is crucial in the evolving world of work, where adaptability and skills development are essential for organisational success. This theme directly addresses the need for HCD to support the changing demands of the workplace.	Pillar 2 – New world of work
Theme 3: HCD ROI	↔ Demonstrating the economic impact of HCD investments through ROI can contribute to the broader emergence of HCD as a growth driver. This theme highlights the importance of measuring the economic benefits of HCD to support its recognition as a key factor in economic development.	Pillar 3 – Economic growth through HCD emergence
Theme 4: HCD challenges	↔ The challenges and opportunities HCD managers face in developing capabilities are directly related to the changing nature of work in the 4IR era. This theme explores the need for HCD managers to adapt and acquire new skills to navigate the evolving workplace effectively.	Pillar 2 – New world of work
Theme 5: HCD management framework	↔ Developing frameworks to improve HCD line manager capabilities is crucial for navigating the complexities of human capital development in the 4IR. This theme focuses on creating structured approaches to enhance HCD management practices in response to the demands of the 4IR.	Pillar 4 – HCD in the 4th Industrial Revolution

HCD, human capital development; PM, performance management; 4IR, Fourth Industrial Revolution; ROI, return on investment.

TABLE 3: Thematic frequency analysis of human capital development pillars.

Theme	Frequency (n)	%	Aligned HCD pillar
HCD management framework	18	22.5	Pillar 4 – HCD in the 4IR
HCD performance management	15	18.8	Pillar 4 – HCD in the 4IR
HCD business strategic objectives	12	15.0	Pillar 2 – New world of work
HCD ROI	20	25.0	Pillar 3 – Economic growth through HCD emergence
HCD challenges	15	18.8	Pillar 2 – New world of work
Total	80	100.0	-

HCD, human capital development; ROI, return on investment; 4IR, Fourth Industrial Revolution.

Theme 1: Human capital development performance management: Pillar 4 – Human capital development in the Fourth Industrial Revolution

Pillar 4 was most suited to Theme 1 because of its significance in performance management as a driver of economic growth through training and development. Six participants emphasised that line managers and leaders fail to hold employees accountable for contributing to economic growth via the performance management process. A key mechanism for identifying skill needs is the performance agreements implemented and monitored in the workplace. The participants' perspectives, as follows, provide a foundational background for future epistemological explorations in this area. Participant 1 articulated:

'We are all interested in prosperity nationally and socio-economic development as a combination through development, but the building blocks are human capabilities and capacities in a broad sense. We cannot claim that we have created economic growth through this course alone. Collective human capabilities and capacities will eventually grow our global economy.' (Participant 1, Public sector, Line Manager)

Participant 2 further explained:

'HRD [Human Resource Development] is a strategic contributor to an organisation. It takes human understanding to design programmes, incorporating formulas and algorithms into robots. It also requires human insight to manage the interface between humans and technology. At the end of the day, all processes are designed to serve people, which is why humans must understand the role of skills and HRD. Line managers are the ultimate custodians of these skills, conducting appraisals and determining

whether interventions are needed to address skills gaps, acquire new skills, or prepare for future organisational needs.' (Participant 2, Public sector, Middle Manager)

Despite the acknowledged importance of HCD, there is a disconnect between its implementation and its integration into performance management processes. Ten participants expressed concerns that HCD was not effectively linked to PDP gaps within government institutions. In addition, 14 participants stressed that employees would not perform to expected standards without KPIs. Personal development plans must be explicitly linked to HCD plans to ensure meaningful career development and workforce capability enhancement. Participant 3 stated:

'Without clear KPIs, employees cannot meet the expectations set for them. It's just not possible. They need that structure and clarity to guide their performance.' (Participant 3, Public sector, Senior Manager)

Participant 8 further explained:

'KPIs are non-negotiable. If we don't have those, there is no way to measure if employees are on track or not. It creates ambiguity, and people perform below the standard expected of them.' (Participant 8, Public sector, Middle Manager)

Political factors also emerged as a barrier to fair career progression. Four participants noted that political appointments limit promotion opportunities for civil servants, which affects skills development and retention. Furthermore, 12 participants observed that organisational culture is often cited as an excuse for poor performance and lack of recognition, ultimately contributing to subpar service delivery in the public sector. Participant 7 stated:

'The organisational culture sometimes becomes an excuse for people's poor performance. They blame it on the culture, but the truth is they aren't being held accountable for their work.' (Participant 7, Public sector, Line Manager)

Participant 10 elaborated:

'A lot of the time, when people underperform, they hide behind the culture of the organisation, which can be toxic. It's easy to use it as an excuse to avoid recognition or addressing poor service delivery.' (Participant 10, Private sector, Line Manager)

Participants provided varying perspectives on how HCD is incorporated into organisational performance frameworks. Some acknowledged its presence in formal structures, while others highlighted inconsistencies:

‘Yes, most organisations have balanced scorecards that include HCD.’ (Participant 2, Public sector, Middle Manager)

‘However, it is not a consistent KPI among managers and is not mandated by DPSA guidelines. Tools associated with KPIs are directly linked to financial rewards, often neglecting the broader value of HCD in organisational success. The Integrated HR Planning tool should ensure that HCD is prioritised without compromise.’ (Participant 1, Public sector, Line Manager)

‘Managers are required to upskill their employees, but in larger organisations with over 100 employees, HCD is more frequently embedded in KPIs for line managers. In smaller organisations, this is often overlooked.’ (Participant 1, Public sector, Line Manager)

‘In government, HCD is formally integrated but primarily for senior management services from director level and above, as reflected in the Core Management Criteria (CMC) under the KPI ‘People Management and Empowerment.’ (Participant 4, Public sector, Middle Manager)

The findings highlight a critical gap in aligning HCD with performance management processes. While some organisations have structured approaches, the inconsistent application of HCD in KPIs, political interference in career progression and a lack of accountability among leaders hinder effective skills development. To maximise the impact of HCD on economic growth, organisations must integrate it into performance management systems with clear KPIs, structured PDPs and accountability mechanisms for managers to ensure workforce readiness and sustainable development.

Theme 2: Human capital development, business strategic objectives: Pillar 2 – New world of work

Human capital development must be strategically aligned with business objectives to build a future-fit workforce capable of adapting to the evolving global economy. This requires integrating HCD with key performance metrics, digital transformation and emerging workforce trends to enhance organisational agility, innovation and competitiveness. A proactive approach ensures employees develop critical skills needed for the ‘new world of work’, driving long-term business sustainability and growth. Participant 3 explained:

‘What we are trying to do is to capacitate our people to promote trade in the new world of work. So we have that as a standard in our training that we have exposure to that, specifically with our heads of missions as you might recall, we have all the training apart from working with key stakeholders, we normally have the provinces coming to the heads of mission as to what the provinces can or can’t do for that matter.’ (Participant 3, Public sector, Senior Manager)

Participants emphasised the critical need for HCD to align with business strategic objectives and ensure a future-fit workforce in the evolving global economy.

Participant 3 highlighted the importance of equipping employees with relevant skills:

‘We are capacitating our people to promote trade in the new world of work. Our training programmes expose them to this reality.’ (Participant 3, Public sector, Senior Manager)

This underscores the necessity of training initiatives that prepare employees for emerging business landscapes.

Similarly, Participant 6 stressed the integration of HCD with business strategy, noting:

‘Business strategy and HCD must be integrated. We need to align skills development with market demands.’ (Participant 6, Public sector, Senior Manager)

This sentiment was echoed by Participant 9, who pointed out the limitations of traditional training methods, stating:

‘Our current training models are outdated. We need dynamic learning solutions that reflect business needs.’ (Participant 9, Public sector, Senior Manager)

The need for transformation in learning approaches reflects a broader organisational shift towards adaptability and innovation.

In addition, Participant 11 emphasised the role of digital transformation in shaping workforce capabilities, remarking:

‘Digital transformation demands a shift in skills. HCD should proactively support business strategy through targeted skills development.’ (Participant 11, Private sector, Middle Manager)

This highlights businesses’ need to adopt forward-thinking HCD strategies that foster agility and responsiveness to technological advancements. Participants reinforced that HCD must be strategically aligned with evolving business needs, ensuring that employees are equipped with the skills required to thrive in the New World of Work.

Theme 3: Human capital development Return on Investment: Pillar 3 – Economic growth through HCD emergence

Human capital development investments must yield measurable economic returns, mainly through effective skills transfer initiatives. Organisations must ensure that training and development programmes enhance employee performance, productivity and long-term business success. Skills transfer is critical in sustaining workforce capability, reducing skill gaps and fostering organisational knowledge continuity. Participants emphasised that HCD should not be viewed as a cost but as a strategic investment that drives innovation, efficiency and overall organisational growth. By aligning HCD initiatives with business objectives, companies can track ROI through improved operational outcomes, employee retention and competitive advantage in the evolving labour market. Participant 14 indicated:

‘There’s no skills transfer. Well I need someone to pay attention to the organisational designs submitted. But it’s now 3 years later that nothing is done, so actually it must be outdated. By

that time we were so overworked, we needed the Chief Directorate with at least 14 people and I could justify that, and that was where my scope was for work for less than a year now. Work has been escalating so much, and with this COVID, we are in the digital economy. So you know, we have to relook that and even, even if I can get, what I asked for in 2018, it will a big step in the right direction so that I can prepare someone to take over from me, because I've got 5 years left then I retire, and everything will be dropped.' (Participant 14, Private sector, Middle Manager)

Participants emphasised the necessity of measuring the ROI in HCD to ensure that training initiatives contribute meaningfully to business objectives. Participant 5 highlighted the importance of accountability in training expenditures, stating:

'Training investments should be measured for ROI. We need tangible evidence that our programmes are yielding economic benefits.' (Participant 5, Public sector, Middle Manager)

This highlights the need for organisations to implement evaluation mechanisms that assess the effectiveness and financial impact of HCD initiatives.

A key component of maximising ROI is ensuring that training leads to effective skills transfer. Participant 8 stressed this point:

'Without skills transfer, we are wasting resources. We must develop mechanisms to ensure effective knowledge-sharing.' (Participant 8, Public sector, Middle Manager)

This reflects the concern that without structured knowledge transfer, investments in employee development may not translate into long-term workforce sustainability. Looking beyond immediate skill gaps, Participant 12 emphasised the importance of a proactive approach, stating:

'We must invest in skills transfer programmes that anticipate future needs, not just react to existing gaps.' (Participant 12, Private sector, Senior Manager)

This highlights the strategic necessity of forward-thinking workforce planning, where HCD investments are responsive and anticipatory, ensuring businesses remain competitive in the evolving economic landscape. Collectively, these insights reinforce the critical role of skills transfer in demonstrating the ROI of HCD, ensuring that training efforts lead to measurable, sustainable and future-oriented workforce development.

Theme 4: Human capital development challenges: Pillar 2 – New world of work

The new world of work presents significant challenges, particularly the ineffective alignment between education, training and workplace demands. Participant 12 highlighted the disconnect between learning initiatives and organisational needs, stating:

'There is a major gap between education and training and the needs of the organisation. Our interventions often lack strategic planning.' (Participant 12, Private sector, Senior Manager)

This highlights organisations' need to move beyond generic training models and adopt a more targeted approach that directly addresses business requirements. To bridge this gap, Participant 2 emphasised the importance of a structured, forward-thinking approach, stating:

'We need a systematic approach to upskilling employees to meet future workplace demands.' (Participant 2, Public sector, Middle Manager)

This reflects the need for organisations to develop comprehensive training strategies that prepare employees for emerging industry trends rather than just addressing immediate skill shortages. The impact of education and training on organisational performance was further reinforced by Participant 13, who stated:

'High-performance service delivery is only possible when education and training initiatives are directly linked to on-the-ground needs.' (Participant 13, Private sector, Line Manager)

This highlights the necessity of practical, application-based learning that ensures employees can translate knowledge into workplace efficiency. However, Participant 15 raised concerns about the superficial nature of many training programmes, noting:

'Many training programmes are tick-box exercises, failing to address real performance issues.' (Participant 15, Private sector, Senior Manager)

This critique points to ineffective training investments that prioritise compliance over genuine skill development. Participant 12 added:

'I think the lack of an operative link between education and training and changes in the organisation are major challenges in the new world of work. Take that example of the Singaporean, which is an extreme example if you think about the fact. That particular intervention is such an excellent intervention and there were about ten or twelve government departments that were involved, only when they decided on that there shouldn't be a plan around that intervention. They should say fine, we got these deficits seen in our organisation we want these people to be specifically empowered around in these areas, and when they come back let us look now how do we address etc. The reality is that we really use education and training really more like tick-box things. For me the capacity building initiative is if we look at the high-performance in service delivery. Really I think the only time where you can see an improvement in service delivery is where you have that frontline work e.g. if you send a nurse to operate a new machine, the proof of knowledge transfer is in the effective operation thereof. We need to find ways to make service delivery outputs more visible and hold people more accountable for non-performance.' (Participant 12, Private sector, Senior Manager)

Collectively, these insights emphasise the urgency of rethinking HCD strategies to create meaningful links between education, training and workplace performance.

Organisations must prioritise structured, needs-driven training approaches to enhance workforce readiness and overall business success in the evolving world of work.

Theme 5: Human capital development management framework: Pillar 4 – Human capital development in the Fourth Industrial Revolution

A structured framework for HCD management is essential for organisations to effectively adapt to the demands of the 4IR. Participant 3 highlighted the lack of clear Human Resource Development (HRD) strategies, stating:

‘Departments lack clear HRD strategies. A structured approach is needed to navigate 4IR challenges.’ (Participant 3, Public sector, Senior Manager)

This emphasises the necessity for well-defined frameworks that guide workforce development in response to technological advancements.

The persistence of skills gaps in key industries is primarily attributed to the absence of formalised HCD structures. Participant 6 reinforced this point, noting:

‘The absence of a formalised HCD framework is why skills gaps persist in key industries.’ (Participant 6, Public sector, Senior Manager)

This suggests that organisations risk falling behind in workforce readiness for emerging job demands without strategic planning. To ensure effective adaptation, Participant 10 stressed the role of policy in shaping HCD initiatives, stating:

‘Policy development should drive HCD initiatives in 4IR. Without structure, organisations will struggle to adapt.’ (Participant 10, Private sector, Line Manager)

This highlights the importance of policy-driven interventions that create a sustainable roadmap for workforce transformation.

Further supporting this need, Participant 15 emphasised the role of HCD managers in anticipating future skill requirements, stating:

‘HCD managers need better tools to forecast future skills needs and develop proactive frameworks.’ (Participant 15, Private sector, Senior Manager)

This highlights the necessity of predictive analytics and strategic workforce planning to ensure long-term competitiveness in a rapidly evolving digital landscape. Participant 3 responded:

‘Then with pillar 2, I don’t think departments do enough to prepare themselves. I mean when I was looking at my report, the question was ‘how many departments have got HRD strategies?’ I mean very few, I mean, we provide a framework but we expect you to write your own strategy that is contextual, that talks to your own issues. Now you find that departments don’t do that, which is the current pillar, the outgoing strategy we swapped it

around. The new strategy we swapped around because we would want to put a number of policies in place to support what they do in pillar 1, 2 and 3 and if they have that policy, they can even anticipate what it is they want to address in pillar 4. Because pillar 4 is more about economic growth the impact of what you are doing, but you cannot achieve that impact unless you plan from the onset that I want to address that.’ (Participant 3, Public sector, Senior Manager)

Overall, participants reinforced that a structured HCD framework is vital for addressing 4IR challenges, closing skill gaps and ensuring organisations remain agile in an era of rapid technological change.

The implication of these findings for HCD managers is that HCD and inclusive economic growth are real concerns in the SA economy, especially in the public space. Although much knowledge of skills is prevalent in public service, the applicability thereof is highly questionable in light of the steadily increasing triple challenges of poverty, unemployment and economic growth. Serious risk-mitigating factors have been highlighted as extremely vital to service delivery. Although the public sector is highly regulated, the risks may have been ignored or not taken seriously. This results in highly skilled, scarce and critical resources emigrating to other countries for better opportunities. Ultimately, organisational sustainability in the new world digital economy is threatened across African countries.

Discussion

Human capital development plays a critical role in economic growth, but its integration into performance management systems remains inconsistent. Participants noted that while HCD initiatives address skill gaps, they are often not linked to performance mechanisms such as KPIs. This lack of integration limits HCD’s impact on economic development, as highlighted by Govender and Adegbite (2023). A significant gap is the lack of robust measurement tools to assess the ROI of HCD, particularly in emerging economies where expertise and assessment frameworks are limited (Akpieyi, 2024). Furthermore, weak managerial accountability hinders effective training and development (Anh Vu & Ha, 2021). To address these challenges, well-defined KPIs and structured PDPs are essential to ensuring HCD efforts translate into measurable workforce capabilities (Beausoleil, 2022).

Political factors and organisational culture also hinder HCD’s effectiveness. Political appointments limit career growth, while organisational culture may foster underperformance. Despite efforts to incorporate HCD into balanced scorecards, inconsistencies persist, especially in government institutions. This highlights the need for systemic reforms to align HCD with performance management, ensuring workforce readiness and economic growth.

Integrating HCD with business strategies is crucial for preparing the workforce for the new world of work. Participants stressed aligning skill development with emerging market trends to equip employees with future-relevant

competencies. As digital transformation accelerates, businesses must embed HCD in strategic planning to enhance agility, innovation and competitiveness (Doherty & Stephens, 2021; Li, 2024). Traditional training models are outdated, and organisations must adapt their human capital strategies across technical, psychological and social dimensions to meet evolving demands (Zulu et al., 2024). Organisations must adopt dynamic learning solutions and digital skills training to ensure workforce readiness.

Measuring HCD ROI is essential to ensure skill development leads to meaningful outcomes. Participants emphasised viewing HCD as a strategic investment rather than a cost. Many organisations, however, lack practical skill transfer mechanisms, limiting the long-term impact of training programmes. Govender and Adegbite (2023) found that awareness of ROI measurement remains low, and organisations struggle to sustain workforce capabilities without structured knowledge-sharing. Participants suggested integrating HCD with business objectives to track ROI through improved performance and retention. Significant challenges remain in aligning education, training and workplace demands. Participants pointed out gaps between existing learning initiatives and organisational needs, emphasising the need for a structured, forward-thinking approach to skills development. Many training programmes were described as inadequate, failing to address real performance challenges. Digital learning, particularly AI-enabled personalised training, is emerging as a key enabler of workforce development (Evseeva et al., 2019; Vardarlier, 2020). However, linking education and training directly to high-performance service delivery remains challenging. A structured HCD management framework is necessary for organisations to navigate 4IR complexities. Many organisations lack clear HR development strategies, contributing to skill gaps (Mefi & Asoba, 2021). Business acumen is increasingly crucial for shaping the future of work (Schultz, 2021). Organisations risk falling behind in workforce readiness and economic

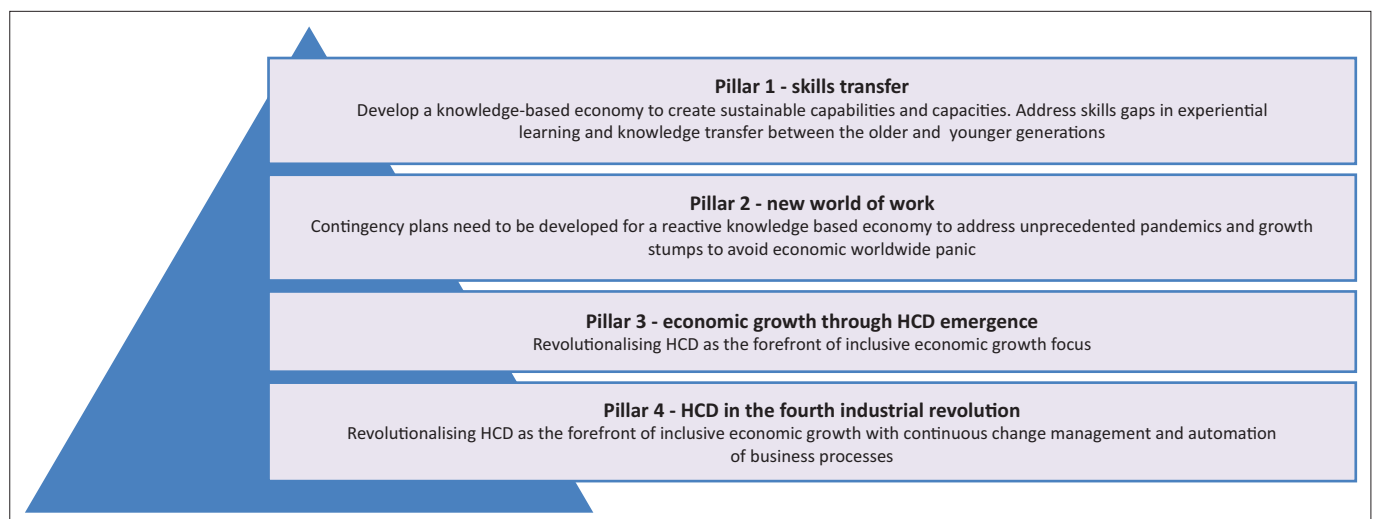
competitiveness without structured policy interventions and strategic workforce planning.

Following the discussion of the research findings are the recommendations and conclusions for practice in the form of a management framework. This study significant findings offer original evidence and make important theoretical contributions to the literature on human capital development (HCD) and its role in promoting inclusive economic growth. Pillar 1 identifies skills transfer to develop a knowledge-based economy to create sustainable capabilities and capacities. Unemployment, coupled with scarce and critical skills, reveals tenacious gaps in experiential learning and a lack of knowledge transfer between the older and younger generations.

Pillar 2 recognises a new world of work where continuous change management contingency plans need to be developed for a reactive knowledge-based economy to address unprecedented pandemics and growth stumps to avoid worldwide economic panic. Pillar 3 is aimed at revolutionising HCD as being at the forefront of inclusive economic growth focus, while Pillar 4 aims to make learning and working indistinguishable with the constant evolution of advancing technologies.

Themes 1 to 5 are aligned to all four pillars as each is interdependent on the other with a fine golden thread permeating across all the pillars. Theme 5 alludes to the HCD model for economic growth which was designed and developed with the incorporation of all four pillars for maximum operational efficiencies and high impact service delivery in the workplace. The HCD model for economic growth with implications for stakeholders is proposed in Figure 1.

To attain the objectives of this research study, the four pillars were identified as paramount to the success of this project, namely, skill transfer, a new world of work, economic growth



HCD, human capital development.

FIGURE 1: Proposed four-pillar human capital development model for economic growth.

through HCD emergence and HCD in the 4IR. The proposed model and its implementation activities could be appropriate for all government institutions, including private institutions. The secondary objective highlights and emphasises the pivotal roles of theory and practices of HCD, radical economic transformation for inclusive economic growth, supporting policy analysis and implementation within the public sector.

In conclusion, the study's findings provide robust evidence that the research objectives and questions were comprehensively addressed. The first research objective, which aimed to explore how HCD is aligned with business strategic objectives in the context of the 4IR, was addressed through Theme 2, which illuminated the emphasis participants placed on agile learning strategies and the strategic integration of critical and future-fit skills. The second objective, which sought to evaluate the performance management capabilities of line managers in supporting HCD, was explored under Theme 1, where concerns regarding accountability, the design and application of performance indicators and the use of PDPs were critically examined. The third objective, which aimed to assess the perceived ROI of HCD interventions, was addressed through insights captured in Theme 3. Participants reflected on the importance of measuring tangible outcomes such as employee competence, productivity and continuity of expertise. The fourth objective, relating to the challenges affecting HCD implementation, was comprehensively addressed in Theme 4, which revealed a range of inhibiting factors including political interference, budget constraints, inadequate capacity and misalignment with organisational culture. Finally, Theme 5 enabled the development of a conceptual HCD management framework, thereby fulfilling the fifth research objective of proposing a model to enhance the effectiveness of HCD within the digital economy. Overall, the thematic findings, supported by participant narratives and frequency analysis, affirm that the research questions and objectives were met in a manner that provides both theoretical insight and practical guidance for the advancement of strategic HCD in the SA public sector.

Recommendations

This study explored the effects of HCD in the new world digital economy, including the challenges and opportunities for growth. The research findings from the selected interview participants provided the acquisition of rich data concerning the research questions and the methodology used to conduct the study, including the analysis of the research findings. An interpretivist ontology was followed to determine the realities of the new world digital economy. The findings showed that without HCD, inclusive economic growth is highly challenged. Five key themes derived from the data and code groups were linked back to the research questions and objectives. The semi-structured qualitative interviews generated greater discussion points than anticipated because of the country's weak economy and HRD system weaknesses and implementation failures. Human capital development is seen as the solution to

address the key shortcomings of employees responsible for the creation of economic growth. The rich data acquired enabled the researcher to reach a saturation point where further data were not required, because of the sufficiency of information that was garnered, to develop a HCD model for economic growth.

Conclusion

The study concluded with the main features of this research study, together with conclusions and recommendations for futuristic innovations and further studies on improvements in economic growth for the SA emerging economy. The factors contributing to the epistemological intention to develop the HCD growth emergence model were explored and discussed with proposed frameworks for implementation and best practice. Empirical contributions to this study were discussed, along with the significant themes, conclusions and recommendations. The key purpose of undertaking this study was to research and provide innovative solutions on how HCD can contribute towards addressing the human capital factor to create inclusive economic growth for the emerging SA economy. The frameworks and recommendations provided may necessitate further research to incorporate newer strategies and the 4IR progression techniques to support the new world digital global economic growth processes in conjunction with the developing country imperatives.

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Authors' contributions

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Data availability

The data that support the findings of this study are available from the corresponding author, C.M., upon reasonable request.

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